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/Ion energetics measurements : part 1. 1
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U.S. DEPARTMENT OF COMMERCE / National Bureau of Standards



Ion Energetics Measurements Part I. 1971-1973

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Ion Energetics Measurements

Part I. 1971-1973

H. M. Rosenstock, D. Sims,
S. S. Schroyer, and W. J. Webb

Ion Energetics Data Center
National Measurement Laboratory
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Foreword

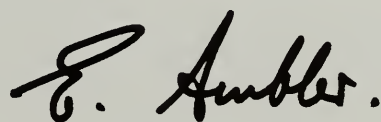
The National Standard Reference Data System provides access to the quantitative data of physical science, critically evaluated and compiled for convenience and readily accessible through a variety of distribution channels. The System was established in 1963 by action of the President's Office of Science and Technology and the Federal Council for Science and Technology, and responsibility to administer it was assigned to the National Bureau of Standards.

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The System now includes a complex of data centers and other activities in academic institutions and other laboratories. Components of the NSRDS produce compilations of critically evaluated data, reviews of the state of quantitative knowledge in specialized areas, and computations of useful functions derived from standard reference data. The centers and projects also establish criteria for evaluation and compilation of data and recommend improvements in experimental techniques. They are normally associated with research in the relevant field.

The technical scope of NSRDS is indicated by the categories of projects active or being planned: nuclear properties, atomic and molecular properties, solid state properties, thermodynamic and transport properties, chemical kinetics, and colloid and surface properties.

Reliable data on the properties of matter and materials are a major foundation of scientific and technical progress. Such important activities as basic scientific research, industrial quality control, development of new materials for building and other technologies, measuring and correcting environmental pollution depend on quality reference data. In NSRDS, the Bureau's responsibility to support American science, industry, and commerce is vitally fulfilled.

A handwritten signature in black ink, reading "E. Ambler." The signature is fluid and cursive, with a large initial "E" and a trailing period.

ERNEST AMBLER, *Director*

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Ion Energetics Measurements

Part I. 1971-1973

H. M. Rosenstock, D. Sims, S. S. Schroyer, and W. J. Webb

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The present publication tabulates measurement information on energetics of gaseous positive ions published in 1972 and 1973 along with some information from 1971. It is intended to supplement the information previously compiled and evaluated in "Energetics of Gaseous Ions." Approximately five thousand measurements are tabulated, drawn from over six hundred published papers.

Key words: Appearance potential; electron impact; electron spectroscopy; gaseous ion; ionization potential; photoionization; spectroscopy.

1. Introduction

The present supplement is the first of a series intended to update the measurement information which was presented and critically evaluated in the compilation "Energetics of Gaseous Ions"[1].¹

This supplement includes measurement information on gaseous positive ions which was published in 1972 and 1973, together with additional information which appeared in 1971 but was not included in the ion energetics compilation.

The format and the ordering of ions is similar to the previously published compilation. The notation (V) after an ionization potential indicates a vertical ionization potential which is higher than the adiabatic value [1,2]. The methods, along with their abbreviations, are given in table 1. The methods are discussed in detail in references 1 and 2. In addition, the abstracted measurement information is occasionally annotated with one or more comments which will be useful in evaluating the quality of the information. A list of the comments is given in table 2. They should be self-explanatory, with the possible exception of the comment on metastable transitions. For complex fragmentation processes the observation of metastable transitions provides useful corroborative information on the neutral products of the fragmentation process. Hence where given in the publication presenting fragment appearance potentials, this additional information has been noted in a comment. We are aware that there is much additional useful information on metastable transitions in other publications. However, no attempt was made to incorporate this material at this stage of the project. Evidently, it will have to be taken into account in the critical evaluations which are planned for the future.

We have inserted two asterisks in the other products column to indicate that no fragmentation takes place. Hence, a blank space in that column indicates a fragmentation process in which the neutral fragments are not specified in the journal article.

As before, names are given for all compounds where chemical structure cannot be adequately represented by a one-line semistructural formula, i.e., ring compounds. In a departure from the previously published compilation, we have decided to adopt the systematic nomenclature used by Chemical Abstracts Services. In some instances this leads to extremely long and involved names. To ease the pain, in these instances we also give a short name, if available. Unfortunately this is not so for some complex organometallic compounds. In all cases, name or no name, we give the Chemical Abstracts Services Registry Number to facilitate access of other data bases and to retain an identifier for the compound which is more permanent than the name.

We emphasize the interim nature of the present supplement. It is probable that additional measurements published during this period will be identified. They will be given in the next supplement, along with those measurements published in 1974 and 1975. Further, the intent of the supplement is to present as accurately as possible the measurement information as given in the papers themselves. This will, of course lead to occasional inconsistencies in the tabulated information, reflecting the inconsistencies in the literature itself. They will (hopefully) be removed in the critical evaluation planned for later. Also, the reader should be cautioned that information given in this supplement is not necessarily more accurate than that presented in the earlier compilation.

¹ Figures in brackets indicate literature references.

TABLE 1. Methods for ion energetics measurements in order of sort preference

Abbreviation	Technique
S	Spectroscopic
PI	Photoionization
TPE	Threshold Photoelectron Spectroscopy
PE	Photoelectron Spectroscopy
AUG	Auger Electron Spectroscopy
PEN	Penning Ionization
EM	Electron Monochromator Studies
RPD	Retarding Potential Difference
EDD	Energy Distribution Difference
NRE	N th Root Extrapolation
SRP	Square Root Plot
FD	First Derivative
SD	Second Derivative
DC	Deconvolution
SEQ	Sequential Ionization
EI	Other Electron Impact
SI	Surface Ionization
CTS	Charge Transfer Spectrum
BH	Born-Haber Cycle
D	Derived Value
OTH	Other

References for the Introduction

- [1] Rosenstock, H. M., Draxl, K., Steiner, B. W., and Herron, J. T., "Energetics of Gaseous Ions," J. Phys. Chem. Ref. Data **6**, Supplement 1 (1977).
- [2] Rosenstock, H. M., "The Measurement of Ionization and Appearance Potentials," Int. J. Mass Spectrom. Ion Phys. **20**, 139 (1976).

TABLE 2. List of comments and coding acronyms

RN	CAS Registry Number xxxxxx-xx-x
RD	Radical
TV	Threshold value approximately corrected to 0 K
HB	Threshold value approximately corrected for hot bands (implies vibrational hot bands)
ZK	Threshold value for zero kinetic energy ions (used only where threshold dependence on KE is measured)
ZT	Zero average translational energy of decomposition at threshold (used where KE is shown to be approximately 0 but no threshold dependence is measured)
AD	____ eV average translational energy of decomposition at threshold
HE	High kinetic energy ion
CD	Metastable transition indicates ____ eV kinetic energy release
UN	Metastable transitions indicate ____ eV kinetic energy release (applies to successive metastables)
PC	Appearance potential of the corresponding metastable transition
MT	Metastable transition(s) observed (used also if there is possibility of collision contribution)
RS	Average of ____ Rydberg series limits (use words)
AV	Average of ____ values (use words)
FI	Fragment from electron impact induced decomposition of ____
PA	Appearance potential of negative ion
NI	Negative ion detected
PM	Position of peak maximum
TR	Other product(s) thermochemically reasonable
SC	Mean value of spin-orbit components
JC	Mean value of Jahn-Teller components

2. Acknowledgements

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3. Index of Ions

H^+	24	$C_5H_4^+$	36
D^+	24	$C_5H_5^+$	37
H_2^+	24	$C_5H_6^+$	37
HD^+	24	$C_5H_7^+$	38
H_3^+	24	$C_5H_8^+$	39
Li^+	24	$C_5H_9^+$	39
Li_2^+	24	$C_5H_{10}^+$	40
B^+	24	$C_5H_{11}^+$	40
BH_2^+	25	$C_5H_{12}^+$	40
BH_3^+	25	$C_6H_2^+$	41
$B_3H_5^+$	25	$C_6H_4^+$	41
$B_3H_6^+$	25	$C_6H_5^+$	41
$B_4H_8^+$	25	$C_6H_3D_2^+$	43
$B_5H_8^+$	25	$C_6H_6^+$	43
$B_5H_9^+$	25	$C_6H_4D_2^+$	44
C^+	25	$C_6H_7^+$	44
C^{+2}	26	$C_6H_8^+$	44
C^{+3}	26	$C_6H_9^+$	45
C_2^+	26	$C_6H_{10}^+$	45
C_3^+	26	$C_6H_{11}^+$	46
CH^+	26	$C_6H_{12}^+$	46
CH_2^+	26	$C_6D_{12}^+$	47
CH_3^+	26	$C_6H_{14}^+$	47
CH_4^+	28	$C_7H_6^+$	47
C_2H^+	28	$C_7H_7^+$	47
C_2D^+	28	$C_7H_8^+$	49
$C_2H_2^+$	28	$C_7H_9^+$	50
$C_2D_2^+$	29	$C_7H_{10}^+$	50
$C_2H_3^+$	29	$C_7H_{11}^+$	51
$C_2D_3^+$	29	$C_7H_{12}^+$	51
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C_3H^+	30	$C_8H_8^+$	52
$C_3H_2^+$	30	$C_8H_9^+$	53
$C_3H_3^+$	30	$C_8H_{10}^+$	54
$C_3H_4^+$	30	$C_8H_{11}^+$	55
$C_3H_5^+$	31	$C_8H_{12}^+$	55
$C_3H_6^+$	32	$C_8H_{13}^+$	56
$C_3H_7^+$	33	$C_8H_{14}^+$	56
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$C_4H_4^+$	34	$C_9H_{10}^+$	59
$C_4H_6^+$	34	$C_9H_{12}^+$	60
$C_4H_7^+$	35	$C_9H_{13}^+$	61
$C_4H_8^+$	35	$C_9H_{14}^+$	61
$C_4H_9^+$	36	$C_9H_{16}^+$	61
$C_4H_{10}^+$	36	$C_9H_{18}^+$	62

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$C_{12}H_{10}B^+$	82
$C_{18}H_{15}B^+$	82
N^+	82
N^{+2}	82
N^{+3}	83
N_2^+	83
N_2^{+2}	83
NH^+	84
NH_2^+	84
NH_3^+	84
ND_3^+	84
NH_4^+	84
$N_2H_4^+$	84
N_3H^+	85
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O^+	110
O^{+2}	110
O^{+3}	110
O^{+6}	111
O_2^+	111
OH^+	111
H_2O^+	111
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H_3O^+	112
LiO^+	112
Li_2O^+	112
BO^+	112
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BHO_2^+	112
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$C_4H_5O^+$	120
$C_4H_6O^+$	121
$C_4H_8O^+$	121
$C_4H_{10}O^+$	121
$C_5H_4O^+$	121

$C_5H_6O^+$	121
$C_5H_8O^+$	121
$C_5H_9O^+$	122
$C_5H_{10}O^+$	122
$C_6H_4O^+$	122
$C_6H_5O^+$	122
$C_6H_6O^+$	122
$C_6H_8O^+$	122
$C_6H_{10}O^+$	123
$C_6H_{12}O^+$	123
$C_7H_5O^+$	124
$C_7H_6O^+$	124
$C_7H_7O^+$	125
$C_7H_8O^+$	126
$C_7H_{12}O^+$	127
$C_7H_{14}O^+$	127
$C_8H_7O^+$	127
$C_8H_8O^+$	128
$C_8H_9O^+$	128
$C_8H_{10}O^+$	128
$C_8H_{12}O^+$	129
$C_8H_{14}O^+$	129
$C_8H_{16}O^+$	129
$C_9H_9O^+$	130
$C_9H_8DO^+$	130
$C_9H_{10}O^+$	130
$C_9H_{12}O^+$	130
$C_9H_{18}O^+$	130
$C_{10}H_{11}DO^+$	130
$C_{10}H_{14}O^+$	130
$C_{10}H_{16}O^+$	131
$C_{11}H_{10}O^+$	131
$C_{11}H_{12}O^+$	131
$C_{11}H_{13}O^+$	131
$C_{11}H_{12}DO^+$	131
$C_{11}H_{16}O^+$	131
$C_{12}H_{10}O^+$	132
$C_{12}H_{15}DO^+$	132
$C_{12}H_{18}O^+$	132
$C_{13}H_8O^+$	132
$C_{13}H_{10}O^+$	132
$C_{13}H_{11}O^+$	132
$C_{13}H_{12}O^+$	132
$C_{14}H_{10}O^+$	132
$C_{14}H_{14}O^+$	132
$C_{14}H_{22}O^+$	132
$C_{15}H_{15}O^+$	133
$C_{16}H_{10}O^+$	133
$C_{16}H_{16}O^+$	133
$C_{18}H_{18}O^+$	133
$C_{19}H_{20}O^+$	133
$C_{19}H_{22}O^+$	133
$C_{23}H_{24}O^+$	133

CH_2O_2^+	133
$\text{C}_2\text{H}_4\text{O}_2^+$	134
$\text{C}_3\text{H}_4\text{O}_2^+$	134
$\text{C}_3\text{H}_6\text{O}_2^+$	134
$\text{C}_4\text{H}_2\text{O}_2^+$	134
$\text{C}_4\text{H}_4\text{O}_2^+$	134
$\text{C}_4\text{H}_6\text{O}_2^+$	134
$\text{C}_4\text{H}_8\text{O}_2^+$	134
$\text{C}_5\text{H}_4\text{O}_2^+$	135
$\text{C}_5\text{H}_6\text{O}_2^+$	135
$\text{C}_5\text{H}_8\text{O}_2^+$	135
$\text{C}_5\text{H}_{10}\text{O}_2^+$	135
$\text{C}_6\text{H}_4\text{O}_2^+$	136
$\text{C}_6\text{H}_5\text{O}_2^+$	136
$\text{C}_6\text{H}_6\text{O}_2^+$	136
$\text{C}_6\text{H}_8\text{O}_2^+$	136
$\text{C}_6\text{H}_{10}\text{O}_2^+$	137
$\text{C}_6\text{H}_{11}\text{O}_2^+$	137
$\text{C}_6\text{H}_{12}\text{O}_2^+$	137
$\text{C}_7\text{H}_5\text{O}_2^+$	137
$\text{C}_7\text{H}_6\text{O}_2^+$	137
$\text{C}_7\text{H}_7\text{O}_2^+$	138
$\text{C}_7\text{H}_8\text{O}_2^+$	138
$\text{C}_7\text{H}_{10}\text{O}_2^+$	138
$\text{C}_7\text{H}_{13}\text{O}_2^+$	138
$\text{C}_8\text{H}_7\text{O}_2^+$	138
$\text{C}_8\text{H}_8\text{O}_2^+$	139
$\text{C}_8\text{H}_{10}\text{O}_2^+$	139
$\text{C}_8\text{H}_{12}\text{O}_2^+$	139
$\text{C}_9\text{H}_{10}\text{O}_2^+$	140
$\text{C}_9\text{H}_{14}\text{O}_2^+$	140
$\text{C}_{10}\text{H}_6\text{O}_2^+$	140
$\text{C}_{10}\text{H}_{12}\text{O}_2^+$	140
$\text{C}_{10}\text{H}_{14}\text{O}_2^+$	140
$\text{C}_{10}\text{H}_{16}\text{O}_2^+$	141
$\text{C}_{11}\text{H}_{16}\text{O}_2^+$	141
$\text{C}_{11}\text{H}_{20}\text{O}_2^+$	141
$\text{C}_{12}\text{H}_{18}\text{O}_2^+$	141
$\text{C}_{13}\text{H}_{10}\text{O}_2^+$	141
$\text{C}_{14}\text{H}_8\text{O}_2^+$	141
$\text{C}_{14}\text{H}_{10}\text{O}_2^+$	142
$\text{C}_{15}\text{H}_{12}\text{O}_2^+$	142
$\text{C}_{20}\text{H}_{22}\text{O}_2^+$	142
$\text{C}_{20}\text{H}_{26}\text{O}_2^+$	142
$\text{C}_{22}\text{H}_{12}\text{O}_2^+$	142
$\text{C}_3\text{H}_2\text{O}_3^+$	142
$\text{C}_3\text{H}_4\text{O}_3^+$	142
$\text{C}_3\text{H}_6\text{O}_3^+$	142
$\text{C}_4\text{H}_2\text{O}_3^+$	142
$\text{C}_6\text{H}_6\text{O}_3^+$	143
$\text{C}_7\text{H}_6\text{O}_3^+$	143
$\text{C}_8\text{H}_5\text{O}_3^+$	143
$\text{C}_8\text{H}_8\text{O}_3^+$	143

$\text{C}_9\text{H}_7\text{O}_3^+$	143
$\text{C}_9\text{H}_{10}\text{O}_3^+$	143
$\text{C}_{10}\text{H}_6\text{O}_3^+$	144
$\text{C}_{14}\text{H}_8\text{O}_3^+$	144
$\text{C}_{14}\text{H}_{12}\text{O}_3^+$	144
$\text{C}_2\text{H}_4\text{O}_4^+$	144
$\text{C}_4\text{H}_8\text{O}_4^+$	144
$\text{C}_5\text{H}_{10}\text{O}_4^+$	144
$\text{C}_6\text{H}_6\text{O}_4^+$	144
$\text{C}_6\text{H}_8\text{O}_4^+$	144
$\text{C}_6\text{H}_{12}\text{O}_4^+$	144
$\text{C}_8\text{H}_6\text{O}_4^+$	144
$\text{C}_9\text{H}_8\text{O}_4^+$	144
$\text{C}_{10}\text{H}_6\text{O}_4^+$	144
$\text{C}_{14}\text{H}_8\text{O}_4^+$	145
$\text{C}_{22}\text{H}_{10}\text{O}_4^+$	145
$\text{C}_{14}\text{H}_8\text{O}_6^+$	145
$\text{C}_{10}\text{H}_{14}\text{O}_4\text{Be}^+$	145
CH_3BO^+	145
$\text{C}_3\text{H}_9\text{BO}^+$	145
$\text{C}_3\text{H}_9\text{BO}_2^+$	145
$\text{C}_3\text{H}_9\text{BO}_3^+$	145
NO^+	145
N_2O^+	146
NO_2^+	146
$\text{C}_3\text{N}_2\text{O}^+$	146
$\text{C}_6\text{H}_5\text{NO}_3$	146
CHNO^+	147
CH_3NO^+	147
$\text{C}_2\text{H}_3\text{NO}^+$	147
$\text{C}_2\text{H}_5\text{NO}^+$	147
$\text{C}_2\text{H}_7\text{NO}^+$	147
$\text{C}_3\text{H}_7\text{NO}^+$	147
$\text{C}_3\text{H}_9\text{NO}^+$	147
$\text{C}_4\text{H}_9\text{NO}^+$	147
$\text{C}_4\text{H}_{11}\text{NO}^+$	147
$\text{C}_5\text{H}_3\text{NO}^+$	147
$\text{C}_5\text{H}_5\text{NO}^+$	147
$\text{C}_5\text{H}_8\text{NO}^+$	148
$\text{C}_5\text{H}_{13}\text{NO}^+$	148
$\text{C}_6\text{H}_5\text{NO}^+$	148
$\text{C}_6\text{H}_6\text{NO}^+$	148
$\text{C}_6\text{H}_7\text{NO}^+$	148
$\text{C}_6\text{H}_{11}\text{NO}^+$	149
$\text{C}_6\text{H}_{15}\text{NO}^+$	149
$\text{C}_7\text{H}_4\text{NO}^+$	149
$\text{C}_7\text{H}_6\text{NO}^+$	149
$\text{C}_7\text{H}_7\text{NO}^+$	150
$\text{C}_7\text{H}_9\text{NO}^+$	150
$\text{C}_7\text{H}_{10}\text{NO}^+$	150
$\text{C}_7\text{H}_{11}\text{NO}^+$	150
$\text{C}_7\text{H}_{13}\text{NO}^+$	150
$\text{C}_7\text{H}_{17}\text{NO}^+$	150

$C_8H_4NO^+$	150
$C_8H_7NO^+$	150
$C_8H_8NO^+$	151
$C_8H_9NO^+$	151
$C_8H_{12}NO^+$	151
$C_8H_{13}NO^+$	151
$C_8H_{18}NO^+$	151
$C_9H_8NO^+$	151
$C_9H_{11}NO^+$	151
$C_9H_{13}NO^+$	151
$C_9H_{15}NO^+$	152
$C_9H_{17}NO^+$	152
$C_9H_{18}NO^+$	152
$C_{10}H_{10}NO^+$	152
$C_{10}H_{11}NO^+$	152
$C_{11}H_{13}NO^+$	152
$C_{12}H_{13}NO^+$	152
$C_{12}H_{15}NO^+$	152
$C_6H_4N_2O^+$	152
$C_8H_{10}N_2O^+$	152
$C_{10}H_{22}N_2O^+$	152
$C_{17}H_{20}N_2O^+$	153
$CH_3NO_2^+$	153
$CD_3NO_2^+$	153
$C_2H_5NO_2^+$	153
$C_6H_4NO_2^+$	153
$C_6H_5NO_2^+$	153
$C_6H_7NO_2^+$	154
$C_7H_6NO_2^+$	154
$C_7H_7NO_2^+$	154
$C_7H_{10}NO_2^+$	155
$C_8H_5NO_2^+$	155
$C_8H_9NO_2^+$	155
$C_8H_{13}NO_2^+$	155
$C_9H_{11}NO_2^+$	155
$C_9H_{13}NO_2^+$	155
$C_9H_{16}NO_2^+$	156
$C_9H_{17}NO_2^+$	156
$C_{10}H_{13}NO_2^+$	156
$C_{13}H_{10}NO_2^+$	156
$C_{13}H_{11}NO_2^+$	156
$C_{14}H_{13}NO_2^+$	156
$C_4H_4N_2O_2^+$	156
$C_6H_6N_2O_2^+$	156
$C_7H_4N_2O_2^+$	157
$C_7H_8N_2O_2^+$	157
$C_8H_{10}N_2O_2^+$	157
$C_9H_{12}N_2O_2^+$	157
$C_9H_{15}N_2O_2^+$	157
$C_9H_{17}N_2O_2^+$	157
$C_{11}H_{12}N_2O_2^+$	157
$C_{11}H_{21}N_2O_2^+$	158
$C_{12}H_{20}N_2O_2^+$	158

$C_{13}H_{12}N_2O_2^+$	158
$C_{14}H_{14}N_2O_2^+$	158
$C_{16}H_{10}N_2O_2^+$	158
$C_{16}H_{12}N_2O_2^+$	158
$C_{18}H_{17}N_3O_2^+$	158
$C_4H_3NO_3^+$	158
$C_6H_5NO_3^+$	158
$C_7H_4NO_3^+$	158
$C_7H_7NO_3^+$	159
$C_9H_{11}NO_3^+$	159
$C_9H_7N_2O_3^+$	159
$C_{10}H_{10}N_2O_3^+$	159
$C_7H_5NO_4^+$	159
$C_8H_7NO_4^+$	159
$C_{13}H_9NO_4^+$	159
$C_{17}H_9NO_4^+$	159
$C_6H_4N_2O_4^+$	159
$C_{13}H_{10}N_2O_4^+$	160
$C_{14}H_{12}N_2O_4^+$	160
$C_{18}H_{30}N_2O_4^+$	160
$C_{16}H_{11}N_3O_4^+$	160
F^+	160
F_2^+	160
HF^+	160
DF^+	160
BF^+	160
BF_2^+	160
BF_3^+	160
$B_2F_4^+$	161
CF^+	161
CF_2^+	161
CF_3^+	161
$C_2F_3^+$	162
CF_4^+	162
$C_2F_4^+$	162
$C_3F_6^+$	162
$C_4F_6^+$	162
$C_6F_6^+$	162
$C_4F_8^+$	163
$C_{10}F_8^+$	163
$C_{12}F_{10}^+$	163
$C_6F_{12}^+$	163
CH_2F^+	163
C_2HF^+	163
$C_2H_2F^+$	163
$C_2H_3F^+$	164
$C_2H_4F^+$	164
$C_2H_5F^+$	164
C_3HF^+	164
$C_3H_2F^+$	164
$C_3H_3F^+$	164
$C_3H_7F^+$	164
$C_6H_4F^+$	164

$C_6H_5F^+$	164
$C_7H_6F^+$	165
$C_7H_7F^+$	165
$C_{10}H_{13}F^+$	165
$C_{10}H_{15}F^+$	165
$C_{12}H_9F^+$	165
CHF_2^+	166
$C_2HF_2^+$	166
$C_2H_2F_2^+$	166
$C_2H_3F_2^+$	166
$C_3HF_2^+$	166
$C_3H_2F_2^+$	166
$C_6H_4F_2^+$	166
$C_{12}H_8F_2^+$	167
$C_2HF_3^+$	167
$C_2H_3F_3^+$	167
$C_3HF_3^+$	167
$C_6H_3F_3^+$	167
$C_6H_2F_4^+$	167
$C_6HF_5^+$	168
$C_8H_3F_5^+$	168
NF^+	168
N_2F^+	168
NF_2^+	168
$N_2F_2^+$	169
NF_3^+	169
$N_2F_4^+$	170
$B_3H_3N_3F_3^+$	170
$CN_2F_2^+$	170
$C_3N_3F_3^+$	170
$C_5NF_5^+$	170
$C_2N_2F_6^+$	170
$C_8N_2F_6^+$	170
$C_9NF_7^+$	171
CH_2NF^+	171
$C_2H_3NF^+$	171
$C_3H_6NF^+$	171
$C_6H_6NF^+$	171
$CHNF_2^+$	171
$CH_2NF_2^+$	171
$C_2H_6NF_2^+$	171
$C_6H_5NF_2^+$	172
$C_8H_4N_2F_2^+$	172
$C_8H_2N_2F_4^+$	172
$C_6H_2NF_5^+$	172
$C_6H_7NF_6^+$	172
$C_4H_{12}BN_2F^+$	172
$C_2H_6BNF_2^+$	172
$C_3H_9B_3N_3F_3^+$	172
OF^+	172
OF_2^+	172
HOF^+	173
BOF^+	173

BOF_2^+	173
COF_2^+	173
$C_2OF_3^+$	174
CF_4O^+	174
$C_3OF_5^+$	174
$C_3F_6O^+$	174
$C_6H_4OF^+$	174
$C_6H_5OF^+$	174
$C_7H_4OF^+$	174
$C_7H_7OF^+$	175
$C_7H_5O_2F^+$	175
$C_8H_7O_2F^+$	175
$C_6H_4OF_2^+$	175
$C_8H_6O_2F_2^+$	175
$C_2H_3OF_3^+$	175
$C_2HO_2F_3^+$	175
$C_3H_3O_2F_3^+$	175
$C_4H_5O_2F_3^+$	176
$C_5H_5O_2F_3^+$	176
$C_6H_3O_2F_3^+$	176
$C_8H_{11}O_2F_3^+$	176
$C_4H_5O_4F_3^+$	176
$C_5H_7O_4F_3^+$	176
$C_6H_9O_4F_3^+$	176
$C_3H_3OF_5^+$	176
$C_6HOF_5^+$	176
$C_7H_3OF_5^+$	176
$C_3H_2OF_6^+$	176
$C_5H_2O_2F_6^+$	176
$C_{10}H_2O_4F_{12}Be^+$	176
NOF_3^+	176
$C_2NOF_6^+$	177
$C_8H_8NOF^+$	177
$C_6H_4NO_2F^+$	177
$C_8H_7NOF_2^+$	177
$C_6H_4NOF_3^+$	177
Ne^+	177
Na^+	177
Na_2^+	177
Mg^+	177
$C_5H_5Mg^+$	178
$C_{10}H_{10}Mg^+$	178
$C_{12}H_{14}Mg^+$	178
Al^+	178
Al_2^+	178
AlC^+	178
AlC_2^+	178
$Al_2C_2^+$	178
$C_{18}H_{15}Al^+$	178
AlO^+	178
AlO_2^+	179
Al_2O^+	179
$Al_2O_2^+$	179

AlF ⁺	179	C ₁₄ H ₂₄ Si ₂ ⁺	186
AlF ₂ ⁺	179	C ₁₅ H ₂₂ Si ₂ ⁺	186
AlOF ⁺	179	C ₁₅ H ₂₄ Si ₂ ⁺	186
AlOF ₂ ⁺	179	C ₁₆ H ₂₂ Si ₂ ⁺	186
C ₁₅ H ₁₂ O ₆ F ₉ Al ⁺	179	C ₂₁ H ₂₄ Si ₂ ⁺	187
C ₁₅ H ₃ O ₆ F ₁₈ Al ⁺	179	C ₂₄ H ₂₆ Si ₂ ⁺	187
Si ⁺	179	C ₂₆ H ₂₆ Si ₂ ⁺	187
SiH ⁺	179	C ₃₆ H ₃₀ Si ₂ ⁺	187
SiH ₂ ⁺	180	C ₈ H ₂₄ Si ₃ ⁺	187
SiH ₃ ⁺	180	C ₁₇ H ₂₈ Si ₃ ⁺	187
SiH ₄ ⁺	180	C ₂₆ H ₃₂ Si ₃ ⁺	187
Si ₂ H ₆ Te ⁺	180	C ₆ H ₁₆ Si ₄ ⁺	187
SiC ₂ ⁺	180	C ₁₀ H ₂₄ Si ₄ ⁺	187
Si ₂ C ⁺	180	C ₁₀ H ₃₀ Si ₄ ⁺	187
CH ₃ Si ⁺	180	C ₁₀ H ₃₀ Si ₅ ⁺	187
CH ₅ Si ⁺	180	C ₁₂ H ₃₆ Si ₅ ⁺	188
C ₂ H ₆ Si ⁺	180	C ₁₂ H ₃₆ Si ₆ ⁺	188
C ₂ H ₇ Si ⁺	180	C ₁₆ H ₃₆ Si ₇ ⁺	188
C ₃ H ₈ Si ⁺	180	Si ₂ N ⁺	188
C ₃ H ₉ Si ⁺	181	SiH ₃ N ₃ ⁺	188
C ₄ H ₉ Si ⁺	181	Si ₃ H ₉ N ⁺	188
C ₄ H ₁₂ Si ⁺	181	C ₂ H ₉ NSi ⁺	188
C ₅ H ₁₀ Si ⁺	181	C ₈ H ₁₃ NSi ⁺	188
C ₅ H ₁₂ Si ⁺	182	C ₃ H ₉ N ₃ Si ⁺	188
C ₆ H ₈ Si ⁺	182	C ₈ H ₂₄ N ₄ Si ⁺	188
C ₆ H ₁₂ Si ⁺	182	CH ₉ NSi ₂ ⁺	188
C ₆ H ₁₄ Si ⁺	182	C ₁₁ H ₂₁ NSi ₂ ⁺	188
C ₈ H ₁₁ Si ⁺	182	SiO ⁺	188
C ₈ H ₁₂ Si ⁺	183	Si ₂ H ₆ O ⁺	189
C ₉ H ₁₄ Si ⁺	183	CH ₆ OSi ⁺	189
C ₁₀ H ₁₀ Si ⁺	183	C ₃ H ₉ SiO ⁺	189
C ₁₀ H ₁₄ Si ⁺	183	C ₁₀ H ₁₆ OSi ⁺	189
C ₁₀ H ₁₆ Si ⁺	183	C ₁₃ H ₁₈ OSi ⁺	189
C ₁₁ H ₁₆ Si ⁺	183	C ₁₃ H ₂₀ OSi ⁺	189
C ₁₂ H ₁₆ Si ⁺	183	C ₅ H ₁₂ O ₂ Si ⁺	189
C ₁₂ H ₁₈ Si ⁺	184	C ₈ H ₂₀ O ₄ Si ⁺	189
C ₁₃ H ₁₃ Si ⁺	184	C ₁₂ H ₂₂ OSi ₂ ⁺	189
C ₁₃ H ₁₄ Si ⁺	184	Si ₂ NO ⁺	189
C ₁₃ H ₁₆ Si ⁺	184	CH ₃ NOSi ⁺	189
C ₁₄ H ₁₄ Si ⁺	184	C ₄ H ₉ NOSi ⁺	190
C ₁₄ H ₁₈ Si ⁺	184	SiF ₄ ⁺	190
C ₁₇ H ₁₈ Si ⁺	185	Si ₂ F ₆ ⁺	190
C ₁₇ H ₂₀ Si ⁺	185	SiH ₃ F ⁺	190
C ₁₈ H ₁₅ Si ⁺	185	SiH ₂ F ₂ ⁺	190
C ₁₈ H ₁₆ Si ⁺	185	SiHF ₃ ⁺	191
C ₂₂ H ₂₀ Si ⁺	185	SiF ₃ C ⁺	191
C ₂₄ H ₁₆ Si ⁺	185	C ₅ H ₉ SiF ⁺	191
C ₂₄ H ₂₀ Si ⁺	185	CH ₃ F ₃ Si ⁺	191
C ₆ H ₁₈ Si ₂ ⁺	186	C ₇ H ₁₀ F ₆ Si ⁺	191
C ₁₁ H ₂₀ Si ₂ ⁺	186	C ₆ H ₁₂ F ₄ Si ₄ ⁺	191
C ₁₂ H ₁₀ Si ₂ ⁺	186	SiAl ⁺	191
C ₁₂ H ₂₂ Si ₂ ⁺	186	SiAlO ⁺	191
C ₁₃ H ₂₂ Si ₂ ⁺	186	P ⁺	192

P_2^+	192	$C_4H_{12}N_2PF^+$	197
P_4^+	192	$C_2H_6NPF_2^+$	197
PH^+	192	$C_6H_{18}N_3F_2P^+$	197
PH_2^+	193	$C_4H_{12}N_2F_3P^+$	197
PH_3^+	193	$C_2H_6NF_4P^+$	197
BP^+	193	$C_2H_9BNF_2P^+$	197
PC^+	193	$C_2H_{11}B_3NF_2P^+$	197
C_2P^+	193	$C_2H_{12}B_3NF_2P^+$	197
CP_2^+	193	$C_2H_{12}B_4NF_2P^+$	198
CHP^+	193	$C_2H_{14}B_4NF_2P^+$	198
CH_5P^+	193	POF_3^+	198
$C_3H_9P^+$	193	$P_2OF_4^+$	198
$C_4H_{11}P^+$	193	$CNOF_2P^+$	198
$C_5H_5P^+$	193	$NaPO_2^+$	198
$C_{10}H_9P^+$	193	PSi^+	198
$C_{10}H_{13}P^+$	194	PSi_2^+	198
$C_{12}H_{13}P^+$	194	P_2Si^+	198
$C_{12}H_{17}P^+$	194	SiH_5P^+	198
$C_{15}H_{11}P^+$	194	$Si_3H_9P^+$	198
$C_{17}H_{29}P^+$	194	$CSiP^+$	198
$C_{19}H_{13}P^+$	194	$C_7H_{19}SiP^+$	199
$C_{29}H_{25}P^+$	194	$C_9H_{25}Si_2P^+$	199
$C_6H_{18}N_3P^+$	194	S^+	199
$C_8H_{18}N_3P^+$	194	S_2^+	199
PO^+	194	S_8^+	199
PO_2^+	194	HS^+	199
$P_2O_3^+$	195	H_2S^+	199
$P_2O_4^+$	195	H_3S^+	200
$P_2O_5^+$	195	BHS^+	200
$P_3O_6^+$	195	CS^+	200
$P_3O_7^+$	195	CS_2^+	201
$P_4O_7^+$	195	CHS^+	202
$P_4O_8^+$	195	CH_2S^+	202
$P_4O_9^+$	195	CH_3S^+	202
$P_4O_{10}^+$	195	CH_4S^+	202
CH_4OP^+	195	$C_2H_3S^+$	203
$CH_4O_2P^+$	195	$C_2H_4S^+$	203
$CH_5O_2P^+$	195	$C_2H_5S^+$	204
$C_2H_6O_2P^+$	196	$C_2H_6S^+$	204
$C_{19}H_{35}O_2P^+$	196	$C_3H_5S^+$	205
$CH_4O_3P^+$	196	$C_3H_6S^+$	205
$C_2H_6O_3P^+$	196	$C_3H_7S^+$	205
$C_2H_7O_3P^+$	196	$C_3H_8S^+$	205
$C_3H_8O_4P^+$	196	$C_4H_4S^+$	205
$C_3H_9O_4P^+$	196	$C_4D_4S^+$	205
PF_3^+	196	$C_4H_6S^+$	205
PF_5^+	197	$C_4H_8S^+$	205
$P_2F_4^+$	197	$C_4H_9S^+$	206
PHF_2^+	197	$C_4H_{10}S^+$	206
$BH_3F_3P^+$	197	$C_5H_6S^+$	206
$B_3H_5F_3P^+$	197	$C_5H_{10}S^+$	206
$PH_2NF_2^+$	197	$C_6H_6S^+$	206
CNF_2P^+	197	$C_6H_8S^+$	206

$C_6H_{10}S^+$	207	$C_{17}H_{20}N_2S^+$	213
$C_6H_{14}S^+$	207	$C_{18}H_{22}N_2S^+$	213
$C_7H_8S^+$	207	$C_{20}H_{25}N_3S^+$	213
$C_8H_6S^+$	207	SO^+	213
$C_8H_{10}S^+$	207	SO_2^+	214
$C_8H_{12}S^+$	207	S_2O^+	214
$C_8H_{18}S^+$	207	COS^+	215
$C_9H_{10}S^+$	207	CH_2OS^+	215
$C_{11}H_{10}S^+$	208	$C_2H_4OS^+$	216
$C_{12}H_8S^+$	208	$C_2H_6OS^+$	216
$C_{12}H_{10}S^+$	208	$C_3H_5OS^+$	216
$CH_2S_2^+$	208	$C_3H_6OS^+$	216
$C_2H_6S_2^+$	208	$C_4H_8OS^+$	216
$C_3H_5S_2^+$	208	$C_4H_{10}OS^+$	216
$C_3H_6S_2^+$	209	$C_5H_4OS^+$	216
$C_3H_8S_2^+$	209	$C_5H_6OS^+$	216
$C_4H_8S_2^+$	209	$C_6H_6OS^+$	216
$C_4H_{10}S_2^+$	209	$C_6H_{11}OS^+$	217
$C_5H_6S_2^+$	209	$C_6H_{12}OS^+$	217
$C_6H_4S_2^+$	209	$C_6H_{14}OS^+$	217
$C_6H_{10}S_2^+$	209	$C_7H_{13}OS^+$	217
$C_6H_{14}S_2^+$	209	$C_7H_{14}OS^+$	217
$C_8H_{10}S_2^+$	210	$C_8H_{16}OS^+$	217
$C_8H_{18}S_2^+$	210	$C_8H_{18}OS^+$	217
$C_3H_6S_3^+$	210	$C_{12}H_{10}OS^+$	218
$C_5H_4S_3^+$	210	$C_2H_6O_2S^+$	218
$C_6H_6S_3^+$	210	$C_3H_6SO_2^+$	218
$C_7H_8S_3^+$	210	$C_4H_6SO_2^+$	218
$C_{10}H_{12}S_3^+$	210	$C_5H_4O_2S^+$	218
$C_{12}H_{16}S_3^+$	210	$C_5H_{10}O_2S^+$	218
$C_{14}H_{20}S_3^+$	210	$C_6H_6O_2S^+$	218
$C_{17}H_{12}S_3^+$	210	$C_{14}H_9O_2S^+$	218
$C_6H_4S_4^+$	210	$C_{15}H_{11}O_2S^+$	218
$C_{10}H_{18}S_6^+$	211	$C_2H_4O_3S^+$	218
$C_3H_9BS^+$	211	$C_2H_6O_3S^+$	218
$C_3H_9BS_2^+$	211	$C_4H_3NSO^+$	219
$C_3H_9BS_3^+$	211	$C_4H_9NOS^+$	219
$CHNS^+$	211	$C_6H_7NOS^+$	219
$C_2H_3NS^+$	211	$C_6H_{11}NOS^+$	219
$C_3H_3NS^+$	211	$C_7H_5NOS^+$	219
$C_4H_5NS^+$	211	$C_7H_9NOS^+$	219
$C_5H_3NS^+$	212	$C_8H_7NOS^+$	219
$C_5H_5NS^+$	212	$C_8H_9NOS^+$	219
$C_6H_7NS^+$	212	$C_8H_{11}NOS^+$	219
$C_{10}H_9NS^+$	212	$C_{13}H_9NOS^+$	219
$C_{12}H_9NS^+$	212	$C_3H_2N_2OS^+$	220
$C_{13}H_{11}NS^+$	212	$C_4H_{12}N_2OS^+$	220
$C_3H_6N_2S^+$	213	$C_{17}H_{18}N_2OS^+$	220
$C_4H_2N_2S^+$	213	$C_{18}H_{22}N_2OS^+$	220
$C_4H_8N_2S^+$	213	$C_{19}H_{22}N_2OS^+$	220
$C_6H_4N_2S^+$	213	$C_{20}H_{24}N_2OS^+$	220
$C_8H_{18}N_2S^+$	213	$C_{19}H_{23}N_3OS^+$	220
$C_{16}H_{18}N_2S^+$	213	$C_{22}H_{27}N_3OS^+$	220

$C_{23}H_{29}N_3OS^+$	220	$C_3H_9O_3PS^+$	228
$C_3H_7NO_2S^+$	220	$C_2H_6OPS_2^+$	228
$C_4H_3NO_2S^+$	220	$C_2H_7OPS_2^+$	228
$C_5H_{11}NO_2S^+$	220	$C_2H_6O_2PS_2^+$	228
$C_7H_5NO_2S^+$	220	$C_3H_9O_2PS_2^+$	228
$C_8H_7NO_2S^+$	221	CNF_2PS^+	228
$C_8H_9NO_2S^+$	221	Cl^+	228
$C_{13}H_9NO_2S^+$	221	Cl^{+2}	229
$C_3H_2N_2O_2S^+$	221	Cl_2^+	229
$C_{15}H_{11}NO_3S^+$	221	BCl^+	229
$C_{22}H_{30}N_4O_2S_2^+$	221	BCl_2^+	229
SF^+	221	BCl_3^+	229
SF_2^+	221	$B_2Cl_4^+$	229
SF_3^+	221	CCl^+	230
SF_4^+	221	CCl_2^+	230
SF_5^+	222	CCl_3^+	230
S_2F^+	222	$C_6Cl_4^+$	230
$S_2F_2^+$	222	$C_6Cl_6^+$	230
CF_2S^+	222	CH_2Cl^+	230
NSF^+	222	CH_3Cl^+	230
NSF_3^+	223	C_2HCl^+	231
$C_{21}H_{24}N_3F_3S^+$	223	$C_2H_2Cl^+$	231
SO_3F^+	224	$C_2H_3Cl^+$	231
SOF_2^+	224	$C_2H_5Cl^+$	231
$SO_2F_2^+$	225	$C_3H_5Cl^+$	231
$CH_3O_2FS^+$	226	$C_3H_7Cl^+$	231
$C_6H_3OF_3S^+$	226	$C_4H_9Cl^+$	231
$C_{20}H_{21}N_2OF_3S^+$	226	$C_6H_4Cl^+$	231
$C_{22}H_{26}N_3OF_3S^+$	226	$C_6H_5Cl^+$	231
$C_{20}H_{19}N_2O_2F_3S^+$	226	$C_6H_{11}Cl^+$	232
$C_{22}H_{24}N_3O_2F_3S^+$	226	$C_7H_6Cl^+$	232
SiH_4S^+	226	$C_7H_7Cl^+$	232
$Si_2H_6S^+$	226	$C_8H_7Cl^+$	232
CH_6SiS^+	226	$C_{10}H_{15}Cl^+$	232
CH_3NSiS^+	226	$C_{12}H_9Cl^+$	232
$C_4H_9NSiS^+$	227	$CHCl_2^+$	232
PS^+	227	$CH_2Cl_2^+$	233
P_4S^+	227	$C_2H_2Cl_2^+$	233
$P_4S_2^+$	227	$C_6H_2Cl_2^+$	233
$P_4S_3^+$	227	$C_6H_4Cl_2^+$	234
$P_4S_4^+$	227	$C_8H_6Cl_2^+$	234
$P_4S_5^+$	227	$CHCl_3^+$	234
$P_4S_6^+$	227	$C_6H_3Cl_3^+$	234
$P_4S_7^+$	227	$C_6H_2Cl_4^+$	234
$P_4S_8^+$	227	$C_6HCl_5^+$	234
$P_4S_9^+$	227	$B_3H_3N_3Cl_3^+$	234
$P_4S_{10}^+$	227	$C_6H_6NCl^+$	234
CH_2PS^+	227	$C_{16}H_{12}NCl^+$	235
$C_6H_{18}N_3PS^+$	227	$C_6H_5NCl_2^+$	235
$C_2H_6OPS^+$	227	$C_4H_{12}BN_2Cl^+$	235
$C_2H_6O_2PS^+$	227	$C_2H_6BNCl_2^+$	235
$C_2H_7O_2PS^+$	228	$C_3H_9B_3N_3Cl_3^+$	235
$C_2H_6O_3PS^+$	228	ClO_2^+	235

Cl_2O^+	236	$\text{C}_4\text{H}_{12}\text{N}_2\text{SiCl}_2^+$	244
COCl_2^+	236	$\text{C}_2\text{H}_6\text{NSiCl}_3^+$	244
C_2OCl_3^+	237	$\text{C}_6\text{H}_{15}\text{O}_3\text{SiCl}^+$	244
$\text{C}_8\text{O}_3\text{Cl}_4^+$	237	$\text{C}_4\text{H}_{10}\text{O}_2\text{SiCl}_2^+$	244
$\text{C}_3\text{H}_5\text{OCl}^+$	237	$\text{C}_2\text{H}_5\text{OSiCl}_3^+$	244
$\text{C}_6\text{H}_4\text{OCl}^+$	237	SiF_3Cl^+	244
$\text{C}_6\text{H}_5\text{OCl}^+$	237	PCl^+	245
$\text{C}_7\text{H}_5\text{OCl}^+$	237	PCl_2^+	245
$\text{C}_7\text{H}_7\text{OCl}^+$	237	PCl_3^+	245
$\text{C}_2\text{H}_3\text{O}_2\text{Cl}^+$	238	PCl_5^+	245
$\text{C}_8\text{H}_7\text{O}_2\text{Cl}^+$	238	POCl^+	245
$\text{C}_6\text{H}_4\text{OCl}_2^+$	238	POCl_3^+	246
$\text{C}_8\text{H}_6\text{O}_2\text{Cl}_2^+$	238	PF_2Cl^+	247
$\text{C}_8\text{H}_7\text{NOCl}^+$	238	CSCl_2^+	247
$\text{C}_8\text{H}_8\text{NOCl}^+$	238	$\text{C}_2\text{S}_2\text{Cl}_4^+$	247
$\text{C}_{17}\text{H}_{14}\text{NOCl}^+$	239	$\text{C}_4\text{H}_3\text{SCl}^+$	248
$\text{C}_6\text{H}_4\text{NO}_2\text{Cl}^+$	239	NSCl^+	248
$\text{C}_8\text{H}_7\text{NOCl}_2^+$	239	$\text{C}_{17}\text{H}_{19}\text{N}_2\text{SCl}^+$	248
ClF^+	239	$\text{C}_{20}\text{H}_{24}\text{N}_3\text{SCl}^+$	248
ClF_3^+	239	SOCl_2^+	248
BClF^+	240	SO_2Cl_2^+	249
BClF_2^+	240	SOCl_3^+	250
BCl_2F^+	240	$\text{CH}_3\text{O}_2\text{SCl}^+$	250
CFCl^+	240	$\text{C}_{17}\text{H}_{17}\text{N}_2\text{OSCl}^+$	250
CF_2Cl^+	240	$\text{C}_{19}\text{H}_{21}\text{N}_2\text{OSCl}^+$	250
$\text{C}_2\text{F}_2\text{Cl}^+$	240	$\text{C}_{21}\text{H}_{26}\text{N}_3\text{OSCl}^+$	250
CF_3Cl^+	240	SF_5Cl^+	250
$\text{C}_2\text{F}_3\text{Cl}^+$	241	CFSCl^+	250
CFCl_2^+	241	SO_2FCl^+	250
C_2FCl_2^+	241	PSCl_3^+	251
CF_2Cl_2^+	241	$\text{C}_4\text{H}_{12}\text{N}_2\text{PSCl}^+$	252
$\text{CF}_2\text{CCl}_2^+$	241	$\text{C}_2\text{H}_6\text{NPSCl}_2^+$	252
CFCl_3^+	241	Ar^+	252
CH_2FCl^+	241	Ar^{+2}	252
C_2HFCl^+	241	Ar^{+3}	252
$\text{C}_2\text{H}_2\text{FCl}^+$	241	Ar^{+4}	252
CHF_2Cl^+	241	Ca^+	252
$\text{C}_2\text{HF}_2\text{Cl}^+$	241	Ca^{+2}	252
CHFC_2^+	241	Ca^{+3}	252
ClO_3F^+	242	Sc^+	252
AlOCl^+	242	Sc^{+3}	253
SiCl^+	242	Sc^{+4}	253
SiCl_4^+	242	ScC_2^+	253
SiH_3Cl^+	242	$\text{C}_{15}\text{H}_3\text{O}_6\text{F}_{18}\text{Sc}^+$	253
$\text{SiH}_2\text{Cl}_2^+$	242	Ti^+	253
SiHCl_3^+	243	TiC_2^+	253
$\text{C}_3\text{H}_9\text{SiCl}^+$	243	TiO^+	253
$\text{C}_4\text{H}_9\text{SiCl}^+$	244	TiO_2^+	253
$\text{C}_4\text{H}_{11}\text{SiCl}^+$	244	$\text{C}_{15}\text{H}_3\text{O}_6\text{F}_{18}\text{Ti}^+$	253
$\text{C}_5\text{H}_9\text{SiCl}^+$	244	TiS^+	254
$\text{C}_2\text{H}_6\text{SiCl}_2^+$	244	V^+	254
$\text{C}_3\text{H}_6\text{SiCl}_2^+$	244	VN^+	254
$\text{C}_6\text{H}_{12}\text{Si}_4\text{Cl}_4^+$	244	VO^+	254

VO_2^+	254	$\text{C}_6\text{H}_{18}\text{N}_3\text{PCr}^+$	261
V_4O_8^+	254	$\text{C}_7\text{H}_{18}\text{N}_3\text{OPCr}^+$	261
$\text{V}_4\text{O}_{10}^+$	254	$\text{C}_9\text{H}_{18}\text{N}_3\text{O}_3\text{PCr}^+$	261
$\text{C}_{15}\text{H}_3\text{O}_6\text{F}_{18}\text{V}^+$	254	$\text{C}_{10}\text{H}_{18}\text{N}_3\text{O}_4\text{PCr}^+$	261
Cr^+	254	$\text{C}_{11}\text{H}_{18}\text{N}_3\text{O}_5\text{PCr}^+$	261
$\text{C}_6\text{H}_6\text{Cr}^+$	255	$\text{C}_{15}\text{H}_{36}\text{N}_6\text{O}_3\text{P}_2\text{Cr}^+$	261
$\text{C}_7\text{H}_8\text{Cr}^+$	255	$\text{C}_{16}\text{H}_{36}\text{N}_6\text{O}_4\text{P}_2\text{Cr}^+$	261
$\text{C}_8\text{H}_{10}\text{Cr}^+$	255	$\text{CrP}_6\text{F}_{18}^+$	261
$\text{C}_9\text{H}_{12}\text{Cr}^+$	256	$\text{C}_9\text{H}_8\text{O}_5\text{SCr}^+$	261
$\text{C}_{10}\text{H}_{10}\text{Cr}^+$	256	$\text{C}_7\text{H}_6\text{O}_6\text{SCr}^+$	261
$\text{C}_{11}\text{H}_{11}\text{Cr}^+$	256	$\text{C}_7\text{H}_4\text{O}_8\text{SCr}^+$	261
$\text{C}_{12}\text{H}_{12}\text{Cr}^+$	256	$\text{C}_6\text{H}_5\text{ClCr}^+$	261
$\text{C}_{12}\text{H}_{18}\text{Cr}^+$	256	$\text{C}_7\text{H}_5\text{OClCr}^+$	261
$\text{C}_{14}\text{H}_{16}\text{Cr}^+$	256	$\text{C}_8\text{H}_5\text{O}_2\text{ClCr}^+$	262
$\text{C}_{20}\text{H}_{44}\text{Cr}^+$	256	$\text{C}_9\text{H}_5\text{O}_3\text{ClCr}^+$	262
$\text{C}_6\text{H}_7\text{NCr}^+$	256	$\text{C}_{13}\text{H}_7\text{O}_6\text{ClCr}^+$	262
CrCO^{+2}	256	Mn^+	262
$\text{C}_6\text{O}_6\text{Cr}^+$	256	MnH^+	262
$\text{C}_7\text{H}_6\text{OCr}^+$	256	$\text{C}_{10}\text{H}_{10}\text{Mn}^+$	262
$\text{C}_7\text{H}_8\text{OCr}^+$	257	$\text{C}_{11}\text{H}_{11}\text{Mn}^+$	262
$\text{C}_8\text{H}_8\text{OCr}^+$	257	$\text{C}_{32}\text{H}_{16}\text{N}_8\text{Mn}^+$	262
$\text{C}_9\text{H}_{10}\text{OCr}^+$	257	MnCO^+	262
$\text{C}_{10}\text{H}_{12}\text{OCr}^+$	257	MnC_2O_2^+	262
$\text{C}_{13}\text{H}_{18}\text{OCr}^+$	257	MnC_3O_3^+	262
$\text{C}_8\text{H}_6\text{O}_2\text{Cr}^+$	257	MnC_4O_4^+	262
$\text{C}_8\text{H}_8\text{O}_2\text{Cr}^+$	257	CHOMn^+	262
$\text{C}_9\text{H}_8\text{O}_2\text{Cr}^+$	258	$\text{C}_2\text{HO}_2\text{Mn}^+$	263
$\text{C}_{10}\text{H}_{10}\text{O}_2\text{Cr}^+$	258	$\text{C}_3\text{HO}_3\text{Mn}^+$	263
$\text{C}_{11}\text{H}_{12}\text{O}_2\text{Cr}^+$	258	$\text{C}_8\text{H}_5\text{O}_3\text{Mn}^+$	263
$\text{C}_{14}\text{H}_{18}\text{O}_2\text{Cr}^+$	258	$\text{C}_4\text{HO}_4\text{Mn}^+$	263
$\text{C}_9\text{H}_6\text{O}_3\text{Cr}^+$	258	$\text{C}_5\text{HO}_5\text{Mn}^+$	263
$\text{C}_9\text{H}_8\text{O}_3\text{Cr}^+$	258	$\text{C}_{15}\text{H}_{21}\text{O}_6\text{Mn}^+$	263
$\text{C}_{10}\text{H}_8\text{O}_3\text{Cr}^+$	258	MnF^+	263
$\text{C}_{11}\text{H}_{10}\text{O}_3\text{Cr}^+$	259	MnF_2^+	263
$\text{C}_{12}\text{H}_{12}\text{O}_3\text{Cr}^+$	259	MnF_3^+	263
$\text{C}_{15}\text{H}_{18}\text{O}_3\text{Cr}^+$	259	MnF_4^+	263
$\text{C}_{10}\text{H}_8\text{O}_4\text{Cr}^+$	259	$\text{C}_{15}\text{H}_3\text{O}_6\text{F}_{18}\text{Mn}^+$	263
$\text{C}_{11}\text{H}_8\text{O}_5\text{Cr}^+$	259	$\text{C}_{19}\text{H}_3\text{O}_{10}\text{F}_{18}\text{Mn}^+$	264
$\text{C}_8\text{H}_6\text{O}_6\text{Cr}^+$	259	$\text{C}_3\text{H}_9\text{SiMn}^+$	264
$\text{C}_{13}\text{H}_8\text{O}_6\text{Cr}^+$	259	$\text{C}_4\text{H}_9\text{OSiMn}^+$	264
$\text{C}_{14}\text{H}_{10}\text{O}_6\text{Cr}^+$	259	$\text{C}_5\text{H}_9\text{O}_2\text{SiMn}^+$	264
$\text{C}_{15}\text{H}_{21}\text{O}_6\text{Cr}^+$	260	$\text{C}_6\text{H}_9\text{O}_3\text{SiMn}^+$	264
$\text{C}_{14}\text{H}_{10}\text{O}_7\text{Cr}^+$	260	$\text{C}_7\text{H}_9\text{O}_4\text{SiMn}^+$	264
$\text{C}_7\text{H}_7\text{NOCr}^+$	260	$\text{C}_5\text{H}_3\text{O}_5\text{SiMn}^+$	264
$\text{C}_8\text{H}_7\text{NO}_2\text{Cr}^+$	260	$\text{C}_8\text{H}_9\text{O}_5\text{SiMn}^+$	264
$\text{C}_7\text{H}_5\text{NO}_3\text{Cr}^+$	260	$\text{C}_7\text{H}_9\text{O}_4\text{F}_3\text{SiPMn}^+$	264
$\text{C}_9\text{H}_7\text{NO}_3\text{Cr}^+$	260	$\text{C}_6\text{H}_9\text{O}_3\text{F}_6\text{SiP}_2\text{Mn}^+$	264
$\text{C}_{11}\text{H}_{11}\text{NO}_3\text{Cr}^+$	260	$\text{C}_5\text{H}_9\text{O}_2\text{F}_9\text{SiP}_3\text{Mn}^+$	264
$\text{C}_{13}\text{H}_7\text{O}_6\text{FCr}^+$	260	$\text{C}_{10}\text{H}_{15}\text{SMn}^+$	264
$\text{C}_{14}\text{H}_7\text{O}_6\text{F}_3\text{Cr}^+$	260	$\text{C}_{18}\text{H}_{17}\text{SMn}^+$	264
$\text{C}_{15}\text{H}_{12}\text{O}_6\text{F}_9\text{Cr}^+$	260	$\text{C}_8\text{H}_{13}\text{OSMn}^+$	265
$\text{C}_{15}\text{H}_3\text{O}_6\text{F}_{18}\text{Cr}^+$	260	$\text{C}_{10}\text{H}_{15}\text{OSMn}^+$	265
$\text{C}_{16}\text{H}_{44}\text{Si}_4\text{Cr}^+$	261	$\text{C}_{18}\text{H}_{17}\text{OSMn}^+$	265

$C_{12}H_{15}O_2SMn^+$	265
$C_{20}H_{17}O_2SMn^+$	265
$C_8H_{11}O_3SMn^+$	265
$C_{10}H_{13}O_3SMn^+$	265
$C_{12}H_{15}O_3SMn^+$	265
$C_{20}H_{17}O_3SMn^+$	265
$C_{10}H_{11}O_5SMn^+$	265
$C_5O_5ClMn^+$	266
Fe^+	266
$C_3H_3Fe^+$	266
$C_5H_5Fe^+$	266
$C_{10}H_{10}Fe^+$	266
$C_{12}H_{12}Fe^+$	267
$C_{12}H_{14}Fe^+$	267
$C_{32}H_{16}N_8Fe^+$	267
$C_{15}H_{21}O_6Fe^+$	267
$C_{33}H_{57}O_6Fe^+$	267
$C_{15}H_{12}O_6F_9Fe^+$	267
$C_{15}H_3O_6F_{18}Fe^+$	267
$C_{13}H_{18}SiFe^+$	268
$C_6H_{18}N_3PFe^+$	268
$C_{12}H_{36}N_6P_2Fe^+$	268
$C_7H_{18}N_3OPFe^+$	268
$C_8H_{18}N_3O_2PFe^+$	268
$C_9H_{18}N_3O_3PFe^+$	268
$C_{10}H_{18}N_3O_4PFe^+$	268
$C_{13}H_{36}N_6OP_2Fe^+$	268
$C_{14}H_{36}N_6O_2P_2Fe^+$	268
$C_{15}H_{36}N_6O_3P_2Fe^+$	268
$FeP_5F_{15}^+$	268
$C_{10}H_9ClFe^+$	268
$C_{10}H_8Cl_2Fe^+$	268
Co^+	268
$C_3H_3Co^+$	269
$C_5H_5Co^+$	269
$C_{10}H_{10}Co^+$	269
$C_{11}H_{13}BCo^+$	269
$C_{12}H_{16}B_2Co^+$	269
$C_{16}H_{15}BCo^+$	269
$C_{22}H_{20}B_2Co^+$	269
$C_{32}H_{16}N_8Co^+$	269
$CoCo^+$	269
$C_2O_2Co^+$	269
$C_4HO_4Co^+$	269
$C_{15}H_{21}O_6Co^+$	270
$C_{12}H_{16}B_2O_2Co^+$	270
$C_{15}H_3O_6F_{18}Co^+$	270
$C_4H_3O_4SiCo^+$	270
F_3PCo^+	270
$ClCo^+$	270
$SiCl_2Co^+$	270
$SiCl_3Co^+$	270
$COSiCl_3Co^+$	270

$C_2O_2SiCl_3Co^+$	270
$C_3O_3SiCl_3Co^+$	270
$F_3SiPCL_3Co^+$	270
$C_3O_3F_3SiPCL_2Co^+$	271
$COF_3SiPCL_3Co^+$	271
$C_3O_3F_3SiPCL_3Co^+$	271
$COF_6SiP_2Cl_3Co^+$	271
$C_2O_2F_6SiP_2Cl_3Co^+$	271
Ni^+	271
$C_3H_3Ni^+$	271
$C_5H_5Ni^+$	271
$C_6H_{10}Ni^+$	272
$C_8H_8Ni^+$	272
$C_{10}H_{10}Ni^+$	272
$C_{32}H_{16}N_8Ni^+$	272
$C_5H_5NONi^+$	272
$C_{12}H_{18}N_2O_2Ni^+$	272
Cu^+	272
Cu_2^+	273
Cu_3^+	273
$C_{32}H_{16}N_8Cu^+$	273
$C_{12}H_{18}N_2O_2Cu^+$	273
$CuCl^+$	273
Cu_2Cl^+	273
$Cu_2Cl_2^+$	273
$Cu_3Cl_2^+$	273
$Cu_3Cl_3^+$	273
$Cu_4Cl_3^+$	273
$Cu_4Cl_4^+$	273
$Cu_5Cl_4^+$	273
$Cu_5Cl_5^+$	274
Zn^+	274
$C_{32}H_{16}N_8Zn^+$	274
$ZnCl_2^+$	274
Ga^+	274
CH_3Ga^+	274
$C_2H_3Ga^+$	274
$C_2H_4Ga^+$	274
$C_2H_6Ga^+$	275
$C_3H_9Ga^+$	275
$C_4H_6Ga^+$	275
$C_6H_9Ga^+$	275
$C_{12}H_{10}Ga^+$	275
$C_{18}H_{15}Ga^+$	275
GaF^+	275
GaF_2^+	275
$Ga_2F_5^+$	275
$C_{15}H_3O_6F_{18}Ga^+$	275
GaP^+	275
Ge^+	275
Ge_2^+	275
GeH_4^+	275
$C_3H_9Ge^+$	276

$C_4H_{12}Ge^+$	276	AsF_3^+	280
$C_7H_{18}Ge^+$	276	$C_6H_7F_6As^+$	280
$C_8H_{18}Ge^+$	276	$C_8H_{11}F_6As^+$	280
$C_8H_{20}Ge^+$	276	$Si_3H_9As^+$	280
$C_9H_{14}Ge^+$	276	AsP^+	281
$C_9H_{20}Ge^+$	276	AsP_3^+	281
$C_{10}H_{14}Ge^+$	276	$As_2P_2^+$	281
$C_{10}H_{16}Ge^+$	276	As_3P^+	281
$C_{12}H_{18}Ge^+$	277	AsS^+	281
$C_{13}H_{15}Ge^+$	277	$As_2S_2^+$	281
$C_{14}H_{18}Ge^+$	277	$As_3S_2^+$	281
$C_6H_{18}Ge_2^+$	277	$As_3S_3^+$	281
$GeH_3N_3^+$	277	$As_4S_3^+$	281
$Ge_3H_9N^+$	277	$As_4S_4^+$	281
GeO^+	277	$AsCl_3^+$	281
$Ge_2H_6O^+$	277	Se^+	281
CH_3NOGe^+	277	Se^{+4}	281
GeF_2^+	277	SeH^+	281
GeF_4^+	277	H_2Se^+	281
$Ge_2F_4^+$	278	CSe_2^+	282
GeH_3F^+	278	$C_2H_5Se^+$	282
$GeH_2F_2^+$	278	$C_2H_6Se^+$	282
$GeOF_2^+$	278	$C_3H_7Se^+$	282
$C_6H_{18}SiGe^+$	278	$C_4H_4Se^+$	282
GeH_5P^+	278	$C_5H_6Se^+$	282
$Ge_3H_9P^+$	278	$C_3H_6NSe^+$	282
GeH_4S^+	278	$C_4H_{10}NSe^+$	282
$Ge_2H_6S^+$	278	$COSe^+$	283
CH_3NSGe^+	278	$C_5H_4OSe^+$	283
Cl_3Ge^+	278	$C_6H_6OSe^+$	283
Cl_4Ge^+	278	$C_5H_4O_2Se^+$	283
GeH_3Cl^+	278	$C_4H_6NOSe^+$	283
$GeH_2Cl_2^+$	279	$C_5H_9NOSe^+$	283
$C_2H_6ClGe^+$	279	$C_4H_8NO_2Se^+$	283
$C_3H_9ClGe^+$	279	$C_5H_{11}NO_2Se^+$	283
$CH_3Cl_2Ge^+$	279	$C_6H_3OF_3Se^+$	283
$C_2H_6Cl_2Ge^+$	279	$Si_2H_6Se^+$	283
$CH_3Cl_3Ge^+$	279	SeP^+	284
$C_8H_{14}CrGe^+$	279	$CSSe^+$	284
$C_9H_{14}OCrGe^+$	279	$ScSe^+$	284
$C_{10}H_{14}O_2CrGe^+$	279	$Ge_2H_6Se^+$	284
$C_{11}H_{14}O_3CrGe^+$	279	Br^+	284
$C_5H_3O_5MnGe^+$	279	Br^{+4}	284
$C_4H_3O_4GeCo^+$	279	Br^{+5}	284
$GeCu^+$	280	HBr^+	284
As^+	280	DBr^+	284
As_2^+	280	C_2HBr^+	285
As_4^+	280	$C_2H_3Br^+$	285
AsH_3^+	280	$C_2H_5Br^+$	285
$C_2H_7As^+$	280	$C_3H_5Br^+$	285
$C_5H_5As^+$	280	$C_3H_7Br^+$	285
$C_{12}H_{13}As^+$	280	$C_4H_7Br^+$	286
$C_{19}H_{13}As^+$	280	$C_4H_9Br^+$	286

$C_5H_9Br^+$	286	PF_2Br^+	296
$C_5H_{11}Br^+$	286	$C_4H_3SBr^+$	296
$C_6H_4Br^+$	286	$SOSBr_2^+$	296
$C_6H_5Br^+$	286	$SOBr_3^+$	297
$C_6H_{11}Br^+$	286	$PSBr_3^+$	297
$C_7H_7Br^+$	287	$C_5H_8ClBr^+$	298
$C_7H_9Br^+$	287	$C_6H_{10}ClBr^+$	298
$C_{10}H_{15}Br^+$	287	$PClBr^+$	298
$C_{12}H_9Br^+$	287	PCl_2Br^+	298
$C_2H_2Br_2^+$	287	$PClBr_2^+$	298
$C_5H_8Br_2^+$	288	$C_5O_5BrMn^+$	298
$C_6H_4Br_2^+$	288	$C_6H_3NO_4MnBr^+$	298
$C_6H_{10}Br_2^+$	288	$Cu_3Br_3^+$	298
$C_{12}H_8Br_2^+$	289	$Cu_4Br_3^+$	298
$C_6H_3Br_3^+$	289	$Cu_4Br_4^+$	298
$C_6H_6NBr^+$	289	$ZnBr_2^+$	298
$C_{18}H_{17}N_2Br^+$	289	GeH_3Br^+	299
$C_6H_5NBr_2^+$	289	$GeH_2Br_2^+$	299
$C_4H_{12}BN_2Br^+$	289	Kr^+	299
$C_2H_6BNBr_2^+$	289	KrF_2^+	299
$COBr_2^+$	289	Rb^+	300
$C_5H_9OBr^+$	290	Rb^{+2}	300
$C_6H_4OBr^+$	290	$RbCl^+$	300
$C_6H_5OBr^+$	290	$RbBr^+$	300
$C_7H_4OBr^+$	290	Rb_2Br^+	300
$C_7H_7OBr^+$	290	Sr^+	300
$C_2H_3O_2Br^+$	291	Sr^{+2}	301
$C_7H_5O_2Br^+$	291	Sr^{+3}	301
$C_7H_{11}O_2Br^+$	291	$SrCl^+$	301
$C_8H_7O_2Br^+$	291	Y^+	301
$C_6H_4OBr_2^+$	291	Y^{+6}	301
$C_8H_6O_2Br_2^+$	291	YS^+	301
$C_8H_7NOBr^+$	291	YSe^+	301
$C_8H_8NOBr^+$	292	Zr^{+5}	301
$C_6H_4NO_2Br^+$	292	Zr^{+6}	301
$C_8H_7NOBr_2^+$	292	$ZrCl^+$	301
BrF^+	292	$ZrCl_2^+$	301
BrF_3^+	292	$ZrCl_3^+$	301
BrF_5^+	292	$ZrCl_4^+$	301
CF_3Br^+	292	Nb^{+6}	301
$C_2F_3Br^+$	293	Nb^{+7}	302
$C_5H_8FBr^+$	293	NbF_3^+	302
$C_6H_{10}FBr^+$	293	NbF_4^+	302
$C_{12}H_8FBr^+$	293	$Nb_2F_9^+$	302
$SiBr^+$	293	$Nb_3F_{14}^+$	302
SiH_3Br^+	293	$NbCl^+$	302
$SiH_2Br_2^+$	294	$NbCl_2^+$	302
$C_5H_9SiBr^+$	294	$NbCl_3^+$	302
SiF_3Br^+	294	$NbCl_4^+$	302
PBr^+	294	Mo^+	302
PBr_2^+	294	Mo^{+7}	302
PBr_3^+	294	Mo^{+8}	302
$POBr_3^+$	295	$C_6O_6Mo^+$	302

$C_6H_{18}N_3PMo^+$	302	Ag_3Cl^+	307
$C_{12}H_{36}N_6P_2Mo^+$	303	$Ag_3Cl_2^+$	307
$C_7H_{18}N_3OPMo^+$	303	$Ag_3Cl_3^+$	307
$C_8H_{18}N_3O_2PMo^+$	303	$Ag_4Cl_3^+$	307
$C_9H_{18}N_3O_3PMo^+$	303	$Ag_4Cl_4^+$	308
$C_{10}H_{18}N_3O_4PMo^+$	303	$Ag_5Cl_4^+$	308
$C_{11}H_{18}N_3O_5PMo^+$	303	$AgBr^+$	308
$C_{13}H_{36}N_6OP_2Mo^+$	303	Ag_2Br^+	308
$C_{14}H_{36}N_6O_2P_2Mo^+$	303	$Ag_3Br_2^+$	308
$C_{15}H_{36}N_6O_3P_2Mo^+$	303	$Ag_3Br_3^+$	308
$C_{16}H_{36}N_6O_4P_2Mo^+$	303	Cd^+	308
$MoCl^+$	303	$CdCl_2^+$	308
$MoCl_2^+$	303	$CdBr_2^+$	309
$MoCl_3^+$	303	In^+	309
$MoCl_4^+$	303	In_2^+	309
$MoCl_5^+$	303	InO^+	309
$MoO_2Cl_2^+$	303	In_2O^+	309
$MoOCl_3^+$	304	$InCl^+$	309
$MoOCl_4^+$	304	$InBr^+$	309
$MoO_2Br_2^+$	304	Sn^+	309
MoO_2ClBr^+	304	SnH_4^+	310
Ru^+	304	$C_3H_9Sn^+$	310
$C_3H_3Ru^+$	304	$C_4H_{12}Sn^+$	310
$C_5H_5Ru^+$	304	$C_7H_{18}Sn^+$	310
$C_8H_8Ru^+$	304	$C_9H_{14}Sn^+$	310
$C_{10}H_{10}Ru^+$	304	$C_{10}H_{16}Sn^+$	310
$C_{12}H_{14}Ru^+$	305	$C_{12}H_{16}Sn^+$	310
RuO_4^+	305	$C_{12}H_{18}Sn^+$	310
$C_{15}H_3O_6F_{18}Ru^+$	305	$C_{13}H_{16}Sn^+$	311
RhC^+	305	$C_{14}H_{18}Sn^+$	311
RhC_2^+	305	$C_{14}H_{30}Sn^+$	311
$C_7H_7O_4Rh^+$	305	$C_{15}H_{32}Sn^+$	311
$C_{12}H_9O_4Rh^+$	305	$C_{16}H_{36}Sn^+$	311
$C_{17}H_{11}O_4Rh^+$	305	$C_{24}H_{20}Sn^+$	311
$C_{15}H_{21}O_6Rh^+$	305	$C_6H_{18}Sn_2^+$	311
$C_{15}H_{20}NO_8Rh^+$	305	SnO^+	311
$C_{15}H_{19}N_2O_{10}Rh^+$	306	$C_6H_{18}SiSn^+$	311
$C_{15}H_{18}N_3O_{12}Rh^+$	306	$C_{16}H_{44}Si_4Sn^+$	311
$C_7H_4O_4F_3Rh^+$	306	$C_6H_{18}GeSn^+$	311
$C_7HO_4F_6Rh^+$	306	$SnBrCl^+$	311
$RhP_4F_{12}H^+$	306	$SnBr_2Cl^+$	311
Pd^+	306	$SnBr_3Cl^+$	311
$C_6H_{10}Pd^+$	306	Sb^+	311
$C_{12}H_{18}N_2O_2Pd^+$	306	Sb_2^+	311
Ag^+	306	Sb_3^+	312
Ag_2^+	306	Sb_4^+	312
Ag_3^+	307	SbH_3^+	312
$NaAg^+$	307	$C_5H_5Sb^+$	312
$AgAl^+$	307	SbF_3^+	312
$AgPO_2^+$	307	SbP^+	312
$AgCl^+$	307	TeH^+	312
Ag_2Cl^+	307	H_2Te^+	312
$Ag_2Cl_2^+$	307	$C_2H_6Te^+$	313

$C_4H_4Te^+$	313	$Cu_3I_2^+$	319
$C_5H_6Te^+$	313	$Cu_2I_3^+$	319
$C_5H_4OTe^+$	313	$Cu_3I_3^+$	319
$C_6H_6OTe^+$	313	$Cu_4I_3^+$	319
$C_5H_4O_2Te^+$	313	$Cu_4I_4^+$	320
$C_6H_6O_2Te^+$	313	ZnI_2	320
TeP^+	313	ZnI_2^+	320
$C_5H_6STe^+$	313	GeH_3I^+	320
$Ge_2H_6Te^+$	313	$GeH_2I_2^+$	320
I^+	314	IBr^+	320
I_2^+	314	RbI^+	320
I_2^{+2}	314	Rb_2I^+	321
CH_3I^+	314	AgI^+	321
C_2HI^+	314	CdI_2^+	321
$C_2H_3I^+$	314	InI^+	321
$C_2H_5I^+$	314	Xe^+	321
$C_3H_5I^+$	315	$XeOF_4^+$	321
$C_3H_7I^+$	315	Cs^+	322
$C_4H_9I^+$	315	Cs^{+3}	322
$C_5H_{11}I^+$	316	Cs^{+4}	322
$C_6H_{13}I^+$	316	Cs^{+5}	322
$C_7H_7I^+$	316	Cs^{+6}	322
$C_{12}H_9I^+$	316	Cs^{+7}	322
$C_2H_2I_2^+$	316	Cs^{+8}	322
$C_6H_6NI^+$	316	Cs^{+9}	322
$C_{25}H_{25}N_2I^+$	317	Cs^{+10}	322
$C_{29}H_{35}N_2I^+$	317	Cs_2^+	322
$C_4H_{12}BN_2I^+$	317	$Cs_2NO_3^+$	322
$C_2H_6BNI_2^+$	317	CsF^+	322
$C_2H_5OI^+$	317	$CsCl^+$	322
$C_3H_7OI^+$	317	$CsBr^+$	323
$C_6H_5OI^+$	317	CsI^+	323
$C_2H_3O_2I^+$	317	Ba^+	323
$C_8H_7O_2I^+$	317	Ba^{+2}	323
$C_6H_4OI_2^+$	317	Ba^{+3}	323
$C_8H_6O_2I_2^+$	317	Ba^{+4}	323
$C_8H_8NOI^+$	318	Ba^{+5}	323
IF_5^+	318	Ba^{+6}	323
NaI^+	318	Ba^{+7}	323
MgI_2^+	318	Ba^{+8}	323
SiH_3I^+	318	Ba^{+9}	323
$SiH_2I_2^+$	318	Ba^{+10}	323
$C_5H_9SiI^+$	318	BaO^+	323
PI_3^+	318	La^+	323
PF_2I^+	319	LaC^+	324
$C_4H_2SI_2^+$	319	LaC_2^+	324
ICl^+	319	LaC_3^+	324
$C_5O_5IMn^+$	319	LaC_4^+	324
CuI^+	319	LaF^+	324
Cu_2I^+	319	LaF_2^+	324
Cu_3I^+	319	$La_2F_5^+$	324
CuI_2^+	319	$LaSe^+$	324
$Cu_2I_2^+$	319	$LaRh^+$	324

Ce ⁺	324
Ce ⁺²	325
Ce ⁺³	325
Ce ⁺⁴	325
Ce ₂ ⁺	325
C ₂ Ce ⁺	325
CeN ⁺	325
CeO ⁺	325
CeO ₂ ⁺	325
Ce ₂ O ₂ ⁺	325
CeF ⁺	325
CeF ₂ ⁺	325
CeF ₃ ⁺	325
Ce ₂ F ₅ ⁺	326
CSiCe ⁺	326
CeS ⁺	326
CeS ₂ ⁺	326
CePd ⁺	326
CeI ⁺	326
CeI ⁺²	326
CeI ₂ ⁺	326
CeI ₃ ⁺	326
Pr ⁺	326
Pr ⁺³	326
Pr ⁺⁴	326
Pr ⁺⁵	326
PrI ⁺	326
PrI ₂ ⁺	326
PrI ₃ ⁺	326
Nd ⁺	326
Nd ⁺³	327
Nd ⁺⁴	327
NdCl ⁺	327
NdCl ₂ ⁺	327
NdCl ₃ ⁺	327
NdBr ₂ ⁺	327
NdI ⁺	327
NdI ₂ ⁺	327
NdI ₃ ⁺	327
Pm ⁺³	327
Pm ⁺⁴	327
Sm ⁺	327
Sm ⁺³	327
Sm ⁺⁴	327
SmI ⁺	327
SmI ₂ ⁺	328
Eu ⁺	328
Eu ⁺³	328
Eu ⁺⁴	328
Eu ₂ ⁺	328
EuC ₂ ⁺	328
EuCN ⁺	328
EuAg ⁺	328

EuI ⁺	328
EuI ₂ ⁺	328
Gd ⁺	328
Gd ⁺³	328
Gd ⁺⁴	328
GdCl ⁺	328
GdCl ₂ ⁺	328
NaGdCl ₃ ⁺	329
GdI ⁺	329
GdI ₂ ⁺	329
GdI ₃ ⁺	329
Tb ⁺	329
Tb ⁺³	329
Tb ⁺⁴	329
TbI ⁺	329
TbI ₂ ⁺	329
TbI ₃ ⁺	329
Dy ⁺	329
Dy ⁺³	329
Dy ⁺⁴	329
DyI ⁺	329
DyI ₂ ⁺	329
DyI ₃ ⁺	329
Ho ⁺	329
Ho ⁺³	330
Ho ⁺⁴	330
Ho ₂ ⁺	330
HoAg ⁺	330
HoI ⁺	330
HoI ₂ ⁺	330
HoI ₃ ⁺	330
Er ⁺	330
Er ⁺³	330
Er ⁺⁴	330
ErI ⁺	330
ErI ₂ ⁺	330
ErI ₃ ⁺	330
Tm ⁺	330
Tm ⁺³	330
Tm ⁺⁴	331
TmBr ₂ ⁺	331
TmBr ₃ ⁺	331
Yb ⁺	331
Yb ⁺²	331
Yb ⁺³	331
Yb ⁺⁴	331
Yb ₂ ⁺	331
YbCl ⁺	331
YbCl ₂ ⁺	331
YbBr ⁺	331
YbBr ₂ ⁺	331
Lu ⁺	331
Lu ⁺⁴	331

LuC ₂ ⁺	331	C ₅ H ₃ O ₅ SiRe ⁺	335
LuC ₄ ⁺	332	ReCl ₄ ⁺	335
Hf ⁴⁺	332	ReO ₂ Cl ⁺	335
Ta ⁵⁺	332	ReOCl ₃ ⁺	335
TaF ₃ ⁺	332	ReOCl ₄ ⁺	335
TaF ₄ ⁺	332	C ₅ H ₃ O ₅ GeRe ⁺	335
Ta ₂ F ₉ ⁺	332	ReO ₃ I ⁺	335
Ta ₃ F ₁₄ ⁺	332	BaReO ₄ ⁺	335
TaCl ₂ ⁺	332	C ₁₂ H ₁₄ Os ⁺	335
TaCl ₃ ⁺	332	OsO ₄ ⁺	336
TaCl ₄ ⁺	332	OsOCl ₃ ⁺	336
C ₆ H ₁₈ W ⁺	332	OsOCl ₄ ⁺	336
C ₆ O ₆ W ⁺	332	C ₇ H ₇ O ₄ Ir ⁺	336
C ₁₀ H ₅ NO ₅ W ⁺	332	C ₇ HO ₄ F ₆ Ir ⁺	336
C ₁₁ H ₇ NO ₅ W ⁺	332	Au ⁺	336
C ₁₂ H ₉ NO ₅ W ⁺	332	Au ₂ ⁺	336
C ₁₁ H ₄ N ₂ O ₅ W ⁺	332	AuB ⁺	336
C ₁₂ H ₃₆ N ₆ P ₂ W ⁺	333	AuBO ⁺	336
C ₁₄ H ₃₆ N ₆ O ₂ P ₂ W ⁺	333	AuAl ⁺	336
C ₁₅ H ₃₆ N ₆ O ₃ P ₂ W ⁺	333	AuAl ₂ ⁺	337
C ₁₆ H ₃₆ N ₆ O ₄ P ₂ W ⁺	333	Au ₂ Al ⁺	337
WCl ⁺	333	AuGe ⁺	337
WCl ₂ ⁺	333	AuCe ⁺	337
WCl ₃ ⁺	333	AuHo ⁺	337
WCl ₄ ⁺	333	Hg ⁺	337
WCl ₅ ⁺	333	C ₁₂ H ₁₀ Hg.....	337
WCl ₆ ⁺	333	HgCl ₂ ⁺	337
WOCl ₃ ⁺	333	C ₃ H ₅ ClHg ⁺	337
WOCl ₄ ⁺	333	Tl ⁺	337
WS ₂ Cl ⁺	333	Tl ³⁺	338
WS ₂ Cl ₂ ⁺	333	Tl ₂ ⁺	338
WScI ₃ ⁺	333	TlO ⁺	338
WScI ₄ ⁺	333	Tl ₂ O ⁺	338
WOSCl ⁺	334	TlBO ⁺	338
WOSCl ₂ ⁺	334	TlBO ₂ ⁺	338
WBr ₂ ⁺	334	Tl ₂ BO ₂ ⁺	338
WBr ₃ ⁺	334	TlF ⁺	338
WBr ⁺	334	Tl ₂ F ⁺	338
WO ₂ Br ⁺	334	Tl ₂ F ₂ ⁺	338
WBr ₂ ⁺	334	TlCl ⁺	338
WO ₂ Br ₂ ⁺	334	TlAs ⁺	339
WBr ₃ ⁺	334	TlBr ⁺	339
WBr ₄ ⁺	334	TlI ⁺	339
WO ₂ I ⁺	334	Pb ⁴⁺	339
WO ₂ I ₂ ⁺	334	C ₃ H ₉ Pb ⁺	339
ReO ⁺	334	C ₄ H ₁₂ Pb ⁺	339
ReO ₂ ⁺	334	C ₇ H ₁₈ Pb ⁺	339
ReO ₃ ⁺	335	C ₆ H ₁₈ Pb ₂ ⁺	339
Re ₂ O ₅ ⁺	335	C ₁₆ H ₄₄ Si ₄ Pb ⁺	339
Re ₂ O ₆ ⁺	335	PbCl ₂ ⁺	340
Re ₂ O ₇ ⁺	335	PbI ₂ ⁺	340
C ₅ HO ₅ Re ⁺	335	Bi ₃ ⁺	340
ReF ₆ ⁺	335	Bi ₄ ⁺	340

BiF_3^+	340
BiF_4^+	340
Bi_2F_9^+	340
GaBi^+	340
BiTl^+	340
Ac^+	340
Th^+	340
ThO^+	340
ThO_2^+	340
ThCl_4^+	340
ThPt^+	340
Pa^+	340
U^+	341
U^{+2}	341
UO^+	341
UO_2^+	341

UO_3^+	341
US^+	341
UOS^+	341
UCl_3^+	341
UCl_4^+	341
Np^+	341
Pu^+	341
Am^+	342
Cm^+	342
Bk^+	342
Cf^+	342
Es^+	342
Fm^+	342
Md^+	342
No^+	342

Table of Ion Energetics Measurements

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
H ⁺	H ₂ (² Σ _g ⁺) (RN-CAS Registry Number 1333-74-0)	H	18.0±0.2	EI	3799
H ⁺	CH ₄ (RN-CAS Registry Number 74-82-8)		24.0±0.5	EI	3521
	(AD- 1.8-3.2 eV average translational energy of decomposition at threshold)				
H ⁺	H ₂ O (RN-CAS Registry Number 7732-18-5)	OH(X ² Π)	18.7±0.05	EI	3906
	(ZK-Threshold value for zero kinetic energy ions)				
H ⁺	HCHO (RN-CAS Registry Number 50-00-0)	HCO	17.41±0.07	PI	3554
	(TR-Other product(s) thermochemically reasonable)				
H ⁺	HF (RN-CAS Registry Number 7664-39-3)	F	19.444	PI	3928
	(TV-Threshold value approximately corrected to 0°K)				
D ⁺	D ₂ O (RN-CAS Registry Number 7789-20-0)	OD(X ² Π)	18.7±0.05	EI	3906
	(ZK-Threshold value for zero kinetic energy ions)				
H ₂ ⁺	H ₂ (RN-CAS Registry Number 1333-74-0)	**	15.42589±0.00005 S		3770
H ₂ ⁺	H ₂ (RN-CAS Registry Number 1333-74-0)	**	15.38186±0.00031 PE		3531
	(Rotational transitions resolved)				
H ₂ ⁺	HCHO (RN-CAS Registry Number 50-00-0)	CO	15.42±0.06	PI	3554
	(TR-Other product(s) thermochemically reasonable)				
HD ⁺	HD (RN-CAS Registry Number 13983-20-5)	**	15.44477±0.00007 S		3763
H ₃ ⁺	C ₂ H ₆ (RN-CAS Registry Number 74-84-0)		32.2±1	EI	3904
	(AD-3.93 eV average translational energy of decomposition at threshold)				
H ₃ ⁺	C ₃ H ₈ (RN-CAS Registry Number 74-98-6)		31.6±1	EI	3904
	(AD-3.46 eV average translational energy of decomposition at threshold)				
H ₃ ⁺	n-C ₄ H ₁₀ (RN-CAS Registry Number 106-97-8)		30.5±1	EI	3904
	(AD-3.03 eV average translational energy of decomposition at threshold)				
Li ⁺	LiF (RN-CAS Registry Number 7789-24-4)		~12	EI	3464
Li ₂ ⁺	Li ₂ (RN-CAS Registry Number 14452-59-6)	**	4.96±0.1	S	3768
B ⁺	B (RN-CAS Registry Number 24389-64-8)	**	8.6±0.4	EI	3468

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
BH_2^+	$\text{BH}_3?$ (RN-CAS Registry Number 13283-31-3)	H?	11-12	EI	3441
BH_3^+	BH_3 (RN-CAS Registry Number 13283-31-3)	**	11-12	EI	3441
B_3H_5^+	B_3H_7 (RN-CAS Registry Number 12429-70-8)		11.5 ± 0.3	EI	3652
B_3H_6^+	B_3H_7 (RN-CAS Registry Number 12429-70-8)	H	11.2 ± 0.3	EI	3652
B_4H_8^+	B_4H_8 (RN-CAS Registry Number 12007-71-5)	**	10.9 ± 0.3	EI	3652
B_5H_8^+	B_5H_9 (RN-CAS Registry Number 19624-22-7)	H	11.84 ± 0.01	RPD	3547
B_5H_8^+	1- $\text{B}_5\text{H}_8\text{CH}_3$ (RN-CAS Registry Number 19495-55-7)	CH_3	10.45 ± 0.02	RPD	3547
B_5H_8^+	2- $\text{B}_5\text{H}_8\text{CH}_3$ (RN-CAS Registry Number 23753-74-4)	CH_3	10.61 ± 0.05	RPD	3547
B_5H_8^+	1- $\text{B}_5\text{H}_8\text{C}_2\text{H}_5$ (RN-CAS Registry Number 23753-61-9)	C_2H_5	10.33 ± 0.05	RPD	3547
B_5H_8^+	2- $\text{B}_5\text{H}_8\text{C}_2\text{H}_5$ (RN-CAS Registry Number 23753-62-0)	C_2H_5	10.31 ± 0.01	RPD	3547
B_5H_8^+	1- $\text{B}_5\text{H}_8\text{C}_3\text{H}_7$ (RN-CAS Registry Number 34692-67-6)	C_3H_7	10.98 ± 0.01	RPD	3547
B_5H_8^+	1- $\text{B}_5\text{H}_8\text{Cl}$ (RN-CAS Registry Number 19469-13-7)	Cl	11.75 ± 0.05	RPD	3547
B_5H_8^+	2- $\text{B}_5\text{H}_8\text{Cl}$ (RN-CAS Registry Number 19469-14-8)	Cl	12.20 ± 0.10	RPD	3547
B_5H_8^+	1- $\text{B}_5\text{H}_8\text{Br}$ (RN-CAS Registry Number 23753-67-5)	Br	11.38 ± 0.05	RPD	3547
B_5H_8^+	2- $\text{B}_5\text{H}_8\text{Br}$ (RN-CAS Registry Number 23753-64-2)	Br	11.75 ± 0.05	RPD	3547
B_5H_8^+	1- $\text{B}_5\text{H}_8\text{I}$ (RN-CAS Registry Number 30624-33-0)	I	10.70 ± 0.05	RPD	3547
B_5H_8^+	2- $\text{B}_5\text{H}_8\text{I}$ (RN-CAS Registry Number 20199-87-5)	I	10.72 ± 0.05	RPD	3547
B_5H_9^+	B_5H_9 (RN-CAS Registry Number 19624-22-7)	**	9.90	PE	3869
C^+	C (RN-CAS Registry Number 7440-44-0)	**	10.5 ± 1.0	EI	3597
C^+	C (RN-CAS Registry Number 7440-44-0)	**	10.8 ± 0.4	EI	3902
C^+	C (RN-CAS Registry Number 7440-44-0)	**	11.4 ± 1.5	EI	3978
C^+	CH_4 (RN-CAS Registry Number 74-82-8)		≤ 25.2	DC	3813

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C^{+2}(^3P)$	C^+ (RN-CAS Registry Number 14067-05-1)	**	31.0	SEQ	3489
$C^{+2}(^1P)$	C^+ (RN-CAS Registry Number 14067-05-1)	**	37.3	SEQ	3489
C^{+3}	C^+ (RN-CAS Registry Number 14067-05-1)	**	75	SEQ	3489
$C^{+3}(^2P)$	$C^{+2}(^3P^0)$ (RN-CAS Registry Number 16092-61-8)	**	49.5	SEQ	3489
$C^{+3}(^2P)$	C^{+2} (RN-CAS Registry Number 16092-61-8)	**	55.5	SEQ	3489
C_2^+	C_2 (RN-CAS Registry Number 12070-15-4)	**	11.1 ± 1.0	EI	3597
C_3^+	C_3 (RN-CAS Registry Number 12075-35-3)	**	12.1 ± 0.2	EI	3601
CH^+	CH_4 (RN-CAS Registry Number 74-82-8)	$H_2 + H?$	22.4	DC	3813
CH_2^+	CH_4 (RN-CAS Registry Number 74-82-8)	H_2	15.3	DC	3813
CH_2^+	CH_3OH (RN-CAS Registry Number 67-56-1)	H_2O	14.05 ± 0.05	PI	3554
(TR-Other product(s) thermochemically reasonable)					
CH_2^+	$CH_2=CF_2$ (RN-CAS Registry Number 75-38-7)	CF_2	16.99 ± 0.02	PI	3930
CH_2^+	$CH_2=CF_2$ (RN-CAS Registry Number 75-38-7)	CF_2	17.2 ± 0.1	EI	3539
CH_3^+	CH_3 (RN-CAS Registry Number 2229-07-4)	**	9.81 ± 0.02	PE	3717
(RD-Radical)					
CH_3^+	CH_3 (RN-CAS Registry Number 2229-07-4)	**	9.837 ± 0.005	PE	3942
(RD-Radical)					
CH_3^+	CH_3 (RN-CAS Registry Number 2229-07-4)	**	9.86 ± 0.04 (V)	PE	3695
(RD-Radical)					
CH_3^+	CH_3 (RN-CAS Registry Number 2229-07-4)	**	9.86 ± 0.04	PE	3700
(RD-Radical)					
CH_3^+	CH_4 (RN-CAS Registry Number 74-82-8)	H	14.4	DC	3813
CH_3^+	$CH_3C \equiv CH$ (RN-CAS Registry Number 74-99-7)	C_2H	14.6 ± 0.1	EI	3769
(TR-Other product(s) thermochemically reasonable)					
CH_3^+	$CH_3C \equiv CH$ (RN-CAS Registry Number 74-99-7)	C_2H	16.0	EI	3808
(AD-0.16 eV average translational energy of decomposition at threshold)					

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
CH_3^+	C_3H_8 (RN-CAS Registry Number 74-98-6) (AD-2.7 eV average translational energy of decomposition at threshold)	C_2H_5^+	30.2 ± 1	EI	3904
CH_3^+	$\text{C}_2\text{H}_5\text{C}\equiv\text{CH}$ (RN-CAS Registry Number 107-00-6) (AD-0.19 eV average translational energy of decomposition at threshold)	C_3H_3	15.1	EI	3808
CH_3^+	$(\text{CH}_3)_2\text{C}=\text{CH}_2$ (RN-CAS Registry Number 115-11-7) (AD-0.20 eV average translational energy of decomposition at threshold)	C_3H_5	16.4	EI	3808
CH_3^+	$1-\text{C}_4\text{H}_8$ (RN-CAS Registry Number 106-98-9) (AD-0.09 eV average translational energy of decomposition at threshold)	C_3H_5	14.1	EI	3808
CH_3^+	$(\text{CH}_3)_3\text{CC}\equiv\text{CH}$ (RN-CAS Registry Number 917-92-0) (AD-0.11 eV average translational energy of decomposition at threshold)	C_5H_7	14.7	EI	3808
CH_3^+	$(\text{CH}_3)_3\text{CCH}=\text{CH}_2$ (RN-CAS Registry Number 558-37-2) (AD-0.13 eV average translational energy of decomposition at threshold)	C_5H_9	15.4	EI	3808
CH_3^+	CH_3NH_2 (RN-CAS Registry Number 74-89-5) (AD-0.13 eV average translational energy of decomposition at threshold)	NH_2	14.5	EI	3808
CH_3^+	$\text{C}_2\text{H}_5\text{NH}_2$ (RN-CAS Registry Number 75-04-7) (AD-0.19 eV average translational energy of decomposition at threshold)	CH_2NH_2	15.6	EI	3808
CH_3^+	$(\text{CH}_3)_2\text{NH}$ (RN-CAS Registry Number 124-40-3) (AD-0.13 eV average translational energy of decomposition at threshold)	CH_3NH	14.8	EI	3808
CH_3^+	$(\text{CH}_3)_3\text{N}$ (RN-CAS Registry Number 75-50-3) (AD-0.11 eV average translational energy of decomposition at threshold)	$(\text{CH}_3)_2\text{N}$	14.9	EI	3808
CH_3^+	$(\text{C}_2\text{H}_5)_2\text{NH}$ (RN-CAS Registry Number 109-89-7) (AD-0.09 eV average translational energy of decomposition at threshold)	$\text{C}_2\text{H}_5\text{NHCH}_2$	15.4	EI	3808
CH_3^+	$(\text{C}_2\text{H}_5)_3\text{N}$ (RN-CAS Registry Number 121-44-8) (AD-0.13 eV average translational energy of decomposition at threshold)	$(\text{C}_2\text{H}_5)_2\text{NCH}_2$	16.7	EI	3808
CH_3^+	CH_3OH (RN-CAS Registry Number 67-56-1) (TR-Other product(s) thermochemically reasonable)	OH	13.82 ± 0.04	PI	3554
CH_3^+	$(\text{CH}_3)_2\text{CO}$ (RN-CAS Registry Number 67-64-1)		15.2	EI	3550
CH_3^+	$(\text{CH}_2\text{NF}_2)\text{CH}_2$ (RN-CAS Registry Number 21298-22-6)		14.6 ± 0.3	EI	3634
CH_3^+	$\text{CH}_2(\text{NF}_2)\text{CH}(\text{NF}_2)\text{CH}_3$ (RN-CAS Registry Number 15403-25-5)		16.4 ± 0.4	EI	3634
CH_3^+	$(\text{CH}_3)_2\text{C}(\text{NF}_2)_2$ (RN-CAS Registry Number 19309-63-8)		14.7 ± 0.2	EI	3634
CH_3^+	$(\text{CH}_3\text{O})_3\text{PO}$ (RN-CAS Registry Number 512-56-1)		17.90 ± 0.40	EI	3989
CH_3^+	$(\text{CH}_3\text{O})_2\text{P}(\text{CH}_3\text{S})\text{O}$ (RN-CAS Registry Number 152-20-5)		15.20 ± 0.30	EI	3989
CH_3^+	$(\text{CH}_3\text{O})_2\text{P}(\text{CH}_3\text{S})\text{S}$ (RN-CAS Registry Number 2953-29-9)		14.50 ± 0.40	EI	3989

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
CH_3^+	CH_3I (RN-CAS Registry Number 74-88-4) (TR-Other product(s) thermochemically reasonable)	I	12.260 ± 0.013	PI	3524
CH_3^+	CH_3I (RN-CAS Registry Number 74-88-4)	I	12.07 ± 0.07	EDD	3626
$\text{CH}_4^+(\text{}^2\text{B}_2)$	CH_4 (RN-CAS Registry Number 74-82-8)	**	12.51	PE	3645
$\text{CH}_4^+(\text{}^2\text{B}_2)$	CH_4 (RN-CAS Registry Number 74-82-8)	**	~12.51	PE	3529
$\text{CH}_4^+(\text{}^2\text{B}_2)$	CH_4 (RN-CAS Registry Number 74-82-8)	**	12.64	PE	3716
$\text{CH}_4^+(\text{}^2\text{A}_1)$	CH_4 (RN-CAS Registry Number 74-82-8)	**	22.39	PE	3716
CH_4^+	CH_4 (RN-CAS Registry Number 74-82-8)	**	12.8	DC	3813
C_2H^+	C_2H (RN-CAS Registry Number 2122-48-7)	**	11.6 ± 0.5	EI	3601
C_2H^+ (RD-Radical)	C_2H (RN-CAS Registry Number 2122-48-7)	**	11.96 ± 0.05	D	3931
C_2H^+ (RD-Radical)	C_2H (RN-CAS Registry Number 2122-48-7)	**	11.96 ± 0.05	D	3929
C_2H^+ (RD-Radical)	C_2H_2 (RN-CAS Registry Number 74-86-2)	H	17.36 ± 0.01	PI	3931
C_2H^+	$\text{CH} \equiv \text{CCN}$ (RN-CAS Registry Number 1070-71-9)	CN	18.19 ± 0.04	PI	3929
C_2H^+	$\text{CHF}_2\text{C} \equiv \text{CH}$ (RN-CAS Registry Number 18371-25-0) (TR-Other product(s) thermochemically reasonable)	CHF_2	16.19 ± 0.02	EI	3769
C_2D^+	C_2D_2 (RN-CAS Registry Number 1070-74-2)	D	17.44 ± 0.01	PI	3931
$\text{C}_2\text{H}_2^+(\text{}^2\Pi_u)$	C_2H_2 (RN-CAS-Registry Number 74-86-2)	**	11.394 ± 0.005	PI	4069
$\text{C}_2\text{H}_2^+(\text{}^2\Pi_u)$	C_2H_2 (RN-CAS Registry Number 74-86-2)	**	11.398 ± 0.005	PI	3921
C_2H_2^+	C_2H_2 (RN-CAS Registry Number 74-86-2)	**	11.40	PE	4048
C_2H_2^+	$\text{CH}_3\text{C} \equiv \text{CH}$ (RN-CAS Registry Number 74-99-7)	CH_2	15.2 ± 0.1	EI	3769
C_2H_2^+	$\text{C}_2\text{H}_3\text{F}$ (RN-CAS Registry Number 75-02-5)	HF	13.51 ± 0.02	PI	3930
C_2H_2^+	(TR-Other product(s) thermochemically reasonable)				

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_2^+$	$CH_2=CF_2$ (RN-CAS Registry Number 75-38-7)	2F	19.08 ± 0.03	PI	3930
$C_2H_2^+$	C_2H_3Cl (RN-CAS Registry Number 75-01-4)	HCl	12.47 ± 0.1	PI	3930
(TR—Other product(s) thermochemically reasonable)					
$C_2D_2^+(\Pi_u)$	C_2D_2 (RN-CAS Registry Number 1070-74-2)	**	11.404 ± 0.005	PI	3921
$C_2D_2^+$	C_2D_6 (RN-CAS Registry Number 1632-99-1)	2D ₂	14.8	TPE	3919
$C_2H_3^+$	C_2H_3 (RN-CAS Registry Number 2669-89-8)	**	8.7 ± 0.1	D	3930
(RD—Radical)					
$C_2H_3^+$	C_2H_3F (RN-CAS Registry Number 75-02-5)	F	13.84 ± 0.04	PI	3930
$C_2H_3^+$	C_2H_3Cl (RN-CAS Registry Number 75-01-4)	Cl	12.48 ± 0.04	PI	3930
(TR—Other product(s) thermochemically reasonable)					
$C_2D_3^+$	C_2D_6 (RN-CAS Registry Number 1632-99-1)	D ₂ +D	14.8	TPE	3919
$C_2H_4^+(^2B_{2u})$	C_2H_4 (RN-CAS Registry Number 74-85-1)	**	10.51	PE	3649
$C_2H_4^+$	C_2H_4 (RN-CAS Registry Number 74-85-1)	**	10.51	PE	3739
$C_2H_4^+$	C_2H_4 (RN-CAS Registry Number 74-85-1)	**	10.51	PE	3847
$C_2H_4^+$	C_2H_4 (RN-CAS Registry Number 74-85-1)	**	10.515 ± 0.003	PE	3957
$C_2H_4^+$	C_2H_4 (RN-CAS Registry Number 74-85-1)	**	10.56	PE	3533
$C_2H_4^*$	C_2H_4 (RN-CAS Registry Number 74-85-1)	**	12.38	PE	3739
$C_2H_4^+(^2B_{2g})$	C_2H_4 (RN-CAS Registry Number 74-85-1)	**	12.45	PE	3649
$C_2H_4^*$	C_2H_4 (RN-CAS Registry Number 74-85-1)	**	12.56	PE	3533
$C_2H_4^*$	C_2H_4 (RN-CAS Registry Number 74-85-1)	**	14.4	PE	3739
$C_2H_4^+(^2A_g)$	C_2H_4 (RN-CAS Registry Number 74-85-1)	**	14.43	PE	3649
$C_2H_4^*$	C_2H_4 (RN-CAS Registry Number 74-85-1)	**	14.46	PE	3533
$C_2H_4^+(^2B_{1u})$	C_2H_4 (RN-CAS Registry Number 74-85-1)	**	15.74	PE	3649
$C_2H_4^*$	C_2H_4 (RN-CAS Registry Number 74-85-1)	**	15.96	PE	3533
$C_2H_4^+(^2B_{3u})$	C_2H_4 (RN-CAS Registry Number 74-85-1)	**	~18.8	PE	3649

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_4^{+*}$	C_2H_4 (RN-CAS Registry Number 74-85-1)	**	18.91	PE	3533
$C_2H_4^+(^2A_g)$	C_2H_4 (RN-CAS Registry Number 74-85-1)	**	~ 22.8	PE	3649
$C_2H_4^+$	C_3H_8 (RN-CAS Registry Number 74-98-6)	CH_4	11.55	EI	3488
(PC-Appearence potential of the corresponding metastable transition)					
$C_2H_4^+$	C_3H_8 (RN-CAS Registry Number 74-98-6)	CH_4	11.9	EI	3488
(MT-Metastable transition(s) observed)					
$C_2H_5^+$	C_2H_5Br (RN-CAS Registry Number 74-96-4)	Br	10.72 ± 0.08	EDD	3626
$C_2H_6^+$	C_2H_6 (RN-CAS Registry Number 74-84-0)	**	11.76 ± 0.05	DC	3791
$C_2H_6^+$	$(CH_3)_2C(NF_2)_2$ (RN-CAS Registry Number 19309-63-8)	$NF_3 + CNF?$	13.1 ± 0.2	EI	3634
C_3H^+	$CH_3C \equiv CH$ (RN-CAS Registry Number 74-99-7)	$H_2 + H$	14.0 ± 0.1	EI	3769
$C_3H_2^+$	$CH_3C \equiv CH$ (RN-CAS Registry Number 74-99-7)	H_2	13.8 ± 0.1	EI	3769
$C_3H_3^+$	$CH_3C \equiv CH$ (RN-CAS Registry Number 74-99-7)	H	11.9 ± 0.1	EI	3769
(TR-Other product(s) thermochemically reasonable)					
$C_3H_3^+$	$C_2H_5C \equiv CH$ (RN-CAS Registry Number 107-00-6)	CH_3	11.7	EI	3808
(AD-0.06 eV average translational energy of decomposition at threshold)					
$C_3H_3^+$	C_6H_6 (Benzene) (RN-CAS-Registry Number 71-43-2)	C_3H_3	13.79	PI	4075
(Corrected for kinetic shift)					
$C_3H_3^+$	$(CH_3)_2NCH=CHC \equiv CH$ (RN-CAS Registry Number 2206-24-8)	$C_2H_4 + HCN + H$	15.2	EI	3674
(TR-Other product(s) thermochemically reasonable)					
$C_3H_3^+$	$(C_2H_5)_2NCH=CHC \equiv CH$ (RN-CAS Registry Number 1809-53-6)		18.6	EI	3674
(TR-Other product(s) thermochemically reasonable)					
(OP-the other product(s) is(are): $2C_2H_2 + HCN + 3H_2$)					
$C_3H_4^+$	$CH_3C \equiv CH$ (RN-CAS Registry Number 74-99-7)	**	10.37	PE	4048
$C_3H_4^+$	$CH_3C \equiv CH$ (RN-CAS Registry Number 74-99-7)	**	10.5 ± 0.1	EI	3769
(TR-Other product(s) thermochemically reasonable)					
$C_3H_4^+$	$CH_2=C=CH_2$ (RN-CAS Registry Number 463-49-0)	**	10.017 ± 0.003	S	3774
(RS-Average of two Rydberg series limits)					

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3H_4^+$	$CH_2=C=CH_2$ (RN-CAS Registry Number 463-49-0)	**	10.07 (V)	PE	4019
$C_3H_4(^2B_2)$	C_3H_4 (Cyclopropene) (RN-CAS Registry Number 2781-85-3)	**	9.67	PE	3727
$C_3H_4(^2B_1)$	C_3H_4 (Cyclopropene) (RN-CAS Registry Number 2781-85-3)	**	9.86 (V)	PE	3505
$C_3H_4(^2B_1)$	C_3H_4 (Cyclopropene) (RN-CAS Registry Number 2781-85-3)	**	10.57	PE	3727
$C_3H_4(^2B_2)$	C_3H_4 (Cyclopropene) (RN-CAS Registry Number 2781-85-3)	**	11.02 (V)	PE	3505
$C_3H_4(^2A_1)$	C_3H_4 (Cyclopropene) (RN-CAS Registry Number 2781-85-3)	**	12.38	PE	3727
$C_3H_4(^2A_1)$	C_3H_4 (Cyclopropene) (RN-CAS Registry Number 2781-85-3)	**	12.7 (V)	PE	3505
$C_3H_4(^2B_2)$	C_3H_4 (Cyclopropene) (RN-CAS Registry Number 2781-85-3)	**	14.5	PE	3727
$C_3H_4(^2A_1)$	C_3H_4 (Cyclopropene) (RN-CAS Registry Number 2781-85-3)	**	16.2	PE	3727
$C_3H_4(^2B_1)$	C_3H_4 (Cyclopropene) (RN-CAS Registry Number 2781-85-3)	**	17.8	PE	3727
$C_3H_4(^2A_1)$	C_3H_4 (Cyclopropene) (RN-CAS Registry Number 2781-85-3)	**	19.2	PE	3727
$C_3H_5^+$	$(CH_3)_2C=CH_2$ (RN-CAS Registry Number 115-11-7) (AD-0.05 eV average translational energy of decomposition at threshold)	CH_3	11.8	EI	3808
$C_3H_5^+$	$1-C_4H_8$ (RN-CAS Registry Number 106-98-9) (AD-0.07 eV average translational energy of decomposition at threshold)	CH_3	11.8	EI	3808
$C_3H_5^+$	C_4H_8 (Cyclopropane, methyl-) (RN-CAS Registry Number 594-11-6)	CH_3	10.9	SD	3493
$C_3H_5^+$	$CH\equiv C(CH_2)_3CH_3$ (RN-CAS Registry Number 693-02-7)		14.09 ± 0.05	EI	3585
$C_3H_5^+$	$CH_3C\equiv CCH_2CH_2CH_3$ (RN-CAS Registry Number 764-35-2)		13.9 ± 0.01	EI	3585
$C_3H_5^+$	C_6H_{10} (Cyclohexene) (RN-CAS Registry Number 110-83-8)		13.68 ± 0.05	EI	3585
$C_3H_5^+$	$C_5H_8=CH_2$ (Cyclopentane, methylene-) (RN-CAS Registry Number 1528-30-9)		14.05 ± 0.05	EI	3585

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3H_5^+$	$C_5H_7CH_3$ (Cyclopentene, 1-methyl-) (RN-CAS Registry Number 693-89-0)		14.90 ± 0.1	EI	3585
$C_3H_5^+$	$(C_2H_5)_2S$ (RN-CAS Registry Number 352-93-2)	$CH_3SH + H$	12.41 ± 0.05	PI	4025
$C_3H_5^+$	$C_3H_6S_2$ (1,3-Dithiolane) (RN-CAS Registry Number 4829-04-3)	S_2H	10.8 ± 0.2	EI	3598
$C_3H_5^+$	$CH_2=CHCH_2CH_2Br$ (RN-CAS Registry Number 5162-44-7)	CH_2Br	12.6	EI	3900
$C_3H_5^+$	$CH_2=CH(CH_2)_3Br$ (RN-CAS Registry Number 1119-51-3)		12.2	EI	3900
$C_3H_5^+$	$C_6H_{11}Br$ (Cyclohexane, bromo-) (RN-CAS Registry Number 108-85-0)		12.52 ± 0.05	PI	4078
$C_3H_6^+$	C_3H_6 (RN-CAS Registry Number 115-07-1)	**	9.72	PE	3864
$C_3H_6^+$	C_3H_6 (RN-CAS Registry Number 115-07-1)	**	9.74	PE	3533
$C_3H_6^+$	C_3H_6 (RN-CAS Registry Number 115-07-1)	**	9.744 ± 0.003	PE	3957
$C_3H_6^+$	C_3H_6 (RN-CAS Registry Number 115-07-1)	**	9.86 (V)	PE	3950
$C_3H_6^+$	C_3H_6 (RN-CAS Registry Number 115-07-1)	**	9.9 (V)	PE	3940
$C_3H_6^+$	$n-C_4H_{10}$ (RN-CAS Registry Number 106-97-8)	CH_4	11.06	EI	3538
(PC-Appearance potential of the corresponding metastable transition)					
$C_3H_6^+$	$n-C_4H_{10}$ (RN-CAS Registry Number 106-97-8)	CH_4	11.56	EI	3538
(MT-Metastable transition(s) observed)					
$C_3H_6^+$	$(CH_3)_2C=CHCH_2$ (RN-CAS Registry Number 513-35-9)	C_2H_4	11.70 ± 0.11	EI	3544
(TR-Other product(s) thermochemically reasonable)					
$C_3H_6^+$	$CH_3CH_2CH_2CH=CH_2$ (RN-CAS Registry Number 109-67-1)	C_2H_4	11.61 ± 0.08	EI	3544
(TR-Other product(s) thermochemically reasonable)					
$C_3H_6^+$	$(CH_3)_2CHCH=CH_2$ (RN-CAS Registry Number 563-45-1)	C_2H_4	11.54 ± 0.10	EI	3544
(TR-Other product(s) thermochemically reasonable)					
$C_3H_6^+$	$C_2H_5C(CH_3)=CH_2$ (RN-CAS Registry Number 563-46-2)	C_2H_4	11.66 ± 0.06	EI	3544
(TR-Other product(s) thermochemically reasonable)					
$C_3H_6^+$	$cis-C_2H_5CH=CHCH_3$ (RN-CAS Registry Number 627-20-3)	C_2H_4	11.54 ± 0.02	EI	3544
(TR-Other product(s) thermochemically reasonable)					
$C_3H_6^+$	$trans-C_2H_5CH=CHCH_3$ (RN-CAS Registry Number 646-04-8)	C_2H_4	11.73 ± 0.11	EI	3544
(TR-Other product(s) thermochemically reasonable)					

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3H_6^+$	C_5H_{10} (Cyclopentane) (RN-CAS Registry Number 287-92-3) (TR-Other product(s) thermochemically reasonable)	C_2H_4	11.74 ± 0.07	EI	3544
$C_3H_6^+$	C_6H_{12} (Cyclohexane) (RN-CAS Registry Number 110-82-7)	C_3H_6	11.23 ± 0.04	PI	4078
$C_3H_6^+$	$n-C_3H_7OH$ (RN-CAS Registry Number 71-23-8)	H_2O	10.33 ± 0.03	EDD	3626
$C_3H_6^+$	$n-C_3H_7OH$ (RN-CAS Registry Number 71-23-8)	H_2O	10.3	EI	3916
$C_3H_6^+$	C_4H_6O (Cyclobutanone) (RN-CAS Registry Number 1191-95-3) (TR-Other product(s) thermochemically reasonable)	CO	9.85 ± 0.15	EDD	3794
$C_3H_6^+$	$iso-C_3H_7NO$ (RN-CAS Registry Number 920-40-1)	HNO	10.8 ± 0.1	EI	3602
$C_3H_6^+$	$iso-C_3H_7NO$ (RN-CAS Registry Number 920-40-1)		10.8 ± 0.1	EI	3654
$C_3H_7^+$	$n-C_4H_{10}$ (RN-CAS Registry Number 106-97-8) (PC-Appearance potential of the corresponding metastable transition)	CH_3	11.09	EI	3538
$C_3H_7^+$	$n-C_4H_{10}$ (RN-CAS Registry Number 106-97-8) (MT-Metastable transition(s) observed)	CH_3	11.53	EI	3538
$C_3H_7^+$	C_6H_{12} (Cyclohexane) (RN-CAS Registry Number 110-82-7)	C_3H_5	11.49 ± 0.03	PI	4078
$C_3H_7^+$	$iso-C_3H_7Cl$ (RN-CAS Registry Number 75-29-6)	Cl?	$11.3 \pm < 0.1$	EI	3735
$C_3H_7^+$	$iso-C_3H_7Br$ (RN-CAS Registry Number 75-26-3)	Br?	$10.7 \pm < 0.1$	EI	3735
$C_3H_7^+$	$iso-C_3H_7I$ (RN-CAS Registry Number 75-30-9)	I?	$10.0 \pm < 0.1$	EI	3735
$C_3H_8^+$	C_3H_8 (RN-CAS Registry Number 74-98-6)	**	11.5 (V)	PE	3710
$C_3H_8^+$	C_3H_8 (RN-CAS Registry Number 74-98-6)	**	11.27 ± 0.05	DC	3791
$C_4H_2^+$	$HC \equiv CC \equiv CH$ (RN-CAS Registry Number 460-12-8)	**	10.17	PE	4048
$C_4H_3^+$	$(CH_3)_2NCH=CHC \equiv CH$ (RN-CAS Registry Number 2206-24-8) (TR-Other product(s) thermochemically reasonable) (OP-the other product(s) is(are): <i>cyclo</i> -(CH_2) ₂ N + H_2)		14.4	EI	3674

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_4H_3^+$	$C_4H_8NCH=CHC\equiv CH$ (Pyrrolidine, 1-(1-buten-3-ynyl)-) (RN-CAS Registry Number 19352-85-3) (TR-Other product(s) thermochemically reasonable) (OP-the other product(s) is(are): $cyclo-(CH_2)_2N + C_2H_4$)		15.2	EI	3674
$C_4H_3^+$	$(C_2H_5)_2NCH=CHC\equiv CH$ (RN-CAS Registry Number 1809-53-6) (TR-Other product(s) thermochemically reasonable) (OP-the other product(s) is(are): $CH_2=NH + C_2H_4 + CH_3$)		15.0	EI	3674
$C_4H_4^+$	$CH_2=CHC\equiv CH$ (RN-CAS Registry Number 689-97-4)	**	9.63	PE	3997
$C_4H_4^+$	$CH_2=CHC\equiv CH$ (RN-CAS Registry Number 689-97-4)	**	9.9	EI	3767
$C_4H_4^+$	C_6H_6 (Benzene) (RN-CAS-Registry Number 71-43-2) (Corrected for kinetic shift)	C_2H_2	13.85	PI	4075
$C_4H_4^+$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2) (PC-Appearence potential of the corresponding metastable transition)	C_2H_2	14.1	EI	3488
$C_4H_4^+$	$(CH_3)_2NCH=CHC\equiv CH$ (RN-CAS Registry Number 2206-24-8) (TR-Other product(s) thermochemically reasonable)	$CH_2=NH + CH_3$	13.4	EI	3674
$C_4H_4^+$	$C_4H_8NCH=CHC\equiv CH$ (Pyrrolidine, 1-(1-buten-3-ynyl)-) (RN-CAS Registry Number 19352-85-3) (TR-Other product(s) thermochemically reasonable) (OP-the other product(s) is(are): $CH_2N=CH_2 + C_2H_2 + H$)		13.7	EI	3674
$C_4H_6^+$	$CH_2=CHCH=CH_2$ (RN-CAS Registry Number 106-99-0) (<i>trans</i> -conformer)	**	9.03	PE	3847
$C_4H_6^+$	$CH_3C\equiv CCH_3$ (RN-CAS Registry Number 503-17-3)	**	9.59	PE	4048
$C_4H_6^+$	$CH_2=C=CHCH_3$ (RN-CAS Registry Number 590-19-2)	**	9.33 (V)	PE	4019
$C_4H_6^+$	$CH\equiv C(CH_2)_3CH_3$ (RN-CAS Registry Number 693-02-7)	C_2H_4	11.08 ± 0.05	EI	3585
$C_4H_6^+$	$CH_3C\equiv CCH_2CH_2CH_3$ (RN-CAS Registry Number 764-35-2)	C_2H_4	11.02 ± 0.05	EI	3585
$C_4H_6^+$	C_6H_{10} (Cyclohexene) (RN-CAS Registry Number 110-83-8)	C_2H_4	11.91 ± 0.05	EI	3585
$C_4H_6^+$	$C_5H_8=CH_2$ (Cyclopentane, methylene-) (RN-CAS Registry Number 1528-30-9)	C_2H_4	12.32 ± 0.05	EI	3585
$C_4H_6^+$	$C_5H_7CH_3$ (Cyclopentene, 1-methyl-) (RN-CAS Registry Number 693-89-0)	C_2H_4	12.33 ± 0.05	EI	3585

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_4H_6^+$	$C_6H_{11}Cl$ (Cyclohexane, chloro-) (RN-CAS Registry Number 542-18-7)		11.07 ± 0.03	PI	4078
$C_4H_7^+$	$CH_3CH_2CH_2CH=CH_2$ (RN-CAS Registry Number 109-67-1) (TR-Other product(s) thermochemically reasonable)	CH_3	11.35 ± 0.07	EI	3544
$C_4H_7^+$	$(CH_3)_2C=CHCH_3$ (RN-CAS Registry Number 513-35-9) (TR-Other product(s) thermochemically reasonable)	CH_3	11.33 ± 0.12	EI	3544
$C_4H_7^+$	$(CH_3)_2CHCH=CH_2$ (RN-CAS Registry Number 563-45-1) (TR-Other product(s) thermochemically reasonable)	CH_3	11.15 ± 0.12	EI	3544
$C_4H_7^+$	$C_2H_5C(CH_3)=CH_2$ (RN-CAS Registry Number 563-46-2) (TR-Other product(s) thermochemically reasonable)	CH_3	11.34 ± 0.07	EI	3544
$C_4H_7^+$	<i>cis</i> - $C_2H_5CH=CHCH_3$ (RN-CAS Registry Number 627-20-3) (TR-Other product(s) thermochemically reasonable)	CH_3	11.24 ± 0.02	EI	3544
$C_4H_7^+$	<i>trans</i> - $C_2H_5CH=CHCH_3$ (RN-CAS Registry Number 646-04-8) (TR-Other product(s) thermochemically reasonable)	CH_3	11.35 ± 0.03	EI	3544
$C_4H_7^+$	C_5H_{10} (Cyclopentane) (RN-CAS Registry Number 287-92-3) (TR-Other product(s) thermochemically reasonable)	CH_3	11.36 ± 0.08	EI	3544
$C_4H_7^+$	C_6H_{12} (Cyclohexane) (RN-CAS Registry Number 110-82-7)	C_2H_5	11.21 ± 0.04	PI	4078
$C_4H_7^+$	$C_6H_{11}Cl$ (Cyclohexane, chloro-) (RN-CAS Registry Number 542-18-7)		11.52 ± 0.05	PI	4078
$C_4H_7^+$	$CH_2=CHCH_2CH_2Br$ (RN-CAS Registry Number 5162-44-7)	Br	10.6	EI	3900
$C_4H_7^+$	$C_6H_{11}Br$ (Cyclohexane, bromo-) (RN-CAS Registry Number 108-85-0)		11.54 ± 0.02	PI	4078
$C_4H_8^+$	$1-C_4H_8$ (RN-CAS Registry Number 106-98-9)	**	9.72 (V)	PE	3950
$C_4H_8^+$	$1-C_4H_8$ (RN-CAS Registry Number 106-98-9)	**	9.625 ± 0.003	PE	3957
$C_4H_8^+$	<i>iso</i> - C_4H_8 (RN-CAS Registry Number 115-11-7)	**	9.21	PE	3533
$C_4H_8^+$	<i>iso</i> - C_4H_8 (RN-CAS Registry Number 115-11-7)	**	9.239 ± 0.003	PE	3957
$C_4H_8^+$	<i>cis</i> -2- C_4H_8 (RN-CAS Registry Number 590-18-1)	**	9.07	PE	3533
$C_4H_8^+$	<i>cis</i> -2- C_4H_8 (RN-CAS Registry Number 590-18-1)	**	9.124 ± 0.005	PE	3957
$C_4H_8^+$	<i>cis</i> -2- C_4H_8 (RN-CAS Registry Number 590-18-1)	**	9.29 (V)	PE	4084

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_4H_8^+$	<i>trans</i> -2- C_4H_8 (RN-CAS Registry Number 624-64-6)	**	9.11 (V)	PE	3649
$C_4H_8^+$	<i>trans</i> -2- C_4H_8 (RN-CAS Registry Number 624-64-6)	**	9.09	PE	3533
$C_4H_8^+$	<i>trans</i> -2- C_4H_8 (RN-CAS Registry Number 624-64-6)	**	9.122±0.005	PE	3957
$C_4H_8^+$	<i>trans</i> -2- C_4H_8 (RN-CAS Registry Number 624-64-6)	**	9.32 (V)	PE	4084
$C_4H_8^+$	C_4H_8 (Cyclobutane) (RN-CAS Registry Number 287-23-0)	**	9.92±0.05	PE	3757
$C_4H_8^+$	C_4H_8 (Cyclobutane) (RN-CAS Registry Number 287-23-0)	**	10.7±0.1 (V)	PE	4037
$C_4H_8^+$	C_4H_8 (Cyclopropane, methyl-) (RN-CAS Registry Number 594-11-6)	**	9.9±0.2	SD	3493
$C_4H_8^+$	C_6H_{12} (Cyclohexane) (RN-CAS Registry Number 110-82-7)	C_2H_4	11.08±0.01	PI	4078
$C_4H_8^+$	$C_6H_{11}Cl$ (Cyclohexane, chloro-) (RN-CAS Registry Number 542-18-7)		10.2±0.01	PI	4078
$C_4H_9^+$	<i>tert</i> - C_4H_9NO (RN-CAS Registry Number 917-95-3)	NO	8.9±0.1	EI	3602
$C_4H_9^+$	<i>tert</i> - C_4H_9NO (RN-CAS Registry Number 917-95-3)		8.9±0.1	EI	3654
$C_4H_9^+$	$C_6H_{11}Cl$ (Cyclohexane, chloro-) (RN-CAS Registry Number 542-18-7)		10.56±0.02	PI	4078
$C_4H_9^+$	$(CH_3)_3CGe(CH_3)_3$ (RN-CAS Registry Number 1184-91-4)	$(CH_3)_3Ge$	10.19±0.27	EI	3548
$C_4H_9^+$	$(CH_3)_3CSn(CH_3)_3$ (RN-CAS Registry Number 3531-47-3)	$(CH_3)_3Sn$	10.03±0.23	EI	3548
$C_4H_9^+$	$(CH_3)_3CPb(CH_3)_3$ (RN-CAS Registry Number 32997-03-8)	$(CH_3)_3Pb$	9.45±0.15	EI	3548
$C_4H_{10}^+$	<i>n</i> - C_4H_{10} (RN-CAS Registry Number 106-97-8)	**	10.87±0.05	DC	3791
$C_4H_{10}^+$	<i>n</i> - C_4H_{10} (RN-CAS Registry Number 106-97-8)	**	10.89	EI	3538
$C_4H_{10}^+$	<i>iso</i> - C_4H_{10} (RN-CAS Registry Number 75-28-5)	**	11.4 (V)	PE	3710
$C_4H_{10}^+$	<i>iso</i> - C_4H_{10} (RN-CAS Registry Number 75-28-5)	**	10.74±0.05	DC	3791
$C_5H_4^+$	$CH_3C\equiv CC\equiv CH$ (RN-CAS Registry Number 4911-55-1)	**	9.51	PE	4048

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_5H_5^+$	$C_6H_4ClCH_3$ (Benzene, 1-chloro-2-methyl-) (RN-CAS Registry Number 95-49-8)		15.67 ± 0.015	EI	3777
$C_5H_5^+$	$C_6H_4ClCH_3$ (Benzene, 1-chloro-3-methyl-) (RN-CAS Registry Number 108-41-8)		15.71 ± 0.15	EI	3777
$C_5H_5^+$	$C_6H_4ClCH_3$ (Benzene, 1-chloro-4-methyl-) (RN-CAS Registry Number 106-43-4)		15.66 ± 0.15	EI	3777
$C_5H_5^+$	$C_6H_4BrCH_3$ (Benzene, 1-bromo-2-methyl-) (RN-CAS Registry Number 95-46-5)		15.19 ± 0.15	EI	3777
$C_5H_5^+$	$C_6H_4BrCH_3$ (Benzene, 1-bromo-3-methyl-) (RN-CAS Registry Number 591-17-3)		15.20 ± 0.15	EI	3777
$C_5H_5^+$	$C_6H_4BrCH_3$ (Benzene, 1-bromo-4-methyl-) (RN-CAS Registry Number 106-38-7)		15.23 ± 0.15	EI	3777
$C_5H_5^+$	$C_6H_4ICH_3$ (Benzene, 1-iodo-2-methyl-) (RN-CAS Registry Number 615-37-2)		14.34 ± 0.15	EI	3777
$C_5H_5^+$	$C_6H_4ICH_3$ (Benzene, 1-iodo-3-methyl-) (RN-CAS Registry Number 625-95-6)		14.47 ± 0.15	EI	3777
$C_5H_5^+$	$C_6H_4ICH_3$ (Benzene, 1-iodo-4-methyl-) (RN-CAS Registry Number 624-31-7)		14.66 ± 0.15	EI	3777
$C_5H_6^+$	$CH_2=C(CH_3)C\equiv CH$ (RN-CAS Registry Number 78-80-8)	**	10.1	EI	3767
$C_5H_6^+$	$CH_2=CHC\equiv CCH_3$ (RN-CAS Registry Number 646-05-9)	**	9.4	EI	3767
$C_5H_6^+$	$CH_3CH=CHC\equiv CH$ (RN-CAS Registry Number 2206-23-7)	**	8.5	EI	3767
$C_5H_6^+$	C_5H_6 (Cyclopentadiene) (RN-CAS Registry Number 26912-33-4)	**	8.56 ± 0.01	EM	3535
$C_5H_6^+$	C_5H_6 (1,3-Cyclopentadiene) (RN-CAS Registry Number 542-92-7)	**	9.0	EI	3476
$C_5H_6^+$	$C_3H_5C\equiv CH$ (Cyclopropane, ethynyl-) (RN-CAS Registry Number 6746-94-7)	**	9.58 (V)	PE	3997
$C_5H_6^+$	C_7H_{10} (Bicyclo[2.2.1]hept-2-ene) (RN-CAS Registry Number 498-66-8) (ON-Other name: 2-Norbornene)	C_2H_4	9.22 ± 0.01	EM	3535

(MT-Metastable transition(s) observed)

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_5H_6^+$	C_7H_{10} (Tricyclo[2.2.1.0 ^{2,6}]heptane (RN-CAS Registry Number 279-19-6) (ON-Other name: Nortricyclene)	C_2H_4	9.44 ± 0.01	EM	3535
(MT-Metastable transition(s) observed)					
$C_5H_6^+$	$C_6H_5NH_2$ (Benzenamine) (RN-CAS Registry Number 62-53-3)	HCN	12.13 ± 0.06	EDD	3784
(MT-Metastable transition(s) observed)					
$C_5H_6^+$	$C_6H_5NH_2$ (Benzenamine) (RN-CAS Registry Number 62-53-3)		$12.04 \pm <0.1$	EI	3735
$C_5H_6^+$	C_6H_5OH (Phenol) (RN-CAS Registry Number 108-95-2)	CO	12.45 ± 0.1	EI	3817
$C_5H_6^+$	C_6H_5SH (Benzenethiol) (RN-CAS Registry Number 108-98-5)	CS	12.18 ± 0.1	EI	3817
$C_5H_6^+$	C_7H_9Br (bicyclo[2.2.1]hept-2-ene, 5-bromo-, <i>exo</i> -) (RN-CAS Registry Number 5810-82-2)	C_2H_3Br	10.0	EI	3900
$C_5H_6^+$	C_7H_9Br (Bicyclo[2.2.1]hept-2-ene, 5-bromo-, <i>endo</i> -) (RN-CAS Registry Number 5810-82-2)	C_2H_3Br	10.0	EI	3900
$C_5H_7^+$	$CH \equiv C(CH_2)_3CH_3$ (RN-CAS Registry Number 693-02-7)	CH_3	10.87 ± 0.05	EI	3585
$C_5H_7^+$	$CH_3C \equiv CCH_2CH_2CH_3$ (RN-CAS Registry Number 764-35-2)	CH_3	10.63 ± 0.05	EI	3585
(MT-Metastable transition(s) observed)					
$C_5H_7^+$	C_6H_{10} (Cyclohexene) (RN-CAS Registry Number 110-83-8)	CH_3	11.22 ± 0.05	EI	3585
(MT-Metastable transition(s) observed)					
$C_5H_7^+$	$C_5H_8=CH_2$ (Cyclopentane, methylene-) (RN-CAS Registry Number 1528-30-9)	CH_3	11.71 ± 0.05	EI	3585
(MT-Metastable transition(s) observed)					
$C_5H_7^+$	$C_5H_7CH_3$ (Cyclopentene, 1-methyl-) (RN-CAS Registry Number 693-89-0)	CH_3	11.59 ± 0.05	EI	3585
(MT-Metastable transition(s) observed)					
$C_5H_7^+$	$C_{10}H_{16}$ (4,7-Methano-1 <i>H</i> -indene, octahydro-, (3 α ,4 β ,7 β ,7 α)-) (RN-CAS Registry Number 2825-82-3) (ON-Other name: <i>exo</i> -Tricyclo[5.2.1.0 ^{2,6}]decane)		10.0 ± 0.1	PI	3918
$C_5H_7^+$	$C_{10}H_{15}CH_3$ (RN-CAS Registry Number XXXXX-XX-X) (ON-Other name: 2-Methyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		$\leq 10.2 \pm 0.1$	PI	3918

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_5H_7^+$	$C_{10}H_{15}CH_3$ (4,7-Methano-1 <i>H</i> -indene, octahydro-2-methyl, (2 α ,3 $\alpha\beta$,4 α ,7 α ,7 $\alpha\beta$)-) (RN-CAS Registry Number 50745-90-9) (ON-Other name: <i>cis</i> -4-Methyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		$> 10.2 \pm 0.1$	PI	3918
$C_5H_7^+$	$C_{10}H_{15}CH_3$ (4,7-Methano-1 <i>H</i> -indene, octahydro-8-methyl-, stereoisomer) (RN-CAS Registry Number 50745-92-1) (ON-Other name: <i>anti</i> -10-Methyl- <i>endo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		$> 10.5 \pm 0.1$	PI	3918
$C_5H_7^+$	$C_{10}H_{15}C_2H_5$ (4,7-Methano-1 <i>H</i> -indene, 5-ethyloctahydro-, (3 $\alpha\alpha$,4 β ,5 α ,7 β ,7 $\alpha\alpha$)-) (RN-CAS Registry Number 32787-97-6) (ON-Other name: <i>endo</i> -8-Ethyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		$> 10.2 \pm 0.1$	PI	3918
$C_5H_7^+$	$C_6H_{11}Cl$ (Cyclohexane, chloro-) (RN-CAS Registry Number 542-18-7)		10.67 ± 0.05	PI	4078
$C_5H_8^+$	$CH_2=C(CH_3)CH=CH_2$ (RN-CAS Registry Number 78-79-5)	**	8.89	PE	3847
$C_5H_8^+$	$CH_2=C(CH_3)CH+CH_2$ (RN-CAS Registry Number 78-79-5)	**	9.04 (V)	PE	3892
$C_5H_8^+$	$CH_2=CHCH_2CH=CH_2$ (RN-CAS Registry Number 591-93-5)	**	9.62 ± 0.02	PE	4010
$C_5H_8^+$	$CH_3CH=C=CHCH_3$ (RN-CAS Registry Number 591-96-8)	**	9.13 (V)	PE	4019
$C_5H_8^+$	$(CH_3)_2C=C=CH_2$ (RN-CAS Registry Number 598-25-4)	**	8.95 (V)	PE	4019
$C_5H_8^+$	<i>trans</i> - $CH_2=CHCH=CHCH_3$ (RN-CAS Registry Number 2004-70-8)	**	8.61	PE	3847
$C_5H_8^+$	C_5H_8 (Cyclopropane, ethenyl-) (RN-CAS Registry Number 693-86-7)	**	9.1 (V)	PE	4034
$C_5H_8(^2A')$	$C_3H_5C_2H_3$ (Cyclopropane, ethenyl-) (RN-CAS Registry Number 693-86-7)	**	9.2	PE	3576
$C_5H_8(^2A')$	$C_3H_5C_2H_3$ (Cyclopropane, ethenyl-) (RN-CAS Registry Number 693-86-7)	**	10.7	PE	3576
$C_5H_8(^2A')$	$C_3H_5C_2H_3$ (Cyclopropane, ethenyl-) (RN-CAS Registry Number 693-86-7)	**	11.7	PE	3576
$C_5H_9^+$	C_6H_{12} (Cyclohexane) (RN-CAS Registry Number 110-82-7)	CH_3	11.07 ± 0.04	PI	4078
$C_5H_9^+$	$C_{10}H_{16}$ (4,7-Methano-1 <i>H</i> -indene, octahydro-, (3 $\alpha\alpha$,4 β ,7 β ,7 $\alpha\alpha$)-) (RN-CAS Registry Number 2825-82-3) (ON-Other name: <i>exo</i> -Tricyclo[5.2.1.0 ^{2,6}]decane)		10.5 ± 0.1	PI	3918
$C_5H_9^+$	$C_6H_{11}Cl$ (Cyclohexane, chloro-) (RN-CAS Registry Number 542-18-7)		11.01 ± 0.02	PI	4078

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3H_5^+$	$CH_2=CH(CH_2)_3Br$ (RN-CAS Registry Number 1119-51-3)	Br	10.2	EI	3900
$C_3H_{10}^+$	$(CH_3)_2C=CHCH_3$ (RN-CAS Registry Number 513-35-9)	**	8.682 ± 0.003	PE	3957
$C_3H_{10}^+$	$(CH_3)_2C=CHCH_3$ (RN-CAS Registry Number 513-35-9)	**	8.72	PE	3533
$C_3H_{10}^+$	$(CH_3)_2C=CHCH_3$ (RN-CAS Registry Number 513-35-9)	**	8.83 ± 0.11	EI	3544
$C_3H_{10}^+$	$(CH_3)_2CHCH=CH_2$ (RN-CAS Registry Number 563-45-1)	**	9.533 ± 0.003	PE	3957
$C_3H_{10}^+$	$(CH_3)_2CHCH=CH_2$ (RN-CAS Registry Number 563-45-1)	**	9.60 ± 0.03	EI	3544
$C_3H_{10}^+$	$C_2H_5C(CH_3)=CH_2$ (RN-CAS Registry Number 563-46-2)	**	9.148 ± 0.003	PE	3957
$C_3H_{10}^+$	$C_2H_5C(CH_3)=CH_2$ (RN-CAS Registry Number 563-46-2)	**	9.35 ± 0.08	EI	3544
$C_3H_{10}^+$	$1-C_5H_{10}$ (RN-CAS Registry Number 109-67-1)	**	9.54 ± 0.02 (V)	PE	4010
$C_3H_{10}^+$	$1-C_5H_{10}$ (RN-CAS Registry Number 109-67-1)	**	9.82 ± 0.06	EI	3544
$C_3H_{10}^+$	$1-C_5H_{10}$ (RN-CAS Registry Number 109-67-1)	**	9.524 ± 0.003	PE	3957
$C_3H_{10}^+$	<i>cis</i> -2- C_5H_{10} (RN-CAS Registry Number 627-20-3)	**	9.23 ± 0.02	EI	3544
$C_3H_{10}^+$	<i>cis</i> -2- C_5H_{10} (RN-CAS Registry Number 627-20-3)	**	9.036 ± 0.005	PE	3957
$C_3H_{10}^+$	<i>trans</i> -2- C_5H_{10} (RN-CAS Registry Number 646-04-8)	**	9.32 ± 0.03	EI	3544
$C_3H_{10}^+$	<i>trans</i> -2- C_5H_{10} (RN-CAS Registry Number 646-04-8)	**	9.036 ± 0.005	PE	3957
$C_3H_{10}^+$	C_5H_{10} (Cyclopentane) (RN-CAS-Registry Number 287-92-3)	**	10.40	PE	4056
$C_3H_{10}^+$	C_5H_{10} (Cyclopentane) (RN-CAS Registry Number 287-92-3)	**	10.91 ± 0.07	EI	3544
$C_3H_{11}^+$	<i>tert</i> - $C_5H_{11}NO$ (RN-CAS Registry Number 34946-78-6)	NO	8.7 ± 0.1	EI	3602
$C_3H_{11}^+$	<i>tert</i> - $C_5H_{11}NO$ (RN-CAS Registry Number 34946-78-6)		8.7 ± 0.1	EI	3654
$C_3H_{12}^+$	<i>n</i> - C_5H_{12} (RN-CAS-Registry Number 109-66-0)	**	10.36	PE	4056
$C_3H_{12}^+$	<i>n</i> - C_5H_{12} (RN-CAS Registry Number 109-66-0)	**	10.59 ± 0.05	DC	3791
$C_3H_{12}^+$	<i>iso</i> - C_5H_{12} (RN-CAS Registry Number 78-78-4)	**	10.50 ± 0.05	DC	3791
$C_3H_{12}^+$	<i>neo</i> - C_5H_{12} (RN-CAS Registry Number 463-82-1)	**	10.25 ± 0.1	PE	3677

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3H_{12}^+$	<i>neo</i> - C_5H_{12} (RN-CAS Registry Number 463-82-1)	**	10.21 ± 0.04	PE	3880
$C_3H_{12}^+$	<i>neo</i> - C_5H_{12} (RN-CAS Registry Number 463-82-1)	**	11.3 (V)	PE	3710
$C_3H_{12}^+$	<i>neo</i> - C_5H_{12} (RN-CAS Registry Number 463-82-1)	**	~ 11.3 (V)	PE	4050
(JC-Mean value of Jahn-Teller components)					
$C_6H_2^+$	$HC \equiv CC \equiv CC \equiv CH$ (RN-CAS Registry Number 3161-99-7)	**	9.50	PE	4048
$C_6H_4^+$	C_6H_4 (1,3-Cyclohexadien-5-yne) (RN-CAS Registry Number 462-80-6)	**	9.75 ± 0.2	RPD	3583
$C_6H_4^+$	C_6H_6 (Benzene) (RN-CAS-Registry Number 71-43-2)	H_2	12.94	PI	4075
(Corrected for kinetic shift)					
$C_6H_4^+$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	H_2	14.04 ± 0.06	EDD	3784
(MT-Metastable transition(s) observed)					
$C_6H_4^+$	C_6H_5CN (Benzonitrile) (RN-CAS Registry Number 100-47-0)	HCN	13.80 ± 0.06	EDD	3784
(MT-Metastable transition(s) observed)					
$C_6H_4^+$	C_6H_5CN (Benzonitrile) (RN-CAS Registry Number 100-47-0)		$13.92 \pm < 0.1$	EI	3735
$C_6H_5^+$	C_6H_5 (Phenyl) (RN-CAS Registry Number 2396-01-2)	**	8.1 ± 0.1	PI	3752
(RD-Radical)					
$C_6H_5^+$	$CH \equiv CCH_2CH_2C \equiv CH$ (RN-CAS Registry Number 628-16-0)	H	10.21 ± 0.03	EI	3790
$C_6H_5^+$	C_6H_6 (Benzene) (RN-CAS-Registry Number 71-43-2)	H	12.94	PI	4075
(Corrected for kinetic shift)					
$C_6H_5^+$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	H	13.97 ± 0.06	EDD	3784
$C_6H_5^+$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	H	$14.05 \pm < 0.1$	EI	3735
$C_6H_5^+$	C_6H_5CHO (Benzaldehyde) (RN-CAS Registry Number 100-52-7)	CO + H	14.11	EI	3792
(TR-Other product(s) thermochemically reasonable)					

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_5^+$	$C_6H_5COCH_3$ (Ethanone, 1-phenyl-) (RN-CAS Registry Number 98-86-2) (TR-Other product(s) thermochemically reasonable)	$CO + CH_3$	13.28	EDD	3626
$C_6H_5^+$	$C_6H_5COCH_3$ (Ethanone, 1-phenyl-) (RN-CAS Registry Number 98-86-2) (TR-Other product(s) thermochemically reasonable)	$CO + CH_3$	13.97	EI	3792
$C_6H_5^+$	$(C_6H_5)_2CO$ (Methanone, diphenyl-) (RN-CAS Registry Number 119-61-9) (TR-Other product(s) thermochemically reasonable)	$C_6H_5 + CO$	15.67	EI	3792
$C_6H_5^+$	C_6H_5COOH (Benzoic acid) (RN-CAS Registry Number 65-85-0) (MT-Metastable transition(s) observed)	$CO + OH$	15.08 ± 0.2	EI	3973
$C_6H_5^+$	C_6H_5COOH (Benzoic acid) (RN-CAS Registry Number 65-85-0) (TR-Other product(s) thermochemically reasonable)	$CO + OH$	15.08	EI	3792
$C_6H_5^+$	$C_6H_5COOCH_3$ (Benzoic acid methyl ester) (RN-CAS Registry Number 93-58-3) (TR-Other product(s) thermochemically reasonable)	$CH_3O + CO$	13.82	EDD	3626
$C_6H_5^+$	$C_6H_5COOCH_3$ (Benzoic acid methyl ester) (RN-CAS Registry Number 93-58-3) (TR-Other product(s) thermochemically reasonable)	$CH_3O + CO$	14.74	EI	3792
$C_6H_5^+$	C_6H_5NO (Benzene, nitroso-) (RN-CAS Registry Number 586-96-9)	NO	11.0 ± 0.1	EI	3602
$C_6H_5^+$	C_6H_5NO (Benzene, nitroso-) (RN-CAS Registry Number 586-96-9)		11.0 ± 0.1	EI	3654
$C_6H_5^+$	$C_6H_5CONH_2$ (Benzamide) (RN-CAS Registry Number 55-21-0) (TR-Other product(s) thermochemically reasonable)	$NH_2 + CO$	14.21	EI	3792
$C_6H_5^+$	$C_6H_5NO_2$ (Benzene, nitro-) (RN-CAS Registry Number 98-95-3)	NO_2	11.93 ± 0.1	EI	3447
$C_6H_5^+$	C_6H_5Cl (Benzene, chloro-) (RN-CAS Registry Number 108-90-7)	Cl	12.81	EDD	3626
$C_6H_5^+$	C_6H_5COCl (Benzoyl chloride) (RN-CAS Registry Number 98-88-4) (TR-Other product(s) thermochemically reasonable)	$Cl + CO$	13.81	EI	3792
$C_6H_5^+$	C_6H_5Br (Benzene, bromo-) (RN-CAS Registry Number 108-86-1)	Br	11.82	EDD	3626

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_5^+$	C_6H_5I (Benzene, iodo-) (RN-CAS Registry Number 591-50-4)	I	11.34	EDD	3626
$C_6H_3D_2^+$	$CD\equiv CCH_2CH_2C\equiv CD$ (RN-CAS Registry Number XXXXX-XX-X)	H	10.18 ± 0.03	EI	3790
$C_6H_6^+$	$CH\equiv CCH_2CH_2C\equiv CH$ (RN-CAS Registry Number 628-16-0)	**	9.87 ± 0.03	EI	3790
$C_6H_6^+$	$CH_3C\equiv CC\equiv CCH_3$ (RN-CAS Registry Number 2809-69-0)	**	8.91	PE	4048
$C_6H_6^+$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	9.2	PI	3586
$C_6H_6(^2E_{1g})$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	9.2 (V)	PE	3528
$C_6H_6^+$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	9.24	PE	3519
$C_6H_6(^2E_{1g})$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	9.24 (V)	PE	3513
$C_6H_6(^2E_{1g})$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	9.24 (V)	PE	3673
$C_6H_6^+$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	9.24 (V)	PE	3898
$C_6H_6^+$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	9.25 ± 0.03 (V)	PE	3713
$C_6H_6(^2E_{1g})$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	9.25	PE	3520
$C_6H_6(^2E_{1g})$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	9.27	PE	3658
$C_6H_6(^2E_{2g})$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	11.7 (V)	PE	3673
$C_6H_6(^2A_{2u})$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	12.35 (V)	PE	3673
$C_6H_6(^2E_{1u})$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	13.9 (V)	PE	3673
$C_6H_6(^2B_{2u})$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	14.7 (V)	PE	3673

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_6(^2B_{1u})$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	15.4 (V)	PE	3673
$C_6H_6(^2A_{1g})$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	16.84 (V)	PE	3673
$C_6H_6(^2E_{2g})$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	19.0 (V)	PE	3673
$C_6H_6^+$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	9.20 ± 0.1	EDD	3624
$C_6H_6^+$	C_6H_6 (Benzene) (RN-CAS Registry Number 71-43-2)	**	9.25	CTS	3922
$C_6H_6^+$	C_8H_8 (Pentacyclo[4.2.0.0 ^{2,5} .0 ^{3,8} .0 ^{4,7}]octane) (RN-CAS Registry Number 277-10-1)		$9.2 \pm < 0.1$	EI	3735
$C_6H_6^+$	$C_6H_5OCH_3$ (Benzene, methoxy-) (RN-CAS Registry Number 100-66-3)	CH_2O	11.27 ± 0.1	EI	3446
$C_6H_6^+$	$C_6H_5OCH_3$ (Benzene, methoxy-) (RN-CAS Registry Number 100-66-3)	$HCHO$	11.50	EI	3845
$C_6H_6^+$	$C_6H_5OCH_3$ (Benzene, methoxy-) (RN-CAS Registry Number 100-66-3)		$11.55 \pm < 0.1$	EI	3735
$C_6H_6^+$	$C_6H_6Cr(CO)_3$ (Chromium, (η^6 -benzene)tricarbonyl-) (RN-CAS Registry Number 12082-08-5)		9.49 ± 0.1	EI	3788
$C_6H_4D_2^+$	$CD \equiv CCH_2CH_2C \equiv CD$ (RN-CAS Registry Number XXXXX-XX-X)	**	9.97 ± 0.06	EI	3790
$C_6H_7^+$	C_7H_{10} (Bicyclo[2.2.1]hept-2-ene) (RN-CAS Registry Number 498-66-8) (ON-Other name: 2-Norbornene)	CH_3	10.46 ± 0.01	EM	3535
$C_6H_7^+$	C_7H_{10} (Tricyclo[2.2.1.0 ^{2,6}]heptane) (RN-CAS Registry Number 279-19-6) (ON-Other name: Nortricyclene)	CH_3	10.17 ± 0.01	EM	3535
$C_6H_8^+$	<i>cis</i> - $CH_2=CHCH=CHCH=CH_2$ (RN-CAS Registry Number 2612-46-6)	**	8.32	PE	3847
$C_6H_8^+$	<i>trans</i> - $CH_2=CHCH=CHCH=CH_2$ (RN-CAS Registry Number 821-07-8)	**	8.29	PE	3847

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_8^+$	$C_4H_7C\equiv CH$ (Cyclobutane, ethynyl-) (RN-CAS Registry Number 50786-62-4)	**	10.02 (V)	PE	3997
$C_6H_8^+$	$C_5H_5CH_3$ (1,3-Cyclopentadiene, methyl-) (RN-CAS Registry Number 26519-91-5)	**	8.28 ± 0.05 (V)	PE	3688
$C_6H_8^+$	$C_{10}H_{16}$ (4,7-Methano-1 <i>H</i> -indene, octahydro-, (3 α ,4 β ,7 β ,7 α)-) (RN-CAS Registry Number 2825-82-3) (ON-Other name: <i>exo</i> -Tricyclo[5.2.1.0 ^{2,6}]decane)		9.9 ± 0.1	PI	3918
$C_6H_9^+$	$CH\equiv C(CH_2)_3CH_3$ (RN-CAS Registry Number 693-02-7)	H	10.75 ± 0.05	EI	3585
$C_6H_9^+$	$CH_3C\equiv CCH_2CH_2CH_3$ (RN-CAS Registry Number 764-35-2)	H	10.81 ± 0.05	EI	3585
$C_6H_9^+$	C_6H_{10} (Cyclohexene) (RN-CAS Registry Number 110-83-8)	H	11.8 ± 0.05	EI	3585
$C_6H_9^+$	$C_5H_8=CH_2$ (Cyclopentane, methylene-) (RN-CAS Registry Number 1528-30-9)	H	12.13 ± 0.05	EI	3585
$C_6H_9^+$	$C_5H_7CH_3$ (Cyclopentene, 1-methyl-) (RN-CAS Registry Number 693-89-0)	H	11.97 ± 0.05	EI	3585
$C_6H_9^+$	$C_{10}H_{15}CH_3$ (4,7-Methano-1 <i>H</i> -indene, octahydro-8-methyl, stereoisomer) (RN-CAS Registry Number 50745-92-1) (ON-Other name: <i>anti</i> -10-Methyl- <i>endo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		9.5 ± 0.1	PI	3918
$C_6H_9^+$	$C_{10}H_{15}C_2H_5$ (4,7-Methano-1 <i>H</i> -indene, 5-ethyloctahydro-, (3 α ,4 β ,5 α ,7 β ,7 α)-) (RN-CAS Registry Number 32787-97-6) (ON-Other name: <i>endo</i> -8-Ethyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		$\leq 10.2\pm 0.1$	PI	3918
$C_6H_9^+$	$C_6H_{11}Cl$ (Cyclohexane, chloro-) (RN-CAS Registry Number 542-18-7)		10.40 ± 0.02	PI	4078
$C_6H_{10}^+$	$CH_2=C(CH_3)C(CH_3)=CH_2$ (RN-CAS Registry Number 513-81-5)	**	8.62	PE	3847
$C_6H_{10}^+$	$CH_2=C(CH_3)C(CH_3)=CH_2$ (RN-CAS Registry Number 513-81-5)	**	8.76 (V)	PE	3892
$C_6H_{10}^+$	$CH_2=CHCH_2CH_2CH=CH_2$ (RN-CAS Registry Number 592-42-7)	**	9.59 ± 0.02 (V)	PE	4010
$C_6H_{10}^+$	$CH\equiv C(CH_2)_3CH_3$ (RN-CAS Registry Number 693-02-7)	**	10.52 ± 0.05	EI	3585
$C_6H_{10}^+$	$CH_3C\equiv CCH_2CH_2CH_3$ (RN-CAS Registry Number 764-35-2)	**	9.97 ± 0.05	EI	3585
$C_6H_{10}^+$	$(CH_3)_2C=C=CHCH_3$ (RN-CAS Registry Number 3043-33-2)	**	8.69 (V)	PE	4019
$C_6H_{10}^+$	<i>trans,trans</i> - $CH_3CH=CHCH=CHCH_3$ (RN-CAS Registry Number 5194-51-4)		8.09	PE	3847
$C_6H_{10}^+$	<i>trans,trans</i> - $CH_3CH=CHCH=CHCH_3$ (RN-CAS Registry Number 5194-51-4)		8.93 (V)	PE	3892

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_{10}^+$	C_6H_{10} (Cyclohexene) (RN-CAS Registry Number 110-83-8)	**	9.57 ± 0.05	EI	3585
$C_6H_{10}^+$	$C_5H_8=CH_2$ (Cyclopentane, methylene-) (RN-CAS Registry Number 1528-30-9)	**	8.55 ± 0.01	PI	3585
$C_6H_{10}^+$	$C_5H_8=CH_2$ (Cyclopentane, methylene-) (RN-CAS Registry Number 1528-30-9)	**	9.26 ± 0.05	EI	3585
$C_6H_{10}^+$	$C_5H_7CH_3$ (Cyclopentene, 1-methyl-) (RN-CAS Registry Number 693-89-0)	**	8.55 ± 0.01	PI	3585
$C_6H_{10}^+$	$C_5H_7CH_3$ (Cyclopentene, 1-methyl-) (RN-CAS Registry Number 693-89-0)	**	9.12 ± 0.05	EI	3585
$C_6H_{10}^+$	$C_6H_{10}(CH_3)_2$ (Cyclohexane, 1,2-dimethyl-, <i>cis</i> -) (RN-CAS Registry Number 2207-01-4)	$2CH_3$	10.46 ± 0.1	EDD	3581
$C_6H_{10}^+$	$C_6H_{10}(CH_3)_2$ (Cyclohexane, 1,2-dimethyl-, <i>trans</i> -) (RN-CAS Registry Number 6876-23-9)	$2CH_3$	10.63 ± 0.1	EDD	3581
$C_6H_{10}^+$	$C_{10}H_{15}CH_3$ (RN-CAS Registry Number XXXXX-XX-X) (ON-Other name: 2-Methyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		9.8 ± 0.1	PI	3918
$C_6H_{10}^+$	$C_{10}H_{15}CH_3$ (4,7-Methano-1 <i>H</i> -indene, octahydro-2-methyl-, (2 α ,3 $\alpha\beta$,4 α ,7 α ,7 $\alpha\beta$)-) (RN-CAS Registry Number 50745-90-9) (ON-Other name: <i>cis</i> -4-Methyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		10.0 ± 0.1	PI	3918
$C_6H_{10}^+$	$C_6H_{11}Cl$ (Cyclohexane, chloro-) (RN-CAS Registry Number 542-18-7)		10.10 ± 0.05	PI	4078
$C_6H_{11}^+$	C_6H_{12} (Cyclohexane) (RN-CAS Registry Number 110-82-7)	H	11.32 ± 0.05	PI	4078
$C_6H_{11}^+$	$C_6H_{11}Cl$ (Cyclohexane, chloro-) (RN-CAS Registry Number 542-18-7)		10.20 ± 0.05	PI	4078
$C_6H_{11}^+$	$C_6H_{11}Br$ (Cyclohexane, bromo-) (RN-CAS Registry Number 108-85-0)		9.85 ± 0.05	PI	4078
$C_6H_{12}^+$	$(CH_3)_3CCH=CH_2$ (RN-CAS Registry Number 558-37-2)	**	9.450 ± 0.005	PE	3957
$C_6H_{12}^+$	$(CH_3)_3CCH=CH_2$ (RN-CAS Registry Number 558-37-2)	**	9.7 (V)	PE	3940
$C_6H_{12}^+$	$(CH_3)_2CHC(CH_3)=CH_2$ (RN-CAS Registry Number 563-78-0)	**	9.072 ± 0.005	PE	3957
$C_6H_{12}^+$	$(CH_3)_2C=C(CH_3)_2$ (RN-CAS Registry Number 563-79-1)	**	8.26	PE	3533
$C_6H_{12}^+$	$(CH_3)_2C=C(CH_3)_2$ (RN-CAS Registry Number 563-79-1)	**	8.271 ± 0.005	PE	3957

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_{12}^+$	$(CH_3)_2CHCH_2CH=CH_2$ (RN-CAS Registry Number 691-37-2)	**	9.452 ± 0.003	PE	3957
$C_6H_{12}^+$	$(C_2H_5)_2C=CH_2$ (RN-CAS Registry Number 760-21-4)	**	9.061 ± 0.005	PE	3957
$C_6H_{12}^+$	$C_2H_5CH_2C(CH_3)=CH_2$ (RN-CAS Registry Number 763-29-1)	**	9.076 ± 0.005	PE	3957
$C_6H_{12}^+$	$1-C_6H_{12}$ (RN-CAS Registry Number 592-41-6)	**	9.31	PE	4033
$C_6H_{12}^+$	$1-C_6H_{12}$ (RN-CAS Registry Number 592-41-6)	**	9.478 ± 0.003	PE	3957
$C_6H_{12}^+$	$1-C_6H_{12}$ (RN-CAS Registry Number 592-41-6)	**	9.33	EDD	4033
$C_6H_{12}^+$	$cis-(CH_3)_2CHCH=CHCH_3$ (RN-CAS Registry Number 691-38-3)	**	8.976 ± 0.005	PE	3957
$C_6H_{12}^+$	$cis-2-C_6H_{12}$ (RN-CAS Registry Number 7688-21-3)	**	8.969 ± 0.005	PE	3957
$C_6H_{12}^+$	$cis-3-C_6H_{12}$ (RN-CAS Registry Number 7642-09-3)	**	8.954 ± 0.005	PE	3957
$C_6H_{12}^+$	$trans-(CH_3)_2CHCH=CHCH_3$ (RN-CAS Registry Number 674-76-0)	**	8.972 ± 0.005	PE	3957
$C_6H_{12}^+$	$trans-2-C_6H_{12}$ (RN-CAS Registry Number 4050-45-7)	**	8.966 ± 0.005	PE	3957
$C_6H_{12}^+$	$trans-3-C_6H_{12}$ (RN-CAS Registry Number 13269-52-8)	**	8.965 ± 0.005	PE	3957
$C_6H_{12}^+$	C_6H_{12} (Cyclohexane) (RN-CAS Registry Number 110-82-7)	**	9.88 ± 0.01	S	3757
$C_6H_{12}^+$	C_6H_{12} (Cyclohexane) (RN-CAS Registry Number 110-82-7)	**	9.88 ± 0.01	PI	4078
$C_6H_{12}^+$	C_6H_{12} (Cyclohexane) (RN-CAS-Registry Number 110-82-7)	**	9.87	PE	4056
$C_6H_{12}^+$	C_6H_{12} (Cyclohexane) (RN-CAS Registry Number 110-82-7)	**	10.3 (V)	PE	3997
$C_6D_{12}^+$	C_6D_{12} (Cyclohexane- d_{12}) (RN-CAS Registry Number 1735-17-7)	**	9.91 ± 0.01	S	3757
$C_6H_{14}^+$	$n-C_6H_{14}$ (RN-CAS-Registry Number 110-54-3)	**	10.22	PE	4056
$C_7H_6^+$	C_7H_6 (Bicyclo[4.1.0]hepta-1,3,5-triene) (RN-CAS-Registry Number 4646-69-9)	**	8.82 (V)	PE	4063
$C_7H_7^+$	C_7H_7 (2,4,6-Cycloheptatrien-1-yl) (RN-CAS Registry Number 3551-27-7)	**	6.74 ± 0.05	EI	3789

(RD-Radical)

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_7^+$	(C ₆ H ₅) ₂ CH ₂ (Benzene, 1,1'-methylenebis-) (RN-CAS Registry Number 101-81-5)	C ₆ H ₅	11.5±0.1	EI	3807
$C_7H_7^+$	C ₆ H ₃ (CH ₃) ₂ CHO (Benzaldehyde, 2,4-dimethyl-) (RN-CAS Registry Number 15764-16-6)		11.2	EI	4051
$C_7H_7^+$	C ₆ H ₃ (CH ₃) ₂ CHO (Benzaldehyde, 2,5-dimethyl-) (RN-CAS Registry Number 5779-94-2)		11.2	EI	4051
$C_7H_7^+$	C ₆ H ₃ (CH ₃) ₂ CHO (Benzaldehyde, 3,4-dimethyl-) (RN-CAS Registry Number 5973-71-7)		11.1	EI	4051
$C_7H_7^+$	C ₆ H ₄ (CH ₃)COOH (Benzoic acid, 3-methyl-) (RN-CAS Registry Number 99-04-7)	COOH	12.48±0.2	EI	3973
(MT-Metastable transition(s) observed)					
$C_7H_7^+$	C ₆ H ₄ (CH ₃)COOH (Benzoic acid, 4-methyl-) (RN-CAS Registry Number 99-94-5)	COOH	12.55±0.2	EI	3973
(MT-Metastable transition(s) observed)					
$C_7H_7^+$	C ₆ H ₅ CH ₂ CH ₂ OCOCH ₃ (Acetic acid, 2-phenylethyl ester) (RN-CAS Registry Number 103-45-7)		12.50	EI	3590
$C_7H_7^+$	C ₆ H ₄ (NO ₂)CH ₃ (Benzene, 1-methyl-3-nitro-) (RN-CAS Registry Number 99-08-1)	NO ₂	11.58±0.1	EI	3447
$C_7H_7^+$	C ₆ H ₄ (NO ₂)CH ₃ (Benzene, 1-methyl-4-nitro-) (RN-CAS Registry Number 99-99-0)	NO ₂	11.80±0.1	EI	3447
$C_7H_7^+$	C ₆ H ₄ ClCH ₃ (Benzene, 1-chloro-2-methyl-) (RN-CAS Registry Number 95-49-8)		11.21±0.1	EI	3777
$C_7H_7^+$	C ₆ H ₄ ClCH ₃ (Benzene, 1-chloro-3-methyl-) (RN-CAS Registry Number 108-41-8)		11.34±0.1	EI	3777
$C_7H_7^+$	C ₆ H ₄ ClCH ₃ (Benzene, 1-chloro-4-methyl-) (RN-CAS Registry Number 106-43-4)		11.42±0.1	EI	3777
$C_7H_7^+$	C ₆ H ₄ BrCH ₃ (Benzene, 1-bromo-2-methyl-) (RN-CAS Registry Number 95-46-5)		11.14±0.1	EI	3777
$C_7H_7^+$	C ₆ H ₄ BrCH ₃ (Benzene, 1-bromo-3-methyl-) (RN-CAS Registry Number 591-17-3)		11.22±0.1	EI	3777
$C_7H_7^+$	C ₆ H ₄ BrCH ₃ (Benzene, 1-bromo-4-methyl-) (RN-CAS Registry Number 106-38-7)		11.22±0.1	EI	3777
$C_7H_7^+$	C ₆ H ₄ ICH ₃ (Benzene, 1-iodo-2-methyl-) (RN-CAS Registry Number 615-37-2)		11.14±0.1	EI	3777

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_7^+$	$C_6H_4ICH_3$ (Benzene, 1-iodo-3-methyl-) (RN-CAS Registry Number 625-95-6)		11.26 ± 0.1	EI	3777
$C_7H_7^+$	$C_6H_4ICH_3$ (Benzene, 1-iodo-4-methyl-) (RN-CAS Registry Number 624-31-7)		11.15 ± 0.1	EI	3777
$C_7H_8^+$	$C_6H_5CH_3$ (Benzene, methyl-) (RN-CAS Registry Number 108-88-3)	**	8.82	PI	3753
$C_7H_8^+$	$C_6H_5CH_3$ (Benzene, methyl-) (RN-CAS Registry Number 108-88-3)	**	8.72	PE	3955
$C_7H_8^+$	$C_6H_5CH_3$ (Benzene, methyl-) (RN-CAS Registry Number 108-88-3)	**	8.78 ± 0.02	PE	3854
$C_7H_8^+$	$C_6H_5CH_3$ (Benzene, methyl-) (RN-CAS Registry Number 108-88-3)	**	8.80	PE	3868
$C_7H_8^+$	$C_6H_5CH_3$ (Benzene, methyl-) (RN-CAS Registry Number 108-88-3)	**	8.85 ± 0.015 (V)	PE	4107
$C_7H_8^+$	$C_6H_5CH_3$ (Benzene, methyl-) (RN-CAS Registry Number 108-88-3)	**	9.0 ± 0.03 (V)	PE	3713
$C_7H_8^+$	$C_6H_5CH_3$ (Benzene, methyl-) (RN-CAS Registry Number 108-88-3)	**	8.89 ± 0.03	EDD	3626
$C_7H_8^+$	$C_6H_5CH_3$ (Benzene, methyl-) (RN-CAS Registry Number 108-88-3)	**	8.67	EI	3845
$C_7H_8^+$	$C_6H_5CH_3$ (Benzene, methyl-) (RN-CAS Registry Number 108-88-3)	**	8.80 ± 0.1	EI	3788
$C_7H_8^+$	$C_6H_5CH_3$ (Benzene, methyl-) (RN-CAS Registry Number 108-88-3)	**	8.71	CTS	3546
$C_7H_8^+$	$C_6H_5CH_3$ (Benzene, methyl-) (RN-CAS Registry Number 108-88-3)	**	8.91	CTS	4029
(AV—Average of two values)					
$C_7H_8^+$	C_7H_8 (Bicyclo[2.2.1]hepta-2,5-diene) (RN-CAS Registry Number 121-46-0)	**	8.6 (V)	PE	3724
$C_7H_8^+$	C_7H_8 (Bicyclo[2.2.1]hepta-2,5-diene) (RN-CAS Registry Number 121-46-0)	**	8.69 (V)	PE	3687
$C_7H_8^+$	C_7H_8 (Bicyclo[2.2.1]hepta-2,5-diene) (RN-CAS Registry Number 121-46-0)	**	8.70 (V)	PE	3509

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_8^+$	C_7H_8 (Bicyclo[2.2.1]hepta-2,5-diene) (RN-CAS Registry Number 121-46-0)	**	8.69 (V)	PE	3824
$C_7H_8(^2A_2)$	C_7H_8 (Spiro[2.4]hepta-4,6-diene) (RN-CAS Registry Number 765-46-8)	**	8.14	PE	3576
$C_7H_8(^2B_1)$	C_7H_8 (Spiro[2.4]hepta-4,6-diene) (RN-CAS Registry Number 765-46-8)	**	9.46	PE	3576
$C_7H_8(^2A_1)$	C_7H_8 (Spiro[2.4]hepta-4,6-diene) (RN-CAS Registry Number 765-46-8)	**	10.9	PE	3576
$C_7H_8(^2B_2)$	C_7H_8 (Spiro[2.4]hepta-4,6-diene) (RN-CAS Registry Number 765-46-8)	**	11.89	PE	3576
$C_7H_8(^2B_1)$	C_7H_8 (Spiro[2.4]hepta-4,6-diene) (RN-CAS Registry Number 765-46-8)	**	12.7	PE	3576
$C_7H_8^+$	$C_6H_5C_4H_9$ (Benzene, butyl-) (RN-CAS Registry Number 104-51-8)	$CH_2=CHCH_3$	10.10 ± 0.1	EI	3629
$C_7H_8^+$	$C_6H_4(OCH_3)CH_3$ (Benzene, 1-methoxy-3-methyl-) (RN-CAS Registry Number 100-84-5)	CH_2O	11.22 ± 0.1	EI	3446
$C_7H_8^+$	$C_6H_4(OCH_3)CH_3$ (Benzene, 1-methoxy-4-methyl-) (RN-CAS Registry Number 104-93-8)	CH_2O	11.11 ± 0.1	EI	3446
$C_7H_8^+$	$C_6H_4(OCH_3)CH_3$ (Benzene, 1-methoxy-4-methyl-) (RN-CAS Registry Number 104-93-8)	$HCHO$	11.23	EI	3845
(CD-Metastable transition indicates 0.36 eV kinetic energy release)					
$C_7H_8^+$	$C_6H_5CH_3Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methylbenzene]-) (RN-CAS Registry Number 12083-24-8)		8.31 ± 0.1	EI	3788
$C_7H_9^+$	C_7H_{10} (Bicyclo[2.2.1]hept-2-ene) (RN-CAS Registry Number 498-66-8)	H	11.0 ± 0.01	EI	3535
$C_7H_9^+$	C_7H_{10} (Tricyclo[2.2.1.0 ^{2,6}]heptane) (RN-CAS Registry Number 279-19-6)	H	11.3 ± 0.01	EM	3535
$C_7H_9^+$	C_7H_9Br (bicyclo[2.2.1]hept-2-ene, 5-bromo-, <i>exo</i> -) (RN-CAS Registry Number 5810-82-2)	Br	10.2	EI	3900
$C_7H_9^+$	C_7H_9Br (Bicyclo[2.2.1]hept-2-ene, 5-bromo-, <i>endo</i> -) (RN-CAS Registry Number 5810-82-2)	Br	10.1	EI	3900
$C_7H_{10}^+$	<i>trans,trans</i> - $CH_2=CHCH=CHCH=CHCH_3$ (RN-CAS Registry Number 17679-93-5)		8.07	PE	3847

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_{10}^+$	C_7H_{10} (Bicyclo[2.2.1]hept-2-ene) (RN-CAS Registry Number 498-66-8)	**	8.95 (V)	PE	3509
$C_7H_{10}^+$	C_7H_{10} (Bicyclo[2.2.1]hept-2-ene) (RN-CAS Registry Number 498-66-8)	**	8.97 (V)	PE	3687
$C_7H_{10}^+$	C_7H_{10} (Bicyclo[2.2.1]hept-2-ene) (RN-CAS Registry Number 498-66-8) (ON-Other name: 2-Norbornene)	**	8.80 ± 0.01	EM	3535
$C_7H_{10}^+$	C_7H_{10} (Bicyclo[4.1.0]hept-2-ene) (RN-CAS Registry Number 2566-57-6)	**	8.69 (V)	PE	3849
$C_7H_{10}^+$	C_7H_{10} (Tricyclo[2.2.1.0 ^{2,6}]heptane) (RN-CAS Registry Number 279-19-6)	**	9.40 (V)	PE	3741
$C_7H_{10}^+$	C_7H_{10} (Tricyclo[2.2.1.0 ^{2,6}]heptane) (RN-CAS Registry Number 279-19-6) (ON-Other name: Nortricyclene)	**	8.92 ± 0.01	EM	3535
$C_7H_{10}^+$	$C_{10}H_{15}CH_3$ (4,7-Methano-1 <i>H</i> -indene, octahydro-8-methyl-, stereoisomer) (RN-CAS Registry Number 50745-92-1) (ON-Other name: <i>anti</i> -10-Methyl- <i>endo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		9.5 ± 0.1	PI	3918
$C_7H_{11}^+$	$C_{10}H_{16}$ (4,7-Methano-1 <i>H</i> -indene, octahydro-, (3 α ,4 β ,7 β ,7 α)-) (RN-CAS Registry Number 2825-82-3) (ON-Other name: <i>exo</i> -Tricyclo[5.2.1.0 ^{2,6}]decane)		9.9 ± 0.1	PI	3918
$C_7H_{11}^+$	$C_{10}H_{15}CH_3$ (RN-CAS Registry Number XXXXX-XX-X) (ON-Other name: 2-Methyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		$\leq 10.2 \pm 0.1$	PI	3918
$C_7H_{11}^+$	$C_{10}H_{15}CH_3$ (4,7-Methano-1 <i>H</i> -indene, octahydro-2-methyl-, (2 α ,3 $\alpha\beta$,4 α ,7 α ,7 $\alpha\beta$)-) (RN-CAS Registry Number 50745-90-9) (ON-Other name: <i>cis</i> -4-Methyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		10.0 ± 0.1	PI	3918
$C_7H_{11}^+$	$C_{10}H_{15}C_2H_5$ (4,7-Methano-1 <i>H</i> -indene, 5-ethyloctahydro-, (3 α ,4 β ,5 α ,7 β ,7 α)-) (RN-CAS Registry Number 32787-97-6) (ON-Other name: <i>endo</i> -8-Ethyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		$\leq 10.2 \pm 0.1$	PI	3918
$C_7H_{12}^+$	$(CH_3)_2C=C=C(CH_3)_2$ (RN-CAS Registry Number 1000-87-9)	**	8.47 (V)	PE	4019
$C_7H_{12}^+$	$(C_2H_3)_2C(CH_3)_2$ (RN-CAS Registry Number 1112-35-2)	**	9.55 (V)	PE	3994
$C_7H_{12}^+$	$CH_2=CH(CH_2)_3CH=CH_2$ (RN-CAS Registry Number 3070-53-9)	**	9.52 ± 0.02 (V)	PE	4010
$C_7H_{12}^+$	C_7H_{12} (Bicyclo[2.2.1]heptane) (RN-CAS Registry Number 279-23-2)	**	10.15 (V)	PE	3509

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_{12}^+$	C_7H_{12} (Bicyclo[2.2.1]heptane) (RN-CAS Registry Number 279-23-2)	**	10.2 (V)	PE	3687
$C_7H_{12}^+$	C_7H_{12} (Bicyclo[4.1.0]heptane) (RN-CAS Registry Number 286-08-8)	**	9.46 (V)	PE	3849
$C_7H_{13}^+$	$C_6H_{10}(CH_3)_2$ (Cyclohexane, 1,2-dimethyl-, <i>cis</i> -) (RN-CAS Registry Number 2207-01-4)	CH_3	10.55 ± 0.05	EDD	3581
$C_7H_{13}^+$	$C_6H_{10}(CH_3)_2$ (Cyclohexane, 1,2-dimethyl-, <i>trans</i> -) (RN-CAS Registry Number 6876-23-9)	CH_3	10.73 ± 0.05	EDD	3581
$C_7H_{14}^+$	<i>trans</i> -(CH_3) ₃ CCH=CHCH ₂ (RN-CAS Registry Number 690-08-4)	**	8.908 ± 0.008	PE	3957
$C_7H_{14}^+$	$(CH_3)_3CC(CH_3)=CH_2$ (RN-CAS Registry Number 594-56-9)	**	9.016 ± 0.007	PE	3957
$C_7H_{14}^+$	$(CH_3)_3CCH_2CH=CH_2$ (RN-CAS Registry Number 762-62-9)	**	9.399 ± 0.003	PE	3957
$C_7H_{14}^+$	$(CH_3)_3CCH_2CH=CH_2$ (RN-CAS Registry Number 762-62-9)	**	9.6 (V)	PE	3940
$C_7H_{14}^+$	$(CH_3)_2CHCH_2C(CH_3)=CH_2$ (RN-CAS Registry Number 2213-32-3)	**	9.025 ± 0.005	PE	3957
$C_7H_{14}^+$	$CH_3(CH_2)_3C(CH_3)=CH_2$ (RN-CAS Registry Number 6094-02-6)	**	9.039 ± 0.005	PE	3957
$C_7H_{14}^+$	$C_2H_5C(CH_3)=C(CH_3)_2$ (RN-CAS Registry Number 10574-37-5)	**	8.213 ± 0.005	PE	3957
$C_7H_{14}^+$	$1-C_7H_{14}$ (RN-CAS Registry Number 592-76-7)	**	9.442 ± 0.003	PE	3957
$C_7H_{14}^+$	<i>cis</i> -(CH_3) ₃ CCH=CHCH ₃ (RN-CAS Registry Number 762-63-0)	**	8.922 ± 0.008	PE	3957
$C_7H_{14}^+$	<i>cis</i> -(CH_3) ₂ CHCH ₂ CH=CHCH ₃ (RN-CAS Registry Number 13151-17-2)	**	8.917 ± 0.005	PE	3957
$C_7H_{14}^+$	<i>trans</i> - $CH_3CH_2C(CH_3)HCH=CHCH_3$ (RN-CAS Registry Number 3683-22-5)	**	8.912 ± 0.005	PE	3957
$C_7H_{14}^+$	<i>trans</i> -(CH_3) ₂ CHCH ₂ CH=CHCH ₃ (RN-CAS Registry Number 7385-82-2)	**	8.919 ± 0.005	PE	3957
$C_8H_6^+$	$CH_3C \equiv CC \equiv CC \equiv CCH_3$ (RN-CAS Registry Number 1072-20-4)	**	8.60	PE	4048
$C_8H_6^+$	$C_6H_5C \equiv CH$ (Benzene, ethynyl-) (RN-CAS Registry Number 536-74-3)	**	8.75	PE	3938
$C_8H_6^+$	$C_6H_5C \equiv CH$ (Benzene, ethynyl-) (RN-CAS Registry Number 536-74-3)	**	8.88 ± 0.02 (V)	PE	3854
$C_8H_8^+$	$C_6H_5CH=CH_2$ (Benzene, ethenyl-) (RN-CAS Registry Number 100-42-5)	**	8.40 ± 0.02	PE	3854

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_8^+$	$C_6H_5CH=CH_2$ (Benzene, ethenyl-) (RN-CAS Registry Number 100-42-5)	**	8.42	PE	3938
$C_8H_8^+$	$C_6H_5CH=CH_2$ (Benzene, ethenyl-) (RN-CAS Registry Number 100-42-5)	**	8.49 (V)	PE	3964
$C_8H_8^+$	$C_6H_5C_2H_3$ (Benzene, ethenyl-) (RN-CAS Registry Number 100-42-5)	**	8.55 (V)	PE	3781
$C_8H_8^+$	$C_6H_5CH=CH_2$ (Benzene, ethenyl-) (RN-CAS Registry Number 100-42-5)	**	8.55 (V)	PE	3898
$C_8H_8^+$	$C_6H_5CH=CH_2$ (Benzene, ethenyl-) (RN-CAS Registry Number 100-42-5)	**	8.28 ± 0.04	RPD	4097
$C_8H_8^+$	C_8H_8 (Bicyclo[2.2.1]hepta-2,5-diene, 7-methylene-) (RN-CAS Registry Number 37846-63-2) (ON-Other name: 7-Methylene-norbornadiene)	**	8.50 (V)	PE	3933
$C_8H_8^+$	C_8H_8 (Bicyclo[4.2.0]octa-1,3,5-triene) (RN-CAS-Registry Number 694-87-1)	**	8.66 (V)	PE	4063
$C_8H_8^+$	C_8H_8 (1,3,5,7-Cyclooctatetraene) (RN-CAS Registry Number 629-20-9)	**	8.0	PE	3999
$C_8H_8^+$	C_8H_8 (Pentacyclo[4.2.0.0 ^{2,5} .0 ^{3,8} .0 ^{4,7}]octane) (RN-CAS Registry Number 277-10-1)	**	$8.4 \pm < 0.1$	EI	3735
$C_8H_8^+$	C_8H_8 (Tricyclo[3.2.1.0 ^{2,8}]octa-2,6-diene) (RN-CAS Registry Number XXXXX-XX-X) (ON-Other name: Tetrahydrobullvalene)	**	8.5 (V)	PE	4034
$C_8H_8^+$	C_8H_8 (Tricyclo[4.2.0.0 ^{2,5}]octa-3,7-diene, <i>syn</i> -) (RN-CAS Registry Number 20380-30-7)	**	9.08 (V)	PE	4045
$C_8H_8^+$	C_8H_8 (Tricyclo[4.2.0.0 ^{2,5}]octa-3,7-diene, <i>anti</i> -) (RN-CAS Registry Number 20380-31-8)	**	8.96 (V)	PE	4045
$C_8H_8^+$	$C_6H_5CH_2CH_2OCOCH_3$ (Acetic acid, 2-phenylethyl ester) (RN-CAS Registry Number 103-45-7)		8.90	EI	3590
$C_8H_9^+$	$C_6H_4(CH_3)C_4H_9$ (Benzene, 1-butyl-3-methyl-) (RN-CAS Registry Number 1595-04-6)		11.43 ± 0.1	EI	3629
$C_8H_9^+$	$C_6H_4(CH_3)C_4H_9$ (Benzene, 1-butyl-4-methyl-) (RN-CAS Registry Number 1595-05-7)		11.03 ± 0.1	EI	3629
$C_8H_9^+$	$C_6H_4(CH_3)CH_2CH_2OCOCH_3$ (Phenethyl alcohol, <i>m</i> -methyl-, acetate) (RN-CAS Registry Number 33709-40-9)		12.30	EI	3590

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_9^+$	$C_6H_4(CH_3)CH_2CH_2OCOCH_3$ (Phenethyl alcohol, <i>p</i> -methyl-, acetate) (RN-CAS Registry Number 22532-47-4)		11.80	EI	3590
$C_8H_{10}^+$	$C_6H_4(CH_3)_2$ (Benzene, 1,2-dimethyl-) (RN-CAS Registry Number 95-47-6)	**	8.45 ± 0.02	PE	3854
$C_8H_{10}^+$	$C_6H_4(CH_3)_2$ (Benzene, 1,2-dimethyl-) (RN-CAS-Registry Number 95-47-6)	**	8.57 (V)	PE	4063
$C_8H_{10}^+$	$C_6H_4(CH_3)_2$ (Benzene, 1,2-dimethyl-) (RN-CAS Registry Number 95-47-6)	**	8.75 ± 0.03 (V)	PE	3713
$C_8H_{10}^+$	$C_6H_4(CH_3)_2$ (Benzene, 1,2-dimethyl-) (RN-CAS Registry Number 95-47-6)	**	8.55 ± 0.1	EI	3788
$C_8H_{10}^+$	$C_6H_4(CH_3)_2$ (Benzene, 1,2-dimethyl-) (RN-CAS Registry Number 95-47-6)	**	8.61	CTS	3546
$C_8H_{10}^+$	$C_6H_4(CH_3)_2$ (Benzene, 1,2-dimethyl-) (RN-CAS Registry Number 95-47-6)	**	8.70	CTS	4029
(AV—Average of two values)					
$C_8H_{10}^+$	$C_6H_4(CH_3)_2$ (Benzene, 1,3-dimethyl-) (RN-CAS Registry Number 108-38-3)	**	8.50 ± 0.02	PE	3854
$C_8H_{10}^+$	$C_6H_4(CH_3)_2$ (Benzene, 1,3-dimethyl-) (RN-CAS Registry Number 108-38-3)	**	8.71 ± 0.015 (V)	PE	4107
$C_8H_{10}^+$	$C_6H_4(CH_3)_2$ (Benzene, 1,3-dimethyl-) (RN-CAS Registry Number 108-38-3)	**	8.75 ± 0.03 (V)	PE	3713
$C_8H_{10}^+$	$C_6H_4(CH_3)_2$ (Benzene, 1,4-dimethyl-) (RN-CAS Registry Number 106-42-3)	**	8.37 ± 0.02	PE	3854
$C_8H_{10}^+$	$C_6H_4(CH_3)_2$ (Benzene, 1,4-dimethyl-) (RN-CAS Registry Number 106-42-3)	**	8.6 ± 0.03 (V)	PE	3713
$C_8H_{10}^+$	C_8H_{10} (Bicyclo[2.2.1]hept-2-ene, 5-methylene-) (RN-CAS Registry Number 694-91-7)	**	8.93 (V)	PE	3824
$C_8H_{10}^+$	C_8H_{10} (1,3,5-Cyclooctatriene) (RN-CAS Registry Number 1871-52-9)	**	7.9	PE	3999
$C_8H_{10}^+$	C_8H_{10} (1,3,6-Cyclooctatriene) (RN-CAS Registry Number 3725-30-2)	**	8.5	PE	3999
$C_8H_{10}^+$	C_8H_{10} (Tricyclo[3.2.1.0 ^{2,4}]oct-6-ene, (1 α ,2 α ,4 α ,5 α)-) (RN-CAS Registry Number 3635-94-7) (ON—Other name: Tricyclo[3.2.1.0 ^{2,4}]oct-6-ene, <i>endo</i> -)	**	9.05 (V)	PE	3509

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_{10}^+$	C_8H_{10} (Tricyclo[3.2.1.0 ^{2,4}]oct-6-ene, (1 α ,2 β ,4 β ,5 α)-) (RN-CAS Registry Number 3635-95-8) (ON-Other name: Tricyclo[3.2.1.0 ^{2,4}]oct-6-ene, <i>exo</i> -)	**	8.90 (V)	PE	3509
$C_8H_{10}^+$	C_8H_{10} (Tricyclo[3.2.1.0 ^{2,8}]oct-6-ene) (RN-CAS Registry Number XXXXX-XX-X)	**	8.5 (V)	PE	4034
$C_8H_{10}^+$	C_8H_{10} (Tricyclo[4.2.0.0 ^{2,5}]oct-3-ene, (1 α ,2 β ,5 β ,6 α)-) (RN-CAS Registry Number 39781-76-5)	**	9.25 (V)	PE	4045
$C_8H_{10}^+$	$C_6H_4(CH_3)C_4H_9$ (Benzene, 1-butyl-3-methyl-) (RN-CAS Registry Number 1595-04-6)	$CH_2=CHCH_3$	10.33 ± 0.1	EI	3629
$C_8H_{10}^+$	$C_6H_4(CH_3)C_4H_9$ (Benzene, 1-butyl-4-methyl-) (RN-CAS Registry Number 1595-05-7)	$CH_2=CHCH_3$	10.14 ± 0.1	EI	3629
$C_8H_{10}^+$	$C_6H_4(CH_3)_2Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-1,2-dimethylbenzene]-) (RN-CAS Registry Number 12129-29-2)		8.51 ± 0.1	EI	3788
$C_8H_{11}^+$	$C_{10}H_{15}C_2H_5$ (4,7-Methano-1 <i>H</i> -indene, 5-ethyloctahydro-, (3 α ,4 β ,5 α ,7 β ,7 α)-) (RN-CAS Registry Number 32787-97-6) (ON-Other name: <i>endo</i> -8-Ethyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		9.9 ± 0.1	PI	3918
$C_8H_{12}^+$	C_8H_{12} (Bicyclo[2.2.1]heptane, 2-methylene-) (RN-CAS Registry Number 497-35-8)	**	9.02 (V)	PE	3824
$C_8H_{12}^+$	C_8H_{12} (Bicyclo[2.2.1]heptane, 7-methylene-) (RN-CAS Registry Number 31463-35-1) (ON-Other name: 7-Methylene-norbornane)	**	9.40 (V)	PE	3933
$C_8H_{12}^+$	$C_6H_{11}C \equiv CH$ (Cyclohexane, ethynyl-) (RN-CAS Registry Number 931-48-6)	**	9.92 (V)	PE	3997
$C_8H_{12}^+$	C_8H_{12} (1,3-Cyclooctadiene) (RN-CAS Registry Number 1700-10-3)	**	8.4	PE	3999
$C_8H_{12}^+$	C_8H_{12} (1,4-Cyclooctadiene) (RN-CAS Registry Number 1073-07-0)	**	8.5	PE	3999
$C_8H_{12}^+$	C_8H_{12} (1,5-Cyclooctadiene) (RN-CAS Registry Number 111-78-4)	**	8.9	PE	3999
$C_8H_{12}^+$	$C_3H_5CH=CHC_3H_5$ (Cyclopropane, 1,1'-(1,2-ethenediyl)bis- (<i>E</i>)) (RN-CAS Registry Number 10359-44-1)	**	7.72	PI	3759
$C_8H_{12}^+$	$C_3H_5CH=CHC_3H_5$ (Cyclopropane, 1,1'-(1,2-ethenediyl)bis- (<i>Z</i>)) (RN-CAS Registry Number 23510-65-68)	**	7.70	PI	3759

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_{12}^+$	(C ₃ H ₅) ₂ C=CH ₂ (Cyclopropane, 1,1'-ethenylidenebis-) (RN-CAS Registry Number 822-93-5)	**	8.08	PI	3759
$C_8H_{12}^+$	C_8H_{12} (Tricyclo[3.2.1.0 ^{2,4}]octane, (1 α ,2 α ,4 α ,5 α)-) (RN-CAS Registry Number 22389-16-8) (ON-Other name: Tricyclo[3.2.1.0 ^{2,4}]octane, <i>endo</i> -)	**	9.40 (V)	PE	3509
$C_8H_{12}^+$	C_8H_{12} (Tricyclo[3.2.1.0 ^{2,4}]octane, (1 α ,2 α ,4 α ,5 α)-) (RN-CAS Registry Number 22389-16-8) (ON-Other name: Tricyclo[3.2.1.0 ^{2,4}]octane, <i>endo</i> -)	**	8.8 \pm 0.1	EI	3492
$C_8H_{12}^+$	C_8H_{12} (Tricyclo[3.2.1.0 ^{2,4}]octane, (1 α ,2 β ,4 β ,5 α)-) (RN-CAS Registry Number 13377-46-3) (ON-Other name: Tricyclo[3.2.1.0 ^{2,4}]octane, <i>exo</i> -)	**	9.40 (V)	PE	3509
$C_8H_{12}^+$	C_8H_{12} (Tricyclo[3.2.1.0 ^{2,4}]octane, (1 α ,2 β ,4 β ,5 α)-) (RN-CAS Registry Number 13377-46-3) (ON-Other name: Tricyclo[3.2.1.0 ^{2,4}]octane, <i>exo</i> -)	**	9.1 \pm 0.1	EI	3492
$C_8H_{12}^+$	C_8H_{12} (Tricyclo[4.2.0.0 ^{2,5}]octane, <i>syn</i> -) (RN-CAS Registry Number 28636-10-4)	**	9.18 (V)	PE	4045
$C_8H_{12}^+$	C_8H_{12} (Tricyclo[4.2.0.0 ^{2,5}]octane, <i>anti</i> -) (RN-CAS Registry Number 13027-75-3)	**	9.23 (V)	PE	4045
$C_8H_{12}^+$	C_8H_{12} (Tricyclo[5.1.0.0 ^{2,4}]octane, (1 α ,2 α ,4 α ,7 α)-) (RN-CAS Registry Number 50695-42-6)	**	8.95 (V)	PE	3849
$C_8H_{12}^+$	C_8H_{12} (Tricyclo[5.1.0.0 ^{2,4}]octane, (1 α ,2 β ,4 β ,7 α)-) (RN-CAS Registry Number 50895-58-4)	**	9.39 (V)	PE	3849
$C_8H_{12}^+$	$C_{10}H_{16}$ (4,7-Methano-1 <i>H</i> -indene, octahydro-, (3 α ,4 β ,7 β ,7 α)-) (RN-CAS Registry Number 2825-82-3) (ON-Other name: <i>exo</i> -Tricyclo[5.2.1.0 ^{2,6}]decane)		10.5 \pm 0.1	PI	3918
$C_8H_{12}^+$	$C_{10}H_{15}CH_3$ (RN-CAS Registry Number XXXXX-XX-X) (ON-Other name: 2-Methyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		10.0 \pm 0.1	PI	3918
$C_8H_{13}^+$	$C_{10}H_{15}CH_3$ (4,7-Methano-1 <i>H</i> -indene, octahydro-2-methyl, (2 α ,3 α β ,4 α ,7 α ,7 α β)-) (RN-CAS Registry Number 50745-90-9) (ON-Other name: <i>cis</i> -4-Methyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		10.1 \pm 0.1	PI	3918
$C_8H_{13}^+$	$C_{10}H_{15}CH_3$ (4,7-Methano-1 <i>H</i> -indene, octahydro-8-methyl-, stereoisomer) (RN-CAS Registry Number 50745-92-1) (ON-Other name: <i>anti</i> -10-Methyl- <i>endo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		9.5 \pm 0.1	PI	3918
$C_8H_{14}^+$	(CH ₃) ₂ C=CHCH=C(CH ₃) ₂ (RN-CAS Registry Number 764-13-6)	**	7.65	PE	3847
$C_8H_{14}^+$	CH ₂ =CH(CH ₂) ₄ CH=CH ₂ (RN-CAS Registry Number 3710-30-3)	**	9.52 \pm 0.02 (V)	PE	4010

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_{14}^+$	C_8H_{14} (Bicyclo[2.2.2]octane) (RN-CAS Registry Number 280-33-1)	**	9.43	S	3757
$C_8H_{14}^+$	C_8H_{14} (Bicyclo[2.2.2]octane) (RN-CAS Registry Number 280-33-1)	**	9.45 ± 0.02	PE	3757
$C_8H_{14}^+$	C_8H_{14} (Cyclooctene) (RN-CAS Registry Number 931-88-4)	**	8.8	PE	3999
$C_8H_{16}^+$	$(CH_3)_3CCH_2C(CH_3)=CH_2$ (RN-CAS Registry Number 107-39-1)	**	8.909 ± 0.005	PE	3957
$C_8H_{16}^+$	$(CH_3)_2CHC(CH_3)=C(CH_3)_2$ (RN-CAS Registry Number 565-77-5)	**	8.165 ± 0.005	PE	3957
$C_8H_{16}^+$	$C_2H_5CH_2C(CH_3)=C(CH_3)_2$ (RN-CAS Registry Number 7145-20-2)	**	8.186 ± 0.005	PE	3957
$C_8H_{16}^+$	$(C_2H_5)_2C=CHC_2H_5$ (RN-CAS Registry Number 16789-51-8)	**	8.480 ± 0.004	PE	3957
$C_8H_{16}^+$	$(C_2H_5)_2C=C(CH_3)_2$ (RN-CAS Registry Number 19780-67-7)	**	8.170 ± 0.003	PE	3957
$C_8H_{16}^+$	$cis-(CH_3)_2CHCH=CHCH(CH_3)_2$ (RN-CAS Registry Number 10557-44-5)	**	8.846 ± 0.005	PE	3957
$C_8H_{16}^+$	$cis-C_2H_5C(CH_3)=C(CH_3)C_2H_5$ (RN-CAS Registry Number 19550-87-9)	**	8.172 ± 0.003	PE	3957
$C_8H_{16}^+$	$cis-3-C_8H_{16}$ (RN-CAS Registry Number 14850-22-7)	**	8.849 ± 0.005	PE	3957
$C_8H_{16}^+$	$cis-4-C_8H_{16}$ (RN-CAS Registry Number 7642-15-1)	**	8.841 ± 0.005	PE	3957
$C_8H_{16}^+$	$trans-(CH_3)_2CHCH=CHCH(CH_3)_2$ (RN-CAS Registry Number 692-70-6)	**	8.838 ± 0.005	PE	3957
$C_8H_{16}^+$	$trans-C_2H_5C(CH_3)=C(CH_3)C_2H_5$ (RN-CAS Registry Number 19550-88-0)	**	8.156 ± 0.003	PE	3957
$C_8H_{16}^+$	$trans-4-C_8H_{16}$ (RN-CAS Registry Number 14850-23-8)	**	8.830 ± 0.005	PE	3957
$C_8H_{16}^+$	$C_6H_{10}(CH_3)_2$ (Cyclohexane, 1,2-dimethyl-, <i>cis</i> -) (RN-CAS Registry Number 2207-01-4)	**	9.90 ± 0.07	EDD	3581
$C_8H_{16}^+$	$C_6H_{10}(CH_3)_2$ (Cyclohexane, 1,2-dimethyl-, <i>trans</i> -) (RN-CAS Registry Number 6876-23-9)	**	10.03 ± 0.05	EDD	3581
$C_8H_{16}^+$	C_8H_{16} (Cyclooctane) (RN-CAS Registry Number 292-64-8)	**	9.7	PE	3999
$C_9H_7^+$	$C_6H_5C \equiv CCH_3$ (Benzene, 1-propynyl-) (RN-CAS Registry Number 673-32-5)		11.42 ± 0.05	EI	4044
$C_9H_7^+$	C_9H_8 (1 <i>H</i> -Indene) (RN-CAS Registry Number 95-13-6)	H	12.62 ± 0.05	EI	4044

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_9H_7^+$	$C_6H_8(C_6H_5)_2$ (Benzene, 1,1'-(2-cyclohexen-1-ylidene)bis-) (RN-CAS Registry Number 31158-25-5)		13.6 ± 0.4	EI	4018
$C_9H_7^+$	$C_6H_{10}(C_6H_5)_2$ (Benzene, 1,1'-cyclohexylidenebis-) (RN-CAS Registry Number 21113-55-3)		13.3 ± 0.4	EI	4018
$C_9H_7^+$	$C_6H_9(CH_3)(C_6H_5)_2$ (Benzene, 1,1'-(4-methylcyclohexylidene)bis-) (RN-CAS Registry Number 32812-65-0)		13.7 ± 0.4	EI	4018
$C_9H_7^+$	$C_{10}H_{13}(CH_3)(C_6H_5)_2$ (Naphthalene, 1,2,3,4,4a,5,6,7-octahydro-4a-methyl-2,2-diphenyl-) (RN-CAS Registry Number 50592-50-2)		13.2 ± 0.4	EI	4018
$C_9H_7^+$	$C_6H_5C \equiv CCH = CHCH_2OH$ (2-Penten-4-yn-1-ol, 5-phenyl-, (E)-) (RN-CAS Registry Number 40317-08-6)		11.43 ± 0.05	EI	4044
$C_9H_7^+$	$C_6H_8(=O)(C_6H_5)_2$ (Cyclohexanone, 2,2-diphenyl-) (RN-CAS Registry Number 22612-62-0)		14.1 ± 0.4	EI	4018
$C_9H_7^+$	$C_6H_8(=O)(C_6H_5)_2$ (Cyclohexanone, 4,4-diphenyl-) (RN-CAS Registry Number 4528-68-1)		13.5 ± 0.4	EI	4018
$C_9H_7^+$	$C_6H_7(=O)(CH_3)(C_6H_5)_2$ (Cyclohexanone, 2-methyl-5,5-diphenyl-) (RN-CAS Registry Number 50592-49-9)		13.5 ± 0.4	EI	4018
$C_9H_7^+$	$C_6H_7(=O)(CH_3)(C_6H_5)_2$ (Cyclohexanone, 6-methyl-2,2-diphenyl-) (RN-CAS Registry Number 50592-52-4)		13.7 ± 0.4	EI	4018
$C_9H_7^+$	$C_6H_8(OH)(CH_3)(C_6H_5)_2$ (Cyclohexanol, 1-methyl-4,4-diphenyl-) (RN-CAS Registry Number 50592-47-7)		13.7 ± 0.4	EI	4018
$C_9H_7^+$	$C_6H_6(=O)(CH_3)_2(C_6H_5)_2$ (Cyclohexanone, 2,2-dimethyl-6,6-diphenyl-) (RN-CAS Registry Number 50592-53-5)		13.8 ± 0.4	EI	4018
$C_9H_7^+$	$C_{10}H_{11}(=O)(CH_3)(C_6H_5)_2$ (2(3H)-Naphthalenone, 4,4a,5,6,7,8-hexahydro-4a-methyl-7,7-diphenyl-) (RN-CAS Registry Number 50786-03-3)		13.0 ± 0.4	EI	4018
$C_9H_7^+$	$C_6H_6(=O)(CH_3)(C_6H_5)_2CH_2CH_2CHO$ (Cyclohexanepropanal, 1-methyl-2-oxo-3,3-diphenyl-) (RN-CAS Registry Number XXXXX-XX-X)		13.4 ± 0.4	EI	4018
$C_9H_7^+$	$C_6H_6(=O)(CH_3)(C_6H_5)_2CH_2CH_2COCH_3$ (Cyclohexanone, 2-methyl-2-(3-oxobutyl)-6,6-diphenyl-) (RN-CAS Registry Number 50592-55-7)		14.2 ± 0.4	EI	4018
$C_9H_7^+$	$C_6H_6(=O)(C_6H_5)=CHS(CH_2)_3CH_3$ (Cyclohexanone, 6-[(butylthio)methylene]-2,2-diphenyl-) (RN-CAS Registry Number 50592-51-3)		13.7 ± 0.4	EI	4018
$C_9H_7^+$	$C_6H_6(=O)CH_3(C_6H_5)_2CH_2CH=C(CH_3)Cl$ (Cyclohexanone, 2-(3-chloro-2-butenyl)-2-methyl-6,6-diphenyl-) (RN-CAS Registry Number 50592-54-6)		13.7 ± 0.4	EI	4018
$C_9H_8^+$	C_9H_8 (1H-Indene) (RN-CAS Registry Number 95-13-6)	**	8.33 ± 0.01	EI	3805

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_9H_8^+$	C_9H_8 (Spiro[4.4]nona-1,3,6,8-tetraene) (RN-CAS Registry Number 14867-83-5)	**	7.99 (V)	PE	4049
$C_9H_{10}^+$	$C_6H_4(CH_3)CH=CH_2$ (Benzene, 1-ethenyl-2-methyl-) (RN-CAS Registry Number 611-15-4)	**	8.20 ± 0.02	PE	3854
$C_9H_{10}^+$	$C_6H_4(CH_3)CH=CH_2$ (Benzene, 1-ethenyl-2-methyl-) (RN-CAS Registry Number 611-15-4)	**	8.53 (V)	PE	3964
$C_9H_{10}^+$	$C_6H_4(CH_3)CH=CH_2$ (Benzene, 1-ethenyl-3-methyl-) (RN-CAS Registry Number 100-80-1)	**	8.15 ± 0.02	PE	3854
$C_9H_{10}^+$	$C_6H_4(CH_3)CH=CH_2$ (Benzene, 1-ethenyl-3-methyl-) (RN-CAS Registry Number 100-80-1)	**	8.37 (V)	PE	3964
$C_9H_{10}^+$	$C_6H_4(CH_3)CH=CH_2$ (Benzene, 1-ethenyl-4-methyl-) (RN-CAS Registry Number 622-97-9)	**	8.20 (V)	PE	3964
$C_9H_{10}^+$	$C_6H_5C(CH_3)=CH_2$ (Benzene, (1-methylethenyl)-) (RN-CAS Registry Number 98-83-9)	**	8.52 (V)	PE	3964
$C_9H_{10}^+$	$C_6H_5C(CH_3)=CH_2$ (Benzene, (1-methylethenyl)-) (RN-CAS Registry Number 98-83-9)	**	8.18 ± 0.04	RPD	4097
$C_9H_{10}^+$	$C_6H_5CH=CHCH_3$ (Benzene, 1-propenyl-, (E)-) (RN-CAS Registry Number 873-66-5)	**	8.20 ± 0.02	PE	3854
$C_9H_{10}^+$	$C_6H_5CH=CHCH_3$ (Benzene, 1-propenyl-, (E)-) (RN-CAS Registry Number 873-66-5)	**	7.84 ± 0.04	RPD	4097
$C_9H_{10}^+$	$C_6H_5C(CH_3)=CH_2$ (Benzene, 2-propenyl-) (RN-CAS Registry Number 300-57-2)	**	8.20 ± 0.02	PE	3854
$C_9H_{10}^+$	$C_6H_5CH_2CH=CH_2$ (Benzene, (2-propenyl)-) (RN-CAS Registry Number 300-57-2)	**	8.60	PE	3938
$C_9H_{10}^+$	C_9H_{10} (Bicyclo[3.2.2]nona-2,6,8-triene) (RN-CAS Registry Number 16216-91-4)	**	8.72 (V)	PE	3991
$C_9H_{10}^+$	C_9H_{10} (1 <i>H</i> -Indene, 2,3-dihydro-) (RN-CAS Registry Number 496-11-7)	**	8.45 ± 0.02 (V)	PE	3854
$C_9H_{10}^+$	C_9H_{10} (1 <i>H</i> -Indene, 2,3-dihydro-) (RN-CAS-Registry Number 496-11-7)	**	8.46 (V)	PE	4063
$C_9H_{10}^+$	C_9H_{10} (1 <i>H</i> -Indene, 2,3-dihydro-) (RN-CAS Registry Number 496-11-7)	**	8.60 ± 0.01	EI	3805
$C_9H_{10}^+$	C_9H_{10} (1 <i>H</i> -Indene, 2,3-dihydro-) (RN-CAS Registry Number 496-11-7)	**	8.52	CTS	3546

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_9H_{10}^+$	C_9H_{10} (Spiro[bicyclo[2.2.1]hepta-2,5-diene-7,1'-cyclopropane]) (RN-CAS Registry Number 7092-57-1)	**	8.73 (V)	PE	3780
$C_9H_{10}^+$	C_9H_{10} (Tricyclo[3.3.1.0 ^{2,8}]nona-3,6-diene) (RN-CAS Registry Number 14693-11-9)	**	8.4 (V)	PE	4034
$C_9H_{10}^+$	C_9H_{10} (Tricyclo[4.2.1.0 ^{2,5}]nona-3,7-diene) (RN-CAS Registry Number 4932-71-2)	**	8.7 (V)	PE	3853
$C_9H_{10}^+$	C_9H_{10} (Tricyclo[4.2.1.0 ^{2,5}]nona-3,7-diene, (1 α ,2 β ,5 β ,6 α)-) (RN-CAS Registry Number 15564-44-0) (ON-Other name: Tricyclo[4.2.1.0 ^{2,5}]nona-3,7-diene, <i>exo</i> -)	**	8.65 \pm 0.05 (V)	PE	4040
$C_9H_{10}^+$	$C_6H_4(CH_3)CH_2CH_2OCOCH_3$ (Phenethyl alcohol, <i>m</i> -methyl-, acetate) (RN-CAS Registry Number 33709-40-9)	**	8.75	EI	3590
$C_9H_{10}^+$	$C_6H_4(CH_3)CH_2CH_2OCOCH_3$ (Phenethyl alcohol, <i>p</i> -methyl-, acetate) (RN-CAS Registry Number 22532-47-4)	**	8.50	EI	3590
$C_9H_{12}^+$	$(C_2H_5)_4C$ (RN-CAS Registry Number 20685-34-1)	**	9.52 (V)	PE	3994
$C_9H_{12}^+$	$C_6H_3(CH_3)_3$ (Benzene, 1,2,3-trimethyl-) (RN-CAS Registry Number 526-73-8)	**	8.6 \pm 0.03 (V)	PE	3713
$C_9H_{12}^+$	$C_6H_3(CH_3)_3$ (Benzene, 1,2,4-trimethyl-) (RN-CAS Registry Number 95-63-6)	**	8.5 \pm 0.03 (V)	PE	3713
$C_9H_{12}^+$	$C_6H_3(CH_3)_3$ (Benzene, 1,3,5-trimethyl-) (RN-CAS Registry Number 108-67-8)	**	8.65 \pm 0.03 (V)	PE	3713
$C_9H_{12}^+$	$C_6H_3(CH_3)_3$ (Benzene, 1,3,5-trimethyl-) (RN-CAS Registry Number 108-67-8)	**	8.21 \pm 0.1	EI	3788
$C_9H_{12}^+$	$C_6H_3(CH_3)_3$ (Benzene, 1,3,5-trimethyl-) (RN-CAS Registry Number 108-67-8)	**	8.46	CTS	4029
(AV—Average of two values)					
$C_9H_{12}^+$	C_9H_{12} (Bicyclo[3.2.2]nona-2,6-diene) (RN-CAS Registry Number 14993-07-8)	**	8.84 (V)	PE	3991
$C_9H_{12}^+$	C_9H_{12} (Bicyclo[3.2.2]nona-6,8-diene) (RN-CAS Registry Number 7164-08-1)	**	9.00 (V)	PE	3991
$C_9H_{12}^+$	C_9H_{12} (Tetracyclo[3.3.1.0 ^{2,8} .0 ^{4,6}]nonane) (RN-CAS Registry Number 3105-29-1)	**	8.67 (V)	PE	3741
$C_9H_{12}^+$	C_9H_{12} (Tricyclo[4.2.1.0 ^{2,5}]non-3-ene) (RN-CAS Registry Number 7078-40-2)	**	9 (V)	PE	3853

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_9H_{12}^+$	C_9H_{12} (Tricyclo[4.2.1.0 ^{2,5}]non-3-ene, (1 α ,2 β ,5 β ,6 α)-) (RN-CAS Registry Number 16529-76-3) (ON-Other name: Tricyclo[4.2.1.0 ^{2,5}]non-3-ene, <i>exo</i> -)	**	9.00 \pm 0.05 (V)	PE	4040
$C_9H_{12}^+$	C_9H_{12} (Tricyclo[4.2.1.0 ^{2,5}]non-7-ene) (RN-CAS Registry Number 6827-30-1)	**	8.7 (V)	PE	3853
$C_9H_{12}^+$	C_9H_{12} (Tricyclo[4.2.1.0 ^{2,5}]non-7-ene, <i>exo</i> -) (RN-CAS Registry Number 16529-82-1)	**	8.70 \pm 0.05 (V)	PE	4040
$C_9H_{12}^+$	$C_6H_3(CH_3)_3Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-1,3,5-trimethylbenzene]-) (RN-CAS Registry Number 12129-67-8)		8.61 \pm 0.1	EI	3788
$C_9H_{13}^+$	$C_{10}H_{16}$ (4,7-Methano-1 <i>H</i> -indene, octahydro-, (3 α ,4 β ,7 β ,7 α)-) (RN-CAS Registry Number 2825-82-3) (ON-Other name: <i>exo</i> -Tricyclo[5.2.1.0 ^{2,6}]decane)	CH ₃	9.8 \pm 0.1	PI	3918
$C_9H_{13}^+$	$C_{10}H_{15}CH_3$ (RN-CAS Registry Number XXXXX-XX-X) (ON-Other name: 2-Methyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		\leq 10.2 \pm 0.1	PI	3918
$C_9H_{13}^+$	$C_{10}H_{15}CH_3$ (4,7-Methano-1 <i>H</i> -indene, octahydro-2-methyl-, (2 α ,3 α β ,4 α ,7 α ,7 α β)-) (RN-CAS Registry Number 50745-90-9) (ON-Other name: <i>cis</i> -4-Methyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		10.1 \pm 0.1	PI	3918
$C_9H_{13}^+$	$C_{10}H_{15}CH_3$ (4,7-Methano-1 <i>H</i> -indene, octahydro-8-methyl-, stereoisomer) (RN-CAS Registry Number 50745-92-1) (ON-Other name: <i>anti</i> -10-Methyl- <i>endo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		9.5 \pm 0.1	PI	3918
$C_9H_{13}^+$	$C_{10}H_{15}C_2H_5$ (4,7-Methano-1 <i>H</i> -indene, 5-ethyloctahydro-, (3 α ,4 β ,5 α ,7 β ,7 α)-) (RN-CAS Registry Number 32787-97-6) (ON-Other name: <i>endo</i> -8-Ethyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		9.9 \pm 0.1	PI	3918
$C_9H_{14}^+$	C_9H_{14} (Bicyclo[3.2.2]non-2-ene) (RN-CAS Registry Number 40319-81-1)	**	8.84 (V)	PE	3991
$C_9H_{14}^+$	C_9H_{14} (Bicyclo[3.2.2]non-6-ene) (RN-CAS Registry Number 7124-86-9)	**	8.95 (V)	PE	3991
$C_9H_{14}^+$	C_9H_{14} (1,2-Cyclononadiene) (RN-CAS Registry Number 1123-11-1)	**	8.87 (V)	PE	4019
$C_9H_{14}^+$	C_9H_{14} (Tricyclo[3.2.2.0 ^{2,4}]nonane) (RN-CAS Registry Number 278-80-8)	**	9.50 (V)	PE	3849
$C_9H_{14}^+$	C_9H_{14} (Tricyclo[4.2.1.0 ^{2,5}]nonane, <i>exo</i> -) (RN-CAS Registry Number 16526-27-5)	**	9.5 \pm 0.05 (V)	PE	4040
$C_9H_{16}^+$	$CH_2=CH(CH_2)_5CH=CH_2$ (RN-CAS Registry Number 4900-30-5)	**	9.51 \pm 0.02 (V)	PE	4010

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_9H_{16}^+$	$C_7H_{10}(CH_3)_2$ (Bicyclo[2.2.1]heptane, 7,7-dimethyl-) (RN-CAS Registry Number 2034-53-9)	**	8.30	PE	3687
$C_9H_{16}^+$	C_9H_{16} (Bicyclo[3.2.2]nonane) (RN-CAS Registry Number 283-19-2)	**	9.6 (V)	PE	3991
$C_9H_{16}^+(\text{}^2E)$	C_9H_{16} (Bicyclo[6.1.0]nonane) (RN-CAS Registry Number 286-60-2)	**	9.4 (V)	PE	3509
$C_9H_{16}^+$	C_9H_{16} (Bicyclo[6.1.0]nonane, <i>trans</i> -) (RN-CAS Registry Number 39124-79-3)	**	9.36 (V)	PE	3849
$C_9H_{18}^+$	$CH_3(CH_2)_3C(CH_3)=C(CH_3)_2$ (RN-CAS Registry Number 3074-64-4)	**	8.145 ± 0.005	PE	3957
$C_9H_{18}^+$	$C_2H_5CH_2C(CH_3)=C(CH_3)C_2H_5$ (RN-CAS Registry Number 3074-67-7)	**	8.077 ± 0.005	PE	3957
$C_9H_{18}^+$	$(C_2H_5)_2C=C(CH_3)C_2H_5$ (RN-CAS Registry Number 50787-13-8)	**	8.128 ± 0.005	PE	3957
$C_{10}H_8^+$	$C_{10}H_8$ (Naphthalene) (RN-CAS Registry Number 91-20-3)	**	8.1	PI	3586
$C_{10}H_8^+$	$C_{10}H_8$ (Naphthalene) (RN-CAS Registry Number 91-20-3)	**	8.13	PE	3637
$C_{10}H_8^+$	$C_{10}H_8$ (Naphthalene) (RN-CAS-Registry Number 91-20-3)	**	8.15	PE	4066
$C_{10}H_8^+$	$C_{10}H_8$ (Naphthalene) (RN-CAS Registry Number 91-20-3)	**	8.15	PE	3638
$C_{10}H_8^+$	$C_{10}H_8$ (Naphthalene) (RN-CAS Registry Number 91-20-3)	**	8.15	PE	3668
$C_{10}H_8^+$	$C_{10}H_8$ (Naphthalene) (RN-CAS Registry Number 91-20-3)	**	8.15 (V)	PE	3781
$C_{10}H_8^+$	$C_{10}H_8$ (Naphthalene) (RN-CAS Registry Number 91-20-3)	**	8.15 (V)	PE	3898
$C_{10}H_8^+$	$C_{10}H_8$ (Naphthalene) (RN-CAS Registry Number 91-20-3)	**	8.25 ± 0.01	RPD	3588
$C_{10}H_8^+$	$C_{10}H_8$ (Naphthalene) (RN-CAS Registry Number 91-20-3)	**	8.12	CTS	3922
$C_{10}H_{10}^+$	$C_6H_5CH=CHCH=CH_2$ (Benzene, 1,3-butadienyl-, (E)-) (RN-CAS Registry Number 16939-57-4)	**	7.95	PE	3892

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{10}H_{10}^+$	$CH_2=C(C_6H_5)CH=CH_2$ (Benzene, (1-methylene-2-propenyl)-) (RN-CAS Registry Number 2288-18-8)	**	8.57	PE	3892
$C_{10}H_{10}^+$	$C_9H_8=CH_2$ (Bicyclo[4.2.1]nona-2,4,7-triene, 9-methylene-) (RN-CAS Registry Number 38898-39-4)	**	8.25 (V)	PE	4094
$C_{10}H_{10}^+$	$C_{10}H_{10}$ (Cyclopenta[cd]pentalene, 2a,4a,6a,6b-tetrahydro-) (RN-CAS Registry Number 6053-74-3) (ON-Other name: Triquinacene)	**	9.0 (V)	PE	4004
$C_{10}H_{10}^+$	$C_9H_8(=CH_2)$ (1 <i>H</i> -Indene, 2,3-dihydro-1-methylene-) (RN-CAS Registry Number 1194-56-5)	**	8.00 ± 0.02	PE	3854
$C_{10}H_{10}^+$	$C_{10}H_{10}$ (1,2,3-Metheno-1 <i>H</i> -dicycloprop[cd,hi]indene, octahydro-) (RN-CAS Registry Number 33840-23-2) (ON-Other name: Diademane)	**	8.50 (V)	PE	3849
$C_{10}H_{10}^+$	$(C_5H_5)_2Fe$ (Ferrocene) (RN-CAS Registry Number 102-54-5) (PC-Appearance potential of the corresponding metastable transition)	Fe	13.8 ± 0.5	EI	3628
$C_{10}H_{10}^+$	$(C_5H_5)_2Fe$ (Ferrocene) (RN-CAS Registry Number 102-54-5) (MT-Metastable transition(s) observed)	Fe	13.96 ± 0.10	EI	3628
$C_{10}H_{10}^+$	$(C_5H_5)_2Ni$ (Nickelocene) (RN-CAS Registry Number 1271-28-9) (PC-Appearance potential of the corresponding metastable transition)	Ni	13.3 ± 0.5	EI	3628
$C_{10}H_{12}^+$	$C_6H_3(CH_3)_2CH=CH_2$ (Benzene, 1-ethenyl-2,4-dimethyl-) (RN-CAS Registry Number 2234-20-0)	**	8.22 (V)	PE	3964
$C_{10}H_{12}^+$	$C_6H_3(CH_3)_2CH=CH_2$ (Benzene, 2-ethenyl-1,3-dimethyl-) (RN-CAS Registry Number 2039-90-9)	**	8.10 ± 0.02	PE	3854
$C_{10}H_{12}^+$	$C_6H_3(CH_3)_2CH=CH_2$ (Benzene, 2-ethenyl-1,3-dimethyl-) (RN-CAS Registry Number 2039-90-9)	**	8.48 (V)	PE	3964
$C_{10}H_{12}^+$	$C_6H_3(CH_3)_2CH=CH_2$ (Benzene, 2-ethenyl-1,4-dimethyl-) (RN-CAS Registry Number 2039-89-6)	**	8.00 ± 0.02	PE	3854
$C_{10}H_{12}^+$	$C_6H_5CH=C(CH_3)_2$ (Benzene, (2-methyl-1-propenyl)-) (RN-CAS Registry Number 768-49-0)	**	7.78 ± 0.04	RPD	4097
$C_{10}H_{12}^+$	$C_7H_6=C(CH_3)_2$ (Bicyclo[2.2.1]hepta-2,5-diene, 7-(1-methylethylidene)-) (RN-CAS Registry Number 36456-22-1)	**	7.97	PE	3687
$C_{10}H_{12}^+$	$C_9H_9CH_3$ (1 <i>H</i> -Indene, 2,3-dihydro-1-methyl-) (RN-CAS Registry Number 767-58-8)	**	8.47	CTS	3546

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{10}H_{12}^+$	$C_{10}H_{12}$ (Naphthalene, 1,2,3,4-tetrahydro-) (RN-CAS-Registry Number 119-64-2)	**	8.44 (V)	PE	4063
$C_{10}H_{12}^+$	$C_{10}H_{12}$ (Naphthalene, 1,2,3,4-tetrahydro-) (RN-CAS Registry Number 119-64-2)	**	8.45 ± 0.02 (V)	PE	3854
$C_{10}H_{12}^+$	$C_{10}H_{12}$ (Naphthalene, 1,2,3,4-tetrahydro-) (RN-CAS Registry Number 119-64-2)	**	8.47	CTS	3546
$C_{10}H_{12}^+$	$C_{10}H_{12}$ (Tricycloprop[<i>cd,f,hi</i>]indene, decahydro-, (1 α ,1 β ,1 γ ,2 α ,2 β ,2 γ ,2 δ ,2 ϵ)-) (RN-CAS Registry Number 50895-59-5) (ON-Other name: Pentacyclo[3.3.2.0 ^{2,9} .0 ^{4,10} .0 ^{6,8}]decane)	**	8.78 (V)	PE	3849
$C_{10}H_{14}^+$	$C_6H_4(C_2H_5)_2$ (Benzene, 1,2-diethyl-) (RN-CAS-Registry Number 135-01-3)	**	8.51 (V)	PE	4063
$C_{10}H_{14}^+$	$C_6H_4(C_2H_5)_2$ (Benzene, 1,2-diethyl-) (RN-CAS Registry Number 135-01-3)	**	8.51	CTS	3546
$C_{10}H_{14}^+$	$C_6H_5C(CH_3)_3$ (Benzene, (1,1-dimethylethyl-) (RN-CAS Registry Number 98-06-6)	**	8.64	CTS	3922
$C_{10}H_{14}^+$	$C_6H_2(CH_3)_4$ (Benzene, 1,2,3,5-tetramethyl-) (RN-CAS Registry Number 527-53-7)	**	8.3 ± 0.03 (V)	PE	3713
$C_{10}H_{14}^+$	$C_6H_2(CH_3)_4$ (Benzene, 1,2,4,5-tetramethyl-) (RN-CAS Registry Number 95-93-2)	**	8.2	CTS	3543
$C_{10}H_{14}^+$	$C_7H_8=C(CH_3)_2$ (Bicyclo[2.2.1]hept-2-ene, 7-(1-methylethylidene)-) (RN-CAS Registry Number 14995-50-7)	**	8.27	PE	3687
$C_{10}H_{15}^+$	$C_{10}H_{15}CH_3$ (RN-CAS Registry Number XXXXX-XX-X) (ON-Other name: 2-Methyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)	CH ₃	9.5 ± 0.1	PI	3918
$C_{10}H_{15}^+$	$C_{10}H_{15}CH_3$ (4,7-Methano-1 <i>H</i> -indene, octahydro-2-methyl-, (2 α ,3 α ,4 α ,7 α ,7 β)-) (RN-CAS Registry Number 50745-90-9) (ON-Other name: <i>cis</i> -4-Methyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)	CH ₃	10.1 ± 0.1	PI	3918
$C_{10}H_{15}^+$	$C_{10}H_{15}CH_3$ (4,7-Methano-1 <i>H</i> -indene, octahydro-8-methyl-, stereoisomer) (RN-CAS Registry Number 50745-92-1) (ON-Other name: <i>anti</i> -10-Methyl- <i>endo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)	CH ₃	9.6 ± 0.1	PE	3918
$C_{10}H_{15}^+$	$C_{10}H_{15}C_2H_5$ (4,7-Methano-1 <i>H</i> -indene, 5-ethyloctahydro-, (3 α ,4 β ,5 α ,7 β ,7 α)-) (RN-CAS Registry Number 32787-97-6) (ON-Other name: <i>endo</i> -8-Ethyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)		9.9 ± 0.1	PI	3918
$C_{10}H_{16}^+$	$C_9H_{14}=CH_2$ (Bicyclo[4.2.1]nonane, 9-methylene-) (RN-CAS Registry Number 40916-48-1)	**	9.0 (V)	PE	4094

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{10}H_{16}^+$	$(C_3H_5)_2C=C(CH_3)_2$ (Cyclopropane, 1,1'-(2-methyl-1-propenylidene)bis-) (RN-CAS Registry Number 27720-84-9)	**	7.82	PI	3759
$C_{10}H_{16}^+$	$C_{10}H_{16}$ (4,7-Methano-1H-indene, octahydro-, (3 α ,4 β ,7 β ,7 α)-) (RN-CAS Registry Number 2825-82-3) (ON-Other name: <i>exo</i> -Tricyclo[5.2.1.0 ^{2,6}]decane)	**	9.35 \pm 0.05	PI	3918
$C_{10}H_{16}^+$	$C_{10}H_{16}$ (Tricyclo[3.3.1.1 ^{3,7}]decane (RN-CAS Registry Number 281-23-2)	**	9.30 \pm 0.01	S	3757
$C_{10}H_{16}^+$	$C_{10}H_{16}$ (Tricyclo[3.3.1.1 ^{3,7}]decane) (RN-CAS Registry Number 281-23-2) (ON-Other name: Adamantane)	**	9.1 \pm 0.05	PE	3855
$C_{10}H_{16}^+$	$C_{10}H_{16}$ (Tricyclo[3.3.1.1 ^{3,7}]decane) (RN-CAS Registry Number 281-23-2) (ON-Other name: Adamantane)	**	9.22	PE	3907
$C_{10}H_{16}^+$	$C_{10}H_{16}$ (Tricyclo [3.3.1.1 ^{3,7}]decane) (RN-CAS Registry Number 281-23-2) (ON-Other name: Adamantane)	**	9.23	PE	3886
$C_{10}H_{16}^+$	$C_{10}H_{16}$ (Tricyclo[3.3.1.1 ^{3,7}]decane) (RN-CAS Registry Number 281-23-2) (ON-Other name: Adamantane)	**	9.28 \pm 0.1	PE	3851
$C_{10}H_{16}^+$	$C_{10}H_{16}$ (Tricyclo[3.3.1.1 ^{3,7}]decane (RN-CAS Registry Number 281-23-2) (ON-Other name: Adamantane)	**	9.31 \pm 0.01	PE	3757
$C_{10}H_{16}^+$	$C_{10}H_{16}$ (Tricyclo[3.3.1.1 ^{3,7}]decane) (RN-CAS Registry Number 281-23-2) (ON-Other name: Adamantane)	**	9.55 (V)	PE	3990
$C_{10}H_{16}^+$	$C_{10}H_{16}$ (Tricyclo[3.3.1.1 ^{3,7}]decane (RN-CAS Registry Number 281-23-2) (ON-Other name: Adamantane)	**	9.75 (V)	PE	4000
$C_{10}H_{20}^+$	$CH_3(CH_2)_3C(C_2H_5)=C(CH_3)_2$ (RN-CAS Registry Number 19780-61-1)	**	8.101 \pm 0.005	PE	3957
$C_{10}H_{20}^+$	$CH_3(CH_2)_4C(CH_3)=C(CH_3)_2$ (RN-CAS Registry Number 19781-18-1)	**	8.132 \pm 0.005	PE	3957
$C_{10}H_{20}^+$	$(CH_3)_3CCH_2C(CH_3)=C(CH_3)_2$ (RN-CAS Registry Number 33175-59-6)	**	8.097 \pm 0.005	PE	3957
$C_{10}H_{20}^+$	(<i>tert</i> -C ₄ H ₉) ₂ C=CH ₂ (RN-CAS Registry Number 5857-68-1)	**	8.795 \pm 0.008	PE	3957
$C_{10}H_{20}^+$	<i>cis</i> -(CH ₃) ₃ CCH=CHC(CH ₃) ₃ (RN-CAS Registry Number 692-47-7)	**	8.695 \pm 0.010	PE	3957
$C_{10}H_{20}^+$	<i>cis</i> -(CH ₃) ₃ CCH=CHC(CH ₃) ₃ (RN-CAS Registry Number 692-47-7)	**	8.95 (V)	PE	4084
$C_{10}H_{20}^+$	<i>cis</i> -5-C ₁₀ H ₂₀ (RN-CAS Registry Number 7433-78-5)	**	8.766 \pm 0.005	PE	3957

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{10}H_{20}^+$	<i>trans</i> -(CH ₃) ₃ CCH=CHC(CH ₃) ₃ ** (RN-CAS Registry Number 692-48-8)		8.741±0.008	PE	3957
$C_{10}H_{20}^+$	<i>trans</i> -(CH ₃) ₃ CCH=CHC(CH ₃) ₃ ** (RN-CAS Registry Number 692-48-8)		8.89 (V)	PE	4084
$C_{10}H_{20}^+$	<i>trans</i> -5-C ₁₀ H ₂₀ ** (RN-CAS Registry Number 7433-56-9)		8.760±0.005	PE	3957
$C_{11}H_9^+$	C ₆ H ₅ C≡CCH=CHCH ₂ Cl (Benzene, (5-chloro-3-penten-1-ynyl)-, (<i>E</i>)-) (RN-CAS Registry Number 40316-56-1)		8.95±0.05	EI	4044
$C_{11}H_9^+$	C ₁₀ H ₇ CH ₂ Cl (Naphthalene, 1-(chloromethyl)-) (RN-CAS Registry Number 86-52-2)		11.21±0.05	EI	4044
$C_{11}H_9^+$	C ₁₀ H ₇ CH ₂ Cl (Naphthalene, 2-(chloromethyl)-) (RN-CAS Registry Number 2506-41-4)		11.15±0.05	EI	4044
$C_{11}H_{10}^+$	C ₁₁ H ₁₀ ** (Bicyclo[4.4.1]undeca-1,3,5,7,9-pentaene) (RN-CAS Registry Number 2443-46-1)		7.90 (V)	PE	3953
$C_{11}H_{10}^+$	C ₁₀ H ₇ CH ₃ ** (Naphthalene, 1-methyl-) (RN-CAS Registry Number 90-12-0)		7.95 (V)	PE	3685
$C_{11}H_{10}^+$	C ₁₀ H ₇ CH ₃ ** (Naphthalene, 1-methyl-) (RN-CAS Registry Number 90-12-0)		7.80±0.03	RPD	3588
$C_{11}H_{10}^+$	C ₁₀ H ₇ CH ₃ ** (Naphthalene, 1-methyl-) (RN-CAS Registry Number 90-12-0)		7.98	CTS	3758
$C_{11}H_{10}^+$	C ₁₀ H ₇ CH ₃ ** (Naphthalene, 2-methyl-) (RN-CAS Registry Number 91-57-6)		7.93 (V)	PE	3685
$C_{11}H_{10}^+$	C ₁₀ H ₇ CH ₃ ** (Naphthalene, 2-methyl-) (RN-CAS Registry Number 91-57-6)		8.10±0.03	RPD	3588
$C_{11}H_{10}^+$	(C ₆ H ₅) ₂ S (Benzene, 1,1'-thiobis-) (RN-CAS Registry Number 139-66-2)	CS	12.57±0.1	EI	3817
$C_{11}H_{12}^+$	C ₁₀ H ₁₀ (=CH ₂) ** (Naphthalene, 1,2,3,4-tetrahydro-1-methylene-) (RN-CAS Registry Number 25108-63-8)		7.90±0.02 (V)	PE	3854
$C_{11}H_{14}^+$	C ₆ H ₂ (CH ₃) ₃ CH=CH ₂ ** (Benzene, 2-ethenyl-1,3,5-trimethyl-) (RN-CAS Registry Number 769-25-5)		8.33 (V)	PE	3964
$C_{11}H_{14}^+$	C ₁₁ H ₁₄ ** (5 <i>H</i> -Benzocycloheptene, 6,7,8,9-tetrahydro-) (RN-CAS Registry Number 1075-16-7)		8.40±0.02 (V)	PE	3854
$C_{11}H_{14}^+$	C ₁₁ H ₁₄ ** (5 <i>H</i> -Benzocycloheptene, 6,7,8,9-tetrahydro-) (RN-CAS-Registry Number 1075-16-7)		8.44 (V)	PE	4063

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{11}H_{14}^+$	$C_9H_8(CH_3)_2$ (Indan, 1,1-dimethyl) (RN-CAS Registry Number 4912-92-9)	**	8.47	CTS	3546
$C_{11}H_{14}^+$	$C_9H_8(CH_3)_2$ (1 <i>H</i> -Indene, 2,3-dihydro-2,2-dimethyl-) (RN-CAS Registry Number 20836-11-7)	**	8.47	CTS	3546
$C_{11}H_{14}^+$	$C_8H_8=C(CH_3)_2$ (Tricyclo[3.2.1.0 ^{2,4}]oct-6-ene, 8-(1-methylethylidene)-, <i>endo</i> -) (RN-CAS Registry Number XXXXX-XX-X)	**	7.9	PE	3687
$C_{11}H_{16}^+$	$C_6H_4(CH_3)C_4H_9$ (Benzene, 1-butyl-3-methyl-) (RN-CAS Registry Number 1595-04-6)	**	8.42±0.1	EI	3629
$C_{11}H_{16}^+$	$C_6H_4(CH_3)C_4H_9$ (Benzene, 1-butyl-4-methyl-) (RN-CAS Registry Number 1595-05-7)	**	8.35±0.1	EI	3629
$C_{11}H_{16}^+$	$C_6H(CH_3)_5$ (Benzene, pentamethyl-) (RN-CAS Registry Number 700-12-9)	**	7.9	CTS	3543
$C_{11}H_{16}^+$	$(C_3H_5)_2C=CHC_3H_5$ (Cyclopropane, 1,1',1''-(1-ethenyl-2-ylidene)tris-) (RN-CAS Registry Number 23603-63-6)	**	7.48	PI	3759
$C_{11}H_{16}^+$	$C_{10}H_{14}(=CH_2)$ (Tricyclo[3.3.1.1 ^{3,7}]decane, 2-methylene-) (RN-CAS Registry Number 875-72-9) (ON-Other name: Methyleneadamantane)		8.82	PE	3886
$C_{11}H_{16}^+$	$C_8H_{10}=C(CH_3)_2$ (Tricyclo[3.2.1.0 ^{2,4}]octane, 8-(1-methylethylidene)-, <i>endo</i> -) (RN-CAS Registry Number XXXXX-XX-X)	**	8.18	PE	3687
$C_{11}H_{17}^+$	$C_{10}H_{15}C_2H_5$ (4,7-Methano-1 <i>H</i> -indene, 5-ethyloctahydro-, (3 <i>α</i> ,4 <i>β</i> ,5 <i>α</i> ,7 <i>β</i> ,7 <i>α</i>)-) (RN-CAS Registry Number 32787-97-6) (ON-Other name: <i>endo</i> -8-Ethyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)	CH ₃	10.0±0.1	PI	3918
$C_{11}H_{18}^+$	$C_{10}H_{15}CH_3$ (RN-CAS Registry Number XXXXX-XX-X) (ON-Other name: 2-Methyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)	**	9.35±0.05	PI	3918
$C_{11}H_{18}^+$	$C_{10}H_{15}CH_3$ (4,7-Methano-1 <i>H</i> -indene, octahydro-2-methyl-, (2 <i>α</i> ,3 <i>αβ</i> ,4 <i>α</i> ,7 <i>α</i> ,7 <i>αβ</i>)-) (RN-CAS Registry Number 50745-90-9) (ON-Other name: <i>cis</i> -4-Methyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)	**	9.35±0.05	PI	3918
$C_{11}H_{18}^+$	$C_{10}H_{15}CH_3$ (4,7-Methano-1 <i>H</i> -indene, octahydro-8-methyl-, stereoisomer) (RN-CAS Registry Number 50745-92-1) (ON-Other name: <i>anti</i> -10-Methyl- <i>endo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)	**	9.35±0.05	PI	3918
$C_{11}H_{18}^+$	$C_{10}H_{15}CH_3$ (Tricyclo[3.3.1.1 ^{3,7}]decane, 1-methyl-) (RN-CAS Registry Number 768-91-2) (ON-Other name: 1-Methyladamantane)	**	9.17±0.02	PE	3886

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{11}H_{20}^+$	$(tert-C_4H_9)_2C=C=CH_2$ (RN-CAS Registry Number 22585-31-5)	**	8.55 (V)	PE	4019
$C_{11}H_{22}^+$	$C_2H_5CH_2C(C_2H_5)=C(C_2H_5)_2$ (RN-CAS Registry Number 50787-14-9)	**	8.041 ± 0.020	PE	3957
$C_{12}H_8^+$	$C_{12}H_8$ (Biphenylene) (RN-CAS Registry Number 259-79-0)	**	7.53 ± 0.05	PE	3684
$C_{12}H_8^+$	$C_{12}H_8$ (Biphenylene) (RN-CAS Registry Number 259-79-0)	**	7.60 ± 0.02 (V)	PE	3702
$C_{12}H_{10}^+$	$(C_6H_5)_2$ (1,1'-Biphenyl) (RN-CAS Registry Number 92-52-4)	**	7.95 ± 0.02	PE	3702
$C_{12}H_{10}^+$	$(C_6H_5)_2$ (1,1'-Biphenyl) (RN-CAS Registry Number 92-52-4)	**	8.35	CTS	3577
$C_{12}H_{10}^+$	$C_{12}H_{10}$ (Cyclopent[cd]azulene, 2a, 8b-dihydro-) (RN-CAS Registry Number 38310-40-6)	**	7.46 (V)	PE	4008
$C_{12}H_{10}^+$	$C_{12}H_{10}$ (4a, 8a-Ethenonaphthalene) (RN-CAS Registry Number 19539-78-7)	**	8.1 (V)	PE	4006
$C_{12}H_{12}^+$	$C_{12}H_{12}$ (4a, 8a-Ethenonaphthalene, 1,4-dihydro-) (RN-CAS Registry Number 38310-32-6)	**	8.0 (V)	PE	4006
$C_{12}H_{14}^+$	$C_{11}H_{12}(=CH_2)$ (5H-Benzocycloheptene, 6,7,8,9-tetrahydro-5-methylene-) (RN-CAS Registry Number 40562-09-2)	**	8.45 ± 0.02 (V)	PE	3854
$C_{12}H_{14}^+$	$C_{12}H_{14}$ (4a, 8a-Ethenonaphthalene, 1,2,3,4-tetrahydro-) (RN-CAS Registry Number 24139-33-1)	**	8.0 (V)	PE	4006
$C_{12}H_{14}^+$	$C_{12}H_{14}$ (4a, 8a-Ethenonaphthalene, 1,4,5,8-tetrahydro-) (RN-CAS Registry Number 20295-17-4)	**	8.7 (V)	PE	4006
$C_{12}H_{16}^+$	$C_6H_5CH=CHC(CH_3)_3$ (Benzene, (3,3-dimethyl-1-butenyl)-, (E)-) (RN-CAS Registry Number 3846-66-0)	**	7.80 ± 0.04	RPD	4097
$C_{12}H_{16}^+$	$C_6H_5CH=CHC(CH_3)_3$ (Benzene, (3,3-dimethyl-1-butenyl)-, (Z)-) (RN-CAS Registry Number 3740-05-4)	**	8.29 ± 0.04	RPD	4097
$C_{12}H_{16}^+$	$C_6H_5C(C(CH_3)_3)=CH_2$ (Benzene, (2,2-dimethyl-1-methylenepropyl)-) (RN-CAS Registry Number 5676-29-9)	**	8.25 ± 0.04	RPD	4097
$C_{12}H_{16}^+$	$C_{12}H_{16}$ (Benzocyclooctene, 5,6,7,8,9,10-hexahydro-) (RN-CAS-Registry Number 1076-69-3)	**	8.42 (V)	PE	4063

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{12}H_{16}^+$	$C_{12}H_{16}$ (4a, 8a-Ethenonaphthalene, 1,2,3,4,5,8-hexahydro-) (RN-CAS Registry Number 24139-32-0)	**	8.9 (V)	PE	4006
$C_{12}H_{18}^+$	$C_6(CH_3)_6$ (Benzene, hexamethyl-) (RN-CAS Registry Number 87-85-4)	**	7.8	CTS	3543
$C_{12}H_{18}^+$	$C_{12}H_{18}$ (4a, 8a-Ethenonaphthalene, 1,2,3,4,5,6,7,8-octahydro-) (RN-CAS Registry Number 38992-78-8)	**	9.05 (V)	PE	4006
$C_{12}H_{18}^+$	$C_6(CH_3)_6Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-hexamethylbenzene]-) (RN-CAS Registry Number 12088-11-8)		8.55 ± 0.1	EI	3788
$C_{12}H_{20}^+$	$C_{10}H_{15}C_2H_5$ (4,7-Methano-1 <i>H</i> -indene, 5-ethyloctahydro-, (3 α ,4 β ,5 α ,7 β ,7 α)-) (RN-CAS Registry Number 32787-97-6) (ON-Other name: <i>endo</i> -8-Ethyl- <i>exo</i> -tricyclo[5.2.1.0 ^{2,6}]decane)	**	9.35 ± 0.05	PI	3918
$C_{12}H_{24}^+$	<i>cis</i> -(CH_3) ₃ CCH ₂ C(CH_3)=CHC(CH_3) ₃ ** (RN-CAS Registry Number 27656-50-4)	**	8.346 ± 0.005	PE	3957
$C_{13}H_9^+$	$C_{14}H_9CH_3$ (Phenanthrene, 4-methyl-) (RN-CAS Registry Number 832-64-4) (MT-Metastable transition(s) observed)	C_2H_3	12.7 ± 0.1	EI	3454
$C_{13}H_9^+$	$C_{14}H_8(CH_3)_2$ (Phenanthrene, 4,5-dimethyl-) (RN-CAS Registry Number 3674-69-9)		12.4 ± 0.1	EI	3454
$C_{13}H_9^+$	$C_6H_8(C_6H_5)_2$ (Benzene, 1,1'-(2-cyclohexen-1-ylidene)bis-) (RN-CAS Registry Number 31158-25-5)		13.0 ± 0.4	EI	4018
$C_{13}H_9^+$	$C_6H_{10}(C_6H_5)_2$ (Benzene, 1,1'-cyclohexylidenebis-) (RN-CAS Registry Number 21113-55-3)		13.3 ± 0.4	EI	4018
$C_{13}H_9^+$	$C_6H_7(CH_3)(C_6H_5)_2$ (Cyclohexene, 1-methyl-4,4-diphenyl-) (RN-CAS Registry Number 50592-48-8)		13.4 ± 0.4	EI	4018
$C_{13}H_9^+$	$C_6H_9(CH_3)(C_6H_5)_2$ (Benzene, 1,1'-(4-methylcyclohexylidene)bis-) (RN-CAS Registry Number 32812-65-0)		13.2 ± 0.4	EI	4018
$C_{13}H_9^+$	$C_{10}H_{13}(CH_3)(C_6H_5)_2$ (Naphthalene, 1,2,3,4,4a,5,6,7-octahydro-4a-methyl-2,2-diphenyl-) (RN-CAS Registry Number 50592-50-2)		13.4 ± 0.4	EI	4018
$C_{13}H_9^+$	$C_6H_6(=O)(C_6H_5)_2$ (2-Cyclohexen-1-one, 4,4-diphenyl-) (RN-CAS Registry Number 4528-64-7)		14.4 ± 0.4	EI	4018
$C_{13}H_9^+$	$C_6H_8(=O)(C_6H_5)_2$ (Cyclohexanone, 2,2-diphenyl-) (RN-CAS Registry Number 22612-62-0)		13.8 ± 0.4	EI	4018

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{13}H_9^+$	$C_6H_8(=O)(C_6H_5)_2$ (Cyclohexanone, 4,4-diphenyl-) (RN-CAS Registry Number 4528-68-1)		14.4 ± 0.4	EI	4018
$C_{13}H_9^+$	$C_6H_7(=O)(CH_3)(C_6H_5)_2$ (Cyclohexanone, 2-methyl-5,5-diphenyl-) (RN-CAS Registry Number 50592-49-9)		14.0 ± 0.4	EI	4018
$C_{13}H_9^+$	$C_6H_7(=O)(CH_3)(C_6H_5)_2$ (Cyclohexanone, 6-methyl-2,2-diphenyl-) (RN-CAS Registry Number 50592-52-4)		14.1 ± 0.4	EI	4018
$C_{13}H_9^+$	$C_6H_8(OH)(CH_3)(C_6H_5)_2$ (Cyclohexanol, 1-methyl-4,4-diphenyl-) (RN-CAS Registry Number 50592-47-7)		13.9 ± 0.4	EI	4018
$C_{13}H_9^+$	$C_6H_6(=O)(CH_3)_2(C_6H_5)_2$ (Cyclohexanone, 2,2-dimethyl-6,6-diphenyl-) (RN-CAS Registry Number 50592-53-5)		13.4 ± 0.4	EI	4018
$C_{13}H_9^+$	$C_6H_6(=O)(CH_3)(C_6H_5)_2CH_2CH_2CHO$ (Cyclohexanepropanal, 1-methyl-2-oxo-3,3-diphenyl-) (RN-CAS Registry Number XXXXX-XX-X)		13.6 ± 0.4	EI	4018
$C_{13}H_9^+$	$C_6H_6(=O)(CH_3)(C_6H_5)_2CH_2CH_2COCH_3$ (Cyclohexanone, 2-methyl-2-(3-oxobutyl)-6,6-diphenyl-) (RN-CAS Registry Number 50592-55-7)		13.6 ± 0.4	EI	4018
$C_{13}H_9^+$	$C_6H_6(=O)(C_6H_5)=CHS(CH_2)_3CH_3$ (Cyclohexanone, 6-[(butylthio)methylene]-2,2-diphenyl-) (RN-CAS Registry Number 50592-51-3)		13.7 ± 0.4	EI	4018
$C_{13}H_9^+$	$C_6H_6(=O)CH_3(C_6H_5)_2CH_2CH=C(CH_3)Cl$ (Cyclohexanone, 2-(3-chloro-2-butenyl)-2-methyl-6,6-diphenyl-) (RN-CAS Registry Number 50592-54-6)		13.3 ± 0.4	EI	4018
$C_{13}H_{10}^+$	$C_{13}H_{10}$ (Fluorene) (RN-CAS Registry Number 86-73-7)	**	7.93 ± 0.02 (V)	PE	3702
$C_{13}H_{11}^+$	$(C_6H_5)_3CH$ (Benzene, 1,1',1''-methylidynetris-) (RN-CAS-Registry Number 519-73-3)	C_6H_5	10.9	PI	4055
$C_{13}H_{11}^+$	$C_6H_5CH_2C_6H_4OH$ (Phenol, 4-(phenylmethyl)-) (RN-CAS Registry Number 101-53-1)	OH	11.0 ± 0.2	EI	3807
$C_{13}H_{11}^+$	$C_6H_5CH_2C_6H_4OCH_3$ (Benzene, 1-methoxy-4-(phenylmethyl)-) (RN-CAS Registry Number 834-14-0)	OCH_3	11.6 ± 0.1	EI	3807
$C_{13}H_{11}^+$	$C_6H_5CH_2C_6H_4NO_2$ (Benzene, 1-nitro-4-(phenylmethyl)-) (RN-CAS Registry Number 1817-77-2)	NO_2	10.5 ± 0.1	EI	3807
$C_{13}H_{12}^+$	$(C_6H_5)_2CH_2$ (Benzene, 1,1'-methylenebis-) (RN-CAS Registry Number 101-81-5)	**	8.80 ± 0.02 (V)	PE	3854
$C_{13}H_{12}^+$	$(C_6H_5)_2CH_2$ (Benzene, 1,1'-methylenebis-) (RN-CAS Registry Number 101-81-5)	**	9.00 ± 0.05	EI	3806

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{13}H_{12}^+$	$C_6H_5C_6H_4CH_3$ (1,1'-Biphenyl, 2-methyl-) (RN-CAS Registry Number 643-58-3)	**	8.10 ± 0.02	PE	3702
$C_{13}H_{12}^+$	$C_6H_5C_6H_4CH_3$ (1,1'-Biphenyl, 3-methyl-) (RN-CAS Registry Number 643-93-6)	**	7.95 ± 0.02	PE	3702
$C_{13}H_{12}^+$	$C_6H_5C_6H_4CH_3$ (1,1'-Biphenyl, 4-methyl-) (RN-CAS Registry Number 644-08-6)	**	7.80 ± 0.02	PE	3702
$C_{13}H_{14}^+$	$C_{13}H_{14}$ (1,2,4-Ethanylylidene-1 <i>H</i> -cyclobuta[<i>cd</i>]pentalene, octahydro-5,7-bis (methylene)-) (RN-CAS Registry Number 42607-62-5) (ON-Other name: 8,11-Dimethylene-pentacyclo[5.4.0.0 ^{2,6} .0 ^{3,10} .0 ^{5,9}]tridecane)	**	8.50	PE	4036
$C_{13}H_{16}^+$	$C_{13}H_{16}$ (Bicyclo[5.4.2]trideca-7,9,11,12-tetraene) (RN-CAS Registry Number XXXXX-XX-X)	**	8.2 (V)	PE	3999
$C_{13}H_{16}^+$	$C_{13}H_{16}$ (1,2,4-Ethanylylidene-1 <i>H</i> -cyclobuta[<i>cd</i>]pentalene, octahydro-5-methyl-7-methylene-, (1 α ,1 $\alpha\beta$,2 α ,3 $\alpha\beta$,4 α ,5 α ,5 $\alpha\beta$,5 β)-) (RN-CAS Registry Number 42607-64-7)	**	9.10	PE	4036
$C_{13}H_{26}^+$	$((CH_3)_3C)_2C=CHCH(CH_3)_2$ (RN-CAS Registry Number 50787-12-7)	**	8.307 ± 0.008	PE	3957
$C_{14}H_{10}^+$	$C_{14}H_{10}$ (Anthracene) (RN-CAS Registry Number 120-12-7)	**	7.47	S	3857
$C_{14}H_{10}^+$	(RS-Average of two Rydberg series limits)				
$C_{14}H_{10}^+$	$C_{14}H_{10}$ (Anthracene) (RN-CAS Registry Number 120-12-7)	**	7.4	PI	3586
$C_{14}H_{10}^+$	$C_{14}H_{10}$ (Anthracene) (RN-CAS Registry Number 120-12-7)	**	7.40	PI	3877
$C_{14}H_{10}^+$	$C_{14}H_{10}$ (Anthracene) (RN-CAS Registry Number 120-12-7)	**	7.40	PE	3668
$C_{14}H_{10}^+$	$C_{14}H_{10}$ (Anthracene) (RN-CAS Registry Number 120-12-7)	**	7.40 (V)	PE	3896
$C_{14}H_{10}^+$	$C_{14}H_{10}$ (Anthracene) (RN-CAS Registry Number 120-12-7)	**	7.41 ± 0.05	PE	3684
$C_{14}H_{10}^+$	$C_{14}H_{10}$ (Anthracene) (RN-CAS Registry Number 120-12-7)	**	7.47 ± 0.01	PE	3644
$C_{14}H_{10}^+$	$C_{14}H_{10}$ (Anthracene) (RN-CAS Registry Number 120-12-7)	**	7.47 ± 0.01	PE	3657

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{14}H_{10}^+$	$C_{14}H_{10}$ (Anthracene) (RN-CAS Registry Number 120-12-7)	**	7.35	CTS	3577
$C_{14}H_{10}^+$	$C_{14}H_{10}$ (Anthracene) (RN-CAS Registry Number 120-12-7)	**	7.4	CTS	3543
$C_{14}H_{10}^+$	$C_6H_5C\equiv CC_6H_5$ (Benzene, 1,1'-(1,2-ethynediyl)bis-) (RN-CAS Registry Number 501-65-5)	**	7.90 ± 0.02	PE	3854
$C_{14}H_{10}^+$	$C_6H_5C\equiv CC_6H_5$ (Benzene, 1,1'-(1-2-ethynediyl)bis-) (RN-CAS Registry Number 501-65-5)	**	8.0 ± 0.05	PE	3684
$C_{14}H_{10}^+$	$C_{14}H_{10}$ (Phenanthrene) (RN-CAS Registry Number 85-01-8)	**	7.86 ± 0.01	PE	3644
$C_{14}H_{10}^+$	$C_{14}H_{10}$ (Phenanthrene) (RN-CAS Registry Number 85-01-8)	**	7.92 ± 0.02 (V)	PE	3702
$C_{14}H_{10}^+$	$C_{14}H_{10}$ (Phenanthrene) (RN-CAS Registry Number 85-01-8)	**	7.92 ± 0.05	PE	3684
$C_{14}H_{10}^+$	$C_{14}H_{10}$ (Phenanthrene) (RN-CAS Registry Number 85-01-8)	**	8.03 ± 0.01	RPD	3588
$C_{14}H_{10}^+$	$C_{14}H_{10}$ (Phenanthrene) (RN-CAS Registry Number 85-01-8)	**	8.25	CTS	3577
$C_{14}H_{10}^+$	$C_6H_8(C_6H_5)_2$ (Benzene, 1,1'-(2-cyclohexen-1-ylidene)bis-) (RN-CAS Registry Number 31158-25-5)		10.4 ± 0.4	EI	4018
$C_{14}H_{10}^+$	$C_6H_{10}(C_6H_5)_2$ (Benzene, 1,1'-cyclohexylidenebis-) (RN-CAS Registry Number 21113-55-3)		10.8 ± 0.4	EI	4018
$C_{14}H_{10}^+$	$C_6H_9(CH_3)(C_6H_5)_2$ (Benzene, 1,1'-(4-methylcyclohexylidene)bis-) (RN-CAS Registry Number 32812-65-0)		10.2 ± 0.4	EI	4018
$C_{14}H_{10}^+$	$C_{10}H_{13}(CH_3)(C_6H_5)_2$ (Naphthalene, 1,2,3,4,4a,5,6,7-octahydro-4a-methyl-2,2-diphenyl-) (RN-CAS Registry Number 50592-50-2)		9.3 ± 0.4	EI	4018
$C_{14}H_{10}^+$	$C_6H_8(=O)(C_6H_5)_2$ (Cyclohexanone, 2,2-diphenyl-) (RN-CAS Registry Number 22612-62-0)		10.7 ± 0.4	EI	4018
$C_{14}H_{10}^+$	$C_6H_8(=O)(C_6H_5)_2$ (Cyclohexanone, 4,4-diphenyl-) (RN-CAS Registry Number 4528-68-1)		13.2 ± 0.4	EI	4018
$C_{14}H_{10}^+$	$C_6H_7(=O)(CH_3)(C_6H_5)_2$ (Cyclohexanone, 2-methyl-5,5-diphenyl-) (RN-CAS Registry Number 50592-49-9)		9.6 ± 0.4	EI	4018
$C_{14}H_{10}^+$	$C_6H_7(=O)(CH_3)(C_6H_5)_2$ (Cyclohexanone, 6-methyl-2,2-diphenyl-) (RN-CAS Registry Number 50592-52-4)		10.3 ± 0.4	EI	4018

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{14}H_{10}^+$	$C_6H_8(OH)(CH_3)(C_6H_5)_2$ (Cyclohexanol, 1-methyl-4,4-diphenyl-) (RN-CAS Registry Number 50592-47-7)		10.5 ± 0.4	EI	4018
$C_{14}H_{10}^+$	$C_6H_6(=O)(CH_3)(C_6H_5)_2CH_2CH_2CHO$ (Cyclohexanepropanal, 1-methyl-2-oxo-3,3-diphenyl-) (RN-CAS Registry Number XXXXX-XX-X)		10.2 ± 0.4	EI	4018
$C_{14}H_{10}^+$	$C_6H_6(=O)(CH_3)(C_6H_5)_2CH_2CH_2COCH_3$ (Cyclohexanone, 2-methyl-2-(3-oxobutyl)-6,6-diphenyl-) (RN-CAS Registry Number 50592-55-7)		10.0 ± 0.4	EI	4018
$C_{14}H_{10}^+$	$C_6H_6(=O)CH_3(C_6H_5)_2CH_2CH=C(CH_3)Cl$ (Cyclohexanone, 2-(3-chloro-2-butenyl)-2-methyl-6,6-diphenyl-) (RN-CAS Registry Number 50592-54-6)		10.5 ± 0.4	EI	4018
$C_{14}H_{12}^+$	$C_6H_5CH=CHC_6H_5$ (Benzene, 1,1'-(1,2-ethenediyl)bis-, (E)) (RN-CAS Registry Number 103-30-0)	**	7.70 ± 0.02	PE	3854
$C_{14}H_{12}^+$	$C_6H_5CH=CHC_6H_5$ (Benzene, 1,1'-(1,2-ethenediyl)bis-, (E)-) (RN-CAS Registry Number 103-30-0)	**	7.76	PE	3657
$C_{14}H_{12}^+$	$C_6H_5CH=CHC_6H_5$ (Benzene, 1,1'-(1,2-ethenediyl)bis-, (Z)) (RN-CAS Registry Number 645-49-8)	**	7.80 ± 0.02	PE	3854
$C_{14}H_{12}^+$	$C_{14}H_{12}$ (Benzene, 1,1'-(1,2-ethenediyl)bis-) (RN-CAS Registry Number 588-59-0)	**	7.5	PI	3586
$C_{14}H_{12}^+$	$C_6H_5CH=CHC_6H_5$ (Benzene, 1,1'-(1,2-ethenediyl)bis-) (RN-CAS Registry Number 588-59-0)	**	7.9	CTS	3577
$C_{14}H_{12}^+$	$(C_6H_5)_2C=CH_2$ (Benzene, 1,1'-ethenylidenebis-) (RN-CAS Registry Number 530-48-3)	**	8.00 ± 0.02	PE	3854
$C_{14}H_{12}^+$	$C_{14}H_{12}$ (Phenanthrene, 9,10-dihydro-) (RN-CAS Registry Number 776-35-2)	**	7.55 ± 0.02	PE	3702
$C_{14}H_{12}^+$	$C_6H_8(C_6H_5)_2$ (Benzene, 1,1'-(2-cyclohexen-1-ylidene)bis-) (RN-CAS Registry Number 31158-25-5)		9.8 ± 0.4	EI	4018
$C_{14}H_{12}^+$	$C_6H_{10}(C_6H_5)_2$ (Benzene, 1,1'-cyclohexylidenebis-) (RN-CAS Registry Number 21113-55-3)		9.8 ± 0.4	EI	4018
$C_{14}H_{12}^+$	$C_6H_7(CH_3)(C_6H_5)_2$ (Cyclohexene, 1-methyl-4,4-diphenyl-) (RN-CAS Registry Number 50592-48-8)		9.8 ± 0.4	EI	4018
$C_{14}H_{12}^+$	$C_6H_9(CH_3)(C_6H_5)_2$ (Benzene, 1,1'-(4-methylcyclohexylidene)bis-) (RN-CAS Registry Number 32812-65-0)		10.1 ± 0.4	EI	4018
$C_{14}H_{12}^+$	$C_{10}H_{13}(CH_3)(C_6H_5)_2$ (Naphthalene, 1,2,3,4,4a,5,6,7-octahydro-4a-methyl-2,2-diphenyl-) (RN-CAS Registry Number 50592-50-2)		9.5 ± 0.4	EI	4018
$C_{14}H_{12}^+$	$C_6H_8(=O)(C_6H_5)_2$ (Cyclohexanone, 2,2-diphenyl-) (RN-CAS Registry Number 22612-62-0)		9.5 ± 0.4	EI	4018

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{14}H_{12}^+$	$C_6H_8(=O)(C_6H_5)_2$ (Cyclohexanone, 4,4-diphenyl-) (RN-CAS Registry Number 4528-68-1)		10.0 ± 0.4	EI	4018
$C_{14}H_{12}^+$	$C_6H_7(=O)(CH_3)(C_6H_5)_2$ (Cyclohexanone, 2-methyl-5,5-diphenyl-) (RN-CAS Registry Number 50592-49-9)		10.0 ± 0.4	EI	4018
$C_{14}H_{12}^+$	$C_6H_7(=O)(CH_3)(C_6H_5)_2$ (Cyclohexanone, 6-methyl-2,2-diphenyl-) (RN-CAS Registry Number 50592-52-4)		10.4 ± 0.4	EI	4018
$C_{14}H_{12}^+$	$C_6H_8(OH)(CH_3)(C_6H_5)_2$ (Cyclohexanol, 1-methyl-4,4-diphenyl-) (RN-CAS Registry Number 50592-47-7)		10.1 ± 0.4	EI	4018
$C_{14}H_{12}^+$	$C_6H_6(=O)(CH_3)_2(C_6H_5)_2$ (Cyclohexanone, 2,2-dimethyl-6,6-diphenyl-) (RN-CAS Registry Number 50592-53-5)		9.9 ± 0.4	EI	4018
$C_{14}H_{12}^+$	$C_6H_6(=O)(CH_3)(C_6H_5)_2CH_2CH_2CHO$ (Cyclohexanepropanal, 1-methyl-2-oxo-3,3-diphenyl-) (RN-CAS Registry Number XXXXX-XX-X)		10.3 ± 0.4	EI	4018
$C_{14}H_{12}^+$	$C_6H_6(=O)(CH_3)(C_6H_5)_2CH_2CH_2COCH_3$ (Cyclohexanone, 2-methyl-2-(3-oxobutyl)-6,6-diphenyl-) (RN-CAS Registry Number 50592-55-7)		10.5 ± 0.4	EI	4018
$C_{14}H_{12}^+$	$C_6H_6(=O)(C_6H_5)=CHS(CH_2)_3CH_3$ (Cyclohexanone, 6-[(butylthio)methylene]-2,2-diphenyl-) (RN-CAS Registry Number 50592-51-3)		10.1 ± 0.4	EI	4018
$C_{14}H_{12}^+$	$C_6H_6(=O)CH_3(C_6H_5)_2CH_2CH=C(CH_3)Cl$ (Cyclohexanone, 2-(3-chloro-2-butenyl)-2-methyl-6,6-diphenyl-) (RN-CAS Registry Number 50592-54-6)		10.0 ± 0.4	EI	4018
$C_{14}H_{14}^+$	$C_6H_5CH_2CH_2C_6H_5$ (Benzene, 1,1'-(1,2-ethanediyl)bis-) (RN-CAS Registry Number 103-29-7)	**	9.00 ± 0.05	EI	3806
$C_{14}H_{14}^+$	$(C_6H_4CH_3)_2$ (1,1'-Biphenyl, 2,2'-dimethyl-) (RN-CAS Registry Number 605-39-0)	**	8.05 ± 0.02	PE	3702
$C_{14}H_{14}^+$	$(C_6H_4CH_3)_2$ (1,1'-Biphenyl, 3,3'-dimethyl-) (RN-CAS Registry Number 612-75-9)	**	7.85 ± 0.02	PE	3702
$C_{14}H_{14}^+$	$C_6H_5C_6H_4C_2H_5$ (1,1'-Biphenyl, 2-ethyl-) (RN-CAS Registry Number 1812-51-7)	**	8.55 ± 0.02 (V)	PE	3702
$C_{14}H_{16}^+$	$C_{10}H_7(CH_2)_3CH_3$ (Naphthalene, 1-butyl-) (RN-CAS Registry Number 1634-09-0)	**	7.76	PE	3960
$C_{14}H_{28}^+$	$((CH_3)_3C)_2C=CHC(CH_3)_3$ (RN-CAS Registry Number 28923-90-2)	**	8.169 ± 0.012	PE	3957
$C_{15}H_9^+$	$C_{14}H_9CH_3$ (Phenanthrene, 4-methyl-) (RN-CAS Registry Number 832-64-4)	$H_2 + H$	14.4 ± 0.1	EI	3454

(MT—Metastable transition(s) observed)

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{15}H_9^+$	$C_{14}H_8(CH_3)_2$ (Phenanthrene, 2,7-dimethyl-) (RN-CAS Registry Number 1576-69-8)		17.6 ± 0.1	EI	3454
$C_{15}H_9^+$	$C_{14}H_8(CH_3)_2$ (Phenanthrene, 4,5-dimethyl-) (RN-CAS Registry Number 3674-69-9)		15.1 ± 0.1	EI	3454
$C_{15}H_9^+$	$C_{14}H_6(CH_3)_4$ (Phenanthrene, 2,4,5,7-tetramethyl-) (RN-CAS Registry Number 7396-38-5) (MT-Metastable transition(s) observed)	$3CH_3$	14.5 ± 0.1	EI	3454
$C_{15}H_9^+$	$C_{14}H_6(CH_3)_4$ (Phenanthrene, 3,4,5,6-tetramethyl-) (RN-CAS Registry Number 7343-06-8) (MT-Metastable transition(s) observed)	$3CH_3$	16.5 ± 0.1	EI	3454
$C_{15}H_{11}^+$	$C_{14}H_9CH_3$ (Phenanthrene, 4-methyl-) (RN-CAS Registry Number 832-64-4)	H	12.0 ± 0.1	EI	3454
$C_{15}H_{11}^+$	$C_{14}H_8(CH_3)_2$ (Phenanthrene, 2,7-dimethyl-) (RN-CAS Registry Number 1576-69-8)	CH_3	13.5 ± 0.1	EI	3454
$C_{15}H_{11}^+$	$C_{14}H_8(CH_3)_2$ (Phenanthrene, 4,5-dimethyl-) (RN-CAS Registry Number 3674-69-9) (MT-Metastable transition(s) observed)	CH_3	10.8 ± 0.1	EI	3454
$C_{15}H_{12}^+$	$C_{14}H_9CH_3$ (Phenanthrene, 1-methyl-) (RN-CAS Registry Number 832-69-9)	**	7.7 ± 0.03	RPD	3588
$C_{15}H_{12}^+$	$C_{14}H_9CH_3$ (Phenanthrene, 2-methyl-) (RN-CAS Registry Number 2531-84-2)	**	7.9 ± 0.04	RPD	3588
$C_{15}H_{12}^+$	$C_{14}H_9CH_3$ (Phenanthrene, 3-methyl-) (RN-CAS Registry Number 832-71-3)	**	7.68 ± 0.01	RPD	3588
$C_{15}H_{12}^+$	$C_{14}H_9CH_3$ (Phenanthrene, 4-methyl-) (RN-CAS Registry Number 832-64-4)	**	7.70 ± 0.02	RPD	3588
$C_{15}H_{12}^+$	$C_{14}H_9CH_3$ (Phenanthrene, 4-methyl-) (RN-CAS Registry Number 832-64-4)	**	7.1 ± 0.1	EI	3454
$C_{15}H_{12}^+$	$C_{14}H_9CH_3$ (Phenanthrene, 9-methyl-) (RN-CAS Registry Number 883-20-5)	**	7.46 ± 0.03	RPD	3588
$C_{15}H_{13}^+$	$C_6H_{10}(C_6H_5)_2$ (Benzene, 1,1'-cyclohexylidenebis-) (RN-CAS Registry Number 21113-55-3)		10.3 ± 0.4	EI	4018
$C_{15}H_{13}^+$	$C_6H_9(CH_3)(C_6H_5)_2$ (Benzene, 1,1'-(4-methylcyclohexylidene)bis-) (RN-CAS Registry Number 32812-65-0)		10.6 ± 0.4	EI	4018

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{15}H_{13}^+$	$C_{10}H_{13}(CH_3)(C_6H_5)_2$ (Naphthalene, 1,2,3,4,4a,5,6,7-octahydro-4a-methyl-2,2-diphenyl-) (RN-CAS Registry Number 50592-50-2)		10.3 ± 0.4	EI	4018
$C_{15}H_{13}^+$	$C_6H_8(=O)(C_6H_5)_2$ (Cyclohexanone, 2,2-diphenyl-) (RN-CAS Registry Number 22612-62-0)		9.7 ± 0.4	EI	4018
$C_{15}H_{13}^+$	$C_6H_8(=O)(C_6H_5)_2$ (Cyclohexanone, 4,4-diphenyl-) (RN-CAS Registry Number 4528-68-1)		10.5 ± 0.4	EI	4018
$C_{15}H_{13}^+$	$C_6H_7(=O)(CH_3)(C_6H_5)_2$ (Cyclohexanone, 2-methyl-5,5-diphenyl-) (RN-CAS Registry Number 50592-49-9)		10.8 ± 0.4	EI	4018
$C_{15}H_{13}^+$	$C_6H_7(=O)(CH_3)(C_6H_5)_2$ (Cyclohexanone, 6-methyl-2,2-diphenyl-) (RN-CAS Registry Number 50592-52-4)		10.3 ± 0.4	EI	4018
$C_{15}H_{13}^+$	$C_6H_8(OH)(CH_3)(C_6H_5)_2$ (Cyclohexanol, 1-methyl-4,4-diphenyl-) (RN-CAS Registry Number 50592-47-7)		10.1 ± 0.4	EI	4018
$C_{15}H_{13}^+$	$C_6H_6(=O)(CH_3)_2(C_6H_5)_2$ (Cyclohexanone, 2,2-dimethyl-6,6-diphenyl-) (RN-CAS Registry Number 50592-53-5)		10.3 ± 0.4	EI	4018
$C_{15}H_{13}^+$	$C_{10}H_{11}(=O)(CH_3)(C_6H_5)_2$ (2(3 <i>H</i>)-Naphthalenone, 4,4a,5,6,7,8-hexahydro-4a-methyl-7,7-diphenyl-) (RN-CAS Registry Number 50786-03-3)		9.9 ± 0.4	EI	4018
$C_{15}H_{13}^+$	$C_6H_6(=O)(CH_3)(C_6H_5)_2CH_2CH_2CHO$ (Cyclohexanepropanal, 1-methyl-2-oxo-3,3-diphenyl-) (RN-CAS Registry Number XXXXX-XX-X)		10.5 ± 0.4	EI	4018
$C_{15}H_{13}^+$	$C_6H_6(=O)(CH_3)(C_6H_5)_2CH_2CH_2COCH_3$ (Cyclohexanone, 2-methyl-2-(3-oxobutyl)-6,6-diphenyl-) (RN-CAS Registry Number 50592-55-7)		10.6 ± 0.4	EI	4018
$C_{15}H_{13}^+$	$C_6H_6(=O)(C_6H_5)=CHS(CH_2)_3CH_3$ (Cyclohexanone, 6-[(butylthio)methylene]-2,2-diphenyl-) (RN-CAS Registry Number 50592-51-3)		10.8 ± 0.4	EI	4018
$C_{15}H_{13}^+$	$C_6H_6(=O)CH_3(C_6H_5)_2CH_2CH=C(CH_3)Cl$ (Cyclohexanone, 2-(3-chloro-2-butenyl)-2-methyl-6,6-diphenyl-) (RN-CAS Registry Number 50592-54-6)		10.6 ± 0.4	EI	4018
$C_{15}H_{14}^+$	$C_{13}H_8(CH_3)_2$ (9 <i>H</i> -Fluorene, 9,9-dimethyl-) (RN-CAS Registry Number 4569-45-3)	**	7.8 (V)	PE	4081
$C_{15}H_{16}^+$	$C_6H_5C_6H_4CH(CH_3)_2$ (1,1'-Biphenyl, 2-isopropyl-) (RN-CAS Registry Number 19486-60-3)	**	8.50 ± 0.02 (V)	PE	3702
$C_{15}H_{16}^+$	$C_6H_5C_6H_4C_3H_7$ (1,1'-Biphenyl, 2-propyl-) (RN-CAS Registry Number 20282-28-4)	**	8.50 ± 0.02 (V)	PE	3702
$C_{16}H_{10}^+$	$C_{16}H_{10}$ (Pyrene) (RN-CAS Registry Number 129-00-0)	**	7.41 (V)	PE	3951

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{16}H_{10}^+$	$C_{16}H_{10}$ (Pyrene) (RN-CAS Registry Number 129-00-0)	**	7.45 ± 0.01	PE	3657
$C_{16}H_{10}^+$	$C_{16}H_{10}$ (Pyrene) (RN-CAS Registry Number 129-00-0)	**	7.45	CTS	3577
$C_{16}H_{10}^+$	$C_{14}H_8(CH_3)_2$ (Phenanthrene, 2,7-dimethyl-) (RN-CAS Registry Number 1576-69-8)		17.7 ± 0.1	EI	3454
$C_{16}H_{10}^+$	$C_{14}H_8(CH_3)_2$ (Phenanthrene, 4,5-dimethyl-) (RN-CAS Registry Number 3674-69-9)		> 16	EI	3454
$C_{16}H_{11}^+$	$C_{14}H_6(CH_3)_4$ (Phenanthrene, 2,4,5,7-tetramethyl-) (RN-CAS Registry Number 7396-38-5) (MT-Metastable transition(s) observed)	$2CH_3 + H$	15.6 ± 0.1	EI	3454
$C_{16}H_{11}^+$	$C_{14}H_6(CH_3)_4$ (Phenanthrene, 3,4,5,6-tetramethyl-) (RN-CAS Registry Number 7343-06-8) (MT-Metastable transition(s) observed)	$2CH_3 + H$	14.3 ± 0.1	EI	3454
$C_{16}H_{12}^+$	$C_{10}H_7C_6H_5$ (Naphthalene, 2-phenyl-) (RN-CAS-Registry Number 612-94-2)	**	7.75	PE	4066
$C_{16}H_{12}^+$	$C_{14}H_6(CH_3)_4$ (Phenanthrene, 2,4,5,7-tetramethyl-) (RN-CAS Registry Number 7396-38-5) (MT-Metastable transition(s) observed)	$2CH_3$	14.0 ± 0.1	EI	3454
$C_{16}H_{12}^+$	$C_{14}H_6(CH_3)_4$ (Phenanthrene, 3,4,5,6-tetramethyl-) (RN-CAS Registry Number 7343-06-8) (MT-Metastable transition(s) observed)	$2CH_3$	13.5 ± 0.1	EI	3454
$C_{16}H_{13}^+$	$C_{16}H_{14}$ (Phenanthrene, 2,7-dimethyl-) (RN-CAS Registry Number 1576-69-8)	H	13.5 ± 0.1	EI	3454
$C_{16}H_{13}^+$	$C_{14}H_8(CH_3)_2$ (Phenanthrene, 4,5-dimethyl-) (RN-CAS Registry Number 3674-69-9)	H	12.3 ± 0.1	EI	3454
$C_{16}H_{14}^+$	$C_{14}H_8(CH_3)_2$ (Phenanthrene, 2,7-dimethyl-) (RN-CAS Registry Number 1576-69-8)	**	8.0 ± 0.1	EI	3454
$C_{16}H_{14}^+$	$C_{14}H_8(CH_3)_2$ (Phenanthrene, 4,5-dimethyl-) (RN-CAS Registry Number 3674-69-9)	**	7.6 ± 0.1	EI	3454
$C_{16}H_{14}^+$	$C_6H_6(=O)(C_6H_5)_2$ (2-Cyclohexen-1-one, 4,4-diphenyl-) (RN-CAS Registry Number 4528-64-7)		9.3 ± 0.4	EI	4018

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{16}H_{14}^+$	$C_6H_8(=O)(C_6H_5)_2$ (Cyclohexanone, 2,2-diphenyl-) (RN-CAS Registry Number 22612-62-0)		9.6 ± 0.4	EI	4018
$C_{16}H_{14}^+$	$C_6H_7(=O)(CH_3)(C_6H_5)_2$ (Cyclohexanone, 6-methyl-2,2-diphenyl-) (RN-CAS Registry Number 50592-52-4)		9.2 ± 0.4	EI	4018
$C_{16}H_{14}^+$	$C_6H_6(=O)(CH_3)_2(C_6H_5)_2$ (Cyclohexanone, 2,2-dimethyl-6,6-diphenyl-) (RN-CAS Registry Number 50592-53-5)		9.4 ± 0.4	EI	4018
$C_{16}H_{14}^+$	$C_6H_6(=O)(CH_3)(C_6H_5)_2CH_2CH_2CHO$ (Cyclohexanepropanal, 1-methyl-2-oxo-3,3-diphenyl-) (RN-CAS Registry Number XXXXX-XX-X)		9.4 ± 0.4	EI	4018
$C_{16}H_{14}^+$	$C_6H_6(=O)(CH_3)(C_6H_5)_2CH_2CH_2COCH_3$ (Cyclohexanone, 2-methyl-2-(3-oxobutyl)-6,6-diphenyl-) (RN-CAS Registry Number 50592-55-7)		9.3 ± 0.4	EI	4018
$C_{16}H_{14}^+$	$C_6H_6(=O)CH_3(C_6H_5)_2CH_2CH=C(CH_3)Cl$ (Cyclohexanone, 2-(3-chloro-2-butenyl)-2-methyl-6,6-diphenyl-) (RN-CAS Registry Number 50592-54-6)		9.1 ± 0.4	EI	4018
$C_{16}H_{16}^+$	$C_{16}H_{16}$ (Tricyclo[8.2.2.2 ^{4,7}]hexadeca-4,6,10,12,13,15-hexaene) (RN-CAS Registry Number 1633-22-2) (ON-Other name: [2.2]Paracyclophane)	**	8.08 (V)	PE	4088
$C_{16}H_{16}^+$	$C_{16}H_{16}$ (Tricyclo[9.3.1.1 ^{4,8}]hexadeca-1(15),4,6,8(16),11,13-hexaene) (RN-CAS Registry Number 2319-97-3) (ON-Other name: [2.2]Metacyclophane)	**	8.24 (V)	PE	4088
$C_{16}H_{18}^+$	$C_6H_5C_6H_4C_4H_9$ (1,1'-Biphenyl, 2-butyl-) (RN-CAS Registry Number XXXXX-XX-X)	**	8.50 ± 0.02 (V)	PE	3702
$C_{17}H_{12}^+$	$C_{17}H_{12}$ (1,1'-Spirobi[1 <i>H</i> -indene]) (RN-CAS Registry Number 165-42-4)	**	7.80 (V)	PE	4083
$C_{17}H_{15}^+$	$C_{14}H_6(CH_3)_4$ (Phenanthrene, 2,4,5,7-tetramethyl-) (RN-CAS Registry Number 7396-38-5) (MT-Metastable transition(s) observed)	CH_3	11.5 ± 0.1	EI	3454
$C_{17}H_{15}^+$	$C_{18}H_{18}$ (Phenanthrene, 3,4,5,6-tetramethyl-) (RN-CAS Registry Number 7343-06-8) (MT-Metastable transition(s) observed)	CH_3	11.5 ± 0.1	EI	3454
$C_{18}H_{10}^+$	$C_{18}H_{10}$ (Naphthacene) (RN-CAS Registry Number 92-24-0)	**	6.9	PI	3586
$C_{18}H_{12}^+$	$C_{18}H_{12}$ (Benz[<i>a</i>]anthracene) (RN-CAS Registry Number 56-55-3)	**	7.42 (V)	PE	4039

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{18}H_{12}^+$	$C_{18}H_{12}$ (Benz[<i>a</i>]anthracene) (RN-CAS Registry Number 56-55-3)	**	7.47 ± 0.01	PE	3644
$C_{18}H_{12}^+$	$C_{18}H_{12}$ (Benz[<i>a</i>]anthracene) (RN-CAS Registry Number 56-55-3)	**	7.56 ± 0.01	PE	3657
$C_{18}H_{12}^+$	$C_{18}H_{12}$ (Benz[<i>a</i>]anthracene) (RN-CAS Registry Number 56-55-3)	**	7.5	CTS	3577
$C_{18}H_{12}^+$	$C_{18}H_{12}$ (Benzo[<i>c</i>]phenanthrene) (RN-CAS Registry Number 195-19-7)	**	7.62 (V)	PE	4039
$C_{18}H_{12}^+$	$C_{18}H_{12}$ (Chrysene) (RN-CAS Registry Number 218-01-9)	**	7.60 ± 0.01	PE	3644
$C_{18}H_{12}^+$	$C_{18}H_{12}$ (Chrysene) (RN-CAS Registry Number 218-01-9)	**	7.61 (V)	PE	4039
$C_{18}H_{12}^+$	$C_{18}H_{12}$ (Chrysene) (RN-CAS Registry Number 218-01-9)	**	7.75	CTS	3577
$C_{18}H_{12}^+$	$C_{18}H_{12}$ (Naphthacene) (RN-CAS Registry Number 92-24-0)	**	7.01	PE	3668
$C_{18}H_{12}^+$	$C_{18}H_{12}$ (Naphthacene) (RN-CAS Registry Number 92-24-0)	**	7.01 (V)	PE	4039
$C_{18}H_{12}^+$	$C_{18}H_{12}$ (Tetracyclo[6.6.2.1 ^{3,13} .1 ^{6,10}]octadeca-1,3(17),4,6,8,10(18),11,13,15-nonaene) (RN-CAS Registry Number 27313-56-0) (ON-Other name: [2.2.2](1,3,5)cyclophane-1,9,17-triene)	**	8.06 (V)	PE	3647
$C_{18}H_{12}^+$	$C_{18}H_{12}$ (Tetracyclo[6.6.2.1 ^{3,13} .1.1 ^{6,10}]octadeca-1,3(17),4,6,8,10(18),11,13,15-nonane) (RN-CAS Registry Number 27313-56-0) (ON-Other name: [2.2.2](1,3,5)Cyclophane-1,9,17-triene)	**	8.06 (V)	PE	4088
$C_{18}H_{12}^+$	$C_{18}H_{12}$ (Triphenylene) (RN-CAS Registry Number 217-59-4)	**	7.84 ± 0.01	PE	3657
$C_{18}H_{12}^+$	$C_{18}H_{12}$ (Triphenylene) (RN-CAS Registry Number 217-59-4)	**	7.86 (V)	PE	4039
$C_{18}H_{12}^+$	$C_{18}H_{12}$ (Triphenylene) (RN-CAS Registry Number 217-59-4)	**	8.1	CTS	3577
$C_{18}H_{14}^+$	$C_{18}H_{14}$ (1,1':2',1''-Terphenyl) (RN-CAS Registry Number 84-15-1)	**	7.99 ± 0.01	PE	3657
$C_{18}H_{14}^+$	$C_{18}H_{14}$ (1,1':3',1''-Terphenyl) (RN-CAS Registry Number 92-06-8)	**	8.01 ± 0.01	PE	3657

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{18}H_{14}^+$	$C_{18}H_{14}$ (1,1':4',1''-Terphenyl) (RN-CAS Registry Number 92-94-4)	**	7.78 ± 0.01	PE	3657
$C_{18}H_{16}^+$	$C_{16}H_{10}(CH_3)_2$ (Pyrene, 10b,10c-dihydro-10b,10c-dimethyl-, <i>trans</i> -) (RN-CAS Registry Number 956-84-3)	**	6.7	PE	3948
$C_{18}H_{18}^+$	$C_{14}H_6(CH_3)_4$ (Phenanthrene, 2,4,5,7-tetramethyl-) (RN-CAS Registry Number 7396-38-5)	**	7.8 ± 0.1	EI	3454
$C_{18}H_{18}^+$	$C_{14}H_6(CH_3)_4$ (Phenanthrene, 3,4,5,6-tetramethyl-) (RN-CAS Registry Number 7343-06-8)	**	7.5 ± 0.1	EI	3454
$C_{18}H_{18}^+$	$C_{18}H_{18}$ (Tetracyclo[6.6.2.1 ^{3,13} .1 ^{6,10}]octadeca-1,3(17),6,8,10(18),13-hexaene) (RN-CAS Registry Number 27165-88-4) (ON-Other name: [2.2.2](1,3,5)Cyclophane)	**	7.70 (V)	PE	4088
$C_{18}H_{18}^+$	$C_{18}H_{18}$ (Tetracyclo[6.6.2.1 ^{3,13} .1 ^{6,10}]octadeca-1,3(17),6,8,10(18),13-hexaene) (RN-CAS Registry Number 27165-88-4) (ON-Other name: [2.2.2](1,3,5)cyclophane)	**	7.70 (V)	PE	3647
$C_{18}H_{20}^+$	$C_6H_{10}(C_6H_5)_2$ (Benzene, 1,1'-cyclohexylidenebis-) (RN-CAS-Registry Number 21113-55-3)	**	8.9 ± 0.2	EI	4074
$C_{19}H_{16}^+$	$(C_6H_5)_3CH$ (Benzene, 1,1',1''-methylidynetris-) (RN-CAS-Registry Number 519-73-3)	**	8.34 ± 0.03	PI	4055
$C_{19}H_{20}^+$	$C_6H_7(CH_3)(C_6H_5)_2$ (Cyclohexene, 1-methyl-4,4-diphenyl-) (RN-CAS Registry Number 50592-48-8)	**	8.7 ± 0.4	EI	4018
$C_{19}H_{20}^+$	$C_6H_8(OH)(CH_3)(C_6H_5)_2$ (Cyclohexanol, 1-methyl-4,4-diphenyl-) (RN-CAS Registry Number 50592-47-7)	H_2O	9.2 ± 0.4	EI	4018
$C_{19}H_{22}^+$	$C_6H_9(CH_3)(C_6H_5)_2$ (Benzene, 1,1'-(4-methylcyclohexylidene)bis-) (RN-CAS-Registry Number 32812-65-0)	**	8.8 ± 0.2	EI	4074
$C_{19}H_{22}^+$	$C_6H_9(CH_3)(C_6H_5)_2$ (Benzene, 1,1'-(4-methylcyclohexylidene)bis-) (RN-CAS-Registry Number 32812-65-0)	**	8.8 ± 0.2	EI	4074
$C_{20}H_{12}^+$	$C_{20}H_{12}$ (Benzo[a]pyrene) (RN-CAS Registry Number 50-32-8)	**	7.12 ± 0.01	PE	3644
$C_{20}H_{12}^+$	$C_{20}H_{12}$ (Benzo[a]pyrene) (RN-CAS Registry Number 50-32-8)	**	7.39 ± 0.01	PE	3657

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{20}H_{12}^+$	$C_{20}H_{12}$ (Perylene) (RN-CAS Registry Number 198-55-0)	**	6.90 ± 0.01	PE	3657
$C_{20}H_{12}^+$	$C_{20}H_{12}$ (Perylene) (RN-CAS Registry Number 198-55-0)	**	7.00 ± 0.01	PE	3644
$C_{20}H_{12}^+$	$C_{20}H_{12}$ (Perylene) (RN-CAS Registry Number 198-55-0)	**	7.1	CTS	3577
$C_{20}H_{14}^+$	$C_{14}H_9C_6H_5$ (Anthracene, 9-phenyl-) (RN-CAS Registry Number 602-55-1)	**	7.25 (V)	PE	3896
$C_{21}H_{15}^+$	$C_{10}H_6(CH_3)C_{10}H_6CH_3$ (1,1'-Binaphthyl, 2,2'-dimethyl-) (RN-CAS Registry Number 32834-84-7)	CH ₃	13.25	EI	3477
$C_{21}H_{15}^+$	$C_{10}H_6(CH_3)C_{10}H_6CH_3$ (1,1'-Binaphthyl, 3,3'-dimethyl-) (RN-CAS Registry Number 34042-82-5)	CH ₃	12.25	EI	3477
$C_{21}H_{15}^+$	$C_{10}H_6(CH_3)C_{10}H_6CH_3$ (1,1'-Binaphthyl, 7,7'-dimethyl-) (RN-CAS Registry Number 34003-80-0)	CH ₃	12.75	EI	3477
$C_{21}H_{15}^+$	$C_{10}H_6(CH_3)C_{10}H_6CH_3$ (1,1'-Binaphthyl, 8,8'-dimethyl-) (RN-CAS Registry Number 32693-05-3)	CH ₃	11.50	EI	3477
$C_{22}H_{12}^+$	$C_{22}H_{12}$ (Benzo[ghi]perylene) (RN-CAS Registry Number 191-24-2)	**	7.19 ± 0.01	PE	3644
$C_{22}H_{14}^+$	$C_{22}H_{14}$ (3,4-Benzotetraphene) (RN-CAS Registry Number XXXXX-XX-X)	**	7.35 ± 0.01	PE	3657
$C_{22}H_{14}^+$	$C_{22}H_{14}$ (Pentacene) (RN-CAS Registry Number 135-48-8)	**	6.64	PE	3668
$C_{22}H_{14}^+$	$C_{22}H_{14}$ (Pentacene) (RN-CAS Registry Number 135-48-8)	**	6.74 ± 0.01	PE	3644
$C_{22}H_{18}^+$	$C_{10}H_6(CH_3)C_{10}H_6CH_3$ (1,1'-Binaphthyl, 2,2'-dimethyl-) (RN-CAS Registry Number 32834-84-7)	**	8.20	EI	3477
$C_{22}H_{18}^+$	$C_{10}H_6(CH_3)C_{10}H_6CH_3$ (1,1'-Binaphthyl, 3,3'-dimethyl-) (RN-CAS Registry Number 34042-82-5)	**	8.00	EI	3477
$C_{22}H_{18}^+$	$C_{10}H_6(CH_3)C_{10}H_6CH_3$ (1,1'-Binaphthyl, 7,7'-dimethyl-) (RN-CAS Registry Number 34003-80-0)	**	8.15	EI	3477

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{22}H_{18}^+$	$C_{10}H_6(CH_3)C_{10}H_6CH_3$ (1,1'-Binaphthyl, 8,8'-dimethyl-) (RN-CAS Registry Number 32693-05-3)	**	8.00	EI	3477
$C_{23}H_{26}^+$	$C_{10}H_{13}(CH_3)(C_6H_5)_2$ (Naphthalene, 1,2,3,4,4a,5,6,7-octahydro-4a-methyl-2,2-diphenyl-) (RN-CAS-Registry Number 50592-50-2)	**	8.9 ± 0.2	EI	4074
$C_{24}H_{12}^+$	$C_{24}H_{12}$ (Coronene) (RN-CAS Registry Number 191-07-1)	**	7.34 (V)	PE	3951
$C_{24}H_{12}^+$	$C_{24}H_{12}$ (Coronene) (RN-CAS Registry Number 191-07-1)	**	7.5	CTS	3577
$C_{24}H_{22}^+$	$C_{10}H_7(CH_2)_4C_{10}H_7$ (Naphthalene, 1,1'-(1,4-butanediyl)bis-) (RN-CAS Registry Number 29571-17-3)	**	7.67	PE	3960
$C_{25}H_{16}^+$	$C_{25}H_{16}$ (9,9'-Spirobi[9H-fluorene]) (RN-CAS Registry Number 159-66-0)	**	7.7 (V)	PE	4081
$C_{32}H_{14}^+$	$C_{32}H_{14}$ (Ovalene) (RN-CAS Registry Number 190-26-1)	**	6.86 ± 0.01	PE	3644
$C_6H_5Be^+$	$(C_6H_5)_2Be$ (Beryllium, diphenyl-) (RN-CAS Registry Number 22300-89-6)	C_6H_5	13.4 ± 0.2	EI	3815
$C_{12}H_{10}Be^+$	$(C_6H_5)_2Be$ (Beryllium, diphenyl-) (RN-CAS Registry Number 22300-89-6)	**	9.20 ± 0.10	EI	3815
$C_{12}H_{10}B^+$	$(C_6H_5)_3B$ (Borane, triphenyl-) (RN-CAS-Registry Number 960-71-4)	C_6H_5	10.2	PI	4055
$C_{18}H_{15}B^+$	$(C_6H_5)_3B$ (Borane, triphenyl-) (RN-CAS-Registry Number 960-71-4)	**	8.60 ± 0.03	PI	4055
N^+	N_2 (RN-CAS Registry Number 7727-37-9)	N	24.4 ± 0.25	EI	3797
N^+	NH_3 (RN-CAS Registry Number 7664-41-7)	$H_2 + H$	< 22.5	DC	3811
N^{+2}	N_2 (RN-CAS Registry Number 7727-37-9)	N	60.3 ± 2	EI	3797

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
N^{+3}	N_2 (RN-CAS Registry Number 7727-37-9) (HE-High kinetic energy ion)	N	~ 100	EI	3452
$N_2^+(X^2\Sigma_g^+)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	15.5812 ± 0.0002	S	3561
$N_2^+(^2\Sigma_g^-)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	15.60 (V)	PE	4022
$N_2^+(X^2\Sigma_g^+)$	N_2 (RN-CAS-Registry Number 7727-37-9)	**	15.61	PE	4073
$N_2^+(A^2\Pi_u)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	16.695 ± 0.002	PE	3935
$N_2^+(A^2\Pi_u)$	N_2 (RN-CAS-Registry Number 7727-37-9)	**	16.73	PE	4073
$N_2^+(^2\Pi_u)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	16.98 (V)	PE	4022
$N_2^+(^2\Sigma_u)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	18.78 (V)	PE	4022
$N_2^+(B^2\Sigma_u^+)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	18.87 (V)	PE	3714
$N_2^+(C^2\Sigma_u^+)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	24.6 (V)	PE	3714
N_2^+	N_2 (RN-CAS Registry Number 7727-37-9)	**	28.2	PE	3975
$N_2^+(^2\Sigma_g^+)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	35 (V)	PE	3714
N_2^+	N_2 (RN-CAS Registry Number 7727-37-9)	**	36.5	PE	3975
$N_2^+(^2\Sigma_g^+)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	38.7	PE	3975
$N_2^+(^2\Sigma_u)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	$28-29$ (V)	PE	3714
$N_2^+(^2\Sigma_g^+)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	$32-33$ (V)	PE	3714
$N_2^+(^2\Sigma_g^+)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	$36-37$ (V)	PE	3714
$N_2^{+2}(X^1\Sigma_g^+)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	43.3 ± 0.9	AUG	3542
$N_2^{+2}(A'^2\Sigma_u^+)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	46.2 ± 1.3	AUG	3542
$N_2^{+2}(A^3\Pi_g)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	47.2 ± 1.3	AUG	3542
$N_2^{+2}(c^1\Pi_g)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	49.7 ± 1.2	AUG	3542
$N_2^{+2}(d^1\Sigma_u^+)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	51.2 ± 1.15	AUG	3542
$N_2^{+2}(e^1\Sigma_g^+)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	52.8 ± 1.15	AUG	3542
$N_2^{+2}(^1\Sigma_g^+)$	N_2 (RN-CAS Registry Number 7727-37-9)	**	96.3 ± 1.9	AUG	3542

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
N_2^{+2}	N_2 (RN-CAS Registry Number 7727-37-9)	**	43	EI	3452
N_2^{+2}	N_2^+ (RN-CAS Registry Number 13966-04-6)	**	28	EI	3452
NH^+	NH_3 (RN-CAS Registry Number 7664-41-7)	H_2	17.2	DC	3811
NH_2^+	NH_3 (RN-CAS Registry Number 7664-41-7)	H	15.0	DC	3811
NH_2^+	CH_3NH_2 (RN-CAS Registry Number 74-89-5)	CH_3	15.9	EI	3808
$NH_3^+(^2A_1)$	NH_3 (RN-CAS Registry Number 7664-41-7) (HB-Threshold value approximately corrected for hot bands)	**	10.15	PE	3719
$NH_3^+(^2E)$	NH_3 (RN-CAS Registry Number 7664-41-7)	**	14.98 ± 0.02	PE	3719
$NH_3^+(^2A_1)$	NH_3 (RN-CAS Registry Number 7664-41-7)	**	27.0 (V)	PE	3719
NH_3^+	NH_3 (RN-CAS Registry Number 7664-41-7)	**	10.2	DC	3811
$ND_3^+(^2A_1)$	ND_3 (RN-CAS Registry Number 13550-49-7) (HB-Threshold value approximately corrected for hot bands)	**	10.21	PE	3719
$ND_3^+(^2E)$	ND_3 (RN-CAS Registry Number 13550-49-7)	**	15.10 ± 0.03	PE	3719
NH_4^+	$C_2H_5NH_2$ (RN-CAS Registry Number 75-04-7) (MT-Metastable transition(s) observed) (TR-Other product(s) thermochemically reasonable)	$C_2H_2 + H$	12.72 ± 0.02	RPD	3487
NH_4^+	$(CH_3)_2NH$ (RN-CAS Registry Number 124-40-3) (MT-Metastable transition(s) observed)	$C_2H_2 + H$	14.05 ± 0.05	RPD	3487
$N_2H_4^+(^2A)$	N_2H_4 (RN-CAS Registry Number 302-01-2)	**	9.91 (V)	PE	3862
$N_2H_4^+$	N_2H_4 (RN-CAS Registry Number 302-01-2)	**	10.07	PE	3747
$N_2H_4^+(^2B)$	N_2H_4 (RN-CAS Registry Number 302-01-2)	**	10.64 (V)	PE	3862
$N_2H_4^+(^2A)$	N_2H_4 (RN-CAS Registry Number 302-01-2)	**	15.61 (V)	PE	3862
$N_2H_4^+(^2B, ^2A)$	N_2H_4 (RN-CAS Registry Number 302-01-2)	**	16.66 (V)	PE	3862
$N_2H_4^{+*}$	N_2H_4 (RN-CAS Registry Number 302-01-2)	**	24.5	PE	3715
$N_2H_4^{+*}$	N_2H_4 (RN-CAS Registry Number 302-01-2)	**	30.0	PE	3715

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{N}_3\text{H}^+(\text{}^2\text{A}')$	HN_3 (RN-CAS Registry Number 7782-79-8)	**	10.72 ± 0.02	PE	3670
$\text{N}_3\text{H}^+(\text{}^2\text{A}')$	HN_3 (RN-CAS Registry Number 7782-79-8)	**	12.24 ± 0.02 (V)	PE	3670
$\text{N}_3\text{H}^{+\ast}$	HN_3 (RN-CAS Registry Number 7782-79-8)	**	15.37 ± 0.02	PE	3670
$\text{N}_3\text{H}^{+\ast}$	HN_3 (RN-CAS Registry Number 7782-79-8)	**	16.8 ± 0.1 (V)	PE	3670
BH_6N^+	$(\text{BH}_3)(\text{NH}_3)$ (RN-CAS Registry Number xxxx-xx-x)	**	9.44 ± 0.02	PE	3699
$\text{B}_3\text{H}_6\text{N}_3^+$	$\text{B}_3\text{H}_6\text{N}_3$ (Borazine) (RN-CAS Registry Number 6569-51-3)	**	9.88	PE	3637
$\text{B}_3\text{H}_6\text{N}_3^+$	$\text{B}_3\text{H}_6\text{N}_3$ (Borazine) (RN-CAS Registry Number 6569-51-3)	**	10.09 (V)	PE	3673
$\text{B}_3\text{H}_6\text{N}_3(\text{}^2\text{E}')$	$\text{B}_3\text{H}_6\text{N}_3$ (Borazine) (RN-CAS Registry Number 6569-51-3)	**	10.14 ± 0.01	PE	3506
$\text{CHN}^+(\text{X}^2\Pi)$	HCN (RN-CAS Registry Number 74-90-8)	**	13.61 ± 0.01	PE	3840
$\text{CHN}^+(\text{A}^2\Sigma)$	HCN (RN-CAS Registry Number 74-90-8)	**	14.00 ± 0.01	PE	3840
$\text{CHN}^+(\text{B}^2\Sigma)$	HCN (RN-CAS Registry Number 74-90-8)	**	19.06 ± 0.01	PE	3840
CHN^+	HCN (RN-CAS Registry Number 74-90-8)	**	13.71	EDD	3737
CH_4N^+	$\text{C}_2\text{H}_5\text{NO}_2$ (RN-CAS Registry Number 56-40-6)		10.27 ± 0.05	EI	3571
CH_5N^+	CH_3NH_2 (RN-CAS Registry Number 74-89-5)	**	8.80 ± 0.02	PE	3890
$\text{CH}_5\text{N}^+(\text{}^2\text{A}')$	CH_3NH_2 (RN-CAS-Registry Number 74-89-5)	**	9.64 (V)	PE	4068
CH_5N^+	CH_3NH_2 (RN-CAS Registry Number 74-89-5)	**	9.65 (V)	PE	4087
$\text{CH}_5\text{N}^+(\text{}^2\text{A}')$	CH_3NH_2 (RN-CAS-Registry Number 74-89-5)	**	13.22 (V)	PE	4068
$\text{CH}_5\text{N}^+(\text{}^2\text{A}')$	CH_3NH_2 (RN-CAS-Registry Number 74-89-5)	**	14.42 (V)	PE	4068
$\text{CH}_5\text{N}^+(\text{}^2\text{A}')$	CH_3NH_2 (RN-CAS-Registry Number 74-89-5)	**	15.45 (V)	PE	4068
$\text{CH}_5\text{N}^+(\text{}^2\text{A}')$	CH_3NH_2 (RN-CAS-Registry Number 74-89-5)	**	16.85 (V)	PE	4068

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_2N^+$	$C_3H_4N_2$ (1 <i>H</i> -Imidazole) (RN-CAS Registry Number 288-32-4)	HCN	13.2	EI	3910
$C_2H_4N^+$	$(CH_3)_2NCH=CHC\equiv CH$ (RN-CAS Registry Number 2206-24-8)		13.1	EI	3674
$C_2H_4N^+$	$(C_2H_5)_2NCH=CHC\equiv CH$ (RN-CAS Registry Number 1809-53-6)		13.6	EI	3674
$C_2H_6N^+$	$(CH_3)_2NCH=CHC\equiv CH$ (RN-CAS Registry Number 2206-24-8)	$CH=CHC\equiv CH$	12.7	EI	3674
$C_2H_7N^+$	$C_2H_5NH_2$ (RN-CAS Registry Number 75-04-7)	**	9.44 ± 0.18 (V)	PE	3987
$C_2H_7N^+$	$C_2H_5NH_2$ (RN-CAS Registry Number 75-04-7)	**	9.50 (V)	PE	4032
$C_2H_7N^+$	$CH_3CH_2NH_2$ (RN-CAS-Registry Number 75-04-7)	**	9.50 (V)	PE	4068
$C_2H_7N^+$	$(CH_3)_2NH$ (RN-CAS Registry Number 124-40-3)	**	8.07	PE	3589
$C_2H_7N^+$	$(CH_3)_2NH$ (RN-CAS Registry Number 124-40-3)	**	8.25 ± 0.02	PE	3890
C_3HN^+	$CH\equiv CCN$ (RN-CAS Registry Number 1070-71-9)	**	11.6	S	3755
C_3HN^+	$CH\equiv CCN$ (RN-CAS Registry Number 1070-71-9)	**	11.64 ± 0.01	PI	3929
$C_3H_6N^+$	$(C_2H_5)_2NCH=CHC\equiv CH$ (RN-CAS Registry Number 1809-53-6)		12.3	EI	3674
$C_3H_6N^+$	(TR—Other product(s) thermochemically reasonable) (OP—the other product(s) is(are): $CH=CHC\equiv CH + CH_3 + H$)				
$C_3H_6N^+$	$(CH_2NF_2)CH_2$ (RN-CAS Registry Number 21298-22-6)		15.6 ± 0.4	EI	3634
$C_3H_6N^+$	$CH_2(NF_2)CH(NF_2)CH_3$ (RN-CAS Registry Number 15403-25-5)		15.6 ± 0.3	EI	3634
$C_3H_6N^+$	$(CH_3)_2C(NF_2)_2$ (RN-CAS Registry Number 19309-63-8)		15.4 ± 0.3	EI	3634
$C_3H_7N^+$	$CH_2=CHCH_2NH_2$ (RN-CAS Registry Number 107-11-9)	**	8.76	PE	3864
$C_3H_9N^+$	$N(CH_3)_3$ (RN-CAS Registry Number 75-50-3)	**	7.95 ± 0.10	PI	3729
$C_3H_9N^+$	$(CH_3)_3N$ (RN-CAS Registry Number 75-50-3)	**	7.83 ± 0.02	PE	3890
$C_3H_9N^+$	$(CH_3)_3N$ (RN-CAS Registry Number 75-50-3)	**	8.45 ± 0.01 (V)	PE	3699
$C_3H_9N^+$	$(CH_3)_3N$ (RN-CAS Registry Number 75-50-3)	**	8.5 ± 0.1 (V)	PE	3661
$C_3H_9N^+$	$n-C_3H_7NH_2$ (RN-CAS-Registry Number 107-10-8)	**	9.44 (V)	PE	4068

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3H_9N^+$	<i>iso</i> - $C_3H_7NH_2$ (RN-CAS-Registry Number 75-31-0)	**	9.31 (V)	PE	4068
$C_4H_3N^+$	$(CH_3)_2NCH=CHC\equiv CH$ (RN-CAS Registry Number 2206-24-8) (TR-Other product(s) thermochemically reasonable)	$2CH_3$	15.1	EI	3674
$C_4H_3N^+$	$C_4H_8NCH=CHC\equiv CH$ (Pyrrolidine, 1-(1-buten-3-ynyl)-) (RN-CAS Registry Number 19352-85-3) (TR-Other product(s) thermochemically reasonable)	C_4H_8	15.3	EI	3674
$C_4H_3N^+$	$(C_2H_5)_2NCH=CHC\equiv CH$ (RN-CAS Registry Number 1809-53-6) (TR-Other product(s) thermochemically reasonable)	$2C_2H_4 + 2H$	16.5	EI	3674
$C_4H_5N^+$	C_4H_5N (1 <i>H</i> -Pyrrole) (RN-CAS-Registry Number 109-97-7)	**	8.20 ± 0.01	PI	4058
$C_4H_5N^+$	C_4H_5N (1 <i>H</i> -Pyrrole) (RN-CAS Registry Number 109-97-7)	**	8.23 (V)	PE	4009
$C_4H_5N^+$	C_4H_5N (1 <i>H</i> -Pyrrole) (RN-CAS Registry Number 109-97-7)	**	8.40 ± 0.05	EI	3482
$C_4H_{10}N^+$	$(C_2H_5)_3N$ (RN-CAS Registry Number 121-44-8)	C_2H_5	13.14	EI	3674
$C_4H_{11}N^+$	<i>n</i> - $C_4H_9NH_2$ (RN-CAS-Registry Number 109-73-9)	**	9.40 (V)	PE	4068
$C_5H_4N^+$	$(CH_3)_2NCH=CHC\equiv CH$ (RN-CAS Registry Number 2206-24-8) (TR-Other product(s) thermochemically reasonable)	$CH_3 + H_2$	12.4	EI	3674
$C_5H_4N^+$	$C_4H_8NCH=CHC\equiv CH$ (Pyrrolidine, 1-(1-buten-3-ynyl)-) (RN-CAS Registry Number 19352-85-3) (TR-Other product(s) thermochemically reasonable)	$C_3H_3 + H$	15.0	EI	3674
$C_5H_5N^+$	C_5H_5N (Pyridine) (RN-CAS Registry Number 110-86-1)	**	9.4	PI	3586
$C_5H_5N^+$	C_5H_5N (Pyridine) (RN-CAS Registry Number 110-86-1) (HB-Threshold value approximately corrected for hot bands)	**	9.263	PE	3707
$C_5H_5N^+ (^2A_1)$	C_5H_5N (Pyridine) (RN-CAS Registry Number 110-86-1)	**	9.59 (V)	PE	3513
$C_5H_5N^+$	C_5H_5N (Pyridine) (RN-CAS Registry Number 110-86-1)	**	9.60 ± 0.5 (V)	PE	3685

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_5H_5N^+ (^2A_1?)$	C_5H_5N (Pyridine) (RN-CAS Registry Number 110-86-1)	**	9.7 (V)	PE	3832
$C_5H_5N^+ (^2A_2)$	C_5H_5N (Pyridine) (RN-CAS Registry Number 110-86-1)	**	9.73 (V)	PE	3513
$C_5H_5N^+ (^2A_2?)$	C_5H_5N (Pyridine) (RN-CAS Registry Number 110-86-1)	**	9.8 (V)	PE	3832
$C_5H_5N^+ (^2B_1)$	C_5H_5N (Pyridine) (RN-CAS Registry Number 110-86-1)	**	10.5 (V)	PE	3832
$C_5H_5N^+ (^2B_1)$	C_5H_5N (Pyridine) (RN-CAS Registry Number 110-86-1)	**	10.50 (V)	PE	3513
$C_5H_5N^+ (^2B_2)$	C_5H_5N (Pyridine) (RN-CAS Registry Number 110-86-1)	**	12.5 (V)	PE	3832
$C_5H_5N^+ (^2B_1)$	C_5H_5N (Pyridine) (RN-CAS Registry Number 110-86-1)	**	12.6 (V)	PE	3832
$C_5H_5N^+$	C_5H_5N (Pyridine) (RN-CAS Registry Number 110-86-1)	**	9.66 ± 0.03	EDD	3626
$C_5H_5N^+$	C_5H_5N (Pyridine) (RN-CAS Registry Number 110-86-1)	**	9.70 ± 0.05	EI	3498
$C_5H_6N^+$	$(CH_3)_2NCH=CHC\equiv CH$ (RN-CAS Registry Number 2206-24-8)	CH_3	11.2	EI	3674
$C_5H_6N^+$	$C_4H_8NCH=CHC\equiv CH$ (Pyrrolidine, 1-(1-buten-3-ynyl)-) (RN-CAS Registry Number 19352-85-3)	$CH_2=CHCH_2$	11.3	EI	3674
$C_5H_6N^+$	$(C_2H_5)_2NCH=CHC\equiv CH$ (RN-CAS Registry Number 1809-53-6)	$C_2H_4+CH_3$	13.9	EI	3674
	(TR—Other product(s) thermochemically reasonable)				
$C_5H_7N^+$	$C_4H_4N(CH_3)$ (Pyrrole, 1-methyl-) (RN-CAS Registry Number 96-54-8)	**	8.4	EI	3580
$C_5H_7N^+$	$C_4H_4NCH_3$ (Pyrrole, 2-methyl-) (RN-CAS Registry Number 636-41-9)	**	8.01 ± 0.05	EI	3482
$C_5H_{12}N^+$	$(C_2H_5)_3N$ (RN-CAS Registry Number 121-44-8)	CH_3	11.48	EI	3674
$C_6H_5N^+$	C_5H_5CN (Cyclopentadienecarbonitrile) (RN-CAS Registry Number 27659-36-5)	**	9.7	EI	3476

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_6N^+$	$C_6H_4(NH_2)COOH$ (Benzoic acid, 3-amino-) (RN-CAS Registry Number 99-05-8) (MT-Metastable transition(s) observed)	CO + OH	14.26 ± 0.2	EI	3973
$C_6H_6N^+$	$C_6H_4(NH_2)COOH$ (Benzoic acid, 4-amino-) (RN-CAS Registry Number 150-13-0) (MT-Metastable transition(s) observed)	CO + OH	14.77 ± 0.2	EI	3973
$C_6H_6N^+$	$C_6H_4(NO_2)NH_2$ (Benzenamine, 3-nitro-) (RN-CAS Registry Number 99-09-2)	NO_2	11.23 ± 0.1	EI	3447
$C_6H_6N^+$	$C_6H_4(NO_2)NH_2$ (Benzenamine, 4-nitro-) (RN-CAS Registry Number 100-01-6)	NO_2	11.53 ± 0.1	EI	3447
$C_6H_7N^+$	$C_6H_5NH_2$ (Benzenamine) (RN-CAS Registry Number 62-53-3)	**	7.7	PI	3586
$C_6H_7N^+$	$C_6H_5NH_2$ (Benzenamine) (RN-CAS Registry Number 62-53-3)	**	7.70 ± 0.01	PI	4028
$C_6H_7N^+$	$C_6H_5NH_2$ (Benzenamine) (RN-CAS Registry Number 62-53-3)	**	7.65 ± 0.02	PE	3890
$C_6H_7N^+$	$C_6H_5NH_2$ (Benzenamine) (RN-CAS Registry Number 62-53-3)	**	7.66	PE	3988
$C_6H_7N^+$	$C_6H_5NH_2$ (Benzenamine) (RN-CAS Registry Number 62-53-3)	**	7.71	PE	3955
$C_6H_7N^+$	$C_6H_5NH_2$ (Benzenamine) (RN-CAS Registry Number 62-53-3)	**	8.05 (V)	PE	4106
$C_6H_7N^+$	$C_6H_5NH_2$ (Benzenamine) (RN-CAS Registry Number 62-53-3)	**	7.89 ± 0.03	EDD	3626
$C_6H_7N^+$	$C_6H_5NH_2$ (Benzenamine) (RN-CAS Registry Number 62-53-3)	**	7.89	EDD	3485
$C_6H_7N^+$	$C_6H_5NH_2$ (Benzenamine) (RN-CAS Registry Number 62-53-3)	**	7.61 ± 0.1	EI	3788
$C_6H_7N^+$	$C_6H_5NH_2$ (Benzenamine) (RN-CAS Registry Number 62-53-3)	**	7.63	EI	3845
$C_6H_7N^+$	$C_6H_5NH_2$ (Benzenamine) (RN-CAS Registry Number 62-53-3)	**	$8.09 \pm <0.1$	EI	3735
$C_6H_7N^+$	$C_5H_4NCH_3$ (Pyridine, 2-methyl-) (RN-CAS Registry Number 109-06-8)	**	9.20 ± 0.05 (V)	PE	3685

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_7N^+$	$C_5H_4NCH_3$ (Pyridine, 4-methyl-) (RN-CAS Registry Number 108-89-4)	**	9.50 ± 0.05 (V)	PE	3685
$C_6H_7N^+$	$C_5H_4NCH_3$ (Pyridine, 4-methyl) (RN-CAS Registry Number 108-89-4)	**	9.55 ± 0.05	EI	3498
$C_6H_7N^+$	$C_6H_4(NH_2)OCH_3$ (Benzenamine, 3-methoxy-) (RN-CAS Registry Number 536-90-3)	CH_2O	10.51 ± 0.1	EI	3446
$C_6H_7N^+$	$C_6H_4(NH_2)OCH_3$ (Benzenamine, 4-methoxy-) (RN-CAS Registry Number 104-94-9)	HCHO	9.58	EI	3845
$C_6H_7N^+$	$C_6H_5NHCOCH_3$ (Acetamide, <i>N</i> -phenyl-) (RN-CAS Registry Number 103-84-4)	$CH_2=C=O$	10.45 ± 0.03	EI	3483
$C_6H_7N^+$	$C_6H_5NH_2Cr(CO)_3$ (Chromium, (η^6 -benzenamine)tricarbonyl-) (RN-CAS Registry Number 12108-11-1)		7.96 ± 0.1	EI	3788
$C_6H_8N^+$	$(CH_3)_2NCH=CHC\equiv CH$ (RN-CAS Registry Number 2206-24-8)	H	10.1	EI	3674
$C_6H_9N^+$	$(CH_3)_2NCH=CHC\equiv CH$ (RN-CAS Registry Number 2206-24-8)	**	7.7	EI	3674
$C_6H_9N^+$	$C_4H_4NC_2H_5$ (Pyrrole, 2-ethyl-) (RN-CAS Registry Number 1551-06-0)	**	7.97 ± 0.05	EI	3482
$C_6H_{15}N^+$	$(C_2H_5)_3N$ (RN-CAS Registry Number 121-44-8)	**	8.19 ± 0.05 (V)	PE	3987
$C_7H_4N^+$	$C_6H_4(CN)COOH$ (Benzoic acid, 4-cyano-) (RN-CAS Registry Number 619-65-8)	CO + OH	15.68 ± 0.2	EI	3973
(MT-Metastable transition(s) observed)					
$C_7H_4N^+$	$C_6H_4(NO_2)CN$ (Benzonitrile, 3-nitro-) (RN-CAS Registry Number 619-24-9)	NO_2	12.25 ± 0.1	EI	3447
$C_7H_4N^+$	$C_6H_4(NO_2)CN$ (Benzonitrile, 4-nitro-) (RN-CAS Registry Number 619-72-7)	NO_2	12.42 ± 0.1	EI	3447
$C_7H_5N^+$	C_6H_5CN (Benzonitrile) (RN-CAS Registry Number 100-47-0)	**	9.62	PE	3938
$C_7H_5N^+$	C_6H_5CN (Benzonitrile) (RN-CAS Registry Number 100-47-0)	**	9.7	EI	3916
$C_7H_5N^+$	C_6H_5CN (Benzonitrile) (RN-CAS Registry Number 100-47-0)	**	9.77	EI	3845

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_5N^+$	C_6H_5CN (Benzonitrile) (RN-CAS Registry Number 100-47-0)	**	$10.02 \pm <0.1$	EI	3735
$C_7H_5N^+$	$C_6H_4(CN)OCH_3$ (Benzonitrile, 3-methoxy-) (RN-CAS Registry Number 1527-89-5)	CH_2O	12.23 ± 0.1	EI	3446
$C_7H_5N^+$	$C_6H_4(CN)OCH_3$ (Benzonitrile, 4-methoxy-) (RN-CAS Registry Number 874-90-8)	CH_2O	12.30 ± 0.1	EI	3446
$C_7H_5N^+$	$C_6H_4(CN)OCH_3$ (Benzonitrile, 4-methoxy-) (RN-CAS Registry Number 874-90-8)	$HCHO$	12.39	EI	3845
(CD-Metastable transition indicates 0.36 eV kinetic energy release)					
$C_7H_8N^+$	$C_6H_4(NH_2)CH_3$ (Benzenamine, 2-methyl-) (RN-CAS Registry Number 95-53-4)	H	11.25 ± 0.05	PI	4028
$C_7H_8N^+$	$C_6H_4(NH_2)CH_3$ (Benzenamine, 4-methyl-) (RN-CAS Registry Number 106-49-0)	H	11.00 ± 0.1	PI	4028
$C_7H_8N^+$	$C_6H_4(NH_2)C_4H_9$ (Benzenamine, 3-butyl-) (RN-CAS Registry Number 5369-17-5)		12.13 ± 0.1	EI	3629
$C_7H_8N^+$	$C_6H_4(NH_2)C_4H_9$ (Benzenamine, 4-butyl-) (RN-CAS Registry Number 104-13-2)		11.10 ± 0.1	EI	3629
$C_7H_8N^+$	$C_6H_5CH_2C_6H_4NH_2$ (Benzenamine, 4-(phenylmethyl)-) (RN-CAS Registry Number 1135-12-2)	C_6H_5	10.6 ± 0.1	EI	3807
$C_7H_8N^+$	$(C_6H_4NH_2)_2CH_2$ (Benzenamine, 4,4'-methylenebis-) (RN-CAS Registry Number 101-77-9)		10.6 ± 0.1	EI	3807
$C_7H_8N^+$	$C_6H_4(CH_3)NHCOCH_3$ (Acetamide, <i>N</i> -(2-methylphenyl)-) (RN-CAS Registry Number 120-66-1)	CH_3CO	13.97 ± 0.02	EI	3631
$C_7H_8N^+$	$C_6H_4(CH_3)NHCOCH_3$ (Acetamide, <i>N</i> -(4-methylphenyl)-) (RN-CAS Registry Number 103-89-9)	CH_3CO	14.21 ± 0.02	EI	3631
$C_7H_8N^+$	$C_6H_4(NH_2)CH_2CH_2OCOCH_3$ (Benzeneethanol, 4-amino-, acetate(ester)) (RN-CAS Registry Number 33709-38-5)		11.00	EI	3590
$C_7H_8N^+$	$C_6H_4(NO_2)CH_2C_6H_4NH_2$ (Benzenamine, 4-[(4-nitrophenyl)methyl]-) (RN-CAS Registry Number 726-17-0)		11.6 ± 0.2	EI	3807
$C_7H_9N^+$	$C_6H_4(NH_2)CH_3$ (Benzenamine, 2-methyl-) (RN-CAS Registry Number 95-53-4)	**	7.44 ± 0.02	PI	4028
$C_7H_9N^+$	$C_6H_4(NH_2)CH_3$ (Benzenamine, 2-methyl-) (RN-CAS Registry Number 95-53-4)	**	7.45 ± 0.02	PE	3890

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_9N^+$	$C_6H_4(NH_2)CH_3$ (Benzenamine, 2-methyl-) (RN-CAS Registry Number 95-53-4)	**	7.52	PE	3988
$C_7H_9N^+$	$C_6H_4(NH_2)CH_3$ (Benzenamine, 2-methyl-) (RN-CAS Registry Number 95-53-4)	**	7.83 (V)	PE	4106
$C_7H_9N^+$	$C_6H_4(NH_2)CH_3$ (Benzenamine, 3-methyl-) (RN-CAS Registry Number 108-44-1)	**	7.55	PE	3988
$C_7H_9N^+$	$C_6H_4(NH_2)CH_3$ (Benzenamine, 3-methyl-) (RN-CAS Registry Number 108-44-1)	**	7.66 (V)	PE	4106
$C_7H_9N^+$	$C_6H_4(NH_2)CH_3$ (Benzenamine, 4-methyl-) (RN-CAS Registry Number 106-49-0)	**	7.24 ± 0.02	PI	4028
$C_7H_9N^+$	$C_6H_4(NH_2)CH_3$ (Benzenamine, 4-methyl-) (RN-CAS Registry Number 106-49-0)	**	7.37	PE	3988
$C_7H_9N^+$	$C_6H_4(NH_2)CH_3$ (Benzenamine, 4-methyl-) (RN-CAS Registry Number 106-49-0)	**	7.62 (V)	PE	4106
$C_7H_9N^+$	$C_6H_5NHCH_3$ (Benzenamine, <i>N</i> -methyl-) (RN-CAS Registry Number 100-61-8)	**	7.32	PE	3988
$C_7H_9N^+$	$C_6H_5NHCH_3$ (Benzenamine, <i>N</i> -methyl-) (RN-CAS Registry Number 100-61-8)	**	7.35 ± 0.02	PE	3890
$C_7H_9N^+$	$C_5H_3N(CH_3)_2$ (2,6-Dimethylpyridine) (RN-CAS Registry Number 108-48-5)	**	9.23 ± 0.05	EI	3498
$C_7H_9N^+$	$C_5H_3N(CH_3)_2$ (Pyridine, 2,5-dimethyl-) (RN-CAS Registry Number 589-93-5)	**	8.80 ± 0.05 (V)	PE	3685
$C_7H_9N^+$	$C_5H_3N(CH_3)_2$ (Pyridine, 2,6-dimethyl-) (RN-CAS Registry Number 108-48-5)	**	8.90 ± 0.05 (V)	PE	3685
$C_7H_9N^+$	$C_6H_4(NH_2)C_4H_9$ (Benzenamine, 3-butyl-) (RN-CAS Registry Number 5369-17-5)	$CH_2=CHCH_3$	10.10 ± 0.1	EI	3629
$C_7H_9N^+$	$C_6H_4(NH_2)C_4H_9$ (Benzenamine, 4-butyl-) (RN-CAS Registry Number 104-13-2)	$CH_2=CHCH_3$	9.37 ± 0.1	EI	3629
$C_7H_9N^+$	$C_6H_4(CH_3)NHCOCH_3$ (Acetamide, <i>N</i> -(2-methylphenyl)-) (RN-CAS Registry Number 120-66-1)	$CH_2=C=O$	10.05 ± 0.02	EI	3631
$C_7H_9N^+$	$C_6H_4(CH_3)NHCOCH_3$ (Acetamide, <i>N</i> -(4-methylphenyl)-) (RN-CAS Registry Number 103-89-9)	$CH_2=C=O$	10.12 ± 0.02	EI	3631
$C_7H_{10}N^+$	$(C_2H_5)_2NCH=CHC \equiv CH$ (RN-CAS Registry Number 1809-53-6)	CH_3	13.1	EI	3674

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_{11}N^+$	$C_4H_2N(CH_3)_3$ (Pyrrole, 1,3,4-trimethyl-) (RN-CAS Registry Number 30144-12-8)	**	7.3	EI	3580
$C_8H_6N^+$	$C_6H_4(CN)C_4H_9$ (Benzonitrile, 3-butyl-) (RN-CAS Registry Number 20651-74-5)		12.90 ± 0.1	EI	3629
$C_8H_6N^+$	$C_6H_4(CN)C_4H_9$ (Benzonitrile, 4-butyl-) (RN-CAS Registry Number 20651-73-4)		12.71 ± 0.1	EI	3629
$C_8H_7N^+$	$C_6H_4(CH_3)CN$ (Benzonitrile, 4-methyl-) (RN-CAS Registry Number 104-85-8)	**	9.31	EI	4089
$C_8H_7N^+$	$C_6H_4(CN)C_4H_9$ (Benzonitrile, 3-butyl-) (RN-CAS Registry Number 20651-74-5)	$CH_2=CHCH_3$	11.55 ± 0.1	EI	3629
$C_8H_7N^+$	$C_6H_4(CN)C_4H_9$ (Benzonitrile, 4-butyl-) (RN-CAS Registry Number 20651-73-4)	$CH_2=CHCH_3$	11.66 ± 0.1	EI	3629
$C_8H_9N^+$	C_8H_9N (1 <i>H</i> -Indole, 2,3-dihydro-) (RN-CAS Registry Number 496-15-1)	**	7.15 ± 0.02	PE	3890
$C_8H_9N^+$	$C_6H_4(NH_2)CH_2CH_2OCOCH_3$ (Benzeneethanol, 4-amino-, acetate(ester)) (RN-CAS Registry Number 33709-38-5)		7.80	EI	3590
$C_8H_{10}N^+$	$C_6H_5N(CH_3)_2$ (Benzenamine, <i>N,N</i> -dimethyl-) (RN-CAS Registry Number 121-69-7)	H	10.56 ± 0.05	PI	4028
$C_8H_{10}N^+$	$C_4H_8NCH=CHC \equiv CH$ (Pyrrolidine, 1-(1-buten-3-ynyl)-) (RN-CAS Registry Number 19352-85-3)	H	10.7	EI	3674
$C_8H_{11}N^+$	$C_6H_3(CH_3)_2NH_2$ (Benzenamine, 2,6-dimethyl-) (RN-CAS Registry Number 87-62-7)	**	7.30 ± 0.02	PE	3890
$C_8H_{11}N^+$	$C_6H_3(CH_3)_2NH_2$ (Benzenamine, 2,6-dimethyl-) (RN-CAS Registry Number 87-62-7)	**	7.36	PE	3988
$C_8H_{11}N^+$	$C_6H_4(CH_3)NHCH_3$ (Benzenamine, <i>N</i> ,2-dimethyl-) (RN-CAS Registry Number 611-21-2)	**	7.27	PE	3988
$C_8H_{11}N^+$	$C_6H_4(CH_3)NHCH_3$ (Benzenamine, <i>N</i> ,3-dimethyl-) (RN-CAS Registry Number 696-44-6)	**	7.26	PE	3988
$C_8H_{11}N^+$	$C_6H_4(CH_3)NHCH_3$ (Benzenamine, <i>N</i> ,4-dimethyl-) (RN-CAS Registry Number 623-08-5)	**	7.13	PE	3988

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_{11}N^+$	$C_6H_5N(CH_3)_2$ (Benzenamine, <i>N,N</i> -dimethyl-) (RN-CAS Registry Number 121-69-7)	**	7.13 ± 0.04	PI	4028
$C_8H_{11}N^+$	$C_6H_5N(CH_3)_2$ (Benzenamine, <i>N,N</i> -dimethyl-) (RN-CAS Registry Number 121-69-7)	**	7.10 ± 0.02	PE	3890
$C_8H_{11}N^+$	$C_6H_5N(CH_3)_2$ (Benzenamine, <i>N,N</i> -dimethyl-) (RN-CAS Registry Number 121-69-7)	**	7.11	PE	3988
$C_8H_{11}N^+$	$C_6H_5N(CH_3)_2$ (Benzenamine, <i>N,N</i> -dimethyl-) (RN-CAS Registry Number 121-69-7)	**	7.37 (V)	PE	4106
$C_8H_{11}N^+$	$C_6H_5N(CH_3)_2$ (Benzenamine, <i>N,N</i> -dimethyl-) (RN-CAS Registry Number 121-69-7)	**	7.2	CTS	3543
$C_8H_{11}N^+$	$C_6H_5N(CH_3)_2$ (Benzenamine, <i>N,N</i> -dimethyl-) (RN-CAS Registry Number 121-69-7)	**	7.42	CTS	4029
(AV—Average of two values)					
$C_8H_{11}N^+$	$C_4H_8NCH=CHC\equiv CH$ (Pyrrolidine, 1-(1-buten-3-ynyl)-) (RN-CAS Registry Number 19352-85-3)	**	7.5	EI	3674
$C_8H_{12}N^+$	$(C_2H_5)_2NCH=CHC\equiv CH$ (RN-CAS Registry Number 1809-53-6)	H	9.9	EI	3674
$C_8H_{13}N^+$	$(C_2H_5)_2NCH=CHC\equiv CH$ (RN-CAS Registry Number 1809-53-6)	**	8.0	EI	3674
$C_8H_{13}N^+$	$C_4H_4NC_4H_9$ (1 <i>H</i> -Pyrrole, 2-(1,1-dimethylethyl)-) (RN-CAS Registry Number 5398-58-3)	**	7.95 ± 0.05	EI	3482
$C_9H_7N^+$	C_9H_7N (Isoquinoline) (RN-CAS Registry Number 119-65-3)	**	8.50	PE	3638
$C_9H_7N^+$	C_9H_7N (Isoquinoline) (RN-CAS Registry Number 119-65-3)	**	8.54 (V)	PE	3723
$C_9H_7N^+$	C_9H_7N (Quinoline) (RN-CAS Registry Number 91-22-5)	**	8.3	PI	3586
$C_9H_7N^+$	C_9H_7N (Quinoline) (RN-CAS Registry Number 91-22-5)	**	8.62	PE	4066
$C_9H_7N^+$	C_9H_7N (Quinoline) (RN-CAS Registry Number 91-22-5)	**	8.62	PE	3638
$C_9H_7N^+$	C_9H_7N (Quinoline) (RN-CAS Registry Number 91-22-5)	**	8.62 (V)	PE	3723

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_9H_{11}N^+$	$C_9H_{11}N$ (Quinoline, 1,2,3,4-tetrahydro-) (RN-CAS Registry Number 635-46-1)	**	7.00 ± 0.02	PE	3890
$C_9H_{13}N^+$	$C_6H_2(CH_3)_3NH_2$ (Benzenamine, 2,4,6-trimethyl-) (RN-CAS Registry Number 88-05-1)	**	7.15	PE	3988
$C_9H_{13}N^+$	$C_6H_3(CH_3)_2NHCH_3$ (Benzenamine, <i>N</i> ,2,6-trimethyl-) (RN-CAS Registry Number 767-71-5)	**	7.34	PE	3988
$C_9H_{13}N^+$	$C_6H_4(CH_3)N(CH_3)_2$ (Benzenamine, <i>N,N</i> ,2-trimethyl-) (RN-CAS Registry Number 609-72-3)	**	7.40 ± 0.02	PE	3890
$C_9H_{13}N^+$	$C_6H_4(CH_3)N(CH_3)_2$ (Benzenamine, <i>N,N</i> ,2-trimethyl-) (RN-CAS Registry Number 609-72-3)	**	7.44	PE	3988
$C_9H_{13}N^+$	$C_6H_4(CH_3)N(CH_3)_2$ (Benzenamine, <i>N,N</i> ,2-trimethyl-) (RN-CAS Registry Number 609-72-3)	**	7.92 (V)	PE	4106
$C_9H_{13}N^+$	$C_6H_4(CH_3)N(CH_3)_2$ (Benzenamine, <i>N,N</i> ,3-trimethyl-) (RN-CAS Registry Number 121-72-2)	**	7.06	PE	3988
$C_9H_{13}N^+$	$C_6H_4(CH_3)N(CH_3)_2$ (Benzenamine, <i>N,N</i> ,3-trimethyl-) (RN-CAS Registry Number 121-72-2)	**	7.24 (V)	PE	4106
$C_9H_{13}N^+$	$C_6H_4(CH_3)N(CH_3)_2$ (Benzenamine, <i>N,N</i> ,4-trimethyl-) (RN-CAS Registry Number 99-97-8)	**	6.95	PE	3988
$C_9H_{13}N^+$	$C_6H_4(CH_3)N(CH_3)_2$ (Benzenamine, <i>N,N</i> ,4-trimethyl-) (RN-CAS Registry Number 99-97-8)	**	7.27 (V)	PE	4106
$C_9H_{13}N^+$	$C_5H_4NC(CH_3)_3$ (Pyridine, 4-(1,1-dimethylethyl)-) (RN-CAS Registry Number 3978-81-2)	**	9.30 ± 0.05 (V)	PE	3685
$C_9H_{17}N^+$	$C_6H_{11}N=C(CH_3)_2$ (Cyclohexanamine, <i>N</i> -(1-methylethylidene)-) (RN-CAS Registry Number 6407-36-9)	**	8.23	PE	4043
$C_{10}H_9N^+$	$C_{10}H_7(NH_2)$ (1-Naphthylamine) (RN-CAS Registry Number 134-32-7)	**	7.3	PI	3586
$C_{10}H_9N^+$	$C_{10}H_7(NH_2)$ (2-Naphthylamine) (RN-CAS Registry Number 91-59-8)	**	7.2	PI	3586
$C_{10}H_{15}N^+$	$C_6H_4(NH_2)C_4H_9$ (Benzenamine, 3-butyl-) (RN-CAS Registry Number 5369-17-5)	**	7.51 ± 0.1	EI	3629
$C_{10}H_{15}N^+$	$C_6H_4(NH_2)C_4H_9$ (Benzenamine, 4-butyl-) (RN-CAS Registry Number 104-13-2)	**	7.61 ± 0.1	EI	3629

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{10}H_{15}N^+$	$C_6H_5N(C_2H_5)_2$ (Benzenamine, <i>N,N</i> -diethyl-) (RN-CAS Registry Number 91-66-7)	**	6.95 ± 0.02	PE	3890
$C_{10}H_{15}N^+$	$C_6H_2(CH_3)_3NHCH_3$ (Benzenamine, <i>N</i> ,2,4,6-tetramethyl-) (RN-CAS Registry Number 13021-14-2)	**	7.22	PE	3988
$C_{10}H_{15}N^+$	$C_6H_3(CH_3)_2N(CH_3)_2$ (Benzenamine, <i>N,N</i> ,2,6-tetramethyl-) (RN-CAS Registry Number 769-06-2)	**	7.30 ± 0.02	PE	3890
$C_{10}H_{15}N^+$	$C_6H_3(CH_3)_2N(CH_3)_2$ (Benzenamine, <i>N,N</i> ,2,6-tetramethyl-) (RN-CAS Registry Number 769-06-2)	**	7.42	PE	3988
$C_{11}H_{13}N^+$	$C_6H_4(CN)C_4H_9$ (Benzonitrile, 3-butyl-) (RN-CAS Registry Number 20651-74-5)	**	9.77 ± 0.1	EI	3629
$C_{11}H_{13}N^+$	$C_6H_4(CN)C_4H_9$ (Benzonitrile, 4-butyl-) (RN-CAS Registry Number 20651-73-4)	**	10.08 ± 0.1	EI	3629
$C_{11}H_{13}N^+$	$C_{11}H_{13}N$ (2 <i>H</i> -1,4-Ethanoquinoline, 3,4-dihydro-) (RN-CAS Registry Number 4363-25-1) (ON-Other name: Benzoquinuclidine)	**	7.85 ± 0.02	PE	3890
$C_{11}H_{17}N^+$	$C_6H_2(CH_3)_3N(CH_3)_2$ (Benzenamine, <i>N,N</i> ,2,4,6-pentamethyl-) (RN-CAS Registry Number 13021-15-3)	**	7.24	PE	3988
$C_{12}H_{11}N^+$	$(C_6H_5)_2NH$ (Benzenamine, <i>N</i> -phenyl-) (RN-CAS Registry Number 122-39-4)	**	7.14 ± 0.03	PI	4028
$C_{12}H_{11}N^+$	$C_6H_5C_6H_4NH_2$ ([1,1'-Biphenyl]-2-amine) (RN-CAS Registry Number 90-41-5)	**	7.28 ± 0.02	PE	3702
$C_{12}H_{15}N^+$	$C_{12}H_{15}N$ (1 <i>H</i> ,5 <i>H</i> -Benzo[<i>ij</i>]quinolizine, 2,3,6,7-tetrahydro-) (RN-CAS Registry Number 479-59-4) (ON-Other name: Julolidine)	**	6.65 ± 0.02	PE	3890
$C_{13}H_9N^+$	$C_{13}H_9N$ (Acridine) (RN-CAS Registry Number 260-94-6)	**	7.8	PI	3586
$C_{13}H_{12}N^+$	$(C_6H_4NH_2)_2CH_2$ (Benzenamine, 4,4'-methylenebis-) (RN-CAS Registry Number 101-77-9)	NH ₂	10.7 ± 0.1	EI	3807
$C_{13}H_{13}N^+$	$C_6H_5CH_2C_6H_4NH_2$ (Benzenamine, 4-(phenylmethyl)-) (RN-CAS Registry Number 1135-12-2)	**	7.67 ± 0.05	EI	3806

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{14}H_{11}N^+$	$C_6H_5CH_2C_6H_4CN$ (Benzonitrile, 4-(phenylmethyl)-) (RN-CAS Registry Number 23450-31-9)	**	9.25 ± 0.05	EI	3806
$C_{14}H_{15}N^+$	$C_6H_5CH_2CH_2C_6H_4NH_2$ (Benzenamine, 4-(2-phenylethyl)-) (RN-CAS Registry Number 13024-49-2)	**	7.55 ± 0.05	EI	3806
$C_{15}H_{11}N^+$	$C_9H_6NC_6H_5$ (Quinoline, 2-phenyl-) (RN-CAS-Registry Number 612-96-4)	**	8.10	PE	4066
$C_{16}H_{13}N^+$	$C_3H_3(CN)(C_6H_5)_2$ (Cyclopropanecarbonitrile, 1,2-diphenyl-) (RN-CAS Registry Number 10224-14-3)	**	8.80 ± 0.08	EDD	3575
$C_{17}H_{29}N^+$	$C_5H_2N(C(CH_3)_3)_3$ (Pyridine, 2,4,6-tris(1,1-dimethylethyl)-) (RN-CAS Registry Number 20336-15-6)	**	8.6 (V)	PE	3934
$C_{17}H_{29}N^+$	$C_5H_2N(C(CH_3)_3)_3$ (Pyridine, 2,4,6-tris(1,1-dimethylethyl)-) (RN-CAS Registry Number 20336-15-6)	**	8.6 (V)	PE	3685
$C_{18}H_{15}N^+$	$(C_6H_5)_3N$ (Benzenamine, <i>N,N</i> -diphenyl-) (RN-CAS Registry Number 603-34-9)	**	6.80 ± 0.05	PI	4028
$C_{19}H_{13}N^+$	$C_{13}H_8NC_6H_5$ (Acridine, 9-phenyl-) (RN-CAS Registry Number 602-56-2)	**	7.80 (V)	PE	3896
$C_{20}H_{23}N^+$	$C_{15}H_{12}=CHCH_2CH_2N(CH_3)_2$ (1-Propanamine, 3-(10,11-dihydro-5 <i>H</i> -dibenzo[<i>a,d</i>]cyclohepten-5-ylidene)- <i>N,N</i> -dimethyl-) (RN-CAS Registry Number 50-48-6) (ON-Other name: Amitriptyline)	**	8.26 ± 0.07	CTS	4079
$CH_2N_2(^2B_1)$	CH_2N_2 (3 <i>H</i> -Diazirine) (RN-CAS Registry Number 157-22-2)	**	10.3	PE	3727
$CH_2N_2(^2B_2)$	CH_2N_2 (3 <i>H</i> -Diazirine) (RN-CAS Registry Number 157-22-2)	**	12.8	PE	3727
$CH_2N_2(^2A_1)$	CH_2N_2 (3 <i>H</i> -Diazirine) (RN-CAS Registry Number 157-22-2)	**	14.15	PE	3727
$CH_2N_2(^2A_1)$	CH_2N_2 (3 <i>H</i> -Diazirine) (RN-CAS Registry Number 157-22-2)	**	16	PE	3727
$CH_2N_2(^2B_2)$	CH_2N_2 (3 <i>H</i> -Diazirine) (RN-CAS Registry Number 157-22-2)	**	17.5 (V)	PE	3727

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{CH}_2\text{N}_2(^2\text{B}_1)$	CH_2N_2 (3 <i>H</i> -Diazirine) (RN-CAS Registry Number 157-22-2)	**	21	PE	3727
$\text{CH}_2\text{N}_2(^2\text{A}_1)$	CH_2N_2 (3 <i>H</i> -Diazirine) (RN-CAS Registry Number 157-22-2)	**	22.5 (V)	PE	3727
CH_3N_2^+	$\text{CH}_3\text{N}=\text{NCH}_3$ (RN-CAS Registry Number 503-28-6)	CH_3	9.2	EI	3632
$\text{C}_2\text{H}_6\text{N}_2^+$	<i>trans</i> - $\text{CH}_3\text{N}=\text{NCH}_3$ (RN-CAS Registry Number 4143-41-3)	**	~8.20	PE	3649
$\text{C}_2\text{H}_6\text{N}_2(^2\text{B}_1)$	$\text{C}_3\text{H}_6\text{N}_2$ (3 <i>H</i> -Diazirine, 3,3-dimethyl-) (RN-CAS Registry Number 5161-49-9)	**	12.11 (V)	PE	3505
$\text{C}_2\text{H}_6\text{N}_2(^2\text{A}_1)$	$\text{C}_3\text{H}_6\text{N}_2$ (3 <i>H</i> -Diazirine, 3,3-dimethyl-) (RN-CAS Registry Number 5161-49-9)	**	13.31 (V)	PE	3505
$\text{C}_2\text{H}_8\text{N}_2^+$	$\text{CH}_3\text{NHNHCH}_3$ (RN-CAS Registry Number 540-73-8)	**	9.02 (V)	PE	4085
$\text{C}_2\text{H}_8\text{N}_2^+$	$\text{CH}_3\text{NHNHCH}_3$ (RN-CAS Registry Number 540-73-8)	**	9.62	PE	3747
$\text{C}_3\text{H}_2\text{N}_2^+$	$\text{CH}_2(\text{CN})_2$ (RN-CAS-Registry Number 109-77-3)	**	12.88	PE	4067
$\text{C}_3\text{H}_3\text{N}_2^+$	$\text{C}_3\text{H}_4\text{N}_2$ (1 <i>H</i> -Imidazole) (RN-CAS Registry Number 288-32-4)	H	12.8	EI	3910
$\text{C}_3\text{H}_4\text{N}_2^+$	$\text{C}_3\text{H}_4\text{N}_2$ (1 <i>H</i> -Imidazole) (RN-CAS Registry Number 288-32-4)	**	8.78 (V)	PE	4009
$\text{C}_3\text{H}_4\text{N}_2^+$	$\text{C}_3\text{H}_4\text{N}_2$ (1 <i>H</i> -Imidazole) (RN-CAS Registry Number 288-32-4)	**	9.12	EI	3910
$\text{C}_3\text{H}_4\text{N}_2^+$	$\text{C}_3\text{H}_4\text{N}_2$ (1 <i>H</i> -Pyrazole) (RN-CAS Registry Number 288-13-1)	**	9.15 (V)	PE	4009
$\text{C}_3\text{H}_6\text{N}_2^+$	$(\text{CH}_3)_2\text{C}=\text{N}=\text{N}$ (RN-CAS Registry Number 2684-60-8)	**	7.88	PE	4047
$\text{C}_3\text{H}_6\text{N}_2(^2\text{B}_2)$	$\text{C}_3\text{H}_6\text{N}_2$ (3 <i>H</i> -Diazirine, 3,3-dimethyl-) (RN-CAS Registry Number 5161-49-9)	**	9.76 (V)	PE	3505
$\text{C}_3\text{H}_8\text{N}_2^+$	$(\text{CH}_3)_2\text{NN}=\text{CH}_2$ (RN-CAS Registry Number 2035-89-4)	**	7.85	PE	3884
$\text{C}_3\text{H}_8\text{N}_2^+$	$\text{CH}_3\text{NHN}=\text{CHCH}_3$ (RN-CAS Registry Number 17167-73-6)	**	7.67	PE	3884

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{C}_3\text{H}_8\text{N}_2^+$	$\text{CH}_2\text{N}_2(\text{CH}_3)_2$ (Diaziridine, 1,2-dimethyl-) (RN-CAS Registry Number 6794-95-2)	**	9.42 (V)	PE	3888
$\text{C}_3\text{H}_8\text{N}_2^+$	$\text{CH}_2\text{N}_2(\text{CH}_3)_2$ (Diaziridine, 3,3-dimethyl-) (RN-CAS Registry Number 4901-76-2)	**	9.90 (V)	PE	3888
$\text{C}_3\text{H}_8\text{N}_2^+$	$\text{C}_3\text{H}_8\text{N}_2$ (Pyrazolidine) (RN-CAS Registry Number 504-70-1)	**	7.90 (V)	PE	4085
$\text{C}_4\text{H}_2\text{N}_2^+$	<i>cis</i> - $\text{CH}(\text{CN})=\text{CH}(\text{CN})$ (RN-CAS Registry Number 928-53-0)	**	11.15	PE	3778
$\text{C}_4\text{H}_2\text{N}_2^+$	<i>trans</i> - $\text{CH}(\text{CN})=\text{CH}(\text{CN})$ (RN-CAS Registry Number 764-42-1)	**	11.15	PE	3778
$\text{C}_4\text{H}_4\text{N}_2^+$	$\text{C}_4\text{H}_4\text{N}_2$ (Pyrazine) (RN-CAS Registry Number 290-37-9)	**	9.28 ± 0.01	S	3773
(RS-Average of two Rydberg series limits)					
$\text{C}_4\text{H}_4\text{N}_2^+$	$\text{C}_4\text{H}_4\text{N}_2$ (Pyrazine) (RN-CAS Registry Number 290-37-9)	**	9.216	PE	3750
$\text{C}_4\text{H}_4\text{N}_2^+$	$\text{C}_4\text{H}_4\text{N}_2$ (Pyrazine) (RN-CAS Registry Number 290-37-9)	**	9.29	PE	3679
$\text{C}_4\text{H}_4\text{N}_2(^2\text{A}_{1g})$	$\text{C}_4\text{H}_4\text{N}_2$ (Pyrazine) (RN-CAS Registry Number 290-37-9)	**	9.63 (V)	PE	3513
$\text{C}_4\text{H}_4\text{N}_2(^2\text{B}_{2g})$	$\text{C}_4\text{H}_4\text{N}_2$ (Pyrazine) (RN-CAS Registry Number 290-37-9)	**	10.18 (V)	PE	3513
$\text{C}_4\text{H}_4\text{N}_2(^2\text{B}_{2u})$	$\text{C}_4\text{H}_4\text{N}_2$ (Pyrazine) (RN-CAS Registry Number 290-37-9)	**	11.35 (V)	PE	3513
$\text{C}_4\text{H}_4\text{N}_2(^2\text{B}_{1g})$	$\text{C}_4\text{H}_4\text{N}_2$ (Pyrazine) (RN-CAS Registry Number 290-37-9)	**	11.77 (V)	PE	3513
$\text{C}_4\text{H}_4\text{N}_2^+$	$\text{C}_4\text{H}_4\text{N}_2$ (Pyridazine) (RN-CAS Registry Number 289-80-5)	**	8.64	PE	3679
$\text{C}_4\text{H}_4\text{N}_2(^2\text{B}_2)$	$\text{C}_4\text{H}_4\text{N}_2$ (Pyridazine) (RN-CAS Registry Number 289-80-5)	**	8.706 ± 0.001	PE	3639
$\text{C}_4\text{H}_4\text{N}_2(^2\text{B}_2)$	$\text{C}_4\text{H}_4\text{N}_2$ (Pyridazine) (RN-CAS Registry Number 289-80-5)	**	9.31 (V)	PE	3513
$\text{C}_4\text{H}_4\text{N}_2(^2\text{A}_2)$	$\text{C}_4\text{H}_4\text{N}_2$ (Pyridazine) (RN-CAS Registry Number 289-80-5)	**	10.483 ± 0.001	PE	3639
$\text{C}_4\text{H}_4\text{N}_2(^2\text{A}_2)$	$\text{C}_4\text{H}_4\text{N}_2$ (Pyridazine) (RN-CAS Registry Number 289-80-5)	**	10.61 (V)	PE	3513

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_4H_4N_2^+(\text{}^2B_1)$	$C_4H_4N_2$ (Pyridazine) (RN-CAS Registry Number 289-80-5)	**	~ 10.9 (V)	PE	3513
$C_4H_4N_2^+(\text{}^2A_1, \text{}^2B_1)$	$C_4H_4N_2$ (Pyridazine) (RN-CAS Registry Number 289-80-5)	**	~ 11.1	PE	3639
$C_4H_4N_2^+(\text{}^2A_1)$	$C_4H_4N_2$ (Pyridazine) (RN-CAS Registry Number 289-80-5)	**	11.31 (V)	PE	3513
$C_4H_4N_2^+(\text{}^2B_1)$	$C_4H_4N_2$ (Pyridazine) (RN-CAS Registry Number 289-80-5)	**	13.504 ± 0.003	PE	3639
$C_4H_4N_2^+(\text{}^2A_1)$	$C_4H_4N_2$ (Pyridazine) (RN-CAS Registry Number 289-80-5)	**	~ 13.8	PE	3639
$C_4H_4N_2^+(\text{}^2B_2)$	$C_4H_4N_2$ (Pyridazine) (RN-CAS Registry Number 289-80-5)	**	~ 14.5	PE	3639
$C_4H_4N_2^+(\text{}^2A_1)$	$C_4H_4N_2$ (Pyridazine) (RN-CAS Registry Number 289-80-5)	**	~ 15.88	PE	3639
$C_4H_4N_2^+(\text{}^2B_2)$	$C_4H_4N_2$ (Pyridazine) (RN-CAS Registry Number 289-80-5)	**	~ 16.5	PE	3639
$C_4H_4N_2^+(\text{}^2A_1)$	$C_4H_4N_2$ (Pyridazine) (RN-CAS Registry Number 289-80-5)	**	~ 17.0	PE	3639
$C_4H_4N_2^+(\text{}^2A_1, \text{}^2B_2)$	$C_4H_4N_2$ (Pyridazine) (RN-CAS Registry Number 289-80-5)	**	20.0	PE	3639
$C_4H_4N_2^+$	$C_4H_4N_2$ (Pyrimidine) (RN-CAS Registry Number 289-95-2)	**	9.23	PE	3679
$C_4H_4N_2^+(\text{}^2B_2)$	$C_4H_4N_2$ (Pyrimidine) (RN-CAS Registry Number 289-95-2)	**	9.32 ± 0.01	PE	3651
$C_4H_4N_2^+(\text{}^2B_2)$	$C_4H_4N_2$ (Pyrimidine) (RN-CAS Registry Number 289-95-2)	**	9.73 (V)	PE	3513
$C_4H_4N_2^+(\text{}^2B_1)$	$C_4H_4N_2$ (Pyrimidine) (RN-CAS Registry Number 289-95-2)	**	10.40 ± 0.01	PE	3651
$C_4H_4N_2^+(\text{}^2B_1)$	$C_4H_4N_2$ (Pyrimidine) (RN-CAS Registry Number 289-95-2)	**	10.41 (V)	PE	3513
$C_4H_4N_2^+(\text{}^2A_2)$	$C_4H_4N_2$ (Pyrimidine) (RN-CAS Registry Number 289-95-2)	**	11.1	PE	3651
$C_4H_4N_2^+(\text{}^2A_1)$	$C_4H_4N_2$ (Pyrimidine) (RN-CAS Registry Number 289-95-2)	**	11.23 (V)	PE	3513

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_4H_4N_2^+(\text{}^2A_1)$	$C_4H_4N_2$ (Pyrimidine) (RN-CAS Registry Number 289-95-2)	**	11.3	PE	3651
$C_4H_4N_2^+(\text{}^2A_2)$	$C_4H_4N_2$ (Pyrimidine) (RN-CAS Registry Number 289-95-2)	**	11.39 (V)	PE	3513
$C_4H_4N_2^+(\text{}^2B_1)$	$C_4H_4N_2$ (Pyrimidine) (RN-CAS Registry Number 289-95-2)	**	13.6	PE	3651
$C_4H_4N_2^+(\text{}^2A_1, \text{}^2B_2)$	$C_4H_4N_2$ (Pyrimidine) (RN-CAS Registry Number 289-95-2)	**	~14	PE	3651
$C_4H_4N_2^+(\text{}^2A_1)$	$C_4H_4N_2$ (Pyrimidine) (RN-CAS Registry Number 289-95-2)	**	15.3	PE	3651
$C_4H_4N_2^+(\text{}^2B_2)$	$C_4H_4N_2$ (Pyrimidine) (RN-CAS Registry Number 289-95-2)	**	16.6	PE	3651
$C_4H_4N_2^+(\text{}^2A_1)$	$C_4H_4N_2$ (Pyrimidine) (RN-CAS Registry Number 289-95-2)	**	17.2	PE	3651
$C_4H_4N_2^+(\text{}^2A_1, \text{}^2B_2)$	$C_4H_4N_2$ (Pyrimidine) (RN-CAS Registry Number 289-95-2)	**	20.0	PE	3651
$C_4H_4N_2^+(\text{}^2A_1)$	$C_4H_4N_2$ (Pyrimidine) (RN-CAS Registry Number 289-95-2)	**	23.4	PE	3651
$C_4H_8N_2^+$	$CH_3CH=NN=CHCH_3$ (RN-CAS Registry Number 592-56-3)	**	8.56	PE	4043
$C_4H_8N_2^+$	$CH_3CH=NN=CHCH_3$ (RN-CAS Registry Number 592-56-3)	**	9.11 (V)	PE	4085
$C_4H_8N_2^+$	$C_2H_4NC_2H_4N$ (1,1'-Biaziridine) (RN-CAS Registry Number 4388-03-8)	**	8.65 (V)	PE	4085
$C_4H_{10}N_2^+$	$C_2H_5N=NC_2H_5$ (RN-CAS Registry Number 821-14-7)	**	8.7±0.1	EI	4099
$C_4H_{10}N_2^+$	$CH_3NHN=C(CH_3)_2$ (RN-CAS Registry Number 5771-02-8)	**	7.69	PE	3884
$C_4H_{10}N_2^+$	$(CH_3)_2NN=CHCH_3$ (RN-CAS Registry Number 7422-90-4)	**	7.54	PE	3884
$C_4H_{10}N_2^+$	$CHN_2(CH_3)_3$ (Diaziridine, 1,3,3-trimethyl-) (RN-CAS Registry Number 40711-15-7)	**	9.20 (V)	PE	3888
$C_4H_{10}N_2^+$	$C_4H_{10}N_2$ (Piperazine) (RN-CAS Registry Number 110-85-0) (ON-Other name: Piperidazine)	**	8.72 (V)	PE	4085
$C_4H_{12}N_2^+$	$C_2H_5NHNHC_2H_5$ (RN-CAS Registry Number 1615-80-1)	**	8.88 (V)	PE	4085

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_4H_{12}N_2^+$	$(CH_3)_2NN(CH_3)_2$ (RN-CAS Registry Number 6415-12-9)	**	8.38 (V)	PE	4085
$C_4H_{12}N_2^+$	$(CH_3)_2NN(CH_3)_2$ (RN-CAS Registry Number 6415-12-9)	**	8.43 (V)	PE	3889
$C_5H_4N_2^+$	$C_5H_4=N=N$ (1,3-Cyclopentadiene, 5-diazo-) (RN-CAS Registry Number 1192-27-4)	**	8.33 (V)	PE	4047
$C_5H_6N_2^+$	$CH_3C(CN)_2CH_3$ (RN-CAS-Registry Number 7321-55-3)	**	12.39 (V)	PE	4067
$C_5H_6N_2^+$	$C_5H_4NNH_2$ (2-Pyridinamine) (RN-CAS Registry Number 504-29-0)	**	8.85 ± 0.05	EI	3891
$C_5H_6N_2^+$	$C_5NH_4NH_2$ (2-Pyridinamine) (RN-CAS Registry Number 504-29-0)	**	9.3	CTS	3730
$C_5H_6N_2^+$	$C_5H_4NNH_2$ (3-Pyridinamine) (RN-CAS Registry Number 462-08-8)	**	9.03 ± 0.05	EI	3891
$C_5H_6N_2^+$	$C_5NH_4NH_2$ (3-Pyridinamine) (RN-CAS Registry Number 462-08-8)	**	9.0	CTS	3730
$C_5H_6N_2^+$	$C_5H_4NNH_2$ (4-Pyridinamine) (RN-CAS Registry Number 504-24-5)	**	9.27 ± 0.05	EI	3891
$C_5H_6N_2^+$	$C_5NH_4NH_2$ (4-Pyridinamine) (RN-CAS Registry Number 504-24-5)	**	8.4	CTS	3730
$C_5H_8N_2^+$	$C_5H_8N_2$ (2,3-Diazabicyclo[2.2.1]hept-2-ene) (RN-CAS Registry Number 2721-32-6)	**	8.45 ± 0.04	PE	3828
$C_5H_{10}N_2^+$	$C_4H_7N_2CH_3$ (1,5-Diazabicyclo[3.1.0]hexane, 2-methyl-) (RN-CAS Registry Number 6794-96-3)	**	8.78 (V)	PE	3888
$C_5H_{12}N_2^+$	$(CH_3)_2NN=C(CH_3)_2$ (RN-CAS Registry Number 13483-31-3)	**	7.43	PE	3884
$C_5H_{12}N_2^+$	$CN_2(CH_3)_4$ (Diaziridine, tetramethyl-) (RN-CAS Registry Number 50695-43-7)	**	8.94 (V)	PE	3888
$C_6H_4N_2^+$	C_5H_4NCN (2-Pyridinecarbonitrile) (RN-CAS Registry Number 100-70-9)	**	10.33 ± 0.05	EI	3498
$C_6H_7N_2^+$	$C_6H_4(NH_2)NHCOCH_3$ (Acetamide, <i>N</i> -(2-aminophenyl)-) (RN-CAS Registry Number 34801-09-7)	CH_3CO	13.93 ± 0.02	EI	3631

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_7N_2^+$	$C_6H_4(NH_2)NHCOCH_3$ (Acetamide, <i>N</i> -(4-aminophenyl)-) (RN-CAS Registry Number 122-80-5)	CH_3CO	13.72 ± 0.02	EI	3631
$C_6H_8N_2^+$	$C_6H_4(NH_2)_2$ (1,4-Benzenediamine) (RN-CAS Registry Number 106-50-3)	**	7.16	EI	4089
$C_6H_8N_2^+$	$C_4H_2N_2(CH_3)_2$ (Pyrazine, 2,6-dimethyl-) (RN-CAS Registry Number 108-50-9)	**	8.80	PE	3860
$C_6H_8N_2^+$	$C_5NH_3(CH_3)NH_2$ (2-Pyridinamine, 6-methyl-) (RN-CAS Registry Number 1824-81-3)	**	9.1	CTS	3730
$C_6H_8N_2^+$	$C_5H_4NNHCH_3$ (2-Pyridinamine, <i>N</i> -methyl-) (RN-CAS Registry Number 4597-87-9)	**	8.26 ± 0.05	EI	3891
$C_6H_8N_2^+$	$C_5NH_3(CH_3)NH_2$ (3-Pyridinamine, 4-methyl-) (RN-CAS Registry Number 3430-27-1)	**	9.3	CTS	3730
$C_6H_8N_2^+$	$C_5H_4NNHCH_3$ (3-Pyridinamine, <i>N</i> -methyl-) (RN-CAS Registry Number 18364-47-1)	**	8.53 ± 0.05	EI	3891
$C_6H_8N_2^+$	$C_5H_4NNHCH_3$ (4-Pyridinamine, <i>N</i> -methyl-) (RN-CAS Registry Number 1121-58-0)	**	8.75 ± 0.05	EI	3891
$C_6H_8N_2^+$	$C_5H_4N(=NH)CH_3$ (2(1 <i>H</i>)-Pyridinimine, 1-methyl-) (RN-CAS Registry Number 4088-63-5)	**	7.91 ± 0.05	EI	3891
$C_6H_8N_2^+$	$C_5H_4N(=NH)CH_3$ (4(1 <i>H</i>)-Pyridinimine, 1-methyl-) (RN-CAS Registry Number 16562-40-6)	**	7.85 ± 0.05	EI	3891
$C_6H_8N_2^+$	$C_5H_4N(NH)CH_3$ (Pyridinium, 3-amino-1-methyl-, hydroxides, inner salt) (RN-CAS Registry Number 38879-42-2)	**	7.45 ± 0.1	EI	3891
$C_6H_8N_2^+$	$C_6H_4(NH_2)NHCOCH_3$ (Acetamide, <i>N</i> -(2-aminophenyl)-) (RN-CAS Registry Number 34801-09-7)	$CH_2=C=O$	10.49 ± 0.02	EI	3631
$C_6H_8N_2^+$	$C_6H_4(NH_2)NHCOCH_3$ (Acetamide, <i>N</i> -(4-aminophenyl)-) (RN-CAS Registry Number 122-80-5)	$CH_2=C=O$	10.06 ± 0.02	EI	3631
$C_6H_{10}N_2^+$	$C_6H_{10}N_2$ (2,3-Diazabicyclo[2.2.2]oct-2-ene) (RN-CAS Registry Number 3310-62-1)	**	7.79 ± 0.04	PE	3828
$C_6H_{12}N_2^+$	$(CH_3)_2C=NN=C(CH_3)_2$ (RN-CAS Registry Number 627-70-3)	**	7.97	PE	4043
$C_6H_{12}N_2^+$	$C_6H_{12}N_2$ (1,4-Diazabicyclo[2.2.2]octane) (RN-CAS Registry Number 280-57-9)	**	7.52 (V)	PE	4038

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_{12}N_2^+$	$C_6H_{12}N_2$ (1 <i>H</i> ,5 <i>H</i> -Pyrazolo[1,2- <i>a</i>]pyrazole, tetrahydro-) (RN-CAS Registry Number 5397-67-1) (ON-Other name: 1,5-Diazabicyclo[3.3.0]octane)	**	7.90 (V)	PE	4085
$C_6H_{12}N_2^+$	$C_6H_{12}N_2$ (1 <i>H</i> ,5 <i>H</i> -Pyrazolo[1,2- <i>a</i>]pyrazole, tetrahydro-) (RN-CAS Registry Number 5397-67-1) (ON-Other name: 1,5-Diazabicyclo[3.3.0]octane)	**	7.91 (V)	PE	3889
$C_6H_{14}N_2^+$	$C_4H_8N_2(CH_3)_2$ (Pyridazine, hexahydro-1,2-dimethyl-) (RN-CAS Registry Number 26163-37-1)	**	7.77 (V)	PE	3887
$C_6H_{16}N_2^+$	$(CH_3)_2CHNHNHCH(CH_3)_2$ (RN-CAS Registry Number 3711-34-0)	**	8.34 (V)	PE	4085
$C_7H_8N_2^+$	$C_7H_8N_2$ (3,4-Diazatricyclo[4.2.1.0 ^{2,5}]nona-3,7-diene) (RN-CAS Registry Number 23979-29-5)	**	9.05±0.05 (V)	PE	4040
$C_7H_{10}N_2^+$	$C_7H_{10}N_2$ (3,4-Diazatricyclo[4.2.1.0 ^{2,5}]non-3-ene) (RN-CAS Registry Number 23979-30-8)	**	8.90±0.05 (V)	PE	4040
$C_7H_{10}N_2^+$	$C_5NH_4N(CH_3)_2$ (4-Pyridinamine, <i>N,N</i> ,-dimethyl-) (RN-CAS Registry Number 1122-58-3)	**	7.7	CTS	3730
$C_7H_{12}N_2^+$	$C_5H_6N_2(CH_3)_2$ (2,3-Diazabicyclo[2.2.1]hept-5-ene, 2,3-dimethyl-) (RN-CAS Registry Number 14288-15-4)	**	7.74 (V)	PE	3889
$C_7H_{12}N_2^+$	$C_7H_{12}N_2$ (6,7-Diazabicyclo[3.2.2]non-6-ene) (RN-CAS Registry Number 43195-77-3)	**	7.64±0.04	PE	3828
$C_7H_{12}N_2^+$	$C_3N_2(CH_3)_4$ (4 <i>H</i> -Pyrazole, 3,4,4,5-tetramethyl-) (RN-CAS Registry Number 19078-32-1)	**	10.12 (V)	PE	4085
$C_7H_{14}N_2^+$	$C_5H_8N_2(CH_3)_2$ (2,3-Diazabicyclo[2.2.1]heptane, 2,3-dimethyl-) (RN-CAS Registry Number 14287-89-9)	**	7.58 (V)	PE	3889
$C_7H_{16}N_2^+$	$C_4H_7N_2(CH_3)_3$ (Pyridazine, hexahydro-1,2,3-trimethyl-) (RN-CAS Registry Number 38704-92-6)	**	7.81 (V)	PE	3887
$C_8H_6N_2^+$	$C_8H_6N_2$ (Cinnoline) (RN-CAS Registry Number 253-66-7)	**	< 8.8	PE	3638
$C_8H_6N_2^+$	$C_8H_6N_2$ (Cinnoline) (RN-CAS Registry Number 253-66-7)	**	8.90 (V)	PE	3722

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_6N_2^+$	$C_8H_6N_2$ (1,5-Naphthyridine) (RN-CAS Registry Number 254-79-5)	**	9.20 (V)	PE	3722
$C_8H_6N_2^+$	$C_8H_6N_2$ (1,6-Naphthyridine) (RN-CAS Registry Number 253-72-5)	**	9.07 (V)	PE	3722
$C_8H_6N_2^+$	$C_8H_6N_2$ (1,7-Naphthyridine) (RN-CAS Registry Number 253-69-0)	**	8.99 (V)	PE	3722
$C_8H_6N_2^+$	$C_8H_6N_2$ (1,8-Naphthyridine) (RN-CAS Registry Number 254-60-4)	**	9.20 (V)	PE	3722
$C_8H_6N_2^+$	$C_8H_6N_2$ (2,6-Naphthyridine) (RN-CAS Registry Number 253-50-9)	**	8.87 (V)	PE	3722
$C_8H_6N_2^+$	$C_8H_6N_2$ (2,7-Naphthyridine) (RN-CAS Registry Number 253-45-2)	**	8.98 (V)	PE	3722
$C_8H_6N_2^+$	$C_8H_6N_2$ (Phthalazine) (RN-CAS Registry Number 253-52-1)	**	8.70 (V)	PE	3722
$C_8H_6N_2^+$	$C_8H_6N_2$ (Quinazoline) (RN-CAS Registry Number 253-82-7)	**	9.00	PE	3638
$C_8H_6N_2^+$	$C_8H_6N_2$ (Quinazoline) (RN-CAS Registry Number 253-82-7)	**	9.08 (V)	PE	3722
$C_8H_6N_2^+$	$C_8H_6N_2$ (Quinoxaline) (RN-CAS Registry Number 91-19-0)	**	9.00 (V)	PE	3722
$C_8H_6N_2^+$	$C_8H_6N_2$ (Quinoxaline) (RN-CAS Registry Number 91-19-0)	**	9.01	PE	3638
$C_8H_{14}N_2^+$	$C_6H_8N_2(CH_3)_2$ (2,3-Diazabicyclo[2.2.2]oct-5-ene, 2,3-dimethyl-) (RN-CAS Registry Number 14287-91-3)	**	7.59 (V)	PE	3889
$C_8H_{14}N_2^+$	$C_8H_{14}N_2$ (7,8-Diazabicyclo[4.2.2]dec-7-ene) (RN-CAS Registry Number 32634-64-3)	**	7.38 ± 0.04	PE	3828
$C_8H_{16}N_2^+$	$C_8H_{16}N_2$ (Pyridazino[1,2- <i>a</i>]pyridazine, octahydro-) (RN-CAS Registry Number 3661-15-2)	**	7.59 (V)	PE	3889
$C_8H_{18}N_2^+$	$C_4H_6N_2(CH_3)_4$ (Pyridazine, hexahydro-1,2,3,6-tetramethyl, <i>cis</i> -) (RN-CAS Registry Number 26171-64-2)	**	7.82 (V)	PE	3887
$C_8H_{18}N_2^+$	$C_4H_6N_2(CH_3)_4$ (Pyridazine, hexahydro-1,2,3,6-tetramethyl, <i>trans</i> -) (RN-CAS Registry Number 38704-91-5)	**	7.78 (V)	PE	3887

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_{20}N_2^+$	$(C_2H_5)_2NN(C_2H_5)_2$ (RN-CAS Registry Number 4267-00-9)	**	8.10 (V)	PE	3889
$C_9H_{20}N_2^+$	$C_3H_6N_2(C_3H_7)_2$ (Pyrazolidine, 1,2-bis(1-methylethyl)-) (RN-CAS Registry Number 38704-87-9)	**	7.89 (V)	PE	3889
$C_{10}H_8N_2^+$	$(C_5H_4N)_2$ (2,2'-Bipyridine) (RN-CAS Registry Number 366-18-7)	**	8.35 ± 0.02	PE	3702
$C_{10}H_8N_2^+$	$(C_5H_4N)_2$ (4,4'-Bipyridine) (RN-CAS Registry Number 553-26-4)	**	9.10 ± 0.02	PE	3702
$C_{10}H_{16}N_2^+$	$C_6H_4(N(CH_3)_2)_2$ (1,4-Benzenediamine, <i>N,N,N',N'</i> -tetramethyl-) (RN-CAS Registry Number 100-22-1)	**	6.20 ± 0.05	PI	3729
$C_{10}H_{16}N_2^+$	$C_6H_4(N(CH_3)_2)_2$ (1,4-Benzenediamine, <i>N,N,N',N'</i> -tetramethyl-) (RN-CAS Registry Number 100-22-1)	**	6.7	CTS	3543
$C_{10}H_{20}N_2^+$	$C_5H_{10}NC_5H_{10}N$ (1,1'-Bipiperidine) (RN-CAS Registry Number 6130-94-5)	**	8.05 (V)	PE	4085
$C_{11}H_8N_2^+$	$C_{11}H_8N_2$ (1 <i>H</i> -Perimidine) (RN-CAS Registry Number 204-02-4)	**	6.80	CTS	4035
$C_{12}H_{20}N_2^+$	$C_6H_{10}NN(C_6H_{10})$ (Cyclohexanone, cyclohexylidenehydrazone) (RN-CAS Registry Number 4278-87-9)	**	7.84	PE	4043
$C_{13}H_{14}N_2^+$	$(C_6H_4NH_2)_2CH_2$ (Benzenamine, 4,4'-methylenebis-) (RN-CAS Registry Number 101-77-9)	**	7.75 ± 0.05	EI	3806
$C_{14}H_{12}N_2^+$	$C_{13}H_9N_2(CH_3)$ (1 <i>H</i> -Cyclopenta[<i>gh</i>]perimidine, 6,7-dihydro-1-methyl-) (RN-CAS Registry Number 18969-93-2) (ON-Other name: 1-Methylaceperimidine)	**	6.53	CTS	4035
$C_{14}H_{16}N_2^+$	$C_6H_4(NH_2)CH_2CH_2C_6H_4NH_2$ (Benzenamine, 4,4'-(1,2-ethanediyl)bis-) (RN-CAS Registry Number 621-95-4)	**	7.45 ± 0.05	EI	3806
$C_{17}H_{22}N_2^+$	$(C_6H_4N(CH_3)_2)_2CH_2$ (Benzenamine, 4,4'-methylenebis(<i>N,N</i> -dimethyl)-) (RN-CAS Registry Number 101-61-1)	**	7.1	CTS	3543

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{18}H_{18}N_2^+$	$C_6H_5C_3H_3(CN)C_6H_4N(CH_3)_2$ (Cyclopropanecarbonitrile, 2-(<i>p</i> -(dimethylamino)phenyl)-1-phenyl-) (RN-CAS Registry Number 6114-58-5)	**	6.90 ± 0.10	EDD	3575
$C_{19}H_{20}N_2^+$	$C_6H_4(CH_3)C_3H_3(CN)C_6H_4N(CH_3)_2$ (Cyclopropanecarbonitrile, 2-(<i>p</i> -(dimethylamino)phenyl)-1- <i>p</i> -tolyl-) (RN-CAS Registry Number 32589-51-8)	**	6.80 ± 0.07	EDD	3575
$C_{19}H_{24}N_2^+$	$C_{14}H_{12}N(CH_2)_3N(CH_3)_2$ (5 <i>H</i> -Dibenz[<i>b,f</i>]azepine-5-propanamine, 10,11-dihydro- <i>N,N</i> -dimethyl-) (RN-CAS Registry Number 50-49-7) (ON-Other name: Imizine)	**	8.21 ± 0.07	CTS	4079
$CH_3N_3(^2A'')$	CH_3N_3 (RN-CAS Registry Number 624-90-8)	**	9.81 ± 0.02	PE	3670
$C_2H_3N_3^+$	$C_2H_3N_3$ (1 <i>H</i> -1,2,3-Triazole) (RN-CAS Registry Number 288-36-8)	**	10.06 (V)	PE	4009
$C_2H_3N_3^+$	$C_2H_3N_3$ (1 <i>H</i> -1,2,4-Triazole) (RN-CAS Registry Number 288-88-0)	**	10.0 (V)	PE	4009
$C_3H_3N_3^+$	$C_3H_3N_3$ (1,3,5-Triazine) (RN-CAS Registry Number 290-87-9)	**	9.98	PE	3679
$C_3H_3N_3(^2E')$	$C_3H_3N_3$ (1,3,5-Triazine) (RN-CAS Registry Number 290-87-9)	**	10.01 ± 0.01	PE	3720
$C_3H_3N_3^+$	$C_3H_3N_3$ (1,3,5-Triazine) (RN-CAS Registry Number 290-87-9)	**	10.1	PE	3637
$C_3H_3N_3(^2E'')$	$C_3H_3N_3$ (1,3,5-Triazine) (RN-CAS Registry Number 290-87-9)	**	11.69 ± 0.01	PE	3720
$C_3H_3N_3(^2A_2')$	$C_3H_3N_3$ (1,3,5-Triazine) (RN-CAS Registry Number 290-87-9)	**	13.26 ± 0.01	PE	3720
$C_3H_3N_3(^2E')$	$C_3H_3N_3$ (1,3,5-Triazine) (RN-CAS Registry Number 290-87-9)	**	14.56 ± 0.01	PE	3720
$C_3H_3N_3(^2A')$	$C_3H_3N_3$ (1,3,5-Triazine) (RN-CAS Registry Number 290-87-9)	**	15.0 ± 0.01	PE	3720
$C_3H_3N_3(^2A')$	$C_3H_3N_3$ (1,3,5-Triazine) (RN-CAS Registry Number 290-87-9)	**	17.1 ± 0.01	PE	3720
$C_3H_3N_3(^2A')$	$C_3H_3N_3$ (1,3,5-Triazine) (RN-CAS Registry Number 290-87-9)	**	18.05 ± 0.01	PE	3720

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3H_3N_3(^2E')$	$C_3H_3N_3$ (1,3,5-Triazine) (RN-CAS Registry Number 290-87-9)	**	21.0 ± 0.01	PE	3720
$C_{12}H_{11}N_3^+$	$C_{11}H_6N_2(NH_2)CH_3$ (1 <i>H</i> -Perimindin-2-amine, 1-methyl-) (RN-CAS Registry Number 20551-10-4)	**	6.41	CTS	4035
$CH_2N_4^+$	CH_2N_4 (1 <i>H</i> -Tetrazole) (RN-CAS Registry Number 288-94-8)	**	11.3 (V)	PE	4009
$C_2H_2N_4^+$	$C_2H_2N_4$ (1,2,4,5-Tetrazine) (RN-CAS Registry Number 290-96-0)	**	9.14	PE	3679
$C_2H_2N_4(^2B_2)$	$C_2H_2N_4$ (1,2,4,5-Tetrazine) (RN-CAS Registry Number 290-96-0)	**	9.24	PE	3740
$C_2H_2N_4(^2B_1)$	$C_2H_2N_4$ (1,2,4,5-Tetrazine) (RN-CAS Registry Number 290-96-0)	**	11.6	PE	3740
$C_2H_2N_4(^2A_1)$	$C_2H_2N_4$ (1,2,4,5-Tetrazine) (RN-CAS Registry Number 290-96-0)	**	12.1 (V)	PE	3740
$C_2H_2N_4(^2A_2)$	$C_2H_2N_4$ (1,2,4,5-Tetrazine) (RN-CAS Registry Number 290-96-0)	**	12.5	PE	3740
$C_2H_2N_4(^2A_1)$	$C_2H_2N_4$ (1,2,4,5-Tetrazine) (RN-CAS Registry Number 290-96-0)	**	13.2	PE	3740
$C_2H_2N_4(^2B_1)$	$C_2H_2N_4$ (1,2,4,5-Tetrazine) (RN-CAS Registry Number 290-96-0)	**	15.51	PE	3740
$C_2H_2N_4(^2A_1)$	$C_2H_2N_4$ (1,2,4,5-Tetrazine) (RN-CAS Registry Number 290-96-0)	**	16.5	PE	3740
$C_2H_2N_4(^2B_2)$	$C_2H_2N_4$ (1,2,4,5-Tetrazine) (RN-CAS Registry Number 290-96-0)	**	~ 17.5 (V)	PE	3740
$C_2H_2N_4(^2B_2, ^2A_1)$	$C_2H_2N_4$ (1,2,4,5-Tetrazine) (RN-CAS Registry Number 290-96-0)	**	18.9	PE	3740
$C_2H_2N_4(^2A_1)$	$C_2H_2N_4$ (1,2,4,5-Tetrazine) (RN-CAS Registry Number 290-96-0)	**	22.0	PE	3740
$C_2H_2N_4(^2B_2)$	$C_2H_2N_4$ (1,2,4,5-Tetrazine) (RN-CAS Registry Number 290-96-0)	**	~ 24	PE	3740

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_4H_6N_4^+$	$C_2N_4(CH_3)_2$ (1,2,4,5-Tetrazine, 3,6-dimethyl-) (RN-CAS Registry Number 1558-23-2)	**	9.08 (V)	PE	3679
$C_{10}H_{20}N_4^+$	$C_{10}H_{20}N_4$ (Imidazolidine, 2-(1,3-dimethyl-2-imidazolidinylidene)-1,3-dimethyl-) (RN-CAS Registry Number 1911-01-9)	**	6.06 (V)	PE	3512
$C_{10}H_{24}N_4^+$	$((CH_3)_2N)_2C=C(N(CH_3)_2)_2$ (RN-CAS Registry Number 996-70-3)	**	5.95 (V)	PE	3512
$C_{11}H_{15}N_5^+$	$C_{11}H_{13}N_4NH_2$ (9 <i>H</i> -Purin-6-amine, 9-cyclohexyl-) (RN-CAS Registry Number 4235-94-3)	**	9.1	CTS	3915
$C_{32}H_{18}N_8^+$	$C_{32}H_{18}N_8$ (29 <i>H</i> ,31 <i>H</i> -Phthalocyanine) (RN-CAS Registry Number 574-93-6)	**	7.36 ± 0.10	EI	3829
CH_8BN^+	$(CH_3NH_2)(BH_3)$ (RN-CAS Registry Number 1722-33-4)	**	9.66 ± 0.01	PE	3699
$C_2H_8BN^+$	$(CH_3)_2NBH_2$ (RN-CAS Registry Number 1838-13-7)	**	9.51	PE	3584
$C_2H_9BN^+$	$((CH_3)_2NH)(BH_2)$ (RN-CAS Registry Number 74-94-2)	**	9.39 ± 0.01	PE	3699
$C_3H_{12}BN^+$	$((CH_3)_3N)(BH_3)$ (RN-CAS Registry Number 75-22-9)	**	9.28 ± 0.2	PE	3699
$C_4H_{12}BN^+$	$(CH_3)_2NB(CH_3)_2$ (RN-CAS Registry Number 1113-30-0)	**	8.92	PE	3584
$C_6H_{12}BN^+$	$C_6H_{12}BN$ (1 <i>H</i> ,5 <i>H</i> -[1,2]Azaborolo[1,2- <i>a</i>][1,2]azaborole, tetrahydro-) (RN-CAS Registry Number 16153-13-2)	**	8.06	PE	3584
$C_4H_{13}BN_2^+$	$((CH_3)_2N)_2BH$ (RN-CAS Registry Number 2386-98-3)	**	7.76	PE	3584
$C_5H_{15}BN_2^+$	$((CH_3)_2N)_2B(CH_3)$ (RN-CAS Registry Number 6914-63-2)	**	7.63	PE	3584
$C_3H_{12}B_3N_3^+$	$C_3H_{12}B_3N_3$ (Borazine, 1,3,5-trimethyl-) (RN-CAS Registry Number 1004-35-9)	**	8.99 (V)	PE	3944
$C_3H_{12}B_3N_3^{+2}(E^-)$	$C_3H_{12}B_3N_3$ (Borazine, 1,3,5-trimethyl-) (RN-CAS Registry Number 1004-35-9)	**	9.28 ± 0.02	PE	3506

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3H_{12}B_3N_3^+$	$C_3H_{12}B_3N_3$ (Borazine, 2,4,6-trimethyl-) (RN-CAS Registry Number 5314-85-2)	**	9.50 (V)	PE	3944
$C_3H_{12}B_3N_3(^2E^-)$	$C_3H_{12}B_3N_3$ (Borazine, 2,4,6-trimethyl-) (RN-CAS Registry Number 5314-85-2)	**	9.64 ± 0.03	PE	3506
$C_6H_{14}BN_3^+$	$C_6H_{14}BN_3$ ([1,3,2]Diazaborino[1,2-a][1,3,2]diazaborine, octahydro-) (RN-CAS Registry Number 1730-15-0)	**	7.90	PE	3584
$C_6H_{18}BN_3^+$	$B(N(CH_3)_2)_3$ (RN-CAS Registry Number 4375-83-1)	**	7.60 (V)	PE	3704
$C_6H_{18}B_3N_3^+$	$C_6H_{18}B_3N_3$ (Borazine, hexamethyl-) (RN-CAS Registry Number 877-07-6)	**	8.53 (V)	PE	3944
$C_8H_{24}B_2N_4^+$	$((CH_3)_2N)_2BB(N(CH_3)_2)_2$ (RN-CAS Registry Number 1630-79-1)	**	7.3 (V)	PE	3512
$C_8H_{24}B_2N_4^+$	$((CH_3)_2N)_2BB(N(CH_3)_2)_2$ (RN-CAS Registry Number 1630-79-1)	**	7.58	PE	3584
$O^+(^2P)$	O (RN-CAS Registry Number 17778-80-2)	**	18.63	PE	3701
O^+	H_2O (RN-CAS Registry Number 7732-18-5)	H_2	19.0	DC	3967
O^+	H_2O (RN-CAS Registry Number 7732-18-5)	$2H$	26.8	DC	3967
O^+	NO (RN-CAS Registry Number 10102-43-9)	N	20.1 ± 0.3	EI	3945
O^+	HOF (RN-CAS Registry Number 14034-79-8)	HF	14.34	PI	3932
(TV-Threshold value approximately corrected to 0°K)					
O^{+2}	$O^+(^2P)$ (RN-CAS Registry Number 14581-93-2)	**	30	SEQ	3489
O^{+2}	$O^+(^2D)$ (RN-CAS Registry Number 14581-93-2)	**	32	SEQ	3489
$O^{+2}(^1D)$	O^+ (RN-CAS Registry Number 14581-93-2)	**	38	SEQ	3489
$O^{+2}(^5S)$	O^+ (RN-CAS Registry Number 14581-93-2)	**	42	SEQ	3489
O^{+2}	CO (RN-CAS Registry Number 630-08-0)	$C(^1D)$	61	SEQ	3489
O^{+2}	CO^+ (RN-CAS Registry Number 12144-04-6)	$C(^1D)$	47	SEQ	3489
O^{+3}	$O^{+2}(^1S)$ (RN-CAS Registry Number 14127-63-0)	**	49.3	SEQ	3489

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
O^{+3}	$O^{+2}(^1D)$ (RN-CAS Registry Number 14127-63-0)	**	52.6	SEQ	3489
O^{+6}	O^{+5} (RN-CAS Registry Number 14127-66-3)	**	> 160	SEQ	3489
$O_2(X^2\Pi_{1/2})$	$O_2(a^1\Delta_g)$ (RN-CAS Registry Number 7782-44-7)	**	11.108 ± 0.002	S	3878
$O_2(X^2\Pi_g)$	O_2 (RN-CAS Registry Number 7782-44-7)	**	12.07 ± 0.01	PI	4020
$O_2(X^2\Pi_{3/2g})$	O_2 (RN-CAS Registry Number 7782-44-7)	**	12.077	PE	3834
$O_2(X^2\Pi_g)$	O_2 (RN-CAS-Registry Number 7782-44-7)	**	12.08	PE	4073
$O_2(X^2\Pi_{1/2g})$	O_2 (RN-CAS Registry Number 7782-44-7)	**	12.102	PE	3834
$O_2(a^4\pi u)$	O_2 (RN-CAS Registry Number 7782-44-7)	**	16.105	PE	3664
$O_2(^2\Pi_u)$	$O_2(^1\Delta_g)$ (RN-CAS Registry Number 7782-44-7)	**	~ 16.5	PE	3698
$O_2(^2\Phi_u?)$	$O_2(^1\Delta_g)$ (RN-CAS Registry Number 7782-44-7)	**	~ 17.45	PE	3534
$O_2(^2\Phi_u)$	$O_2(^1\Delta_g)$ (RN-CAS Registry Number 7782-44-7)	**	17.5	PE	3698
$O_2(^2\Delta_g?)$	$O_2(^1\Delta_g)$ (RN-CAS Registry Number 7782-44-7)	**	18.81	PE	3534
$O_2(^2\Pi_u)$	O_2 (RN-CAS Registry Number 7782-44-7)	**	22.8 ± 0.1	PE	3975
$O_2(c^4\Sigma_u^-)$	O_2 (RN-CAS Registry Number 7782-44-7)	**	24.6	PE	3975
O_2^*	O_2 (RN-CAS Registry Number 7782-44-7)	**	38.4 ± 0.2	PE	3975
OH^+ (RD-Radical)	OH (RN-CAS-Registry Number 3352-57-6)	**	13.5 ± 1.0	EI	4054
OH^+ (RD-Radical)	OH (RN-CAS Registry Number 3352-57-6)	**	12.88	D	3932
OH^+	H_2O (RN-CAS Registry Number 7732-18-5)	H	18.2	DC	3967
OH^+	HOF (RN-CAS Registry Number 14034-79-8)	F	15.07	PI	3932
(TV-Threshold value approximately corrected to 0°K)					
H_2O^+	H_2O (RN-CAS Registry Number 7732-18-5)	**	12.619 ± 0.006	S	3983
$H_2O^+(^2B_1)$	H_2O (RN-CAS Registry Number 7732-18-5)	**	12.619	PE	3941
$H_2O^+(^2B_1)$	H_2O (RN-CAS Registry Number 7732-18-5)	**	12.62	PE	3719

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{H}_2\text{O}^+(\text{}^2\text{B}_1)$	H_2O (RN-CAS Registry Number 7732-18-5) (Center of rotational envelope)	**	12.624	PE	3530
$\text{H}_2\text{O}^+(\text{}^2\text{A}_1)$	H_2O (RN-CAS Registry Number 7732-18-5)	**	13.78	PE	3719
$\text{H}_2\text{O}^+(\text{}^2\text{A}_1)$	H_2O (RN-CAS Registry Number 7732-18-5) (Origin of rotational envelope)	**	13.930 ± 0.010	PE	3530
$\text{H}_2\text{O}^+(\text{}^2\text{A}_1)$	H_2O (RN-CAS Registry Number 7732-18-5)	**	14.8	PE	3941
$\text{H}_2\text{O}^+(\text{}^2\text{B}_2)$	H_2O (RN-CAS Registry Number 7732-18-5)	**	17.02	PE	3719
$\text{H}_2\text{O}^+(\text{}^2\text{B}_2)$	H_2O (RN-CAS Registry Number 7732-18-5)	**	17.390	PE	3530
$\text{H}_2\text{O}^+(\text{}^2\text{B}_2)$	H_2O (RN-CAS Registry Number 7732-18-5)	**	18.54	PE	3941
$\text{H}_2\text{O}^+(\text{}^2\text{A}_1)$	H_2O (RN-CAS Registry Number 7732-18-5)	**	32.2 (V)	PE	3719
H_2O^+	H_2O (RN-CAS Registry Number 7732-18-5)	**	12.7	DC	3967
D_2O^+	D_2O (RN-CAS Registry Number 7789-20-0)	**	12.636 ± 0.006	S	3983
$\text{D}_2\text{O}^+(\text{}^2\text{B}_1)$	D_2O (RN-CAS Registry Number 7789-20-0) (Center of rotational envelope)	**	12.633	PE	3530
$\text{D}_2\text{O}^+(\text{}^2\text{A}_1)$	D_2O (RN-CAS Registry Number 7789-20-0) (Origin of rotational envelope)	**	13.930 ± 0.010	PE	3530
H_3O^+	$\text{C}_2\text{H}_5\text{OH}$ (RN-CAS Registry Number 64-17-5) (MT-Metastable transition(s) observed) (TR-Other product(s) thermochemically reasonable)	$\text{C}_2\text{H}_2 + \text{H}$	14.30 ± 0.02	RPD	3487
LiO^+	LiO (RN-CAS Registry Number 12142-77-7)	**	8.45 ± 0.20	EI	3909
Li_2O^+	Li_2O (RN-CAS Registry Number 12057-24-8)	**	6.19 ± 0.20	EI	3909
BO^+	BO (RN-CAS Registry Number 13840-87-4)	**	13.0 ± 0.5	EI	3473
BO_2^+	BO_2 (RN-CAS-Registry Number 13840-88-5)	**	14.0 ± 1.0	EI	4054
BHO_2^+	BHO_2 (RN-CAS-Registry Number 13460-50-9)	**	13.5 ± 1.0	EI	4054
$\text{CO}^+(\text{}^X^2\Sigma^+)$	CO (RN-CAS Registry Number 630-08-0)	**	14.014	S	3760

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{CO}^+(\text{A}^2\Pi_{1/2})$	CO (RN-CAS Registry Number 630-08-0)	**	16.550	S	3760
$\text{CO}^+(\text{B}^2\Sigma^+)$	CO (RN-CAS Registry Number 630-08-0)	**	19.672	S	3760
(RS-Average of two Rydberg series limits)					
$\text{CO}^+(\text{X}^2\Sigma^+)$	CO (RN-CAS-Registry Number 630-08-0)	**	14.01	PE	4073
$\text{CO}^+(\text{Z}^2\Sigma_p)$	CO (RN-CAS Registry Number 630-08-0)	**	14.01 (V)	PE	4022
$\text{CO}^+(\text{A}^2\Pi)$	CO (RN-CAS-Registry Number 630-08-0)	**	16.55	PE	4073
$\text{CO}^+(\text{Z}^2\Pi)$	CO (RN-CAS Registry Number 630-08-0)	**	16.91 (V)	PE	4022
$\text{CO}^+(\text{B}^2\Sigma_u^+)$	CO (RN-CAS Registry Number 630-08-0)	**	19.69 (V)	PE	3714
$\text{CO}^+(\text{Z}^2\Sigma_g)$	CO (RN-CAS Registry Number 630-08-0)	**	19.72 (V)	PE	4022
$\text{CO}^+(\text{C}^2\Sigma^+)$	CO (RN-CAS Registry Number 630-08-0)	**	39.0	PE	3975
CO^+	CO ₂ (RN-CAS Registry Number 124-38-9)	$\text{O}(\text{Z}^3\text{S})$	29.0	PI	4095
CO^+	COS (RN-CAS Registry Number 463-58-1)	S?	15.6	EI	3779
$\text{CO}_2^+(\text{X}^2\Pi_{3/2g})$	CO ₂ (RN-CAS Registry Number 124-38-9)	**	13.773 ± 0.002	PI	3925
$\text{CO}_2^+(\text{X}^2\Pi_{3/2g})$	CO ₂ (RN-CAS-Registry Number 124-38-9)	**	13.776 ± 0.008	PI	4069
$\text{CO}_2^+(\text{X}^2\Pi_g)$	CO ₂ (RN-CAS-Registry Number 124-38-9)	**	13.78	PE	4073
$\text{CO}_2^+(\text{X}^2\Pi_g)$	CO ₂ (RN-CAS Registry Number 124-38-9)	**	13.80 ± 0.01	PE	3965
$\text{CO}_2^+(\text{A}^2\Pi_u)$	CO ₂ (RN-CAS Registry Number 124-38-9)	**	17.34 ± 0.01	PE	3965
$\text{CO}_2^+(\text{B}^2\Sigma_u^+)$	CO ₂ (RN-CAS Registry Number 124-38-9)	**	18.08 ± 0.01	PE	3965
$\text{CO}_2^+(\text{C}^2\Sigma_g^+)$	CO ₂ (RN-CAS Registry Number 124-38-9)	**	19.39 ± 0.01	PE	3965
$\text{CO}_2^+(\text{Z}^2\Sigma_u)$	CO ₂ (RN-CAS Registry Number 124-38-9)	**	37	PE	4095
$\text{CO}_2^+(\text{Z}^2\Sigma_g)$	CO ₂ (RN-CAS Registry Number 124-38-9)	**	38.4	PE	4095
$\text{CO}_2^+(\text{Z}^2\Sigma_u?)$	CO ₂ (RN-CAS Registry Number 124-38-9)	**	38.4 (V)	PE	3975
$\text{CO}_2^+(\text{Z}^2\Sigma_g?)$	CO ₂ (RN-CAS Registry Number 124-38-9)	**	40.0 (V)	PE	3975
$\text{C}_3\text{O}_2^+(\text{Z}^2\Pi_u)$	C ₃ O ₂ (RN-CAS Registry Number 504-64-3)	**	10.605	PE	3728
$\text{C}_3\text{O}_2^+(\text{Z}^2\Pi_g)$	C ₃ O ₂ (RN-CAS Registry Number 504-64-3)	**	14.502	PE	3728

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3O_2(^2\Sigma_u)$	C_3O_2 (RN-CAS Registry Number 504-64-3)	**	15.751	PE	3728
$C_3O_2(^2\Sigma_g)$	C_3O_2 (RN-CAS Registry Number 504-64-3)	**	16.978	PE	3728
$C_3O_2(^2\Pi_u)$	C_3O_2 (RN-CAS Registry Number 504-64-3)	**	17.258	PE	3728
CHO^+	HCHO (RN-CAS Registry Number 50-00-0)	H	11.89 ± 0.03	PI	3554
CHO^+	CH_3OH (RN-CAS Registry Number 67-56-1)	$H_2 + H$	13.06 ± 0.10	PI	3554
(TR—Other product(s) thermochemically reasonable)					
CHO^+	$(CH_3)_2O$ (RN-CAS-Registry Number 115-10-6)		13.96 ± 0.2	EI	4071
CHO^+	CH_3OCD_3 (RN-CAS-Registry Number 13725-27-4)		13.97 ± 0.2	EI	4071
CHO^+	$C_2H_5OCD_3$ (RN-CAS-Registry Number 16995-14-5)		13.13 ± 0.2	EI	4071
CDO^+	CH_3OCD_3 (RN-CAS-Registry Number 13725-27-4)		13.87 ± 0.2	EI	4071
CDO^+	$C_2H_5OCD_3$ (RN-CAS-Registry Number 16995-14-5)		13.57 ± 0.2	EI	4071
CH_2O^+	HCHO (RN-CAS Registry Number 50-00-0)	**	10.88 ± 0.02	PI	3554
CH_2O^+	HCHO (RN-CAS Registry Number 50-00-0)	**	10.90 ± 0.03	PI	3765
CH_2O^+	CH_3OH (RN-CAS Registry Number 67-56-1)	H_2	12.05 ± 0.12	PI	3554
(TR—Other product(s) thermochemically reasonable)					
CH_3O^+	CH_3OH (RN-CAS Registry Number 67-56-1)	H	11.55 ± 0.03	PI	3554
CH_3O^+	$(CH_3)_2O$ (RN-CAS-Registry Number 115-10-6)	CH_3	12.42 ± 0.1	EI	4071
CH_3O^+	$C_2H_5OCH_3$ (RN-CAS-Registry Number 540-67-0)		12.86 ± 0.1	EI	4071
CH_3O^+	$n-C_3H_7OH$ (RN-CAS Registry Number 71-23-8)	C_2H_5	11.16 ± 0.03	EDD	3626
CHD_2O^+	$C_2H_5OCD_3$ (RN-CAS-Registry Number 16995-14-5)		12.86 ± 0.05	EI	4071
CH_4O^+	CH_3OH (RN-CAS Registry Number 67-56-1)	**	10.83 ± 0.03	PI	3554
$CH_4O^+(^2A'')$	CH_3OH (RN-CAS-Registry Number 67-56-1)	**	10.94 (V)	PE	4068
CH_4O^+	CH_3OH (RN-CAS Registry Number 67-56-1)	**	10.95	PE	4087
$CH_4O^+(^2A'')$	CH_3OH (RN-CAS Registry Number 67-56-1)	**	10.95 (V)	PE	4032

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{CH}_4\text{O}^+(\text{}^2\text{A}')$	CH_3OH (RN-CAS Registry Number 67-56-1)	**	10.96 (V)	PE	3941
$\text{CH}_4\text{O}^+(\text{}^2\text{A}')$	CH_3OH (RN-CAS Registry Number 67-56-1)	**	12.62 (V)	PE	3941
$\text{CH}_4\text{O}^+(\text{}^2\text{A}')$	CH_3OH (RN-CAS Registry Number 67-56-1)	**	12.66 (V)	PE	4032
$\text{CH}_4\text{O}^+(\text{}^2\text{A}')$	CH_3OH (RN-CAS Registry Number 67-56-1)	**	12.68 (V)	PE	4068
$\text{CH}_4\text{O}^+(\text{}^2\text{A}')$	CH_3OH (RN-CAS Registry Number 67-56-1)	**	15.09 (V)	PE	4032
$\text{CH}_4\text{O}^+(\text{}^2\text{A}')$	CH_3OH (RN-CAS Registry Number 67-56-1)	**	15.19 (V)	PE	4068
$\text{CH}_4\text{O}^+(\text{}^2\text{A}')$	CH_3OH (RN-CAS Registry Number 67-56-1)	**	15.21 (V)	PE	3941
$\text{CH}_4\text{O}^+(\text{}^2\text{A}')$	CH_3OH (RN-CAS Registry Number 67-56-1)	**	15.64 (V)	PE	3941
$\text{CH}_4\text{O}^+(\text{}^2\text{A}')$	CH_3OH (RN-CAS Registry Number 67-56-1)	**	15.66 (V)	PE	4068
$\text{CH}_4\text{O}^+(\text{}^2\text{A}')$	CH_3OH (RN-CAS Registry Number 67-56-1)	**	15.69 (V)	PE	4032
$\text{CH}_4\text{O}^+(\text{}^2\text{A}')$	CH_3OH (RN-CAS Registry Number 67-56-1)	**	17.50 (V)	PE	4068
$\text{CH}_4\text{O}^+(\text{}^2\text{A}')$	CH_3OH (RN-CAS Registry Number 67-56-1)	**	17.53 (V)	PE	4032
$\text{CH}_4\text{O}^+(\text{}^2\text{A}')$	CH_3OH (RN-CAS Registry Number 67-56-1)	**	17.62 (V)	PE	3941
$\text{CH}_4\text{O}^+(\text{}^2\text{A}')$	CH_3OH (RN-CAS Registry Number 67-56-1)	**	22.65 (V)	PE	3941
$\text{C}_2\text{H}_2\text{O}^+$	$\text{C}_4\text{H}_6\text{O}$ (Cyclobutanone) (RN-CAS Registry Number 1191-95-3) (TR—Other product(s) thermochemically reasonable)	C_2H_4	10.53 ± 0.15	EDD	3794
$\text{C}_2\text{H}_3\text{O}^+$	$(\text{CH}_3)_2\text{CO}$ (RN-CAS Registry Number 67-64-1)	CH_3	10.28 ± 0.05	EDD	3626
$\text{C}_2\text{H}_3\text{O}^+$	$(\text{CH}_3)_2\text{CO}$ (RN-CAS Registry Number 67-64-1)	CH_3	11.3	EI	3550
$\text{C}_2\text{H}_3\text{O}^+$	$\text{C}_6\text{H}_5\text{OOCCH}_3$ (Acetic acid, phenyl ester) (RN-CAS Registry Number 122-79-2)	<i>cyclo</i> - $\text{C}_6\text{H}_5\text{O}$	12.78 ± 0.2	EI	3484
$\text{C}_2\text{H}_3\text{O}^+$	$\text{C}_6\text{H}_5\text{OOCCH}_3$ (Acetic acid, phenyl ester) (RN-CAS Registry Number 122-79-2)	<i>cyclo</i> - $\text{C}_6\text{H}_5\text{O}$	12.83 ± 0.03	EI	3483
$\text{C}_2\text{H}_3\text{O}^+$	$\text{C}_6\text{H}_4(\text{CH}_3)\text{OOCCH}_3$ (Acetic acid, 3-methylphenyl ester) (RN-CAS Registry Number 122-46-3)	$\text{C}_6\text{H}_4(\text{CH}_3)\text{O}$	13.83 ± 0.2	EI	3484
$\text{C}_2\text{H}_3\text{O}^+$	$\text{C}_6\text{H}_4(\text{CH}_3)\text{OOCCH}_3$ (Acetic acid, 4-methylphenyl ester) (RN-CAS Registry Number 140-39-6) (OP—the other product(s) is(are): <i>cyclo</i> - $\text{C}_6\text{H}_4(\text{CH}_3)\text{O}$)		13.97 ± 0.2	EI	3484

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_3O^+$	$C_6H_5CH_2CH_2OCOCH_3$ (Acetic acid, 2-phenylethyl ester) (RN-CAS Registry Number 103-45-7)		11.70	EI	3590
$C_2H_3O^+$	$C_6H_4(CH_3)CH_2CH_2OCOCH_3$ (Phenethyl alcohol, <i>m</i> -methyl-, acetate) (RN-CAS Registry Number 33709-40-9)		11.90	EI	3590
$C_2H_3O^+$	$C_6H_4(CH_3)CH_2CH_2OCOCH_3$ (Phenethyl alcohol, <i>p</i> -methyl-, acetate) (RN-CAS Registry Number 22532-47-4)		11.90	EI	3590
$C_2H_3O^+$	$C_6H_4(OCH_3)OOCCH_3$ (Phenol, 3-methoxy-, acetate) (RN-CAS Registry Number 5451-83-2)	$C_6H_4(OCH_3)O$	13.92 ± 0.2	EI	3484
$C_2H_3O^+$	$C_6H_4(OCH_3)OOCCH_3$ (Phenol, 4-methoxy-, acetate) (RN-CAS Registry Number 1200-06-2)	$C_6H_4(OCH_3)O$	14.57 ± 0.2	EI	3484
$C_2H_3O^+$	$C_6H_4(OCH_3)CH_2CH_2OCOCH_3$ (Phenethyl alcohol, <i>m</i> -methoxy-, acetate) (RN-CAS Registry Number 33709-39-6)		11.80	EI	3590
$C_2H_3O^+$	$C_6H_4(OCH_3)CH_2CH_2OCOCH_3$ (Phenethyl alcohol, <i>p</i> -methoxy-, acetate) (RN-CAS Registry Number 22532-51-0)		12.20	EI	3590
$C_2H_3O^+$	$C_6H_4(COOH)OOCCH_3$ (Benzoic acid, 4-(acetyloxy)-) (RN-CAS Registry Number 2345-34-8)	$C_6H_4(COOH)O$	12.46 ± 0.2	EI	3484
$C_2H_3O^+$	$C_5H_8NCOCH_3$ (Pyridine, 1-acetyl-1,2,3,4-tetrahydro-) (RN-CAS Registry Number 19615-27-1)		13.5	EI	4046
$C_2H_3O^+$	$C_5H_{10}NCOCH_3$ (Piperidine, 1-acetyl-) (RN-CAS Registry Number 618-42-8)		15.1	EI	4046
$C_2H_3O^+$	$C_6H_5NHCOCH_3$ (Acetamide, <i>N</i> -phenyl-) (RN-CAS Registry Number 103-84-4)		13.22 ± 0.03	EI	3483
$C_2H_3O^+$	$C_6H_4(NH_2)CH_2CH_2OCOCH_3$ (Benzeneethanol, 4-amino-, acetate(ester)) (RN-CAS Registry Number 33709-38-5)		12.30	EI	3590
$C_2H_3O^+$	$C_6H_4(NO_2)OOCCH_3$ (Acetic acid, 3-nitrophenyl ester) (RN-CAS Registry Number 1523-06-4)		10.94 ± 0.2	EI	3484
	(OP—the other product(s) is(are): <i>cyclo</i> - $C_6H_4(NO_2)O$)				
$C_2H_3O^+$	$C_6H_4(NO_2)OOCCH_3$ (Acetic acid, 4-nitrophenyl ester) (RN-CAS Registry Number 830-03-5)		10.85 ± 0.2	EI	3484
	(OP—the other product(s) is(are): <i>cyclo</i> - $C_6H_4(NO_2)O$)				
$C_2H_3O^+$	$C_6H_4FOOCCH_3$ (Phenol, 2-fluoro-, acetate) (RN-CAS Registry Number 29650-44-0)	<i>cyclo</i> - C_6H_4FO	12.23 ± 0.03	EI	3483
$C_2H_3O^+$	$C_6H_4FOOCCH_3$ (Phenol, 4-fluoro-, acetate) (RN-CAS Registry Number 405-51-6)	<i>cyclo</i> - C_6H_4FO	12.72 ± 0.03	EI	3483

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_3O^+$	$C_6H_3F_2OOCCH_3$ (Phenol, 2,4-difluoro-, acetate) (RN-CAS Registry Number 36914-77-9)		12.00 ± 0.03	EI	3480
$C_2H_3O^+$	$C_6H_3F_2OOCCH_3$ (Phenol, 2,6-difluoro-, acetate) (RN-CAS Registry Number 36914-78-0)		12.24 ± 0.03	EI	3480
$C_2H_3O^+$	CH_3COCF_3 (RN-CAS Registry Number 421-50-1)		11.45	EI	3550
$C_2H_3O^+$	$C_6H_4FNHCOCH_3$ (Acetamide, <i>N</i> -(2-fluorophenyl)-) (RN-CAS Registry Number 399-31-5)		13.59 ± 0.03	EI	3483
$C_2H_3O^+$	$C_6H_4FNHCOCH_3$ (Acetamide, <i>N</i> -(4-fluorophenyl)-) (RN-CAS Registry Number 351-83-7)		13.42 ± 0.03	EI	3483
$C_2H_3O^+$	$C_6H_3F_2NHCOCH_3$ (Acetamide, <i>N</i> -(2,4-difluorophenyl)-) (RN-CAS Registry Number 399-36-0)		13.18 ± 0.03	EI	3480
$C_2H_3O^+$	$C_6H_3F_2NHCOCH_3$ (Acetamide, <i>N</i> -(2,6-difluorophenyl)-) (RN-CAS Registry Number 3869-29-5)		13.80 ± 0.03	EI	3480
$C_2H_3O^+$	$C_6H_4ClOOCCH_3$ (Acetic acid, 2-chlorophenyl ester) (RN-CAS Registry Number 4525-75-1)		12.55 ± 0.03	EI	3483
	(OP—the other product(s) is(are): <i>cyclo</i> - C_6H_4ClO)				
$C_2H_3O^+$	$C_6H_4ClOOCCH_3$ (Acetic acid, 3-chlorophenyl ester) (RN-CAS Registry Number 13031-39-5)		12.36 ± 0.2	EI	3484
	(OP—the other product(s) is(are): <i>cyclo</i> - $C_6H_4(Cl)O$)				
$C_2H_3O^+$	$C_6H_4ClOOCCH_3$ (Acetic acid, 4-chlorophenyl ester) (RN-CAS Registry Number 876-27-7)		12.39 ± 0.03	EI	3483
	(OP—the other product(s) is(are): <i>cyclo</i> - C_6H_4ClO)				
$C_2H_3O^+$	$C_6H_4ClOOCCH_3$ (Acetic acid, 4-chlorophenyl ester) (RN-CAS Registry Number 876-27-7)		12.73 ± 0.2	EI	3484
	(OP—the other product(s) is(are): <i>cyclo</i> - $C_6H_4(Cl)O$)				
$C_2H_3O^+$	$C_6H_4ClCH_2CH_2OCOCH_3$ (Phenethyl alcohol, <i>m</i> -chloro-, acetate) (RN-CAS Registry Number 33709-41-0)		11.60	EI	3590
$C_2H_3O^+$	$C_6H_3Cl_2OOCCH_3$ (Phenol, 2,4-dichloro-, acetate) (RN-CAS Registry Number 6341-97-5)		12.11 ± 0.03	EI	3480
$C_2H_3O^+$	$C_6H_3Cl_2OOCCH_3$ (Phenol, 2,6-dichloro-, acetate) (RN-CAS Registry Number 28165-71-1)		12.09 ± 0.03	EI	3480
$C_2H_3O^+$	$C_6H_4ClNHCOCH_3$ (Acetamide, <i>N</i> -(2-chlorophenyl)-) (RN-CAS Registry Number 533-17-5)		13.91 ± 0.03	EI	3483
$C_2H_3O^+$	$C_6H_4ClNHCOCH_3$ (Acetamide, <i>N</i> -(4-chlorophenyl)-) (RN-CAS Registry Number 539-03-7)		13.00 ± 0.03	EI	3483

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_3O^+$	$C_6H_3Cl_2NHCOCH_3$ (Acetamide, <i>N</i> -(2,4-dichlorophenyl)-) (RN-CAS Registry Number 6975-29-7)		13.08 ± 0.03	EI	3480
$C_2H_3O^+$	$C_6H_3Cl_2NHCOCH_3$ (Acetamide, <i>N</i> -(2,6-dichlorophenyl)-) (RN-CAS Registry Number 17700-54-8)		13.40 ± 0.03	EI	3480
$C_2H_3O^+$	$C_6H_4BrCOOCH_3$ (Phenol, 2-bromo-, acetate) (RN-CAS Registry Number 1829-37-4) (OP—the other product(s) is(are): <i>cyclo</i> - C_6H_4BrO)		12.24 ± 0.03	EI	3483
$C_2H_3O^+$	$C_6H_4BrOOCCH_3$ (Phenol, 3-bromo-, acetate) (RN-CAS Registry Number 35065-86-2) (OP—the other product(s) is(are): <i>cyclo</i> - $C_6H_4(Br)O$)		12.36 ± 0.2	EI	3484
$C_2H_3O^+$	$C_6H_4BrOOCCH_3$ (Phenol, 4-bromo-, acetate) (RN-CAS Registry Number 1927-95-3) (OP—the other product(s) is(are): <i>cyclo</i> - $C_6H_4(Br)O$)		12.87 ± 0.2	EI	3484
$C_2H_3O^+$	$C_6H_4BrOOCCH_3$ (Phenol, 4-bromo-, acetate) (RN-CAS Registry Number 1927-95-3) (OP—the other product(s) is(are): <i>cyclo</i> - C_6H_4BrO)		13.06 ± 0.03	EI	3483
$C_2H_3O^+$	$C_6H_3Br_2OOCCH_3$ (Phenol, 2,4-dibromo-, acetate) (RN-CAS Registry Number 36914-79-1)		12.01 ± 0.03	EI	3480
$C_2H_3O^+$	$C_6H_3Br_2OOCCH_3$ (Phenol, 2,6-dibromo-, acetate) (RN-CAS Registry Number 28165-72-2)		12.36 ± 0.03	EI	3480
$C_2H_3O^+$	$C_6H_4BrNHCOCH_3$ (Acetamide, <i>N</i> -(2-bromophenyl)-) (RN-CAS Registry Number 614-76-6)		14.68 ± 0.03	EI	3483
$C_2H_3O^+$	$C_6H_4BrNHCOCH_3$ (Acetamide, <i>N</i> -(4-bromophenyl)-) (RN-CAS Registry Number 103-88-8)		13.96 ± 0.03	EI	3483
$C_2H_3O^+$	$C_6H_3Br_2NHCOCH_3$ (Acetamide, <i>N</i> -(2,4-dibromophenyl)-) (RN-CAS Registry Number 23373-04-8)		13.10 ± 0.03	EI	3480
$C_2H_3O^+$	$C_6H_3Br_2NHCOCH_3$ (Acetamide, <i>N</i> -(2,6-dibromophenyl)-) (RN-CAS Registry Number 33098-80-5)		13.21 ± 0.03	EI	3480
$C_2H_3O^+$	$C_6H_4IOOCCH_3$ (Phenol, 2-iodo-, acetate) (RN-CAS Registry Number 32865-61-5)	<i>cyclo</i> - C_6H_4IO	12.47 ± 0.03	EI	3483
$C_2H_3O^+$	$C_6H_4IOOCCH_3$ (Phenol, 4-iodo-, acetate) (RN-CAS Registry Number 33527-94-5)	<i>cyclo</i> - C_6H_4IO	12.74 ± 0.03	EI	3483
$C_2H_3O^+$	$C_6H_3I_2OOCCH_3$ (Phenol, 2,4-diiodo-, acetate) (RN-CAS Registry Number 36914-80-4)		12.15 ± 0.03	EI	3480
$C_2H_3O^+$	$C_6H_3I_2OOCCH_3$ (Phenol, 2,6-diiodo-, acetate) (RN-CAS Registry Number 28165-73-3)		12.02 ± 0.03	EI	3480

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_3O^+$	$C_6H_4INHCOCH_3$ (Acetamide, <i>N</i> -(2-iodophenyl)-) (RN-CAS Registry Number 19591-17-4)		13.56 ± 0.03	EI	3483
$C_2H_3O^+$	$C_6H_4INHCOCH_3$ (Acetamide, <i>N</i> -(4-iodophenyl)-) (RN-CAS Registry Number 622-50-4)		13.16 ± 0.03	EI	3483
$C_2H_4O^+$	CH_3CHO (RN-CAS Registry Number 75-07-0)	**	10.20 ± 0.03	PI	3765
$C_2H_5O^+$	$(CH_3)_2O$ (RN-CAS-Registry Number 115-10-6)	H	11.55 ± 0.15	EI	4071
$C_2H_5O^+$	$C_2H_5OCH_3$ (RN-CAS-Registry Number 540-67-0)	CH_3	10.91 ± 0.1	EI	4071
$C_2H_3D_2O^+$	CH_3OCD_3 (RN-CAS-Registry Number 13725-27-4)	D	11.53 ± 0.1	EI	4071
$C_2H_2D_3O^+$	CH_3OCD_3 (RN-CAS-Registry Number 13725-27-4)	H	11.15 ± 0.1	EI	4071
$C_2H_2D_3O^+$	$C_2H_5OCD_3$ (RN-CAS-Registry Number 16995-14-5)	CH_3	11.01 ± 0.1	EI	4071
$C_2H_6O^+$	C_2H_5OH (RN-CAS Registry Number 64-17-5)	**	10.62 (V)	PE	3941
$C_2H_6O^+$	C_2H_5OH (RN-CAS-Registry Number 64-17-5)	**	10.64 (V)	PE	4068
$C_2H_6O^+ (^2B_1)$	$(CH_3)_2O$ (RN-CAS Registry Number 115-10-6)	**	10.04 (V)	PE	3656
$C_2H_6O^+$	$(CH_3)_2O$ (RN-CAS Registry Number 115-10-6)	**	10.04 (V)	PE	3844
$C_2H_6O^+$	$(CH_3)_2O$ (RN-CAS-Registry Number 115-10-6)	**	10.12 ± 0.2	EI	4071
$C_2H_3D_3O^+$	CH_3OCD_3 (RN-CAS-Registry Number 13725-27-4)	**	10.00 ± 0.1	EI	4071
$C_3H_4O^+$	$CH_2=CHCHO$ (RN-CAS Registry Number 107-02-8)	**	10.13	PE	3864
$C_3H_4O^+$	$CH_2=CHCHO$ (RN-CAS Registry Number 107-02-8)	**	11.07 (V)	PE	3972
$C_3H_6O^+$	$(CH_3)_2CO$ (RN-CAS Registry Number 67-64-1)	**	9.71 ± 0.03	PI	3765
$C_3H_6O^+$	$(CH_3)_2CO$ (RN-CAS Registry Number 67-64-1)	**	9.72	PE	3649
$C_3H_6O^+$	$(CH_3)_2CO$ (RN-CAS Registry Number 67-64-1)	**	9.75 ± 0.025	PE	3626
$C_3H_6O^+$	$(CH_3)_2CO$ (RN-CAS Registry Number 67-64-1)	**	9.74	EDD	3485
$C_3H_6O^+$	$CH_2=CHCH_2OH$ (RN-CAS Registry Number 107-18-6)	**	9.63	PE	3864

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3H_6O^+$	$CH_2=CHCH_2OH$ (RN-CAS Registry Number 107-18-6)	**	10.22 (V)	PE	3863
$C_3H_6O^+$	$CH_2=CHOCH_3$ (RN-CAS Registry Number 107-25-5)	**	8.95	PE	3863
$C_3H_6O^+$	C_3H_6O (Oxetane) (RN-CAS Registry Number 503-30-0)	**	9.63	PE	3980
$C_3D_6O^+$	$(CD_3)_2CO$ (RN-CAS Registry Number 666-52-4)	**	9.68	PE	3649
$C_3H_7O^+$	$C_2H_5OCH_3$ (RN-CAS-Registry Number 540-67-0)	H	10.32 ± 0.1	EI	4071
$C_3H_7O^+$	$n-C_3H_7OH$ (RN-CAS Registry Number 71-23-8)	H	10.48 ± 0.03	EDD	3626
$C_3H_7O^+$	$n-C_3H_7OH$ (RN-CAS Registry Number 71-23-8)	H	10.2	EI	3916
$C_3H_4D_3O^+$	$C_2H_5OCD_3$ (RN-CAS-Registry Number 16995-14-5)	H	10.22 ± 0.1	EI	4071
$C_3H_8O^+$	$C_2H_5OCH_3$ (RN-CAS-Registry Number 540-67-0)	**	9.62 ± 0.1	EI	4071
$C_3H_8O^+$	$n-C_3H_7OH$ (RN-CAS Registry Number 71-23-8)	**	10.15 ± 0.025	PE	3626
$C_3H_8O^+$	$n-C_3H_7OH$ (RN-CAS-Registry Number 71-23-8)	**	10.49 (V)	PE	4068
$C_3H_8O^+$	$n-C_3H_7OH$ (RN-CAS Registry Number 71-23-8)	**	10.51 (V)	PE	3941
$C_3H_8O^+$	$n-C_3H_7OH$ (RN-CAS Registry Number 71-23-8)	**	10.16 ± 0.03	EDD	3626
$C_3H_8O^+$	$n-C_3H_7OH$ (RN-CAS Registry Number 71-23-8)	**	10.0	EI	3916
$C_3H_8O^+$	$iso-C_3H_7OH$ (RN-CAS-Registry Number 67-63-0)	**	10.36 (V)	PE	4068
$C_3H_8O^+$	$iso-C_3H_7OH$ (RN-CAS Registry Number 67-63-0)	**	10.42 (V)	PE	3941
$C_3H_5D_3O^+$	$C_2H_5OCD_3$ (RN-CAS-Registry Number 16995-14-5)	**	9.64 ± 0.1	EI	4071
$C_4H_4O^+$	C_4H_4O (Furan) (RN-CAS-Registry Number 110-00-9)	**	8.91 ± 0.01	PI	4058
$C_4H_4O^+$	C_4H_4O (Furan) (RN-CAS Registry Number 110-00-9)	**	8.99 ± 0.05	EI	3482
$C_4H_5O^+$	$C_5H_8NCOCH=CHCH_3$ (Pyridine, 1,2,3,4-tetrahydro-1-(1-oxo-2-butenyl)-, (E)) (RN-CAS Registry Number 50838-23-8)		13.0	EI	4046

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_4H_5O^+$	$C_5H_{10}NCOCH=CHCH_3$ (Piperidine, 1-(1-oxo-2-butenyl)-, (E)) (RN-CAS Registry Number 50838-22-7)	**	14.6	EI	4046
$C_4H_6O^+$	$CH_2=CHCOCH_3$ (RN-CAS Registry Number 78-94-4)	**	10.60 (V)	PE	3972
$C_4H_6O^+$	$CH_3CH=CHCHO$ (RN-CAS Registry Number 4170-30-3)	**	10.28 (V)	PE	3972
$C_4H_6O^+$	C_4H_6O (Cyclobutanone) (RN-CAS Registry Number 1191-95-3)	**	9.61 ± 0.02 (V)	PE	3517
$C_4H_6O^+$	C_4H_6O (Cyclobutanone) (RN-CAS Registry Number 1191-95-3)	**	9.58 ± 0.1	EDD	3794
$C_4H_6O^+$	C_4H_6O (Furan, 2,5-dihydro-) (RN-CAS Registry Number 1708-29-8)	**	9.14 ± 0.02 (V)	PE	3843
$C_4H_8O^+$	$C_2H_5COCH_3$ (RN-CAS Registry Number 78-93-3)	**	9.54 ± 0.03	PI	3765
$C_4H_8O^+$	C_4H_8O (Furan, tetrahydro-) (RN-CAS Registry Number 109-99-9)	**	9.41	S	3749
$C_4H_8O^+$	(RS-Average of four Rydberg series limits)	**	9.57 ± 0.02 (V)	PE	3843
$C_4H_8O^+$	C_4H_8O (Furan, tetrahydro-) (RN-CAS Registry Number 109-99-9)	**	9.57 ± 0.02 (V)	PE	3843
$C_4H_{10}O^+$	$n-C_4H_9OH$ (RN-CAS-Registry Number 71-36-3)	**	10.37 (V)	PE	4068
$C_4H_{10}O^+$	$tert-C_4H_9OH$ (RN-CAS Registry Number 75-65-0)	**	10.25 (V)	PE	3941
$C_5H_4O^+$	$C_6H_4O_2$ (2,5-Cyclohexadiene-1,4-dione) (RN-CAS Registry Number 106-51-4)	CO	11.10 ± 0.05	PI	3523
$C_5H_6O^+$	$C_4H_3OCH_3$ (Furan, 2-methyl-) (RN-CAS Registry Number 534-22-5)	**	8.47 ± 0.05	EI	3482
$C_5H_8O^+$	$CH_2=C(OCH_3)CH=CH_2$ (RN-CAS Registry Number 3588-30-5)	**	8.43	PE	3892
$C_5H_8O^+$	$trans-CH_3OCH=CHCH=CH_2$ (RN-CAS Registry Number 10034-09-0)	**	8.03	PE	3892
$C_5H_8O^+$	C_5H_8O (Cyclopentanone) (RN-CAS Registry Number 120-92-3)	**	9.42 ± 0.03	PI	3765
$C_5H_8O^+$	C_5H_8O (Cyclopentanone) (RN-CAS Registry Number 120-92-3)	**	9.25 ± 0.02 (V)	PE	3517

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_5H_9O^+$	$n-C_4H_9COCH_3$ (RN-CAS Registry Number 591-78-6)	CH_3	9.4	EI	3916
$C_5H_{10}O^+$	$n-C_3H_7COCH_3$ (RN-CAS Registry Number 107-87-9)	**	9.47 ± 0.03	PI	3765
$C_5H_{10}O^+$	$C_5H_{10}O$ (2 <i>H</i> -Pyran, tetrahydro-) (RN-CAS Registry Number 142-68-7)	**	9.48 (V)	PE	4082
$C_5H_{10}O^+$	$C_5H_{10}O$ (2 <i>H</i> -Pyran, tetrahydro-) (RN-CAS Registry Number 142-68-7)	**	9.50 (V)	PE	3733
$C_6H_4O^+$	C_6H_4O (Methanone, 2,4-cyclopentadien-1-ylidene-) (RN-CAS Registry Number 4727-22-4)	**	8.95 ± 0.1	EI	3552
$C_6H_4O^+$	$C_5H_4=CO$ (Methanone, 2,4-cyclopentadien-1-ylidene-) (RN-CAS Registry Number 4727-22-4)	**	8.99 ± 0.1	EI	3553
$C_6H_5O^+$	$C_6H_5OCH_3$ (Benzene, methoxy-) (RN-CAS Registry Number 100-66-3)	CH_3	11.3	EI	3916
$C_6H_5O^+$	$C_6H_5OCH_3$ (Benzene, methoxy-) (RN-CAS Registry Number 100-66-3)	CH_3	11.80 ± 0.1	EI	3446
$C_6H_5O^+$	$C_6H_4(OH)COOH$ (Benzoic acid, 3-hydroxy-) (RN-CAS Registry Number 99-06-9)	$CO + OH$	14.42 ± 0.2	EI	3973
(MT-Metastable transition(s) observed)					
$C_6H_5O^+$	$C_6H_4(OH)COOH$ (Benzoic acid, 4-hydroxy-) (RN-CAS Registry Number 99-96-7)	$CO + OH$	14.56 ± 0.2	EI	3973
(MT-Metastable transition(s) observed)					
$C_6H_5O^+$	$C_6H_5NO_2$ (Benzene, nitro-) (RN-CAS Registry Number 98-95-3)	NO	10.35 ± 0.1	EI	3447
$C_6H_5O^+$	$C_6H_4(NO_2)OH$ (Phenol, 4-nitro-) (RN-CAS Registry Number 100-02-7)	NO_2	11.91 ± 0.1	EI	3447
$C_6H_6O^+$	C_6H_5OH (Phenol) (RN-CAS Registry Number 108-95-2)	**	8.37	PE	3955
$C_6H_6O^+$	C_6H_5OH (Phenol) (RN-CAS Registry Number 108-95-2)	**	8.47 ± 0.02	PE	3890
$C_6H_6O^+$	C_6H_5OH (Phenol) (RN-CAS Registry Number 108-95-2)	**	8.69	EDD	3485
$C_6H_6O^+$	C_6H_5OH (Phenol) (RN-CAS Registry Number 108-95-2)	**	8.50	EI	3845

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_6O^+$	C_6H_5OH (Phenol) (RN-CAS Registry Number 108-95-2)	**	9.09 ± 0.1	EI	3817
$C_6H_6O^+$	$C_6H_5OC_2H_5$ (Benzene, ethoxy-) (RN-CAS Registry Number 103-73-1) (MT-Metastable transition(s) observed)	C_2H_4	11.3	EI	3479
$C_6H_6O^+$	$C_7H_6O_2$ (2,4,6-Cycloheptatrien-1-one, 2-hydroxy-) (RN-CAS Registry Number 533-75-5) (MT-Metastable transition(s) observed)	CO	10.8	EI	3479
$C_6H_6O^+$	$C_6H_4(OH)OCH_3$ (Phenol, 4-methoxy-) (RN-CAS Registry Number 150-76-5)	HCHO	10.30	EI	3845
$C_6H_6O^+$	$C_6H_5OOCCH_3$ (Acetic acid, phenyl ester) (RN-CAS Registry Number 122-79-2)	$CH_2=C=O$	9.57 ± 0.03	EI	3483
$C_6H_6O^+$	$C_6H_5OOCCH_3$ (Acetic acid, phenyl ester) (RN-CAS Registry Number 122-79-2)	$CH_2=C=O$	9.89 ± 0.2	EI	3484
$C_6H_8O^+$	$C_4H_3OC_2H_5$ (Furan, 2-ethyl-) (RN-CAS Registry Number 3208-16-0)	**	8.45 ± 0.05	EI	3482
$C_6H_8O^+$	C_6H_8O (7-Oxabicyclo[2.2.1]hept-2-ene) (RN-CAS Registry Number 6705-50-6)	**	9.44 ± 0.02 (V)	PE	3843
$C_6H_{10}O^+$	$C_6H_{10}O$ (Cyclohexanone) (RN-CAS Registry Number 108-94-1)	**	9.14 ± 0.03	PI	3765
$C_6H_{10}O^+$	$C_6H_{10}O$ (Cyclohexanone) (RN-CAS Registry Number 108-94-1)	**	9.14 ± 0.02 (V)	PE	3517
$C_6H_{10}O^+$	$C_6H_{10}O$ (Cyclohexanone) (RN-CAS-Registry Number 108-94-1)	**	9.5 ± 0.2	EI	4074
$C_6H_{10}O^+$	$C_6H_{10}O$ (7-Oxabicyclo[2.2.1]heptane) (RN-CAS Registry Number 279-49-2)	**	9.57 ± 0.02 (V)	PE	3843
$C_6H_{12}O^+$	$(CH_3)_3CCOH_3$ (RN-CAS Registry Number 75-97-8)	**	8.88 ± 0.04	PE	3851
$C_6H_{12}O^+$	$(CH_3)_3CCOCH_3$ (RN-CAS Registry Number 75-97-8)	**	9.18 ± 0.03	PI	3765
$C_6H_{12}O^+$	$n-C_4H_9COCH_3$ (RN-CAS Registry Number 591-78-6)	**	9.44 ± 0.03	PI	3765
$C_6H_{12}O^+$	$n-C_4H_9COCH_3$ (RN-CAS Registry Number 591-78-6)	**	9.2	EI	3916

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_5O^+$	C_6H_5CHO (Benzaldehyde) (RN-CAS Registry Number 100-52-7)	H	11.26	EI	3792
$C_7H_5O^+$	$C_6H_5COCH_3$ (Ethanone, 1-phenyl-) (RN-CAS Registry Number 98-86-2)	CH_3	9.6	EI	3916
$C_7H_5O^+$	$C_6H_5COCH_3$ (Ethanone, 1-phenyl-) (RN-CAS Registry Number 98-86-2)	CH_3	10.38	EI	3792
(TR—Other product(s) thermochemically reasonable)					
$C_7H_5O^+$	$(C_6H_5)_2CO$ (Methanone, diphenyl-) (RN-CAS Registry Number 119-61-9)	C_6H_5	11.72	EI	3792
(TR—Other product(s) thermochemically reasonable)					
$C_7H_5O^+$	C_6H_5COOH (Benzoic acid) (RN-CAS Registry Number 65-85-0)	OH	12.11 ± 0.2	EI	3973
$C_7H_5O^+$	C_6H_5COOH (Benzoic acid) (RN-CAS Registry Number 65-85-0)	OH	12.11	EI	3792
(TR—Other product(s) thermochemically reasonable)					
$C_7H_5O^+$	$C_6H_5COOCH_3$ (Benzoic acid methyl ester) (RN-CAS Registry Number 93-58-3)	CH_3O	11.40	EI	3792
(TR—Other product(s) thermochemically reasonable)					
$C_7H_5O^+$	$C_6H_5COOC_6H_5$ (Benzoic acid phenyl ester) (RN-CAS Registry Number 93-99-2)		10.0	EI	3897
$C_7H_5O^+$	$C_6H_5COOC_6H_4OCH_3$ (Phenol, 4-methoxy-, benzoate) (RN-CAS Registry Number 1523-19-9)		10.6	EI	3897
$C_7H_5O^+$	$C_6H_5CONH_2$ (Benzamide) (RN-CAS Registry Number 55-21-0)	NH_2	11.09	EI	3792
(TR—Other product(s) thermochemically reasonable)					
$C_7H_5O^+$	$C_5H_8NCOC_6H_5$ (Pyridine, 1-benzoyl-1,2,3,4-tetrahydro-) (RN-CAS Registry Number 50838-24-9)		12.4	EI	4046
$C_7H_5O^+$	$C_5H_{10}NCOC_6H_5$ (Piperidine, 1-benzoyl-) (RN-CAS Registry Number 776-75-0)		14.4	EI	4046
$C_7H_5O^+$	$C_6H_5COOC_6H_4NO_2$ (Benzoic acid 4-nitro phenyl ester) (RN-CAS Registry Number 959-22-8)		10.2	EI	3897
$C_7H_5O^+$	C_6H_5COCl (Benzoyl chloride) (RN-CAS Registry Number 98-88-4)	Cl	10.31	EI	3792
(TR—Other product(s) thermochemically reasonable)					
$C_7H_6O^+$	C_6H_5CHO (Benzaldehyde) (RN-CAS-Registry Number 100-52-7)	**	9.50 ± 0.02	PI	4057

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_6O^+$	C_6H_5CHO (Benzaldehyde) (RN-CAS Registry Number 100-52-7)	**	9.50 ± 0.02	PI	4031
$C_7H_6O^+$	C_7H_6O (Benzaldehyde) (RN-CAS Registry Number 100-52-7)	**	9.6	PI	3586
$C_7H_6O^+$	C_6H_5CHO (Benzaldehyde) (RN-CAS Registry Number 100-52-7)	**	9.40	PE	3938
$C_7H_6O^+$	C_6H_5CHO (Benzaldehyde) (RN-CAS Registry Number 100-52-7)	**	9.74	EI	3792
$C_7H_6O^+$	$C_6H_5CH_2C_6H_4OH$ (Phenol, 4-(phenylmethyl)-) (RN-CAS Registry Number 101-53-1)	C_6H_5	11.1 ± 0.2	EI	3807
$C_7H_7O^+$	$C_6H_4(OCH_3)CH_3$ (Benzene, 1-methoxy-3-methyl-) (RN-CAS Registry Number 100-84-5)	CH_3	11.60 ± 0.1	EI	3446
$C_7H_7O^+$	$C_6H_4(OCH_3)CH_3$ (Benzene, 1-methoxy-4-methyl-) (RN-CAS Registry Number 104-93-8)	CH_3	11.45 ± 0.1	EI	3446
$C_7H_7O^+$	$C_6H_4(OH)C_4H_9$ (Phenol, 3-butyl-) (RN-CAS Registry Number 4074-43-5)		12.79 ± 0.1	EI	3629
$C_7H_7O^+$	$C_6H_4(OH)C_4H_9$ (Phenol, 4-butyl-) (RN-CAS Registry Number 1638-22-8)		11.45 ± 0.1	EI	3629
$C_7H_7O^+$	$C_6H_4(CH_3)OOCCH_3$ (Acetic acid, 2-methylphenyl ester) (RN-CAS Registry Number 533-18-6)	CH_3CO	13.16 ± 0.02	EI	3631
$C_7H_7O^+$	$C_6H_4(CH_3)OOCCH_3$ (Acetic acid, 4-methylphenyl ester) (RN-CAS Registry Number 140-39-6)	CH_3CO	13.47 ± 0.02	EI	3631
$C_7H_7O^+$	$C_6H_4(OCH_3)COOH$ (Benzoic acid, 3-methoxy-) (RN-CAS Registry Number 586-38-9)	$COOH$	13.07 ± 0.2	EI	3973
(MT-Metastable transition(s) observed)					
$C_7H_7O^+$	$C_6H_4(OCH_3)COOH$ (Benzoic acid, 4-methoxy-) (RN-CAS Registry Number 100-09-4)	$COOH$	12.80 ± 0.2	EI	3973
(MT-Metastable transition(s) observed)					
$C_7H_7O^+$	$C_6H_4(NO_2)CH_3$ (Benzene, 1-methyl-3-nitro-) (RN-CAS Registry Number 99-08-1)	NO	9.98 ± 0.1	EI	3447
$C_7H_7O^+$	$C_6H_4(NO_2)CH_3$ (Benzene, 1-methyl-4-nitro-) (RN-CAS Registry Number 99-99-0)	NO	10.34 ± 0.1	EI	3447
$C_7H_7O^+$	$C_6H_4(NO_2)OCH_3$ (Benzene, 1-methoxy-3-nitro-) (RN-CAS Registry Number 555-03-3)	NO_2	11.44 ± 0.1	EI	3447

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_7O^+$	$C_6H_4(NO_2)OCH_3$ (Benzene, 1-methoxy-4-nitro-) (RN-CAS Registry Number 100-17-4)	NO_2	11.63 ± 0.1	EI	3447
$C_7H_8O^+$	$C_6H_5CH_2OH$ (Benzenemethanol) (RN-CAS Registry Number 100-51-6)	**	9.00 ± 0.1	EI	3788
$C_7H_8O^+$	$C_6H_5OCH_3$ (Benzene, methoxy-) (RN-CAS Registry Number 100-66-3)	**	8.20 ± 0.02	PE	3890
$C_7H_8O^+$	$C_6H_5OCH_3$ (Benzene, methoxy-) (RN-CAS Registry Number 100-66-3)	**	8.42 (V)	PE	3781
$C_7H_8O^+$	$C_6H_5OCH_3$ (Benzene, methoxy-) (RN-CAS Registry Number 100-66-3)	**	8.20	EI	3845
$C_7H_8O^+$	$C_6H_5OCH_3$ (Benzene, methoxy-) (RN-CAS Registry Number 100-66-3)	**	8.20	EI	3845
$C_7H_8O^+$	$C_6H_5OCH_3$ (Benzene, methoxy-) (RN-CAS Registry Number 100-66-3)	**	8.25 ± 0.1	EI	3788
$C_7H_8O^+$	$C_6H_5OCH_3$ (Benzene, methoxy-) (RN-CAS Registry Number 100-66-3)	**	8.39 ± 0.1	EI	3446
$C_7H_8O^+$	$C_6H_5OCH_3$ (Benzene, methoxy-) (RN-CAS Registry Number 100-66-3)	**	8.6	EI	3916
$C_7H_8O^+$	$C_6H_5OCH_3$ (Benzene, methoxy-) (RN-CAS Registry Number 100-66-3)	**	8.6	EI	3479
$C_7H_8O^+$	$C_6H_5OCH_3$ (Benzene, methoxy-) (RN-CAS Registry Number 100-66-3)	**	$8.76 \pm < 0.1$	EI	3735
$C_7H_8O^+$	$C_6H_5OCH_3$ (Benzene, methoxy-) (RN-CAS Registry Number 100-66-3)	**	8.18	CTS	3758
$C_7H_8O^+$	$C_6H_5OCH_3$ (Benzene, methoxy-) (RN-CAS Registry Number 100-66-3)	**	8.37	CTS	4029
(AV—Average of two values)					
$C_7H_8O^+$	$C_6H_4(OH)CH_3$ (Phenol, 2-methyl-) (RN-CAS Registry Number 95-48-7)	**	8.24 ± 0.02	PE	3890
$C_7H_8O^+$	$C_6H_4(OH)CH_3$ (Phenol, 4-methyl-) (RN-CAS Registry Number 106-44-5)	**	8.34	EI	4089
$C_7H_8O^+$	$C_6H_4(OH)C_4H_9$ (Phenol, 3-butyl-) (RN-CAS Registry Number 4074-43-5)	$CH_2=CHCH_3$	11.07 ± 0.1	EI	3629

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_8O^+$	$C_6H_4(OH)C_4H_9$ (Phenol, 4-butyl-) (RN-CAS Registry Number 1638-22-8)	$CH_2=CHCH_3$	10.32 ± 0.1	EI	3629
$C_7H_8O^+$	$C_6H_4(OCH_3)_2$ (Benzene, 1,3-dimethoxy-) (RN-CAS Registry Number 151-10-0)	CH_2O	10.98 ± 0.1	EI	3446
$C_7H_8O^+$	$C_6H_4(OCH_3)_2$ (Benzene, 1,4-dimethoxy-) (RN-CAS Registry Number 150-78-7)	HCHO	11.00	EI	3845
$C_7H_8O^+$	$C_6H_4(CH_3)OOCCH_3$ (Acetic acid, 2-methylphenyl ester) (RN-CAS Registry Number 533-18-6)	$CH_2=C=O$	9.44 ± 0.02	EI	3631
$C_7H_8O^+$	$C_6H_4(CH_3)OOCCH_3$ (Acetic acid, 3-methylphenyl ester) (RN-CAS Registry Number 122-46-3)	$CH_2=C=O$	10.03 ± 0.2	EI	3484
$C_7H_8O^+$	$C_6H_4(CH_3)OOCCH_3$ (Acetic acid, 4-methylphenyl ester) (RN-CAS Registry Number 140-39-6)	$CH_2=C=O$	9.26 ± 0.02	EI	3631
$C_7H_8O^+$	$C_6H_4(CH_3)OOCCH_3$ (Acetic acid, 4-methylphenyl ester) (RN-CAS Registry Number 140-39-6)	$CH_2=C=O$	9.75 ± 0.2	EI	3484
$C_7H_8O^+$	$C_6H_5OOCOCH_3$ (Carbonic acid, methyl phenyl ester) (RN-CAS Registry Number 13509-27-8)	CO_2	10.3	EI	3479
(MT—Metastable transition(s) observed)					
$C_7H_8O^+$	$C_6H_5CH_2OHCr(CO)_3$ (Chromium, [(1,2,3,4,5,6- η)-benzenemethanol]tricarbonyl-) (RN-CAS Registry Number 12116-45-9)		9.40 ± 0.1	EI	3788
$C_7H_8O^+$	$C_6H_5OCH_3Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methoxybenzene]-) (RN-CAS Registry Number 12116-44-8)		8.45 ± 0.1	EI	3788
$C_7H_{12}O^+$	$C_7H_{12}O$ (Cycloheptanone) (RN-CAS Registry Number 502-42-1)	**	9.17 ± 0.02 (V)	PE	3517
$C_7H_{12}O^+$	$C_6H_9(=O)CH_3$ (Cyclohexanone, 2-methyl-) (RN-CAS-Registry Number 583-60-8)	**	9.5 ± 0.2	EI	4074
$C_7H_{14}O^+$	$(n-C_3H_7)_2CO$ (RN-CAS Registry Number 123-19-3)	**	9.12 ± 0.03	PI	3765
$C_7H_{14}O^+$	$C_6H_{10}(OH)CH_3$ (Cyclohexanol, 1-methyl-) (RN-CAS-Registry Number 590-67-0)	**	9.8 ± 0.2	EI	4074
$C_8H_7O^+$	$C_6H_4(CH_3)COOH$ (Benzoic acid, 3-methyl-) (RN-CAS Registry Number 99-04-7)	OH	12.38 ± 0.2	EI	3973
$C_8H_7O^+$	$C_6H_4(CH_3)COOH$ (Benzoic acid, 4-methyl-) (RN-CAS Registry Number 99-94-5)	OH	12.07 ± 0.2	EI	3973

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_7O^+$	$C_6H_5COCOC_6H_4CH_3$ (Ethanedione, (4-methylphenyl)phenyl-) (RN-CAS Registry Number 2431-00-7) (TR—Other product(s) thermochemically reasonable)	C_6H_5CO	9.84 ± 0.10	SD	3823
$C_8H_8O^+$	$C_6H_5CH_2CHO$ (Benzeneacetaldehyde) (RN-CAS Registry Number 122-78-1)	**	8.80	PE	3938
$C_8H_8O^+$	$C_6H_5COCH_3$ (Ethanone, 1-phenyl-) (RN-CAS Registry Number 98-86-2)	**	9.29 ± 0.2	PI	4031
$C_8H_8O^+$	$C_6H_5COCH_3$ (Ethanone, 1-phenyl-) (RN-CAS-Registry Number 98-86-2)	**	9.29 ± 0.2	PI	4057
$C_8H_8O^+$	C_6H_5CO (Ethanone, 1-phenyl-) (RN-CAS Registry Number 98-86-2)	**	9.6	PI	3586
$C_8H_8O^+$	$C_6H_5COCH_3$ (Ethanone, 1-phenyl-) (RN-CAS Registry Number 98-86-2)	**	9.1	EI	3916
$C_8H_8O^+$	$C_6H_5COCH_3$ (Ethanone, 1-phenyl-) (RN-CAS Registry Number 98-86-2)	**	9.50	EI	3792
$C_8H_9O^+$	$C_6H_4(OCH_3)C_4H_9$ (Benzene, 1-butyl-3-methoxy-) (RN-CAS Registry Number 20893-43-0)		12.04 ± 0.1	EI	3629
$C_8H_9O^+$	$C_6H_4(OCH_3)C_4H_9$ (Benzene, 1-butyl-4-methoxy-) (RN-CAS Registry Number 18272-84-9)		10.79 ± 0.1	EI	3629
$C_8H_9O^+$	$C_6H_5CH_2C_6H_4OCH_3$ (Benzene, 1-methoxy-4-(phenylmethyl)-) (RN-CAS Registry Number 834-14-0)	C_6H_5	11.9 ± 0.1	EI	3807
$C_8H_9O^+$	$C_6H_4(OCH_3)CH_2CH_2OCOCH_3$ (Phenethyl alcohol, <i>m</i> -methoxy-, acetate) (RN-CAS Registry Number 33709-39-6)		12.10	EI	3590
$C_8H_9O^+$	$C_6H_4(OCH_3)CH_2CH_2OCOCH_3$ (Phenethyl alcohol, <i>p</i> -methoxy-, acetate) (RN-CAS Registry Number 22532-51-0)		11.50	EI	3590
$C_8H_{10}O^+$	$C_6H_5OC_2H_5$ (Benzene, ethoxy-) (RN-CAS Registry Number 103-73-1)	**	8.6	EI	3479
$C_8H_{10}O^+$	$C_6H_5CH_2OCH_3$ (Benzene, (methoxymethyl)-) (RN-CAS Registry Number 538-86-3)	**	9.12 (V)	PE	3781
$C_8H_{10}O^+$	$C_6H_4(OCH_3)CH_3$ (Benzene, 1-methoxy-2-methyl-) (RN-CAS Registry Number 578-58-5)	**	8.03 ± 0.02	PE	3890
$C_8H_{10}O^+$	$C_6H_4(OCH_3)CH_3$ (Benzene, 1-methoxy-3-methyl-) (RN-CAS Registry Number 100-84-5)	**	8.35 ± 0.1	EI	3446

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_{10}O^+$	$C_6H_4(OCH_3)CH_3$ (Benzene, 1-methoxy-4-methyl-) (RN-CAS Registry Number 104-93-8)	**	7.85	EI	3845
$C_8H_{10}O^+$	$C_6H_4(OCH_3)CH_3$ (Benzene, 1-methoxy-4-methyl-) (RN-CAS Registry Number 104-93-8)	**	8.33 ± 0.1	EI	3446
$C_8H_{10}O^+$	$C_6H_4(OCH_3)CH_3$ (Benzene, 1-methoxy-4-methyl-) (RN-CAS Registry Number 104-93-8)	**	7.91	CTS	3758
$C_8H_{10}O^+$	$C_6H_3(CH_3)_2OH$ (Phenol, 2,6-dimethyl-) (RN-CAS Registry Number 576-26-1)	**	8.05 ± 0.02	PE	3890
$C_8H_{10}O^+$	$C_8H_{10}O$ (Tricyclo[3.2.1.0 ^{2,4}]octan-8-one, (1 α ,2 α ,4 α ,5 α)-) (RN-CAS Registry Number 14224-86-3) (ON-Other name: Tricyclo[3.2.1.0 ^{2,4}]octan-8-one, <i>endo</i> -)	**	8.8 ± 0.1	EI	3492
$C_8H_{10}O^+$	$C_8H_{10}O$ (Tricyclo[3.2.1.0 ^{2,4}]octan-8-one, <i>exo</i> -) (RN-CAS Registry Number 7076-83-7)	**	9.2 ± 0.1	EI	3492
$C_8H_{10}O^+$	$C_6H_4(OCH_3)C_4H_9$ (Benzene, 1-butyl-3-methoxy-) (RN-CAS Registry Number 20893-43-0)	$CH_2=CHCH_3$	10.52 ± 0.1	EI	3629
$C_8H_{10}O^+$	$C_6H_4(OCH_3)C_4H_9$ (Benzene, 1-butyl-4-methoxy-) (RN-CAS Registry Number 18272-84-9)	$CH_2=CHCH_3$	10.38 ± 0.1	EI	3629
$C_8H_{10}O^+$	$C_6H_5OOCOC_2H_5$ (Carbonic acid, ethyl phenyl ester) (RN-CAS Registry Number 3878-46-4)	CO_2	10.0	EI	3479
(MT-Metastable transition(s) observed)					
$C_8H_{12}O^+$	$C_8H_{11}OH$ (Tricyclo[3.2.1.0 ^{2,4}]octan-8-ol, <i>endo-syn</i> -) (RN-CAS Registry Number 7076-81-5)	**	8.8 ± 0.1	EI	3492
$C_8H_{12}O^+$	$C_8H_{11}OH$ (Tricyclo[3.2.1.0 ^{2,4}]octan-8-ol, <i>endo-anti</i> -) (RN-CAS Registry Number 16384-97-7)	**	9.1 ± 0.1	EI	3492
$C_8H_{12}O^+$	$C_8H_{11}OH$ (Tricyclo[3.2.1.0 ^{2,4}]octan-8-ol, <i>exo-syn</i> -) (RN-CAS Registry Number 7076-80-4)	**	9.1 ± 0.1	EI	3492
$C_8H_{12}O^+$	$C_8H_{11}OH$ (Tricyclo[3.2.1.0 ^{2,4}]octan-8-ol, <i>exo-anti</i> -)	**	9.3 ± 0.1	EI	3492
$C_8H_{14}O^+$	$C_8H_{14}O$ (Cyclooctanone) (RN-CAS Registry Number 502-49-8)	**	9.09 ± 0.02 (V)	PE	3517
$C_8H_{16}O^+$	$n-C_6H_{13}COCH_3$ (RN-CAS Registry Number 111-13-7)	**	9.40 ± 0.03	PI	3765
$C_8H_{16}O^+$	$n-C_4H_9COCH_2CH_2CH_3$ (RN-CAS Registry Number 589-63-9)	**	9.10 ± 0.05	PI	3765

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_9H_9O^+$	$C_6H_2(CH_3)_2(CH_2D)CHO$ (Benzaldehyde, 2,4-dimethyl-5-(methyl- <i>d</i>)-) (RN-CAS Registry Number 38479-87-7)	CH_2D	12.3 ± 0.1	EI	4041
$C_9H_9O^+$	$C_6H_2(CH_3)_2(CH_2D)CHO$ (Benzaldehyde, 2,5-dimethyl-4-(methyl- <i>d</i>)-) (RN-CAS Registry Number 38479-86-6)	CH_2D	11.4 ± 0.1	EI	4041
$C_9H_8DO^+$	$C_6H_2(CH_3)_2(CH_2D)CHO$ (Benzaldehyde, 2,4-dimethyl-5-(methyl- <i>d</i>)-) (RN-CAS Registry Number 38479-87-7)	CH_3	11.5 ± 0.1	EI	4041
$C_9H_8DO^+$	$C_6H_2(CH_3)_2(CH_2D)CHO$ (Benzaldehyde, 2,5-dimethyl-4-(methyl- <i>d</i>)-) (RN-CAS Registry Number 38479-86-6)	CH_3	11.4 ± 0.1	EI	4041
$C_9H_{10}O^+$	$C_6H_4(OCH_3)CH_2CH_2OCOCH_3$ (Phenethyl alcohol, <i>m</i> -methoxy-, acetate) (RN-CAS Registry Number 33709-39-6)		8.40	EI	3590
$C_9H_{10}O^+$	$C_6H_4(OCH_3)CH_2CH_2OCOCH_3$ (Phenethyl alcohol, <i>p</i> -methoxy-, acetate) (RN-CAS Registry Number 22532-51-0)		8.25	EI	3590
$C_9H_{12}O^+$	$C_6H_3(CH_3)_2OCH_3$ (Benzene, 2-methoxy-1,3-dimethyl-) (RN-CAS Registry Number 1004-66-6)	**	8.10 ± 0.02	PE	3890
$C_9H_{12}O^+$	$C_{10}H_{12}O_2$ (2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetramethyl-) (RN-CAS Registry Number 527-17-3)	CO	10.1 ± 0.05	PI	3523
$C_9H_{18}O^+$	$((CH_3)_3C)_2CO$ (RN-CAS Registry Number 815-24-7)	**	8.65 ± 0.03	PI	3765
$C_9H_{18}O^+$	$(iso-C_4H_9)_2CO$ (RN-CAS Registry Number 108-83-8)	**	9.04 ± 0.03	PI	3765
$C_{10}H_{11}DO^+$	$C_6H_2(CH_3)_2(CH_2D)CHO$ (Benzaldehyde, 2,4-dimethyl-5-(methyl- <i>d</i>)-) (RN-CAS Registry Number 38479-87-7)	**	8.7 ± 0.1	EI	4041
$C_{10}H_{11}DO^+$	$C_6H_2(CH_3)_2(CH_2D)CHO$ (Benzaldehyde, 2,5-dimethyl-4-(methyl- <i>d</i>)-) (RN-CAS Registry Number 38479-86-6)	**	8.7 ± 0.1	EI	4041
$C_{10}H_{14}O^+$	$C_6H_4(OH)C_4H_9$ (Phenol, 3-butyl-) (RN-CAS Registry Number 4074-43-5)	**	8.92 ± 0.1	EI	3629
$C_{10}H_{14}O^+$	$C_6H_4(OH)C_4H_9$ (Phenol, 4-butyl-) (RN-CAS Registry Number 1638-22-8)	**	8.67 ± 0.1	EI	3629
$C_{10}H_{14}O^+$	$C_6H_4(OH)C_4H_9$ (Phenol, 2-(1,1-dimethylethyl-) (RN-CAS Registry Number 88-18-6)	**	8.10 ± 0.02	PE	3890

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{10}H_{14}O^+$	$C_{10}H_{14}O$ (Tricyclo[3.3.1.1 ^{3,7}]decan-2-one) (RN-CAS Registry Number 700-58-3) (ON-Other name: Adamantanone)	**	8.59	PE	3886
$C_{10}H_{16}O^+$	$C_{10}H_{16}O$ (Bicyclo[2,2,1]heptan-2-one, 1,7,7-trimethyl-) (RN-CAS Registry Number 76-22-2)	**	8.76 ± 0.03	PI	3765
$C_{10}H_{16}O^+$	$C_{10}H_{15}OH$ (Tricyclo[3.3.1.1 ^{3,7}]decan-1-ol) (RN-CAS Registry Number 768-95-6) (ON-Other name: 1-Adamantanol)	**	9.09 ± 0.05	PE	3886
$C_{10}H_{16}O^+$	$C_{10}H_{15}OH$ (Tricyclo[3.3.1.1 ^{3,7}]decan-2-ol) (RN-CAS Registry Number 700-57-2) (ON-Other name: 2-Adamantanol)	**	9.09 ± 0.07	PE	3886
$C_{11}H_{10}O^+$	$C_{10}H_7OCH_3$ (Naphthalene, 1-methoxy-) (RN-CAS Registry Number 2216-69-5)	**	7.72 (V)	PE	3781
$C_{11}H_{10}O^+$	$C_{10}H_7OCH_3$ (Naphthalene, 2-methoxy-) (RN-CAS Registry Number 93-04-9)	**	7.87 (V)	PE	3781
$C_{11}H_{12}O^+$	$C_{20}H_{26}O_2$ (<i>D</i> -Homoestra-1,3,5(10)-trien-17a-one, 3-methoxy-) (RN-CAS Registry Number 1232-89-9)		11.46 ± 0.05	EI	3571
$C_{11}H_{12}O^+$	$C_{20}H_{26}O_2$ (<i>D</i> -Homoestra-1,3,5(10)-trien-17a-one, 3-methoxy-, (8 α)-) (RN-CAS Registry Number 1232-88-8)		11.20 ± 0.05	EI	3571
$C_{11}H_{13}O^+$	$C_6(CH_3)_4(CH_2D)CHO$ (Benzaldehyde, 2,3,5,6-tetramethyl-4-(methyl- <i>d</i>)-) (RN-CAS Registry Number 43022-36-2)	CH_2D	11.2 ± 0.1	EI	4041
$C_{11}H_{12}DO^+$	$C_6(CH_3)_4(CH_2D)CHO$ (Benzaldehyde, 2,3,5,6-tetramethyl-4-(methyl- <i>d</i>)-) (RN-CAS Registry Number 43022-36-2)	CH_3	11.2 ± 0.1	EI	4041
$C_{11}H_{16}O^+$	$C_6H_4(OCH_3)C_4H_9$ (Benzene, 1-butyl-3-methoxy-) (RN-CAS Registry Number 20893-43-0)	**	8.17 ± 0.1	EI	3629
$C_{11}H_{16}O^+$	$C_6H_4(OCH_3)C_4H_9$ (Benzene, 1-butyl-4-methoxy-) (RN-CAS Registry Number 18272-84-9)	**	8.24 ± 0.1	EI	3629
$C_{11}H_{16}O^+$	$C_{10}H_{13}(=O)CH_3$ (2(3 <i>H</i>)-Naphthalenone, 4,4a,5,6,7,8-hexahydro-4a-methyl-) (RN-CAS Registry Number 826-56-2)	**	9.6 ± 0.2	EI	4074

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{12}H_{10}O^+$	$C_6H_5C_6H_4OH$ ([1,1'-Biphenyl]-2-ol) (RN-CAS Registry Number 90-43-7)	**	7.80 ± 0.02	PE	3702
$C_{12}H_{15}DO^+$	$C_6(CH_3)_4(CH_2D)CHO$ (Benzaldehyde, 2,3,5,6-tetramethyl-4-(methyl- <i>d</i>)-) (RN-CAS Registry Number 43022-36-2)	**	8.3 ± 0.1	EI	4041
$C_{12}H_{18}O^+$	$C_{10}H_{15}COCH_3$ (Ethanone, 1-tricyclo[3.3.1.1 ^{3,7}]dec-1-yl-) (RN-CAS Registry Number 1660-04-4) (ON-Other name: 1-Acetyladamantane)	**	8.82 ± 0.05	PE	3851
$C_{13}H_8O^+$	$C_{13}H_8O$ (9 <i>H</i> -Fluoren-9-one) (RN-CAS Registry Number 486-25-9)	**	8.36 ± 0.02	PI	3523
$C_{13}H_{10}O^+$	$(C_6H_5)_2CO$ (Methanone, diphenyl-) (RN-CAS-Registry Number 119-61-9)	**	9.14 ± 0.03	PI	4057
$C_{13}H_{10}O^+$	$(C_6H_5)_2CO$ (Methanone, diphenyl-) (RN-CAS Registry Number 119-61-9)	**	9.14 ± 0.03	PI	4031
$C_{13}H_{10}O^+$	$(C_6H_5)_2CO$ (Methanone, diphenyl-) (RN-CAS Registry Number 119-61-9)	**	9.4	PI	3586
$C_{13}H_{10}O^+$	$(C_6H_5)_2CO$ (Methanone, diphenyl-) (RN-CAS Registry Number 119-61-9)	**	9.46	EI	3792
$C_{13}H_{11}O^+$	$C_6H_5CH_2C_6H_4OCH_3$ (Benzene, 1-methoxy-4-(phenylmethyl)-) (RN-CAS Registry Number 834-14-0)	CH_3	11.9 ± 0.1	EI	3807
$C_{13}H_{12}O^+$	$C_6H_5CH_2C_6H_4OH$ (Phenol, 4-(phenylmethyl)-) (RN-CAS Registry Number 101-53-1)	**	8.45 ± 0.05	EI	3806
$C_{14}H_{10}O^+$	$C_{14}H_{10}O$ (9(10 <i>H</i>)-Anthracenone) (RN-CAS Registry Number 90-44-8)	**	8.83 ± 0.03	PI	3523
$C_{14}H_{14}O^+$	$C_6H_5CH_2C_6H_4OCH_3$ (Benzene, 1-methoxy-4-(phenylmethyl)-) (RN-CAS Registry Number 834-14-0)	**	8.20 ± 0.05	EI	3806
$C_{14}H_{22}O^+$	$C_6H_3(C_4H_9)_2OH$ (Phenol, 2,6-bis(1,1-dimethylethyl)-) (RN-CAS Registry Number 128-39-2)	**	7.70 ± 0.02	PE	3890

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{14}H_{22}O^+$	$C_6H_3(C_4H_9)_2OH$ (Phenol, 3,5-bis(1,1-dimethylethyl-) (RN-CAS Registry Number 1138-52-9))	**	7.90 ± 0.02	PE	3890
$C_{15}H_{15}O^+$	$C_{20}H_{22}O_2$ (<i>D</i> -Homoestra-1,3,5(10),6,8-pentaen-17a-one, 3-methoxy-) (RN-CAS Registry Number 1232-90-2)	**	11.46 ± 0.05	EI	3571
$C_{15}H_{15}O^+$	$C_{20}H_{22}O_2$ (<i>D</i> -Homoestra-1,3,5(10),6,8-pentaen-17a-one, 3-methoxy-, (14 β)-) (RN-CAS Registry Number 1232-91-3)	**	10.84 ± 0.09	EI	3571
$C_{16}H_{10}O^+$	$C_{16}H_{10}O$ (4,6-Ethenodibenz[<i>b,f</i>]oxepine, (<i>Z,Z</i>)-) (RN-CAS Registry Number 42073-03-0) (ON-Other name: 8,16-Oxido- <i>cis</i> [2.2]metacyclophane-1,9-diene)	**	7.95 (V)	PE	4088
$C_{16}H_{16}O^+$	$C_{20}H_{22}O_2$ (<i>D</i> -Homoestra-1,3,5(10),6,8-pentaen-17a-one, 3-methoxy-) (RN-CAS Registry Number 1232-90-2)	**	10.79 ± 0.07	EI	3571
$C_{16}H_{16}O^+$	$C_{20}H_{22}O_2$ (<i>D</i> -Homoestra-1,3,5(10),6,8-pentaen-17a-one, 3-methoxy-, (14 β)-) (RN-CAS Registry Number 1232-91-3)	**	10.44 ± 0.11	EI	3571
$C_{18}H_{18}O^+$	$C_6H_8(=O)(C_6H_5)_2$ (Cyclohexanone, 4,4-diphenyl-) (RN-CAS-Registry Number 4528-68-1)	**	8.8 ± 0.2	EI	4074
$C_{19}H_{20}O^+$	$C_6H_7(=O)(CH_3)(C_6H_5)_2$ (Cyclohexanone, 2-methyl-5,5-diphenyl-) (RN-CAS-Registry Number 50592-49-9)	**	8.8 ± 0.2	EI	4074
$C_{19}H_{22}O^+$	$C_6H_8(OH)(CH_3)(C_6H_5)_2$ (Cyclohexanol, 1-methyl-4,4-diphenyl-) (RN-CAS-Registry Number 50592-47-7)	**	9.2 ± 0.2	EI	4074
$C_{23}H_{24}O^+$	$C_{10}H_{11}(=O)(CH_3)(C_6H_5)_2$ (2(3 <i>H</i> -Naphthalenone, 4,4a,5,6,7,8-hexahydro-4a-methyl-7,7-diphenyl-) (RN-CAS-Registry Number 50786-03-3)	**	8.9 ± 0.2	EI	4074
$CH_2O_2^+$	$HCOOH$ (RN-CAS Registry Number 64-18-6)	**	11.05 ± 0.03	PI	3765
$CH_2O_2^+$	$HCOOH$ (RN-CAS Registry Number 64-18-6)	**	11.3	PE	3883
$CH_2O_2^+$	$HCOOH$ (RN-CAS Registry Number 64-18-6)	**	11.33	PE	3874
$CH_2O_2^+$	$HCOOH$ (RN-CAS Registry Number 64-18-6)	**	11.35 ± 0.03	PE	3734
$CH_2O_2^{+*}$	$HCOOH$ (RN-CAS Registry Number 64-18-6)	**	12.4	PE	3883
$CH_2O_2^{+*}$	$HCOOH$ (RN-CAS Registry Number 64-18-6)	**	16.9	PE	3883

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_4O_2^+$	CH_3COOH (RN-CAS Registry Number 64-19-7)	**	10.38 ± 0.03	PI	3765
$C_2H_4O_2^+$	CH_3COOH (RN-CAS Registry Number 64-19-7)	**	10.65	PE	3874
$C_2H_4O_2^+$	CH_3COOH (RN-CAS Registry Number 64-19-7)	**	10.69 ± 0.03	PE	3734
$C_2H_4O_2^+$	CH_3COOH (RN-CAS Registry Number 64-19-7)	**	10.70	PE	3718
$C_2H_4O_2^+$	$HCOOCH_3$ (RN-CAS Registry Number 107-31-3)	**	10.85	PE	3718
$C_3H_4O_2^+$	$CH_2=CHCOOH$ (RN-CAS Registry Number 79-10-7)	**	10.60	PE	3864
$C_3H_6O_2^+$	C_2H_5COOH (RN-CAS Registry Number 79-09-4)	**	10.44 ± 0.03	PE	3734
$C_3H_6O_2^+$	C_2H_5COOH (RN-CAS Registry Number 79-09-4)	**	10.54	PE	3874
$C_3H_6O_2^+$	CH_3COOCH_3 (RN-CAS Registry Number 79-20-9)	**	10.33	PE	3718
$C_3H_6O_2^+$	CH_3COOCH_3 (RN-CAS Registry Number 79-20-9)	**	10.59 (V)	PE	3937
$C_3H_6O_2^+$	$HCOOC_2H_5$ (RN-CAS Registry Number 109-94-4)	**	10.62	PE	3718
$C_3H_6O_2^+$	$C_3H_6O_2$ (1,3-Dioxolane) (RN-CAS Registry Number 646-06-0)	**	10.1 (V)	PE	3733
$C_4H_2O_2^+$	$C_6H_4O_2$ (2,5-Cyclohexadiene-1,4-dione) (RN-CAS Registry Number 106-51-4)	C_2H_2	11.2 ± 0.05	PI	3523
$C_4H_4O_2^+$	$C_4H_4O(=O)$ (2(3H)-Furanone) (RN-CAS Registry Number 20825-71-2)	**	10.70 (V)	PE	3826
$C_4H_6O_2^+$	$CH_2=CHCOOCH_3$ (RN-CAS Registry Number 96-33-3)	**	10.72 (V)	PE	3937
$C_4H_6O_2^+$	$CH_2=CHCOOCH_3$ (RN-CAS Registry Number 96-33-3)	**	10.72 (V)	PE	3972
$C_4H_6O_2^+$	$CH_3COCOCH_3$ (RN-CAS Registry Number 431-03-8)	**	9.55 (V)	PE	3936
$C_4H_6O_2^+$	$C_4H_6O(=O)$ (2(3H)-Furanone, dihydro-) (RN-CAS Registry Number 96-48-0)	**	10.26 (V)	PE	3826
$C_4H_8O_2^+$	$CH_3CH(CH_3)COOH$ (RN-CAS Registry Number 79-31-2)	**	10.30 (V)	PE	3937
$C_4H_8O_2^+$	$HCOOCH_2CH_2CH_3$ (RN-CAS Registry Number 110-74-7)	**	10.62	PE	3718
$C_4H_8O_2^+$	$CH_3COOC_2H_5$ (RN-CAS Registry Number 141-78-6)	**	10.24	PE	3718

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_4H_8O_2^+$	<i>n</i> -C ₃ H ₇ COOH (RN-CAS Registry Number 107-92-6)	**	10.46	PE	3874
$C_4H_8O_2^+$	<i>n</i> -C ₃ H ₇ COOH (RN-CAS Registry Number 107-92-6)	**	10.22 (V)	PE	3937
$C_4H_8O_2^+$	<i>iso</i> -C ₃ H ₇ COOH (RN-CAS Registry Number 79-31-2)	**	10.33±0.03	PE	3734
$C_4H_8O_2^+$	<i>iso</i> -C ₃ H ₇ COOH (RN-CAS Registry Number 79-31-2)	**	10.33	PE	3874
$C_4H_8O_2^+$	C ₄ H ₈ O ₂ (1,3-Dioxane) (RN-CAS Registry Number 505-22-6)	**	10.1 (V)	PE	3733
$C_4H_8O_2^+$	C ₄ H ₈ O ₂ (1,3-Dioxane) (RN-CAS Registry Number 505-22-6)	**	10.12 (V)	PE	4082
$C_4H_8O_2^+$	C ₄ H ₈ O ₂ (1,4-Dioxane) (RN-CAS Registry Number 123-91-1)	**	9.41 (V)	PE	4082
$C_4H_8O_2^+$	C ₄ H ₈ O ₂ (1,4-Dioxane) (RN-CAS Registry Number 123-91-1)	**	9.43 (V)	PE	3733
$C_5H_4O_2^+$	C ₅ H ₄ O ₂ (4-Cyclopentene-1,3-dione) (RN-CAS Registry Number 930-60-9)	**	10.25 (V)	PE	3826
$C_5H_4O_2^+$	C ₄ H ₃ OCHO (2-Furancarboxaldehyde) (RN-CAS Registry Number 98-01-1)	**	9.50±0.05	EI	3482
$C_5H_6O_2^+$	C ₅ H ₆ (=O) ₂ (1,3-Cyclopentanedione) (RN-CAS Registry Number 3859-41-4)	**	9.46±0.05	PE	3848
$C_5H_6O_2^+$	C ₅ H ₅ (=O)OH (2-Cyclopenten-1-one, 3-hydroxy-) (RN-CAS Registry Number 5870-62-2)	**	9.22±0.05 (V)	PE	3848
$C_5H_8O_2^+$	CH ₂ =C(CH ₃)COOCH ₃ (RN-CAS Registry Number 80-62-6)	**	10.28 (V)	PE	3937
$C_5H_8O_2^+$	CH ₂ =C(CH ₃)COOCH ₃ (RN-CAS Registry Number 80-62-6)	**	10.28 (V)	PE	3972
$C_5H_8O_2^+$	CH ₃ COCH ₂ COCH ₃ (RN-CAS Registry Number 123-54-6)	**	8.85±0.05	PE	3848
$C_5H_8O_2^+$	CH ₃ COCH ₂ COCH ₃ (RN-CAS Registry Number 123-54-6)	**	9.18±0.07 (V)	PE	3682
$C_5H_8O_2^+$	CH ₃ CH=CHCOOCH ₃ (RN-CAS Registry Number 18707-60-3)	**	10.11 (V)	PE	3972
$C_5H_{10}O_2^+$	CH ₃ COOCH(CH ₃) ₂ (RN-CAS Registry Number 108-21-4)	**	10.08	PE	3718
$C_5H_{10}O_2^+$	HCOO(CH ₂) ₃ CH ₃ (RN-CAS Registry Number 592-84-7)	**	10.54	PE	3718
$C_5H_{10}O_2^+$	<i>n</i> -C ₄ H ₉ COOH (RN-CAS Registry Number 109-52-4)	**	10.53 (V)	PE	3874

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_5H_{10}O_2^+$	<i>iso</i> - C_4H_9COOH (RN-CAS Registry Number 503-74-2)	**	10.51 (V)	PE	3874
$C_5H_{10}O_2^+$	$C_3H_4O_2(CH_3)_2$ (1,3-Dioxolane, 2,2-dimethyl-) (RN-CAS Registry Number 2916-31-6)	**	9.71 (V)	PE	3733
$C_6H_4O_2^+$	$C_6H_4O_2$ (2,5-Cyclohexadiene-1,4-dione) (RN-CAS Registry Number 106-51-4)	**	9.7	PI	3586
$C_6H_4O_2^+$	$C_6H_4O_2$ (2,5-Cyclohexadiene-1,4-dione) (RN-CAS Registry Number 106-51-4)	**	9.96 ± 0.01	PI	3523
$C_6H_4O_2^+$	$C_6H_4(=O)_2$ (2,5-Cyclohexadiene-1,4-dione) (RN-CAS Registry Number 106-51-4)	**	10.03 (V)	PE	3936
$C_6H_5O_2^+$	$C_6H_4(OH)OCH_3$ (Phenol, 4-methoxy-) (RN-CAS Registry Number 150-76-5)	CH_3	11.10 ± 0.1	EI	3446
$C_6H_5O_2^+$	$C_6H_4(OH)OOCCH_3$ (Benzeneacetic acid, 2-hydroxy-) (RN-CAS Registry Number 614-75-5)	CH_3CO	12.54 ± 0.02	EI	3631
$C_6H_5O_2^+$	$C_6H_4(OH)OOCCH_3$ (Benzeneacetic acid, 4-hydroxy-) (RN-CAS Registry Number 156-38-7)	CH_3CO	13.83 ± 0.02	EI	3631
$C_6H_5O_2^+$	$C_6H_4(NO_2)OH$ (Phenol, 4-nitro-) (RN-CAS Registry Number 100-02-7)	NO	9.90 ± 0.1	EI	3447
$C_6H_6O_2^+$	$C_6H_6O_2$ (1,4-Benzenediol) (RN-CAS Registry Number 123-31-9)	**	7.95 ± 0.03	PI	3523
$C_6H_6O_2^+$	$C_4H_3OCOCH_3$ (Ethanone, 1-(2-furanyl)-) (RN-CAS Registry Number 1192-62-7)	**	9.27 ± 0.05	EI	3482
$C_6H_6O_2^+$	$C_6H_4(OH)OOCCH_3$ (Benzeneacetic acid, 2-hydroxy-) (RN-CAS Registry Number 614-75-5)	$CH_2=C=O$	9.30 ± 0.02	EI	3631
$C_6H_6O_2^+$	$C_6H_4(OH)OOCCH_3$ (Benzeneacetic acid, 4-hydroxy-) (RN-CAS Registry Number 156-38-7)	$CH_2=C=O$	9.28 ± 0.02	EI	3631
$C_6H_8O_2^+$	$C_6H_8(=O)_2$ (1,3-Cyclohexanedione) (RN-CAS Registry Number 504-02-9)	**	9.52 ± 0.05	PE	3848
$C_6H_8O_2^+$	$C_6H_8(=O)_2$ (1,4-Cyclohexanedione) (RN-CAS Registry Number 637-88-7)	**	9.65 (V)	PE	3936
$C_6H_8O_2^+$	$C_5H_5(=O)_2CH_3$ (1,3-Cyclopentanedione, 2-methyl-) (RN-CAS Registry Number 765-69-5)	**	9.40 ± 0.1 (V)	PE	3848

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_8O_2^+$	$C_5H_4(=O)(OH)CH_3$ (2-Cyclopenten-1-one, 3-hydroxy-2-methyl-) (RN-CAS Registry Number 5870-63-3)	**	8.84 ± 0.05	PE	3848
$C_6H_{10}O_2^+$	<i>trans</i> - $CH_3CH=CHCOOC_2H_5$ (RN-CAS Registry Number 623-70-1)	**	10.11 (V)	PE	3937
$C_6H_{11}O_2^+$	$C_4H_6O_2(CH_3)_2$ (1,3-Dioxane, 4,6-dimethyl-, <i>cis</i> -) (RN-CAS Registry Number 3390-18-9)	H	9.693 ± 0.005	EI	3481
$C_6H_{11}O_2^+$	$C_4H_6O_2(CH_3)_2$ (1,3-Dioxane, 4,6-dimethyl-, <i>trans</i> -) (RN-CAS Registry Number 1121-87-5)	H	9.540 ± 0.003	EI	3481
$C_6H_{11}O_2^+$	$C_4H_5O_2(CH_3)_3$ (1,3-Dioxane, 2,4,6-trimethyl-, (2 α ,4 α ,6 α)-) (RN-CAS Registry Number 19145-91-6) (ON-Other name: <i>cis</i> -2- <i>r</i> -4- <i>cis</i> -6-Trimethyl-1,3-dioxan)	CH ₃	9.593 ± 0.006	EI	3481
$C_6H_{11}O_2^+$	$C_4H_5O_2(CH_3)_3$ (1,3-Dioxane, 2,4,6-trimethyl-, (2 α ,4 α ,6 β)-) (RN-CAS Registry Number 36402-73-0) (ON-Other name: <i>cis</i> -2- <i>r</i> -4- <i>trans</i> -6-Trimethyl-1,3-dioxan)	CH ₃	9.448 ± 0.002	EI	3481
$C_6H_{12}O_2^+$	$CH_3COO(CH_2)_3CH_3$ (RN-CAS Registry Number 123-86-4)	**	10.17	PE	3718
$C_6H_{12}O_2^+$	<i>tert</i> - $C_4H_9COOCH_3$ (RN-CAS Registry Number 598-98-1)	**	9.90 ± 0.04	PE	3851
$C_7H_5O_2^+$	$C_6H_4(OH)COOH$ (Benzoic acid, 3-hydroxy-) (RN-CAS Registry Number 99-06-9)	OH	12.51 ± 0.2	EI	3973
$C_7H_5O_2^+$	$C_6H_4(OH)COOH$ (Benzoic acid, 4-hydroxy-) (RN-CAS Registry Number 99-96-7)	OH	12.00 ± 0.2	EI	3973
$C_7H_5O_2^+$	$C_6H_4(COOH)_2$ (1,3-Benzenedicarboxylic acid) (RN-CAS Registry Number 121-91-5)	COOH	12.42 ± 0.2	EI	3973
(MT-Metastable transition(s) observed)					
$C_7H_5O_2^+$	$C_6H_4(COOH)_2$ (1,4-Benzenedicarboxylic acid) (RN-CAS Registry Number 100-21-0)	COOH	12.56 ± 0.2	EI	3973
(MT-Metastable transition(s) observed)					
$C_7H_6O_2^+$	C_6H_5COOH (Benzoic acid) (RN-CAS Registry Number 65-85-0)	**	9.75 ± 0.2	EI	3973
$C_7H_6O_2^+$	C_6H_5COOH (Benzoic acid) (RN-CAS Registry Number 65-85-0)	**	9.75	EI	3792
$C_7H_6O_2^+$	$C_7H_6O_2$ (2,5-Cyclohexadiene-1,4-dione, 2-methyl-) (RN-CAS Registry Number 553-97-9)	**	9.78 ± 0.02	PI	3523

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_7O_2^+$	$C_6H_4(OCH_3)_2$ (Benzene, 1,3-dimethoxy-) (RN-CAS Registry Number 151-10-0)	CH_3	11.17 ± 0.1	EI	3446
$C_7H_7O_2^+$	$C_6H_4(OCH_3)_2$ (Benzene, 1,4-dimethoxy-) (RN-CAS Registry Number 150-78-7)	CH_3	10.98 ± 0.1	EI	3446
$C_7H_7O_2^+$	$C_6H_4(NO_2)OCH_3$ (Benzene, 1-methoxy-3-nitro-) (RN-CAS Registry Number 555-03-3)	NO	9.39 ± 0.1	EI	3447
$C_7H_7O_2^+$	$C_6H_4(NO_2)OCH_3$ (Benzene, 1-methoxy-4-nitro-) (RN-CAS Registry Number 100-17-4)	NO	10.03 ± 0.1	EI	3447
$C_7H_8O_2^+$	$C_6H_4(OH)OCH_3$ (Phenol, 4-methoxy-) (RN-CAS Registry Number 150-76-5)	**	7.50	EI	3845
$C_7H_8O_2^+$	$C_6H_4(OH)OCH_3$ (Phenol, 4-methoxy-) (RN-CAS Registry Number 150-76-5)	**	8.02 ± 0.1	EI	3446
$C_7H_8O_2^+$	$C_6H_4(OCH_3)OOCCH_3$ (Phenol, 3-methoxy-, acetate) (RN-CAS Registry Number 5451-83-2)	$CH_2=C=O$	9.56 ± 0.2	EI	3484
$C_7H_8O_2^+$	$C_6H_4(OCH_3)OOCCH_3$ (Phenol, 4-methoxy-, acetate) (RN-CAS Registry Number 1200-06-2)	$CH_2=C=O$	9.48 ± 0.2	EI	3484
$C_7H_{10}O_2^+$	$C_6H_7(=O)_2CH_3$ (1,3-Cyclohexanedione, 2-methyl-) (RN-CAS Registry Number 1193-55-1)	**	9.37 ± 0.05	PE	3848
$C_7H_{10}O_2^+$	$C_5H_4(=O)_2(CH_3)_2$ (1,3-Cyclopentanedione, 2,2-dimethyl-) (RN-CAS Registry Number 3883-58-7)	**	9.08 ± 0.05	PE	3848
$C_7H_{10}O_2^+$	$C_5H_5(=O)_2C_2H_5$ (1,3-Cyclopentanedione, 2-ethyl-) (RN-CAS Registry Number 823-36-9)	**	9.35 ± 0.1 (V)	PE	3848
$C_7H_{10}O_2^+$	$C_5H_4(=O)(OH)C_2H_5$ (2-Cyclopenten-1-one, 2-ethyl-3-hydroxy-) (RN-CAS Registry Number 5857-25-0)	**	8.79 ± 0.05	PE	3848
$C_7H_{13}O_2^+$	$C_4H_4O_2(CH_3)_4$ (1,3-Dioxane, 2,2,4,6-tetramethyl-, <i>cis</i> -) (RN-CAS Registry Number 17227-17-7)	CH_3	9.332 ± 0.006	EI	3481
$C_7H_{13}O_2^+$	$C_4H_4O_2(CH_3)_4$ (1,3-Dioxane, 2,2,4,6-tetramethyl-, <i>trans</i> -) (RN-CAS Registry Number 20268-00-2)	CH_3	9.128 ± 0.008	EI	3481
$C_8H_7O_2^+$	$C_6H_4(OCH_3)COOH$ (Benzoic acid, 3-methoxy-) (RN-CAS Registry Number 586-38-9)	OH	12.51 ± 0.2	EI	3973

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_7O_2^+$	$C_6H_4(OCH_3)COOH$ (Benzoic acid, 4-methoxy-) (RN-CAS Registry Number 100-09-4)	OH	12.53 ± 0.2	EI	3973
$C_8H_8O_2^+$	$C_6H_5OOCCH_3$ (Acetic acid, phenyl ester) (RN-CAS Registry Number 122-79-2)	**	8.75 ± 0.03	EI	3483
$C_8H_8O_2^+$	$C_6H_5OOCCH_3$ (Acetic acid, phenyl ester) (RN-CAS Registry Number 122-79-2)	**	8.84 ± 0.2	EI	3484
$C_8H_8O_2^+$	$C_6H_4(CH_3)COOH$ (Benzoic acid, 3-methyl-) (RN-CAS Registry Number 99-04-7)	**	9.43 ± 0.2	EI	3973
$C_8H_8O_2^+$	$C_6H_4(CH_3)COOH$ (Benzoic acid, 4-methyl-) (RN-CAS Registry Number 99-94-5)	**	9.23 ± 0.2	EI	3973
$C_8H_8O_2^+$	$C_6H_5COOCH_3$ (Benzoic acid methyl ester) (RN-CAS Registry Number 93-58-3)	**	9.40 ± 0.025	PE	3626
$C_8H_8O_2^+$	$C_6H_5COOCH_3$ (Benzoic acid methyl ester) (RN-CAS Registry Number 93-58-3)	**	9.35 ± 0.03	EDD	3626
$C_8H_8O_2^+$	$C_6H_5COOCH_3$ (Benzoic acid methyl ester) (RN-CAS Registry Number 93-58-3)	**	9.35 ± 0.1	EI	3788
$C_8H_8O_2^+$	$C_6H_5COOCH_3$ (Benzoic acid methyl ester) (RN-CAS Registry Number 93-58-3)	**	9.49	EI	3792
$C_8H_8O_2^+$	$C_6H_5COOCH_3Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methylbenzoate]-) (RN-CAS Registry Number 12125-87-0)		9.31 ± 0.1	EI	3788
$C_8H_{10}O_2^+$	$C_6H_4(OCH_3)_2$ (Benzene, 1,3-dimethoxy-) (RN-CAS Registry Number 151-10-0)	**	8.17 ± 0.1	EI	3446
$C_8H_{10}O_2^+$	$C_6H_4(OCH_3)_2$ (Benzene, 1,4-dimethoxy-) (RN-CAS Registry Number 150-78-7)	**	7.90 (V)	PE	3781
$C_8H_{10}O_2^+$	$C_6H_4(OCH_3)_2$ (Benzene, 1,4-dimethoxy-) (RN-CAS Registry Number 150-78-7)	**	7.45	EI	3845
$C_8H_{10}O_2^+$	$C_6H_4(OCH_3)_2$ (Benzene, 1,4-dimethoxy-) (RN-CAS Registry Number 150-78-7)	**	7.88 ± 0.1	EI	3446
$C_8H_{12}O_2^+$	$C_4(=O)_2(CH_3)_4$ (1,3-Cyclobutanedione, 2,2,4,4-tetramethyl-) (RN-CAS Registry Number 933-52-8)	**	8.80 (V)	PE	3936
$C_8H_{12}O_2^+$	$C_6H_6(=O)_2(CH_3)_2$ (1,3-Cyclohexanedione, 5,5-dimethyl-) (RN-CAS Registry Number 126-81-8)	**	9.28 ± 0.05	PE	3848

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_{12}O_2^+$	$C_6H_7(=O)OC_2H_5$ (2-Cyclohexen-1-one, 3-ethoxy-) (RN-CAS Registry Number 5323-87-5)	**	8.69 ± 0.05	PE	3848
$C_9H_{10}O_2^+$	$C_6H_4(CH_3)OOCCH_3$ (Acetic acid, 2-methylphenyl ester) (RN-CAS Registry Number 533-18-6)	**	8.38 ± 0.02	EI	3631
$C_9H_{10}O_2^+$	$C_6H_4(CH_3)OOCCH_3$ (Acetic acid, 3-methylphenyl ester) (RN-CAS Registry Number 122-46-3)	**	8.98 ± 0.2	EI	3484
$C_9H_{10}O_2^+$	$C_6H_4(CH_3)OOCCH_3$ (Acetic acid, 4-methylphenyl ester) (RN-CAS Registry Number 140-39-6)	**	7.84 ± 0.02	EI	3631
$C_9H_{10}O_2^+$	$C_6H_4(CH_3)OOCCH_3$ (Acetic acid, 4-methylphenyl ester) (RN-CAS Registry Number 140-39-6)	**	8.61 ± 0.2	EI	3484
$C_9H_{14}O_2^+$	$C_6H_7(=O)_2CH(CH_3)_2$ (1,3-Cyclohexanedione, 2-(1-methylethyl)-) (RN-CAS Registry Number 3401-01-2)	**	9.09 ± 0.05	PE	3848
$C_9H_{14}O_2^+$	$C_6H_5(=O)_2(CH_3)_3$ (1,3-Cyclohexanedione, 2,5,5-trimethyl-) (RN-CAS Registry Number 1125-11-7)	**	9.10 ± 0.05	PE	3848
$C_{10}H_6O_2^+$	$C_{10}H_6O_2$ (1,4-Naphthalenedione) (RN-CAS Registry Number 130-15-4)	**	9.56 ± 0.01	PI	3523
$C_{10}H_{12}O_2^+$	$C_{10}H_{12}O_2$ (2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetramethyl-) (RN-CAS Registry Number 527-17-3)	**	9.16 ± 0.03	PI	3523
$C_{10}H_{12}O_2^+$	$C_{10}H_{12}O_2$ (Tricyclo[3.3.1.1 ^{3,7}]decane-2,6-dione) (RN-CAS Registry Number 39751-07-0) (ON-Other name: 2,6-Adamantanedione)	**	9.06	PE	3886
$C_{10}H_{14}O_2^+$	$C_7H_5(=O)_2(CH_3)_3$ (Bicyclo[2.2.1]heptane-2,3-dione, 1,7,7-trimethyl-) (RN-CAS Registry Number 465-29-2)	**	8.80 (V)	PE	3936
$C_{10}H_{14}O_2^+$	$C_8H_{11}OOCCH_3$ (Tricyclo[3.2.1.0 ^{2,4}]octan-8-ol, acetate, <i>endo-syn</i> -) (RN-CAS Registry Number 32426-26-9)	**	8.6 ± 0.1	EI	3492
$C_{10}H_{14}O_2^+$	$C_8H_{11}OOCCH_3$ (Tricyclo[3.2.1.0 ^{2,4}]octan-8-ol, acetate, <i>endo-anti</i> -) (RN-CAS Registry Number 32350-51-9)	**	9.0 ± 0.1	EI	3492
$C_{10}H_{14}O_2^+$	$C_8H_{11}OOCCH_3$ (Tricyclo[3.2.1.0 ^{2,4}]octan-8-ol, acetate, <i>exo-syn</i> -) (RN-CAS Registry Number 32350-52-0)	**	8.9 ± 0.1	EI	3492
$C_{10}H_{14}O_2^+$	$C_8H_{11}OOCCH_3$ (Tricyclo[3.2.1.0 ^{2,4}]octan-8-ol, acetate, <i>exo-anti</i> -) (RN-CAS Registry Number 32350-50-8)	**	9.3 ± 0.1	EI	3492

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{10}H_{14}O_2^+$	$C_8H_8(OCH_3)_2$ (Tricyclo[3.2.1.0 ^{2,4}]oct-6-ene, 8,8-dimethoxy-, (1 α ,2 α ,4 α ,5 α)-) (RN-CAS Registry Number 14224-84-1) (ON-Other name: Tricyclo[3.2.1.0 ^{2,4}]oct-6-ene, 8,8-dimethoxy-, <i>endo</i> -)	**	8.6 ± 0.1	EI	3492
$C_{10}H_{16}O_2^+$	$C_6H_7(=O)_2C(CH_3)_3$ (1,3-Cyclohexanedione, 2-(1,1-dimethylethyl)-) (RN-CAS Registry Number XXXXX-XX-X)	**	9.05 ± 0.1	PE	3848
$C_{10}H_{16}O_2^+$	$C_6H_4(=O)_2(CH_3)_4$ (1,3-Cyclohexanedione, 2,2,5,5-tetramethyl-) (RN-CAS Registry Number 702-50-1)	**	9.04 ± 0.05	PE	3848
$C_{10}H_{16}O_2^+$	$C_8H_{10}(OCH_3)_2$ (Tricyclo[3.2.1.0 ^{2,4}]octane, 8,8-dimethoxy-, (1 α ,2 α ,4 α ,5 α)-) (RN-CAS Registry Number 14224-85-2) (ON-Other name: Tricyclo[3.2.1.0 ^{2,4}]octane, 8,8-dimethoxy-, <i>endo</i> -)	**	8.7 ± 0.1	EI	3492
$C_{10}H_{16}O_2^+$	$C_8H_{10}(OCH_3)_2$ (Tricyclo[3.2.1.0 ^{2,4}]octane, 8,8-dimethoxy-, (1 α ,2 β ,4 β ,5 α)-) (RN-CAS Registry Number 7076-82-6) (ON-Other name: Tricyclo[3.2.1.0 ^{2,4}]octane, 8,8-dimethoxy-, <i>exo</i> -)	**	8.9 ± 0.1	EI	3492
$C_{11}H_{16}O_2^+$	$C_{10}H_{15}COOH$ (Tricyclo[3.3.1.1 ^{3,7}]decane-1-carboxylic acid) (RN-CAS Registry Number 828-51-3) (ON-Other name: 1-Adamantanecarboxylic acid)	**	9.34	PE	3886
$C_{11}H_{20}O_2^+$	$(CH_3)_3CCOCH_2COC(CH_3)_3$ (RN-CAS Registry Number 1118-71-4)	**	8.86 ± 0.07 (V)	PE	3682
$C_{12}H_{18}O_2^+$	$C_{10}H_{15}COOCH_3$ (Tricyclo[3.3.1.1 ^{3,7}]decane-1-carboxylic acid methyl ester) (RN-CAS Registry Number 711-01-3) (ON-Other name: 1-Carbomethoxyadamantane)	**	9.38 ± 0.03	PE	3851
$C_{14}H_8O_2^+$	$C_{14}H_8O_2$ (9 <i>H</i> -Xanthen-9-one) (RN-CAS Registry Number 90-47-1)	**	8.42 ± 0.03	PI	3523
$C_{13}H_{10}O_2^+$	$C_6H_5COOC_6H_5$ (Benzoic acid phenyl ester) (RN-CAS Registry Number 93-99-2)	**	9.0	EI	3897
$C_{14}H_8O_2^+$	$C_{14}H_8O_2$ (1,4-Anthracenedione) (RN-CAS Registry Number 635-12-1)	**	8.45 ± 0.02	PI	3523
$C_{14}H_8O_2^+$	$C_{14}H_8O_2$ (9,10-Anthracenedione) (RN-CAS Registry Number 84-65-1)	**	9.25 ± 0.03	PI	3523
$C_{14}H_8O_2^+$	$C_{14}H_8O_2$ (9,10-Anthracenedione) (RN-CAS Registry Number 84-65-1)	**	9.3	PI	3586

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{14}H_8O_2^+$	$C_{14}H_8O_2$ (9,10-Anthracenedione) (RN-CAS Registry Number 84-65-1) (ON-Other name: Anthraquinone)	**	9.40 ± 0.08	EI	3571
$C_{14}H_8O_2^+$	$C_{14}H_8O_2$ (9,10-Phenanthrenedione) (RN-CAS Registry Number 84-11-7)	**	8.64 ± 0.03	PI	3523
$C_{14}H_{10}O_2^+$	$C_6H_5COCOC_6H_5$ (Ethanedione, diphenyl-) (RN-CAS Registry Number 134-81-6)	**	8.86 ± 0.15	SD	3823
$C_{15}H_{12}O_2^+$	$C_6H_5COCOC_6H_4CH_3$ (Ethanedione, (4-methylphenyl)phenyl-) (RN-CAS Registry Number 2431-00-7)	**	9.05 ± 0.10	SD	3823
$C_{20}H_{22}O_2^+$	$C_{20}H_{22}O_2$ (<i>D</i> -Homoestra-1,3,5(10),6,8-pentaen-17a-one, 3-methoxy-) (RN-CAS Registry Number 1232-90-2)	**	7.56 ± 0.07	EI	3571
$C_{20}H_{22}O_2^+$	$C_{20}H_{22}O_2$ (<i>D</i> -Homoestra-1,3,5(10),6,8-pentaen-17a-one, 3-methoxy-, (14 β)-) (RN-CAS Registry Number 1232-91-3)	**	7.82 ± 0.07	EI	3571
$C_{20}H_{26}O_2^+$	$C_{20}H_{26}O_2$ (<i>D</i> -Homoestra-1,3,5(10)-trien-17a-one, 3-methoxy-) (RN-CAS Registry Number 1232-89-9)	**	8.22 ± 0.06	EI	3571
$C_{20}H_{26}O_2^+$	$C_{20}H_{26}O_2$ (<i>D</i> -Homoestra-1,3,5(10)-trien-17a-one, 3-methoxy-, (8 α)-) (RN-CAS Registry Number 1232-88-8)	**	8.17 ± 0.08	EI	3571
$C_{22}H_{12}O_2^+$	$C_{22}H_{12}O_2$ (6,13-Pentacenedione) (RN-CAS Registry Number 3029-32-1)	**	8.07 ± 0.05	PI	3523
$C_3H_2O_3^+$	$C_3H_2O_2(=O)$ (1,3-Dioxol-2-one) (RN-CAS Registry Number 872-36-6)	**	11.91 (V)	PE	3826
$C_3H_4O_3^+$	$C_3H_4O_2(=O)$ (1,3-Dioxolan-2-one) (RN-CAS Registry Number 96-49-1)	**	11.47 (V)	PE	3826
$C_3H_6O_3^+$	$C_3H_6O_3$ (1,3,5-Trioxane) (RN-CAS Registry Number 110-88-3)	**	~ 10.8 (V)	PE	3733
$C_4H_2O_3^+$	$C_4H_2O(=O)_2$ (2,5-Furandione) (RN-CAS Registry Number 108-31-6)	**	11.45 (V)	PE	3826

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_6O_3^+$	$C_4H_3OCOOCH_3$ (2-Furancarboxylic acid, methyl ester) (RN-CAS Registry Number 611-13-2)	**	9.32 ± 0.05	EI	3482
$C_7H_6O_3^+$	$C_6H_4(OH)COOH$ (Benzoic acid, 3-hydroxy-) (RN-CAS Registry Number 99-06-9)	**	9.20 ± 0.2	EI	3973
$C_7H_6O_3^+$	$C_6H_4(OH)COOH$ (Benzoic acid, 4-hydroxy-) (RN-CAS Registry Number 99-96-7)	**	9.22 ± 0.2	EI	3973
$C_7H_6O_3^+$	$C_6H_4(COOH)OOCCH_3$ (Benzoic acid, 4-(acetyloxy)-) (RN-CAS Registry Number 2345-34-8)	$CH_2=C=O$	10.08 ± 0.2	EI	3484
$C_8H_5O_3^+$	$C_6H_4(COOH)_2$ (1,3-Benzenedicarboxylic acid) (RN-CAS Registry Number 121-91-5)	OH	12.17 ± 0.2	EI	3973
$C_8H_5O_3^+$	$C_6H_4(COOH)_2$ (1,4-Benzenedicarboxylic acid) (RN-CAS Registry Number 100-21-0)	OH	12.14 ± 0.2	EI	3973
$C_8H_8O_3^+$	$C_6H_4(OH)OOCCH_3$ (Benzenecetic acid, 2-hydroxy-) (RN-CAS Registry Number 614-75-5)	**	8.16 ± 0.02	EI	3631
$C_8H_8O_3^+$	$C_6H_4(OH)OOCCH_3$ (Benzenecetic acid, 4-hydroxy-) (RN-CAS Registry Number 156-38-7)	**	8.12 ± 0.02	EI	3631
$C_8H_8O_3^+$	$C_6H_4(OCH_3)COOH$ (Benzoic acid, 3-methoxy-) (RN-CAS Registry Number 586-38-9)	**	9.06 ± 0.2	EI	3973
$C_8H_8O_3^+$	$C_6H_4(OCH_3)COOH$ (Benzoic acid, 4-methoxy-) (RN-CAS Registry Number 100-09-4)	**	9.04 ± 0.2	EI	3973
$C_9H_7O_3^+$	$C_6H_4(COOCH_3)COSC_6H_4CH_3$ (Benzoic acid, 2-[[4-methylphenyl]thio]carbonyl]- methyl ester) (RN-CAS-Registry Number 42797-32-0)		10.98 ± 0.2	EI	4062
$C_9H_7O_3^+$	(OP-The other product(s) is(are): $C_6H_4(S)CH_3$) $C_8H_4O(=O)(OCH_3)SC_6H_4CH_3$ (1(3H)-Isobenzofuranone, 3-methoxy-3-[(4-methylphenyl)thio]-) (RN-CAS-Registry Number 51053-89-5)		10.7 ± 0.2	EI	4062
	(OP-The other product(s) is(are): $C_6H_4(S)CH_3$)				
$C_9H_{10}O_3^+$	$C_6H_4(OCH_3)OOCCH_3$ (Phenol, 3-methoxy-, acetate) (RN-CAS Registry Number 5451-83-2)	**	8.29 ± 0.2	EI	3484
$C_9H_{10}O_3^+$	$C_6H_4(OCH_3)OOCCH_3$ (Phenol, 4-methoxy-, acetate) (RN-CAS Registry Number 1200-06-2)	**	7.92 ± 0.2	EI	3484

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{10}H_6O_3^+$	$C_{10}H_5O_2(OH)$ (1,4-Naphthalenedione, 5-hydroxy-) (RN-CAS Registry Number 481-39-0)	**	8.70 ± 0.02	PI	3523
$C_{14}H_8O_3^+$	$C_{14}H_7O_2(OH)$ (9,10-Anthracenedione, 1-hydroxy-) (RN-CAS Registry Number 129-43-1)	**	8.43 ± 0.05	PI	3523
$C_{14}H_8O_3^+$	$C_{14}H_7O_2(OH)$ (9,10-Anthracenedione, 2-hydroxy-) (RN-CAS Registry Number 605-32-3)	**	8.70 ± 0.03	PI	3523
$C_{14}H_{12}O_3^+$	$C_6H_5COOC_6H_4OCH_3$ (Phenol, 4-methoxy-, benzoate) (RN-CAS Registry Number 1523-19-9)	**	8.6	EI	3897
$C_2H_4O_4^+$	$(HCOOH)_2$ (RN-CAS Registry Number 14523-98-9)	**	11.3 (V)	PE	3734
$C_4H_8O_4^+$	$(CH_3COOH)_2$ (RN-CAS Registry Number 6993-75-5)	**	10.6 (V)	PE	3734
$C_5H_{10}O_4^+$	$(iso-C_3H_7COOH)(HCOOH)$ (RN-CAS Registry Number XXXXX-XX-X)	**	10.5 (V)	PE	3734
$C_6H_6O_4^+$	$CH_3OOC \equiv CCOOCH_3$ (RN-CAS Registry Number 762-42-5)	**	10.9 (V)	PE	3937
$C_6H_8O_4^+$	<i>cis</i> - $CH_3OOCCH=CHCOOCH_3$ (RN-CAS Registry Number 624-48-6)	**	10.47 (V)	PE	3937
$C_6H_8O_4^+$	<i>trans</i> - $CH_3OOCCH=CHCOOCH_3$ (RN-CAS Registry Number 624-49-7)	**	10.70 (V)	PE	3937
$C_6H_{12}O_4^+$	$(CH_3CH_2COOH)_2$ (RN-CAS Registry Number XXXXX-XX-X)	**	10.4 (V)	PE	3734
$C_8H_6O_4^+$	$C_6H_4(COOH)_2$ (1,3-Benzenedicarboxylic acid) (RN-CAS Registry Number 121-91-5)	**	9.98 ± 0.2	EI	3973
$C_8H_6O_4^+$	$C_6H_4(COOH)_2$ (1,4-Benzenedicarboxylic acid) (RN-CAS Registry Number 100-21-0)	**	9.86 ± 0.2	EI	3973
$C_9H_8O_4^+$	$C_6H_4(COOH)OOCCH_3$ (Benzoic acid, 4-(acetyloxy)-) (RN-CAS Registry Number 2345-34-8)	**	9.11 ± 0.2	EI	3484
$C_{10}H_6O_4^+$	$C_{10}H_4O_2(OH)_2$ (1,4-Naphthalenedione, 5,8-dihydroxy-) (RN-CAS Registry Number 475-38-7)	**	8.20 ± 0.02	PI	3523

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{14}H_8O_4^+$	$C_{14}H_6O_2(OH)_2$ (9,10-Anthracenedione, 1,4-dihydroxy-) (RN-CAS Registry Number 81-64-1)	**	7.94 ± 0.03	PI	3523
$C_{14}H_8O_4^+$	$C_{14}H_6O_2(OH)_2$ (9,10-Anthracenedione, 1,5-dihydroxy-) (RN-CAS Registry Number 117-12-4)	**	8.53 ± 0.03	PI	3523
$C_{14}H_8O_4^+$	$C_{14}H_6O_2(OH)_2$ (9,10-Anthracenedione, 2,6-dihydroxy-) (RN-CAS Registry Number 84-60-6)	**	8.65 ± 0.05	PI	3523
$C_{22}H_{10}O_4^+$	$C_{22}H_{10}O_4$ (5,7,12,14-Pentacenetetrone) (RN-CAS Registry Number 23912-79-0)	**	9.22 ± 0.05	PI	3523
$C_{14}H_8O_6^+$	$C_{14}H_4O_2(OH)_4$ (Anthraquinone, 1,4,5,8-tetrahydroxy-) (RN-CAS Registry Number 81-60-7)	**	7.83 ± 0.02	PI	3523
$C_{10}H_{14}O_4Be^+$	$(CH_3COCHCOCH_3)_2Be$ (Beryllium, bis(2,4-pentanedionato- <i>O,O'</i>)-, (<i>T</i> -4)-) (RN-CAS Registry Number 10210-64-7)	**	8.41 ± 0.07 (V)	PE	3682
$CH_3BO^+(^2E)$	$(BH_3)(CO)$ (RN-CAS Registry Number 13205-44-2)	**	12.51 ± 0.02 (V)	PE	3699
$CH_3BO^+(^2A_1)$	$(BH_3)(CO)$ (RN-CAS Registry Number 13205-44-2)	**	13.73 ± 0.01	PE	3699
$CH_3BO^+(^2E)$	$(BH_3)(CO)$ (RN-CAS Registry Number 13205-44-2)	**	16.09 ± 0.02	PE	3699
$CH_3BO^+(^2A_1)$	$(BH_3)(CO)$ (RN-CAS Registry Number 13205-44-2)	**	18.48 ± 0.02	PE	3699
CH_3BO^+	$(BH_3)(CO)$ (RN-CAS Registry Number 13205-44-2)	**	11.14 ± 0.02	PE	3699
$C_3H_9BO^+$	$(CH_3)_2BOCH_3$ (RN-CAS-Registry Number 7318-81-2)	**	10.32 (V)	PE	4065
$C_3H_9BO_2^+$	$(CH_3O)_2BCH_3$ (RN-CAS-Registry Number 7318-81-2)	**	10.40 (V)	PE	4065
$C_3H_9BO_3^+$	$B(OCH_3)_3$ (RN-CAS-Registry Number 121-43-7)	**	10.40 (V)	PE	4065
$NO^+(^3\Pi)$	NO (RN-CAS Registry Number 10102-43-9) (RS-Average of two Rydberg series limits)	**	21.721 ± 0.006	S	3761
$NO^+(X^1\Sigma^+)$	NO (RN-CAS Registry Number 10102-43-9)	**	9.262 ± 0.003	PE	3516
$NO^+(X^1\Sigma^+)$	NO (RN-CAS-Registry Number 10102-43-9)	**	9.27	PE	4073
$NO^+(a^3\Sigma^+)$	NO (RN-CAS Registry Number 10102-43-9)	**	15.667 ± 0.003	PE	3516

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{NO}^+(\text{b}^3\Pi)$	NO (RN-CAS Registry Number 10102-43-9)	**	16.562 ± 0.003	PE	3516
$\text{NO}^+(\text{w}^3\Delta)$	NO (RN-CAS Registry Number 10102-43-9)	**	16.863 ± 0.003	PE	3516
$\text{NO}^+(\text{b}^3\Sigma^-)$	NO (RN-CAS Registry Number 10102-43-9)	**	17.586 ± 0.003	PE	3516
$\text{NO}^+(\text{A}^1\Sigma^-)$	NO (RN-CAS Registry Number 10102-43-9)	**	17.811 ± 0.003	PE	3516
$\text{NO}^+(\text{A}^1\Pi)$	NO (RN-CAS Registry Number 10102-43-9)	**	18.319 ± 0.003	PE	3516
$\text{NO}^+(\text{w}'\Delta)$	NO (RN-CAS Registry Number 10102-43-9)	**	< 18.36	PE	3516
$\text{NO}^+(\text{c}^3\Pi)$	NO (RN-CAS Registry Number 10102-43-9)	**	21.722 ± 0.010	PE	3516
$\text{NO}^+(\text{B}^1\Pi)$	NO (RN-CAS Registry Number 10102-43-9)	**	21.722 ± 0.010	PE	3516
$\text{NO}^+(\text{B}^1\Sigma^+)$	NO (RN-CAS Registry Number 10102-43-9)	**	22.727 ± 0.010	PE	3516
$\text{NO}^+(\text{I}^1\Sigma^+)$	NO (RN-CAS Registry Number 10102-43-9)	**	9.27 ± 0.05	RPD	3453
NO^+	CH_3NO_2 (RN-CAS Registry Number 75-52-5)		11.75 ± 0.01	PI	3524
NO^+	CH_3ONO CH_3O (RN-CAS Registry Number 624-91-9)		10.917 ± 0.008	PI	3524
(TR—Other product(s) thermochemically reasonable)					
$\text{N}_2\text{O}^+(\text{X}^2\Pi)$	N_2O (RN-CAS Registry Number 10024-97-2)	**	12.90	TPE	3998
$\text{N}_2\text{O}^+(\text{A}^2\Sigma^+)$	N_2O (RN-CAS Registry Number 10024-97-2)	**	16.40	TPE	3998
NO_2^+	NO_2 (RN-CAS Registry Number 10102-44-0)	**	$\leq 9.62 \pm 0.01$	PI	3927
$\text{C}_3\text{N}_2\text{O}^+(\text{B}_2)$	$(\text{CN})_2\text{CO}$ (RN-CAS Registry Number 1115-12-4)	**	12.56 (V)	PE	3726
$\text{C}_3\text{N}_2\text{O}^{++}$	$(\text{CN})_2\text{CO}$ (RN-CAS Registry Number 1115-12-4)	**	13.76 (V)	PE	3726
$\text{C}_3\text{N}_2\text{O}^{++}$	$(\text{CN})_2\text{CO}$ (RN-CAS Registry Number 1115-12-4)	**	14.41 (V)	PE	3726
$\text{C}_3\text{N}_2\text{O}^{++}$	$(\text{CN})_2\text{CO}$ (RN-CAS Registry Number 1115-12-4)	**	14.79 (V)	PE	3726
$\text{C}_3\text{N}_2\text{O}^+(\text{B}_1)$	$(\text{CN})_2\text{CO}$ (RN-CAS Registry Number 1115-12-4)	**	16.7 (V)	PE	3726
$\text{C}_3\text{N}_2\text{O}^{++}$	$(\text{CN})_2\text{CO}$ (RN-CAS Registry Number 1115-12-4)	**	17.9 (V)	PE	3726
$\text{C}_6\text{H}_5\text{NO}_3$	$\text{C}_6\text{H}_4(\text{OH})\text{NO}_2$ ** (Phenol, 4-nitro-) (RN-CAS Registry Number 100-02-7)	7.38	EI		4089

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{CHNO}^+(\text{}^2\text{A}'')$	HNCO (RN-CAS Registry Number 75-13-8)	**	11.62 ± 0.02	PE	3670
$\text{CHNO}^+(\text{}^2\text{A}')$	HNCO (RN-CAS Registry Number 75-13-8)	**	12.30 ± 0.02 (V)	PE	3670
CHNO^{++}	HNCO (RN-CAS Registry Number 75-13-8)	**	15.8 ± 0.1 (V)	PE	3670
CHNO^{++}	HNCO (RN-CAS Registry Number 75-13-8)	**	17.50 ± 0.02 (V)	PE	3670
CHNO^{++}	HNCO (RN-CAS Registry Number 75-13-8)	**	19.24 ± 0.02 (V)	PE	3670
CH_3NO^+	HCONH ₂ (RN-CAS Registry Number 75-12-7)	**	10.16 ± 0.03	PI	3765
$\text{C}_2\text{H}_3\text{NO}^+(\text{}^2\text{A}'')$	CH ₃ NCO (RN-CAS Registry Number 624-83-9)	**	10.67 ± 0.02	PE	3670
$\text{C}_2\text{H}_5\text{NO}^+$	CH ₃ CONH ₂ (RN-CAS Registry Number 60-35-5)	**	9.65 ± 0.03	PI	3765
$\text{C}_2\text{H}_5\text{NO}^+$	CH ₃ CONH ₂ (RN-CAS Registry Number 60-35-5)	**	9.80	PE	3718
$\text{C}_2\text{H}_5\text{NO}^+$	C ₂ H ₃ NO (RN-CAS Registry Number 925-91-7)	**	10.1 ± 0.2	EI	4099
$\text{C}_2\text{H}_7\text{NO}^+$	NH ₂ CH ₂ CH ₂ OH (RN-CAS Registry Number 141-43-5)	**	9.87 ± 0.06 (V)	PE	3987
$\text{C}_3\text{H}_7\text{NO}^+$	CH ₃ CONHCH ₃ (RN-CAS Registry Number 79-16-3)	**	~ 9.85 (V)	PE	3718
$\text{C}_3\text{H}_9\text{NO}^+$	CH ₃ OCH ₂ CH ₂ NH ₂ (RN-CAS Registry Number 109-85-3)	**	9.45 ± 0.09 (V)	PE	3987
$\text{C}_3\text{H}_9\text{NO}^+$	NH ₂ (CH ₂) ₃ OH (RN-CAS Registry Number 156-87-6)	**	9.77 ± 0.20 (V)	PE	3987
$\text{C}_4\text{H}_9\text{NO}^+$	CH ₃ CON(CH ₃) ₂ (RN-CAS Registry Number 127-19-5)	**	9.43 (V)	PE	3718
$\text{C}_4\text{H}_{11}\text{NO}^+$	(CH ₃) ₂ NCH ₂ CH ₂ OH (RN-CAS Registry Number 108-01-0)	**	8.85 ± 0.04 (V)	PE	3987
$\text{C}_4\text{H}_{11}\text{NO}^+$	CH ₃ O(CH ₂) ₃ NH ₂ (RN-CAS Registry Number 5332-73-0)	**	9.37 ± 0.12 (V)	PE	3987
$\text{C}_5\text{H}_3\text{NO}^+$	C ₄ H ₃ OCN (2-Furancarbonitrile) (RN-CAS Registry Number 617-90-3)	**	9.77 ± 0.05	EI	3482
$\text{C}_5\text{H}_5\text{NO}^+$	C ₅ H ₄ N(OH) (2-Pyridinol) (RN-CAS Registry Number 109-10-4)	**	9.28 ± 0.02	EI	3636

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_5H_5NO^+$	$C_5H_4N(OH)$ (3-Pyridinol) (RN-CAS Registry Number 109-00-2)	**	9.55 ± 0.02	EI	3636
$C_5H_5NO^+$	$C_5H_4N(OH)$ (3-Pyridinol) (RN-CAS Registry Number 109-00-2)	**	9.55 ± 0.05	EI	3635
$C_5H_5NO^+$	$C_5H_4N(OH)$ (4-Pyridinol) (RN-CAS Registry Number 626-64-2)	**	9.89 ± 0.02	EI	3636
$C_5H_5NO^+$	C_4H_4NCHO (1- <i>H</i> -Pyrrole-2-carboxaldehyde) (RN-CAS Registry Number 1003-29-8)	**	8.93 ± 0.05	EI	3482
$C_5H_8NO^+$	$(CH_3)_2NCOCH=CHCH_3$ (RN-CAS Registry Number 23135-18-4)	CH_3	11.0 ± 0.1	EI	3996
$C_5H_{13}NO^+$	$(CH_3)_2N(CH_2)_3OH$ (RN-CAS Registry Number 3179-63-3)	**	8.74 ± 0.04 (V)	PE	3987
$C_6H_5NO^+$	C_6H_5NO (Benzene, nitroso-) (RN-CAS Registry Number 586-96-9)	**	8.09	PE	3938
$C_6H_6NO^+$	$C_6H_4(NH_2)OCH_3$ (Benzenamine, 3-methoxy-) (RN-CAS Registry Number 536-90-3)	CH_3	11.07 ± 0.1	EI	3446
$C_6H_6NO^+$	$C_6H_4(NH_2)OCH_3$ (Benzenamine, 4-methoxy-) (RN-CAS Registry Number 104-94-9)	CH_3	10.43 ± 0.1	EI	3446
$C_6H_6NO^+$	$C_6H_4(OH)NHCOCH_3$ (Acetamide, <i>N</i> -(2-hydroxyphenyl)-) (RN-CAS Registry Number 614-80-2)	CH_3CO	13.46 ± 0.02	EI	3631
$C_6H_6NO^+$	$C_6H_4(OH)NHCOCH_3$ (Acetamide, <i>N</i> -(4-hydroxyphenyl)-) (RN-CAS Registry Number 103-90-2)	CH_3CO	13.52 ± 0.02	EI	3631
$C_6H_6NO^+$	$C_6H_4(NO_2)NH_2$ (Benzenamine, 3-nitro-) (RN-CAS Registry Number 99-09-2)	NO	9.12 ± 0.1	EI	3447
$C_6H_6NO^+$	$C_6H_4(NO_2)NH_2$ (Benzenamine, 4-nitro-) (RN-CAS Registry Number 100-01-6)	NO	9.56 ± 0.1	EI	3447
$C_6H_7NO^+$	$C_5H_4N(OCH_3)$ (Pyridine, 2-methoxy-) (RN-CAS Registry Number 1628-89-3)	**	8.96 ± 0.02	EI	3636
$C_6H_7NO^+$	$C_5H_4N(OCH_3)$ (Pyridine, 3-methoxy-) (RN-CAS Registry Number 7295-76-3)	**	9.34 ± 0.02	EI	3636
$C_6H_7NO^+$	$C_5H_4N(OCH_3)$ (Pyridine, 3-methoxy-) (RN-CAS Registry Number 7295-76-3)	**	9.34 ± 0.05	EI	3635

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_7NO^+$	$C_5H_4N(OCH_3)$ (Pyridine, 4-methoxy-) (RN-CAS Registry Number 620-08-6)	**	9.58 ± 0.02	EI	3636
$C_6H_7NO^+$	$C_5H_4N(=O)CH_3$ (2(1 <i>H</i>)-Pyridinone, 1-methyl-) (RN-CAS Registry Number 694-85-9)	**	8.58 ± 0.02	EI	3636
$C_6H_7NO^+$	$C_5H_4N(=O)CH_3$ (4(1 <i>H</i>)-Pyridinone, 1-methyl-) (RN-CAS Registry Number 695-19-2)	**	8.48 ± 0.02	EI	3636
$C_6H_7NO^+$	$C_4H_4NCOCH_3$ (Ethanone, 1-(1 <i>H</i> -pyrrol-2-yl)-) (RN-CAS Registry Number 1072-83-9)	**	8.72 ± 0.05	EI	3482
$C_6H_7NO^+$	$C_5H_4N(O)CH_3$ (Pyridinium, 3-hydroxy-1-methyl-, hydroxide, inner salt) (RN-CAS Registry Number 25065-00-3)	**	7.90 ± 0.02	EI	3636
$C_6H_7NO^+$	$C_5H_4N(O)CH_3$ (Pyridinium, 3-hydroxy-1-methyl-, hydroxide, inner salt) (RN-CAS Registry Number 25065-00-3)	**	7.90 ± 0.05	EI	3635
$C_6H_7NO^+$	$C_5H_3N(OH)CH_3$ (3-Pyridinol, 6-methyl-) (RN-CAS Registry Number 1121-78-4)	**	9.15 ± 0.05	EI	3635
$C_6H_7NO^+$	$C_6H_4(OH)NHCOCH_3$ (Acetamide, <i>N</i> -(2-hydroxyphenyl)-) (RN-CAS Registry Number 614-80-2)	$CH_2=C=O$	9.41 ± 0.02	EI	3631
$C_6H_7NO^+$	$C_6H_4(OH)NHCOCH_3$ (Acetamide, <i>N</i> -(4-hydroxyphenyl)-) (RN-CAS Registry Number 103-90-2)	$CH_2=C=O$	9.82 ± 0.02	EI	3631
$C_6H_{11}NO^+$	$(CH_3)_2NCOCH=CHCH_3$ (RN-CAS Registry Number 23135-18-4)	**	9.0 ± 0.1	EI	3996
$C_6H_{15}NO^+$	$(C_2H_5)_2NCH_2CH_2OH$ (RN-CAS Registry Number 100-37-8)	**	8.58 ± 0.03 (V)	PE	3987
$C_7H_4NO^+$	$C_6H_4(CN)OCH_3$ (Benzonitrile, 3-methoxy-) (RN-CAS Registry Number 1527-89-5)	CH_3	12.75 ± 0.1	EI	3446
$C_7H_4NO^+$	$C_6H_4(CN)OCH_3$ (Benzonitrile, 4-methoxy-) (RN-CAS Registry Number 874-90-8)	CH_3	12.65 ± 0.1	EI	3446
$C_7H_4NO^+$	$C_6H_4(NO_2)CN$ (Benzonitrile, 3-nitro-) (RN-CAS Registry Number 619-24-9)	NO	10.45 ± 0.1	EI	3447
$C_7H_4NO^+$	$C_6H_4(NO_2)CN$ (Benzonitrile, 4-nitro-) (RN-CAS Registry Number 619-72-7)	NO	10.80 ± 0.1	EI	3447
$C_7H_6NO^+$	$C_6H_4(NH_2)COOH$ (Benzoic acid, 3-amino-) (RN-CAS Registry Number 99-05-8)	OH	12.18 ± 0.2	EI	3973

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_6NO^+$	$C_6H_4(NH_2)COOH$ (Benzoic acid, 4-amino-) (RN-CAS Registry Number 150-13-0)	OH	12.12 ± 0.2	EI	3973
$C_7H_7NO^+$	$C_6H_5CONH_2$ (Benzamide) (RN-CAS Registry Number 55-21-0)	**	9.60	EI	3792
$C_7H_9NO^+$	$C_6H_4(NH_2)OCH_3$ (Benzenamine, 3-methoxy-) (RN-CAS Registry Number 536-90-3)	**	7.76 ± 0.1	EI	3446
$C_7H_9NO^+$	$C_6H_4(NH_2)OCH_3$ (Benzenamine, 4-methoxy-) (RN-CAS Registry Number 104-94-9)	**	6.92	EI	3845
$C_7H_9NO^+$	$C_6H_4(NH_2)OCH_3$ (Benzenamine, 4-methoxy-) (RN-CAS Registry Number 104-94-9)	**	7.60 ± 0.1	EI	3446
$C_7H_9NO^+$	$C_6H_4(NH_2)OCH_3$ (Benzenamine, 4-methoxy-) (RN-CAS Registry Number 104-94-9)	**	9.39	EI	4089
$C_7H_{10}NO^+$	$C_4H_8NCOCH=CHCH_3$ (Pyrrolidine, 1-(1-oxo-2-butenyl)-) (RN-CAS Registry Number 51944-65-1)	CH_3	11.2 ± 0.1	EI	3996
$C_7H_{11}NO^+$	$C_5H_8NCOCH_3$ (Pyridine, 1-acetyl-1,2,3,4-tetrahydro-) (RN-CAS Registry Number 19615-27-1)	**	8.8	EI	4046
$C_7H_{13}NO^+$	$C_5H_{10}NCOCH_3$ (Piperidine, 1-acetyl-) (RN-CAS Registry Number 618-42-8)	**	9.1	EI	4046
$C_7H_{17}NO^+$	$(C_2H_5)_2N(CH_2)_3OH$ (RN-CAS Registry Number 622-93-5)	**	8.56 ± 0.05 (V)	PE	3987
$C_8H_4NO^+$	$C_6H_4(CN)COOH$ (Benzoic acid, 4-cyano-) (RN-CAS Registry Number 619-65-8)	OH	12.68 ± 0.2	EI	3973
$C_8H_7NO^+$	$C_6H_4(CN)OCH_3$ (Benzonitrile, 3-methoxy-) (RN-CAS Registry Number 1527-89-5)	**	9.11 ± 0.1	EI	3446
$C_8H_7NO^+$	$C_6H_4(CN)OCH_3$ (Benzonitrile, 4-methoxy-) (RN-CAS Registry Number 874-90-8)	**	8.74	EI	3845
$C_8H_7NO^+$	$C_6H_4(CN)OCH_3$ (Benzonitrile, 4-methoxy-) (RN-CAS Registry Number 874-90-8)	**	8.97 ± 0.1	EI	3446

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_8NO^+$	$C_6H_4ClNHCOCH_3$ (Acetamide, <i>N</i> -(2-chlorophenyl)-) (RN-CAS Registry Number 533-17-5)		8.86 ± 0.03	EI	3483
$C_8H_8NO^+$	$C_6H_4BrNHCOCH_3$ (Acetamide, <i>N</i> -(2-bromophenyl)-) (RN-CAS Registry Number 614-76-6)		9.08 ± 0.03	EI	3483
$C_8H_8NO^+$	$C_6H_4INHCOCH_3$ (Acetamide, <i>N</i> -(2-iodophenyl)-) (RN-CAS Registry Number 19591-17-4)		8.57 ± 0.03	EI	3483
$C_8H_9NO^+$	$C_6H_5NHCOCH_3$ (Acetamide, <i>N</i> -phenyl-) (RN-CAS Registry Number 103-84-4)	**	8.18 ± 0.03	EI	3483
$C_8H_{12}NO^+$	$C_5H_{10}NCOCH=CHCH_3$ (Piperidine, 1-(1-oxo-2-butenyl)-) (RN-CAS Registry Number 3626-69-5)	**	11.1 ± 0.1	EI	3996
$C_8H_{13}NO^+$	$C_4H_8NCOCH=CHCH_3$ (Pyrrolidine, 1-(1-oxo-2-butenyl)-) (RN-CAS Registry Number 51944-65-1)	**	9.0 ± 0.1	EI	3996
$C_8H_{18}NO^+$ (RD-Radical)	$(tert-C_4H_9)_2NO$ (RN-CAS Registry Number 2406-25-9)	**	6.77	PE	3712
$C_9H_8NO^+$	$C_6H_5NHCOCH=CHCH_3$ (2-Butenamide, <i>N</i> -phenyl-) (RN-CAS Registry Number 1733-40-0)	CH_3	12.1 ± 0.3	EI	3996
$C_9H_{11}NO^+$	$C_6H_4(CH_3)NHCOCH_3$ (Acetamide, <i>N</i> -(2-methylphenyl)-) (RN-CAS Registry Number 120-66-1)	**	8.03 ± 0.02	EI	3631
$C_9H_{11}NO^+$	$C_6H_4(CH_3)NHCOCH_3$ (Acetamide, <i>N</i> -(4-methylphenyl)-) (RN-CAS Registry Number 103-89-9)	**	7.75 ± 0.02	EI	3631
$C_9H_{11}NO^+$	$C_6H_4(CHO)N(CH_3)_2$ (Benzaldehyde, 4-(dimethylamino)-) (RN-CAS Registry Number 100-10-7)	**	7.36 ± 0.02	PI	4028
$C_9H_{13}NO^+$	$C_6H_4(OCH_3)N(CH_3)_2$ (Benzenamine, 2-methoxy- <i>N,N</i> -dimethyl-) (RN-CAS Registry Number 700-75-4)	**	7.59 ± 0.02	EI	3630
$C_9H_{13}NO^+$	$C_6H_4(O)N(CH_3)_3$ (Benzenaminium, 2-hydroxy- <i>N,N,N</i> -trimethyl-, hydroxide, inner salt) (RN-CAS Registry Number 31061-58-2)	**	~ 6.8	EI	3630
$C_9H_{13}NO^+$	$C_5H_8NCOCH=CHCH_3$ (Pyridine, 1,2,3,4-tetrahydro-1-(1-oxo-2-butenyl)-, (E)) (RN-CAS Registry Number 50838-23-8)	**	8.6	EI	4046

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_9H_{15}NO^+$	$C_5H_{10}NCOCH=CHCH_3$ (Piperidine, 1-(1-oxo-2-butenyl)-, (E)) (RN-CAS Registry Number 50838-22-7)		8.9	EI	4046
$C_9H_{15}NO^+$	$C_5H_{10}NCOCH=CHCH_3$ CH_3 (Piperidine, 1-(1-oxo-2-butenyl)-) (RN-CAS Registry Number 3626-69-5)		8.9 ± 0.1	EI	3996
$C_9H_{17}NO^+$	$C_5H_5N(=O)(CH_3)_4$ (4-Piperidinone, 2,2,6,6-tetramethyl-) (RN-CAS Registry Number 826-36-8)	**	8.30 ± 0.05	EI	3494
$C_9H_{18}NO^+$	$C_5H_6N(CH_3)_4O$ (1-Piperidinyloxy, 2,2,6,6-tetramethyl-) (RN-CAS Registry Number 2564-83-2)	**	6.73	PE	3712
(RD-Radical)					
$C_{10}H_{10}NO^+$	$C_6H_5CH_2NHCOCH=CHCH_3$ CH_3 (2-Butenamide, <i>N</i> -(phenylmethyl)-) (RN-CAS Registry Number 51944-67-3)		10.7 ± 0.1	EI	3996
$C_{10}H_{11}NO^+$	$C_6H_5NHCOCH=CHCH_3$ (2-Butenamide, <i>N</i> -phenyl-) (RN-CAS Registry Number 1733-40-0)	**	8.7 ± 0.1	EI	3996
$C_{11}H_{13}NO^+$	$C_6H_5CH_2NHCOCH=CHCH_3$ CH_3 (2-Butenamide, <i>N</i> -(phenylmethyl)-) (RN-CAS Registry Number 51944-67-3)	**	8.6 ± 0.1	EI	3996
$C_{12}H_{13}NO^+$	$C_5H_8NCOC_6H_5$ (Pyridine, 1-benzoyl-1,2,3,4-tetrahyro-) (RN-CAS Registry Number 50838-24-9)	**	8.4	EI	4046
$C_{12}H_{15}NO^+$	$C_5H_{10}NCOC_6H_5$ (Piperidine, 1-benzoyl-) (RN-CAS Registry Number 776-75-0)	**	8.8	EI	4046
$C_6H_4N_2O^+$	$C_6H_4N_2O$ (Benzofurazan) (RN-CAS Registry Number 273-09-6)	**	9.37	PE	4017
$C_8H_{10}N_2O^+$	$C_6H_4(NH_2)NHCOCH_3$ (Acetamide, <i>N</i> -(2-aminophenyl)-) (RN-CAS Registry Number 34801-09-7)	**	7.39 ± 0.02	EI	3631
$C_8H_{10}N_2O^+$	$C_6H_4(NH_2)NHCOCH_3$ (Acetamide, <i>N</i> -(4-aminophenyl)-) (RN-CAS Registry Number 122-80-5)	**	7.12 ± 0.02	EI	3631
$C_{10}H_{22}N_2O^+$	$C_2H_4N_2O(C_4H_9)_2$ (1,3,4-Oxadiazolidine, 3,4-bis(1,1-dimethylethyl)-) (RN-CAS Registry Number 38786-33-3)	**	8.15 (V)	PE	3889

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{17}H_{20}N_2O^+$	$(C_6H_4N(CH_3)_2)_2CO$ (Methanone, diphenyl-, bis(dimethylamino)deriv.) (RN-CAS Registry Number 58211-66-8)	**	7.25 ± 0.1	PI	4028
$CH_3NO_2^+$	CH_3NO_2 (RN-CAS Registry Number 75-52-5)	**	11.040 ± 0.017	PI	3524
$CH_3NO_2(^2A_1)$	CH_3NO_2 (RN-CAS Registry Number 75-52-5)	**	11.07 ± 0.01	PE	3721
$CH_3NO_2^+$	CH_3NO_2 (RN-CAS Registry Number 75-52-5)	**	11.31 ± 0.015 (V)	PE	4107
$CH_3NO_2(^2A_2)$	CH_3NO_2 (RN-CAS Registry Number 75-52-5)	**	11.73 ± 0.01	PE	3721
$CH_3NO_2(^2B_2)$	CH_3NO_2 (RN-CAS Registry Number 75-52-5)	**	13.85 ± 0.01	PE	3721
$CH_3NO_2(^2B_1)$	CH_3NO_2 (RN-CAS Registry Number 75-52-5)	**	15.75 ± 0.01 (V)	PE	3721
$CH_3NO_2(^2B_2)$	CH_3NO_2 (RN-CAS Registry Number 75-52-5)	**	~ 16.7	PE	3721
$CH_3NO_2(^2A_1)$	CH_3NO_2 (RN-CAS Registry Number 75-52-5)	**	19.1 (V)	PE	3721
$CH_3NO_2^+$	CH_3ONO (RN-CAS Registry Number 624-91-9)	**	10.475 ± 0.007	PI	3524
$CD_3NO_2(^2A_1)$	CD_3NO_2 (RN-CAS Registry Number 13031-32-8)	**	11.08 ± 0.01	PE	3721
$CD_3NO_2(^2A_2)$	CD_3NO_2 (RN-CAS Registry Number 13031-32-8)	**	11.73 ± 0.01	PE	3721
$C_2H_5NO_2^+$	$C_2H_5NO_2$ (RN-CAS Registry Number 56-40-6)	**	9.21 ± 0.05	EI	3571
$C_6H_4NO_2^+$	$C_6H_4(NO_2)_2$ (Benzene, 1,3-dinitro-) (RN-CAS Registry Number 99-65-0)	NO_2	12.34 ± 0.1	EI	3447
$C_6H_4NO_2^+$	$C_6H_4(NO_2)_2$ (Benzene, 1,4-dinitro-) (RN-CAS Registry Number 100-25-4)	NO_2	12.50 ± 0.1	EI	3447
$C_6H_5NO_2^+$	$C_6H_5NO_2$ (Benzene, nitro-) (RN-CAS Registry Number 98-95-3)	**	9.88 ± 0.015 (V)	PE	4107
$C_6H_5NO_2^+$	$C_6H_5NO_2$ (Benzene, nitro-) (RN-CAS Registry Number 98-95-3)	**	9.94 ± 0.025	PE	3626
$C_6H_5NO_2(^2B_1)$	$C_6H_5NO_2$ (Benzene, nitro-) (RN-CAS Registry Number 98-95-3)	**	9.99 ± 0.01	PE	3721
$C_6H_5NO_2^+$	$C_6H_5NO_2$ (Benzene, nitro-) (RN-CAS Registry Number 98-95-3)	**	9.99	PE	3856

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_5NO_2^+$	$C_6H_5NO_2$ (Benzene, nitro-) (RN-CAS Registry Number 98-95-3)	**	9.90	EDD	3485
$C_6H_5NO_2^+$	$C_6H_5NO_2$ (Benzene, nitro-) (RN-CAS Registry Number 98-95-3)	**	9.6	EI	3916
$C_6H_5NO_2^+$	$C_6H_5NO_2$ (Benzene, nitro-) (RN-CAS Registry Number 98-95-3)	**	9.65±0.1	EI	3447
$C_6H_7NO_2^+$	$C_4H_4NCOOCH_3$ (1 <i>H</i> -Pyrrole-2-carboxylic acid, methyl ester) (RN-CAS Registry Number 1193-62-0)	**	8.65±0.05	EI	3482
$C_7H_6NO_2^+$	$C_6H_4(NO_2)C_4H_9$ (Benzene, 1-butyl-3-nitro-) (RN-CAS Registry Number 20651-76-7)		13.08±0.1	EI	3629
$C_7H_6NO_2^+$	$C_6H_4(NO_2)C_4H_9$ (Benzene, 1-butyl-4-nitro-) (RN-CAS Registry Number 20651-75-6)		12.54±0.1	EI	3629
$C_7H_7NO_2^+$	$C_6H_4(NO_2)CH_3$ (Benzene, 1-methyl-2-nitro-) (RN-CAS Registry Number 88-72-2)	**	9.69±0.015 (V)	PE	4107
$C_7H_7NO_2^+$	$C_6H_4(NO_2)CH_3$ (Benzene, 1-methyl-3-nitro-) (RN-CAS Registry Number 99-08-1)	**	9.49±0.015 (V)	PE	4107
$C_7H_7NO_2^+$	$C_6H_4(NO_2)CH_3$ (Benzene, 1-methyl-3-nitro-) (RN-CAS Registry Number 99-08-1)	**	9.48±0.1	EI	3447
$C_7H_7NO_2^+$	$C_6H_4(NO_2)CH_3$ (Benzene, 1-methyl-4-nitro-) (RN-CAS Registry Number 99-99-0)	**	9.54±0.015 (V)	PE	4107
$C_7H_7NO_2^+$	$C_6H_4(NO_2)CH_3$ (Benzene, 1-methyl-4-nitro-) (RN-CAS Registry Number 99-99-0)	**	9.50±0.1	EI	3447
$C_7H_7NO_2^+$	$C_6H_4(NO_2)CH_3$ (Benzene, 1-methyl-4-nitro-) (RN-CAS Registry Number 99-99-0)	**	9.56	EI	4089
$C_7H_7NO_2^+$	$C_6H_4(NH_2)COOH$ (Benzoic acid, 3-amino-) (RN-CAS Registry Number 99-05-8)	**	8.41±0.2	EI	3973
$C_7H_7NO_2^+$	$C_6H_4(NH_2)COOH$ (Benzoic acid, 4-amino-) (RN-CAS Registry Number 150-13-0)	**	8.36±0.2	EI	3973
$C_7H_7NO_2^+$	$C_6H_4(NO_2)C_4H_9$ (Benzene, 1-butyl-3-nitro-) (RN-CAS Registry Number 20651-76-7)	$CH_2=CHCH_3$	11.52±0.1	EI	3629
$C_7H_7NO_2^+$	$C_6H_4(NO_2)C_4H_9$ (Benzene, 1-butyl-4-nitro-) (RN-CAS Registry Number 20651-75-6)	$CH_2=CHCH_3$	11.44±0.1	EI	3629

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_{10}NO_2^+$	$C_4H_8NO(COCH=CHCH_3)$ (Morpholine, 4-(1-oxo-2-butenyl)-) (RN-CAS Registry Number 51944-66-2)	**	11.1 ± 0.1	EI	3996
$C_8H_5NO_2^+$	$C_6H_4(CN)COOH$ (Benzoic acid, 4-cyano-) (RN-CAS Registry Number 619-65-8)	**	10.27 ± 0.2	EI	3973
$C_8H_9NO_2^+$	$C_6H_4(OH)NHCOCH_3$ (Acetamide, <i>N</i> -(2-hydroxyphenyl)-) (RN-CAS Registry Number 614-80-2)	**	7.01 ± 0.02	EI	3631
$C_8H_9NO_2^+$	$C_6H_4(OH)NHCOCH_3$ (Acetamide, <i>N</i> -(4-hydroxyphenyl)-) (RN-CAS Registry Number 103-90-2)	**	7.57 ± 0.02	EI	3631
$C_8H_9NO_2^+$	$C_6H_3(CH_3)_2NO_2$ (Benzene, 1,3-dimethyl-2-nitro-) (RN-CAS Registry Number 81-20-9)	**	9.17 ± 0.015	PE	4107
$C_8H_9NO_2^+$	$C_6H_3(CH_3)_2NO_2$ (Benzene, 2,4-dimethyl-1-nitro-) (RN-CAS Registry Number 89-87-2)	**	9.38 ± 0.015 (V)	PE	4107
$C_8H_9NO_2^+$	$C_5H_4NCH_2COOCH_3$ (2-Pyridineacetic acid methyl ester) (RN-CAS Registry Number 1658-42-0)	**	9.40 ± 0.02	EI	3627
$C_8H_9NO_2^+$	$C_5H_4NCH_2COOCH_3$ (3-Pyridineacetic acid methyl ester) (RN-CAS Registry Number 39998-25-9)	**	9.52 ± 0.02	EI	3627
$C_8H_9NO_2^+$	$C_5H_4NCH_2COOCH_3$ (4-Pyridineacetic acid methyl ester) (RN-CAS Registry Number 29800-89-3)	**	9.62 ± 0.02	EI	3627
$C_8H_{13}NO_2^+$	$C_4H_8NO(COCH=CHCH_3)$ (Morpholine, 4-(1-oxo-2-butenyl)-) (RN-CAS Registry Number 51944-66-2)	**	8.8 ± 0.1	EI	3996
$C_9H_{11}NO_2^+$	$C_5H_4N(CH_3)=CHCOOCH_3$ (Acetic acid, (1-methyl-2(1 <i>H</i>)-pyridinylidene)-, methyl ester) (RN-CAS Registry Number 39998-21-5)	**	7.02 ± 0.02	EI	3627
$C_9H_{11}NO_2^+$	$C_5H_4N(CH_3)=CHCOOCH_3$ (Acetic acid, (1-methyl-4(1 <i>H</i>)-pyridinylidene)-, methyl ester) (RN-CAS Registry Number 39998-22-6)	**	6.82 ± 0.02	EI	3627
$C_9H_{11}NO_2^+$	$C_6H_5CH_2CH(NH_2)COOH$ (DL-Phenylalanine) (RN-CAS Registry Number 150-30-1)	**	≤ 8.4	PI	3766
$C_9H_{13}NO_2^+$	$C_5H_5N(CH_3)CH_2COOCH_3$ (3-Pyridineacetic acid, 1,4-dihydro-1-methyl-, methyl ester) (RN-CAS Registry Number 39998-23-7)	**	6.94 ± 0.02	EI	3627

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_9H_{16}NO_2^+$ (RD-Radical)	$C_5H_4N(O)(=O)(CH_3)_4$ (1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo-) (RN-CAS Registry Number 2896-70-0)	**	7.40 ± 0.05	EI	3494
$C_9H_{17}NO_2^+$	<i>trans</i> -(C_2H_5) ₂ NCH=CHCOC ₂ H ₅ (RN-CAS Registry Number 13894-28-5)	**	7.63 (V)	PE	3885
$C_9H_{17}NO_2^+$	$C_5H_4N(=O)(OH)(CH_3)_4$ (4-Piperidinone, 1-hydroxy-2,2,6,6-tetramethyl-) (RN-CAS Registry Number 3637-11-4)	**	8.51 ± 0.05	EI	3494
$C_{10}H_{13}NO_2^+$	$C_6H_4(NO_2)C_4H_9$ (Benzene, 1-butyl-3-nitro-) (RN-CAS Registry Number 20651-76-7)	**	9.94 ± 0.1	EI	3629
$C_{10}H_{13}NO_2^+$	$C_6H_4(NO_2)C_4H_9$ (Benzene, 1-butyl-4-nitro-) (RN-CAS Registry Number 20651-75-6)	**	10.07 ± 0.1	EI	3629
$C_{13}H_{10}NO_2^+$	$(C_6H_4NO_2)_2CH_2$ (Benzene, 1,1'-methylenebis[4-nitro-]) (RN-CAS Registry Number 1817-74-9)	NO ₂	11.1 ± 0.1	EI	3807
$C_{13}H_{11}NO_2^+$	$C_6H_5CH_2C_6H_4NO_2$ (Benzene, 1-nitro-4-(phenylmethyl)-) (RN-CAS Registry Number 1817-77-2)	**	9.35 ± 0.05	EI	3806
$C_{14}H_{13}NO_2^+$	$C_6H_5CH_2CH_2C_6H_4NO_2$ (Benzene, 1-nitro-4-(2-phenylethyl)-) (RN-CAS Registry Number 14310-29-3)	**	9.17 ± 0.05	EI	3806
$C_4H_4N_2O_2^+$	$C_4H_4N_2O_2$ (2,4(1 <i>H</i> ,3 <i>H</i>)-Pyrimidinedione) (RN-CAS Registry Number 66-22-8) (ON-Other name: Uracil)	**	9.53 ± 0.02	EI	3571
$C_4H_4N_2O_2^+$	$C_4H_4NNO_2$ (Pyrrole, 2-nitro-) (RN-CAS Registry Number 5919-26-6)	**	9.30 ± 0.05	EI	3482
$C_6H_6N_2O_2^+$	$C_6H_4(NO_2)NH_2$ (Benzenamine, 2-nitro-) (RN-CAS Registry Number 88-74-4)	**	8.43 (V)	PE	3856
$C_6H_6N_2O_2^+$	$C_6H_4(NO_2)NH_2$ (Benzenamine, 3-nitro-) (RN-CAS Registry Number 99-09-2)	**	8.60 (V)	PE	3856
$C_6H_6N_2O_2^+$	$C_6H_4(NO_2)NH_2$ (Benzenamine, 3-nitro-) (RN-CAS Registry Number 99-09-2)	**	8.73 ± 0.1	EI	3447
$C_6H_6N_2O_2^+$	$C_6H_4(NO_2)NH_2$ (Benzenamine, 4-nitro-) (RN-CAS Registry Number 100-01-6)	**	8.60 (V)	PE	3856

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_6N_2O_2^+$	$C_6H_4(NO_2)NH_2$ (Benzenamine, 4-nitro-) (RN-CAS Registry Number 100-01-6)	**	8.43	EI	4089
$C_6H_6N_2O_2^+$	$C_6H_4(NO_2)NH_2$ (Benzenamine, 4-nitro-) (RN-CAS Registry Number 100-01-6)	**	8.62 ± 0.1	EI	3447
$C_7H_4N_2O_2^+$	$C_6H_4(NO_2)CN$ (Benzonitrile, 3-nitro-) (RN-CAS Registry Number 619-24-9)	**	10.29 ± 0.1	EI	3447
$C_7H_4N_2O_2^+$	$C_6H_4(NO_2)CN$ (Benzonitrile, 4-nitro-) (RN-CAS Registry Number 619-72-7)	**	10.23 ± 0.1	EI	3447
$C_7H_8N_2O_2^+$	$C_6H_4(NO_2)NHCH_3$ (Benzenamine, <i>N</i> -methyl-2-nitro-) (RN-CAS Registry Number 612-28-2)	**	8.02 (V)	PE	3856
$C_7H_8N_2O_2^+$	$C_6H_4(NO_2)NHCH_3$ (Benzenamine, <i>N</i> -methyl-4-nitro-) (RN-CAS Registry Number 100-15-2)	**	8.17 (V)	PE	3856
$C_8H_{10}N_2O_2^+$	$C_6H_2NO_2(CH_3)_2NH_2$ (Benzenamine, 2,6-dimethyl-4-nitro-) (RN-CAS Registry Number 16947-63-0)	**	8.33 (V)	PE	3856
$C_8H_{10}N_2O_2^+$	$C_6H_2NO_2(CH_3)_2NH_2$ (Benzenamine, 3,5-dimethyl-4-nitro-) (RN-CAS Registry Number 34761-82-5)	**	8.23 (V)	PE	3856
$C_8H_{10}N_2O_2^+$	$C_6H_4(NO_2)N(CH_3)_2$ (Benzenamine, <i>N,N</i> -dimethyl-4-nitro-) (RN-CAS Registry Number 100-23-2)	**	8.0 (V)	PE	3856
$C_9H_{12}N_2O_2^+$	$C_6H_3NO_2(CH_3)N(CH_3)_2$ (Benzenamine, <i>N,N</i> ,2-trimethyl-4-nitro-) (RN-CAS Registry Number 32417-74-6)	**	8.30 (V)	PE	3856
$C_9H_{15}N_2O_2^+$	$C_4HN(O)(CH_3)_4CONH_2$ (1 <i>H</i> -Pyrrol-1-yloxy, 3-(aminocarbonyl)-2,5-dihydro-2,2,5,5-tetramethyl-) (RN-CAS Registry Number 3229-73-0)	**	7.40 ± 0.05	EI	3494
(RD-Radical)					
$C_9H_{17}N_2O_2^+$	$C_4H_3N(O)(CH_3)_4CONH_2$ (1-Pyrrolidinyloxy, 3-(aminocarbonyl)-2,2,5,5-tetramethyl-) (RN-CAS Registry Number 4399-80-8)	**	7.40 ± 0.05	EI	3494
(RD-Radical)					
$C_{11}H_{12}N_2O_2^+$	$C_{11}H_{12}N_2O_2$ (DL-Tryptophan) (RN-CAS Registry Number 54-12-6)	**	≤ 7.5	EI	3766

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{11}H_{21}N_2O_2^+$ (RD-Radical)	$C_5H_5N(O)(CH_3)_4NHCOCH_3$ (1-Piperidinyloxy, 4-(acetylamino)-2,2,6,6-tetramethyl-) (RN-CAS Registry Number 14691-89-5)	**	7.40 ± 0.05	EI	3494
$C_{12}H_{20}N_2O_2^+$	$C_{12}H_{20}O_2N_2$ (2-Pentanone, 4,4'-(1,2-ethanediylidinitrilo)bis-) (RN-CAS Registry Number 6310-76-5)	**	7.71 (V)	PE	3822
$C_{13}H_{12}N_2O_2^+$	$C_6H_4(NO_2)CH_2C_6H_4NH_2$ (Benzenamine, 4-[(4-nitrophenyl)methyl]-) (RN-CAS Registry Number 726-17-0)	**	7.87 ± 0.05	EI	3806
$C_{14}H_{14}N_2O_2^+$	$C_6H_4(NH_2)CH_2CH_2C_6H_4NO_2$ (Benzenamine, 4-[2-(4-nitrophenyl)ethyl]-) (RN-CAS Registry Number 7357-96-2)	**	7.78 ± 0.05	EI	3806
$C_{16}H_{10}N_2O_2^+$	$C_{16}H_{10}N_2O_2$ ([$\Delta^{2,2'}$ -Biindoline]-3,3'-dione) (RN-CAS Registry Number 12626-73-2) (ON-Other name: Indigo Blue)	**	7.17	PI	3586
$C_{16}H_{12}N_2O_2^+$	$C_6H_4(NO_2)C_3H_3(CN)C_6H_5$ (Cyclopropanecarbonitrile, 1-(p-nitrophenyl)-2-phenyl-) (RN-CAS Registry Number 10432-22-1)	**	9.05 ± 0.10	EDD	3575
$C_{18}H_{17}N_3O_2^+$	$C_6H_4(NO_2)C_3H_3(CN)C_6H_4N(CH_3)_2$ (Cyclopropanecarbonitrile, 2-(p-(dimethylamino)phenyl)-1-(p-nitrophenyl)-) (RN-CAS Registry Number 28752-34-3)	**	8.30 ± 0.07	EDD	3575
$C_4H_3NO_3^+$	$C_4H_3ONO_2$ (Furan, 2-nitro-) (RN-CAS Registry Number 609-39-2)	**	10.04 ± 0.05	EI	3482
$C_6H_5NO_3^+$	$C_6H_4(NO_2)OH$ (Phenol, 4-nitro-) (RN-CAS Registry Number 100-02-7)	**	8.84 ± 0.1	EI	3447
$C_6H_5NO_3^+$	$C_6H_4(NO_2)OOCCH_3$ (Acetic acid, 3-nitrophenyl ester) (RN-CAS Registry Number 1523-06-4)	$CH_2=C=O$	10.85 ± 0.2	EI	3484
$C_6H_5NO_3^+$	$C_6H_4(NO_2)OOCCH_3$ (Acetic acid, 4-nitrophenyl ester) (RN-CAS Registry Number 830-03-5)	$CH_2=C=O$	10.76 ± 0.2	EI	3484
$C_7H_4NO_3^+$	$C_6H_4(NO_2)COOH$ (Benzoic acid, 3-nitro-) (RN-CAS Registry Number 121-92-6)	OH	13.00 ± 0.2	EI	3973
$C_7H_4NO_3^+$	$C_6H_4(NO_2)COOH$ (Benzoic acid, 4-nitro-) (RN-CAS Registry Number 62-23-7)	OH	11.58 ± 0.2	EI	3973

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_7NO_3^+$	$C_6H_4(NO_2)OCH_3$ (Benzene, 1-methoxy-3-nitro-) (RN-CAS Registry Number 555-03-3)	**	9.09 ± 0.1	EI	3447
$C_7H_7NO_3^+$	$C_6H_4(NO_2)OCH_3$ (Benzene, 1-methoxy-4-nitro-) (RN-CAS Registry Number 100-17-4)	**	9.04 ± 0.1	EI	3447
$C_9H_{11}NO_3^+$	$C_6H_4(OH)CH_2CH(NH_2)COOH$ (DL-Tyrosine) (RN-CAS Registry Number 556-03-6)	**	≤ 8.4	EI	3766
$C_9H_7N_2O_3^+$	$C_6H_4(NO_2)NHCOCH=CHCH_3$ CH_3 (2-Butenamide, <i>N</i> -(4-nitrophenyl)-) (RN-CAS Registry Number 51944-68-4)		13.6 ± 0.3	EI	3996
$C_{10}H_{10}N_2O_3^+$	$C_6H_4(NO_2)NHCOCH=CHCH_3$ CH_3 (2-Butenamide, <i>N</i> -(4-nitrophenyl)-) (RN-CAS Registry Number 51944-68-4)	**	9.1 ± 0.1	EI	3996
$C_7H_5NO_4^+$	$C_6H_4(NO_2)COOH$ (Benzoic acid, 3-nitro-) (RN-CAS Registry Number 121-92-6)	**	10.31 ± 0.2	EI	3973
$C_7H_5NO_4^+$	$C_6H_4(NO_2)COOH$ (Benzoic acid, 4-nitro-) (RN-CAS Registry Number 62-23-7)	**	10.18 ± 0.2	EI	3973
$C_8H_7NO_4^+$	$C_6H_4(NO_2)OOCCH_3$ (Acetic acid, 3-nitrophenyl ester) (RN-CAS Registry Number 1523-06-4)	**	9.43 ± 0.2	EI	3484
$C_8H_7NO_4^+$	$C_6H_4(NO_2)OOCCH_3$ (Acetic acid, 4-nitrophenyl ester) (RN-CAS Registry Number 830-03-5)	**	9.48 ± 0.2	EI	3484
$C_{13}H_9NO_4^+$	$C_6H_5COOC_6H_4NO_2$ (Benzoic acid 4-nitro phenyl ester) (RN-CAS Registry Number 959-22-8)	**	9.3	EI	3897
$C_{17}H_9NO_4^+$	$C_{17}H_9NO_4$ (Naphtho[2,3- <i>f</i>]quinoline-7,12-dione, 5,6-dihydroxy-) (RN-CAS Registry Number 568-02-5) (ON-Other name: Alizarine Blue)	**	7.35	PI	3586
$C_6H_4N_2O_4^+$	$C_6H_4(NO_2)_2$ (Benzene, 1,3-dinitro-) (RN-CAS Registry Number 99-65-0)	**	10.62 ± 0.1	EI	3447
$C_6H_4N_2O_4^+$	$C_6H_4(NO_2)_2$ (Benzene, 1,4-dinitro-) (RN-CAS Registry Number 100-25-4)	**	10.63 ± 0.1	EI	3447

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{13}H_{10}N_2O_4^+$	(C ₆ H ₄ NO ₂) ₂ CH ₂ (Benzene, 1,1'-methylenebis[4-nitro-]) (RN-CAS Registry Number 1817-74-9)	**	9.98±0.05	EI	3806
$C_{14}H_{12}N_2O_4^+$	C ₆ H ₄ (NO ₂)CH ₂ CH ₂ C ₆ H ₄ NO ₂ (Benzene, 1,1'-(1,2-ethanediyl)bis[4-nitro-]) (RN-CAS Registry Number 736-30-1)	**	9.77±0.05	EI	3806
$C_{18}H_{30}N_2O_4^+$	C ₄ (N(C ₂ H ₅) ₂)(COOC ₂ H ₅) ₂ (1,3-Cyclobutadiene-1,3-dicarboxylic acid, 2,4-bis(diethylamino)-, diethyl ester) (RN-CAS Registry Number 20913-35-3)	**	7.55 (V)	PE	3885
$C_{16}H_{11}N_3O_4^+$	C ₃ H ₃ (CN)((C ₆ H ₄)NO ₂) ₂ (Cyclopropanecarbonitrile, 1,2-bis(<i>p</i> -nitrophenyl)-) (RN-CAS Registry Number 28752-28-5)	**	9.30±0.05	EDD	3575
F^+	F ₂ (RN-CAS Registry Number 7782-41-4) (TV-Threshold value approximately corrected to 0°K)	F	19.008	PI	3928
$F_2(^2\Pi_g)$	F ₂ (RN-CAS Registry Number 7782-41-4) (RS-Average of two Rydberg series limits)	**	15.70±0.02	S	3743
$F_2(^2\Pi_g)$	F ₂ (RN-CAS Registry Number 7782-41-4)	**	15.70	PE	3507
$F_2(^2\Pi_u)$	F ₂ (RN-CAS Registry Number 7782-41-4)	**	18.98 (V)	PE	3507
$F_2(^2\Pi_u)$	F ₂ (RN-CAS Registry Number 7782-41-4)	**	~18.45	D	3743
$HF^+(X^2\Pi)$	HF (RN-CAS Registry Number 7664-39-3)	**	16.03±0.01	PE	3500
$HF^+(^2\Sigma^+)$	HF (RN-CAS Registry Number 7664-39-3)	**	19.118	PE	3500
$DF^+(^2\Sigma^+)$	DF (RN-CAS Registry Number 14333-26-7)	**	19.172	PE	3500
BF^+	BF (RN-CAS-Registry Number 13768-60-0)	**	12±1	EI	4054
BF_2^+	BF ₂ (RN-CAS Registry Number 13842-55-2)	**	8±1	EI	3465
BF_2^+	BF ₂ (RN-CAS-Registry Number 13842-55-2)	**	9±1	EI	4054
BF_2^+	BF ₃ (RN-CAS-Registry Number 7637-07-2)		~16	EI	4054
$BF_3(^2A_2')$	BF ₃ (RN-CAS Registry Number 7637-07-2)	**	15.95 (V)	PE	3704
$BF_3(^2E')$	BF ₃ (RN-CAS Registry Number 7637-07-2)	**	16.65 (V)	PE	3704

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{BF}_3(^2\text{E}')$	BF_3 (RN-CAS Registry Number 7637-07-2)	**	17.10 (V)	PE	3704
$\text{BF}_3(^2\text{A}_2)$	BF_3 (RN-CAS Registry Number 7637-07-2)	**	19.15 (V)	PE	3704
$\text{BF}_3(^2\text{E}')$	BF_3 (RN-CAS Registry Number 7637-07-2)	**	20.10 (V)	PE	3704
BF_3^+	BF_3 (RN-CAS Registry Number 7637-07-2)	**	15.71 ± 0.10	RPD	3540
BF_3^+	BF_3 (RN-CAS-Registry Number 7637-07-2)	**	17 ± 1	EI	4054
BF_3^+	$(\text{C}_2\text{H}_5)_2\text{OBF}_3$ (RN-CAS Registry Number 109-63-7)	$(\text{C}_2\text{H}_5)_2\text{O}$	15.00 ± 0.10	RPD	3540
$\text{B}_2\text{F}_4(^2\text{A}_1)$	B_2F_4 (RN-CAS Registry Number 13965-73-6)	**	$\leq 12.23 \pm 0.06$	PE	3709
$\text{B}_2\text{F}_4(^2\text{E})$	B_2F_4 (RN-CAS Registry Number 13965-73-6)	**	$\leq 15.50 \pm 0.03$	PE	3709
$\text{B}_2\text{F}_4(^2\text{B}_1)$	B_2F_4 (RN-CAS Registry Number 13965-73-6)	**	16.32 ± 0.01 (V)	PE	3709
$\text{B}_2\text{F}_4(^2\text{B}_2)$	B_2F_4 (RN-CAS Registry Number 13965-73-6)	**	17.20 ± 0.01	PE	3709
$\text{B}_2\text{F}_4(^2\text{E})$	B_2F_4 (RN-CAS Registry Number 13965-73-6)	**	$\leq 18.71 \pm 0.03$	PE	3709
$\text{B}_2\text{F}_4(^2\text{E}, ^2\text{A}_1)$	B_2F_4 (RN-CAS Registry Number 13965-73-6)	**	20.52 ± 0.01	PE	3709
CF^+ (RD-Radical)	CF (RN-CAS Registry Number 3889-75-6)	**	9.24	D	3930
CF^+ (TR-Other product(s) thermochemically reasonable)	$\text{CH}_2=\text{CF}_2$ (RN-CAS Registry Number 75-38-7)	CH_2F	14.92 ± 0.02	PI	3930
CF^+	$\text{C}_2\text{F}_3\text{Cl}$ (RN-CAS-Registry Number 79-38-9)	CF_2Cl	16.7 ± 0.1	EI	4070
CF^+	$\text{CFCI}=\text{CFCI}$ (RN-CAS-Registry Number 598-88-9)	CFCl_2	16.5 ± 0.1	EI	4070
CF_2^+ (RD-Radical)	CF_2 (RN-CAS Registry Number 2154-59-8)	**	11.54 ± 0.10	EI	3818
CF_2^+ (RD-Radical)	CF_2 (RN-CAS Registry Number 2154-59-8)	**	9.74	D	3930
CF_2^+	C_2F_4 (RN-CAS Registry Number 116-14-3)	CF_2	15.2 ± 0.1	EI	3539
CF_3^+	CH_3CF_3 (RN-CAS Registry Number 71-55-6)	CH_3	13.94 ± 0.1	EI	3478
CF_3^+	$(\text{CF}_3)_2\text{CO}$ (RN-CAS Registry Number 684-16-2)		13.8	EI	3550

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
CF_3^+	CH_3COCF_3 (RN-CAS Registry Number 421-50-1)		14.6	EI	3550
C_2F_3^+	$\text{C}_2\text{F}_3\text{Cl}$ (RN-CAS-Registry Number 79-38-9)	Cl	15.4 ± 0.1	EI	4070
$\text{CF}_4(^2\text{T}_1)$	CF_4 (RN-CAS Registry Number 75-73-0)	**	16.25 ± 0.04 (V)	PE	3880
$\text{CF}_4(^2\text{T}_2)$	CF_4 (RN-CAS Registry Number 75-73-0)	**	17.46 ± 0.04 (V)	PE	3880
$\text{CF}_4(^2\text{E})$	CF_4 (RN-CAS Registry Number 75-73-0)	**	18.58 ± 0.04 (V)	PE	3880
$\text{C}_2\text{F}_4(^2\text{B}_{2u})$	C_2F_4 (RN-CAS Registry Number 116-14-3)	**	10.10	PE	3649
C_2F_4^+	C_2F_4 (RN-CAS Registry Number 116-14-3)	**	10.32	PE	3589
C_2F_4^+	C_2F_4 (RN-CAS Registry Number 116-14-3)	**	10.52 (V)	PE	4084
$\text{C}_2\text{F}_4(^2\text{A}_g)$	C_2F_4 (RN-CAS Registry Number 116-14-3)	**	15.6	PE	3649
$\text{C}_2\text{F}_4(^2\text{B}_{2g})$	C_2F_4 (RN-CAS Registry Number 116-14-3)	**	16.4 (V)	PE	3649
$\text{C}_2\text{F}_4(^2\text{B}_{1u})$	C_2F_4 (RN-CAS Registry Number 116-14-3)	**	16.6 (V)	PE	3649
$\text{C}_2\text{F}_4(^2\text{A}_u)$	C_2F_4 (RN-CAS Registry Number 116-14-3)	**	16.9 (V)	PE	3649
$\text{C}_2\text{F}_4(^2\text{B}_{3g})$	C_2F_4 (RN-CAS Registry Number 116-14-3)	**	17.50	PE	3649
$\text{C}_2\text{F}_4(^2\text{B}_{3u})$	C_2F_4 (RN-CAS Registry Number 116-14-3)	**	18.0	PE	3649
$\text{C}_2\text{F}_4(^2\text{B}_{1u})$	C_2F_4 (RN-CAS Registry Number 116-14-3)	**	19.19	PE	3649
$\text{C}_2\text{F}_4(^2\text{A}_g)$	C_2F_4 (RN-CAS Registry Number 116-14-3)	**	~20.6	PE	3649
$\text{C}_2\text{F}_4(^2\text{B}_{3u})$	C_2F_4 (RN-CAS Registry Number 116-14-3)	**	~22.3	PE	3649
C_3F_6^+	$\text{CF}_3\text{CF}=\text{CF}_2$ (RN-CAS Registry Number 116-15-4)	**	10.62	PE	3589
C_4F_6^+	$\text{CF}_3\text{C}\equiv\text{CCF}_3$ (RN-CAS Registry Number 692-50-2)	**	12.31	PE	3589
C_6F_6^+	C_6F_6 (Benzene, hexafluoro-) (RN-CAS Registry Number 392-56-3)	**	9.90 ± 0.01	S	3559
C_6F_6^+	C_6F_6 (Benzene, hexafluoro-) (RN-CAS Registry Number 392-56-3)	**	12.62 ± 0.01	S	3559

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6F_6^+$	C_6F_6 (Benzene, hexafluoro-) (RN-CAS Registry Number 392-56-3)	**	9.90 (V)	PE	3873
$C_6F_6(^2E_{1g})$	C_6F_6 (Benzene, hexafluoro-) (RN-CAS Registry Number 392-56-3)	**	9.93	PE	3637
$C_4F_8^+$	<i>cis</i> -2- C_4F_8 (RN-CAS Registry Number 1516-65-0)	**	11.46 (V)	PE	4084
$C_4F_8^+$	<i>trans</i> -2- C_4F_8 (RN-CAS Registry Number 1516-64-9)	**	11.55 (V)	PE	4084
$C_4F_8^+$	<i>trans</i> -2- C_4F_8 (RN-CAS Registry Number 1516-64-9)	**	11.55 (V)	PE	3649
$C_{10}F_8^+$	$C_{10}F_8$ (Naphthalene, octafluoro-) (RN-CAS Registry Number 313-72-4)	**	8.85	PE	3637
$C_{12}F_{10}^+$	$(C_6F_5)_2$ (1,1'-Biphenyl, decafluoro-) (RN-CAS Registry Number 434-90-2)	**	9.40 ± 0.02	PE	3702
$C_6F_{12}^+$	$(CF_3)_2C=C(CF_3)_2$ (RN-CAS Registry Number 360-57-6)	**	12.61 (V)	PE	4084
CH_2F^+	CH_2F (RN-CAS Registry Number 3744-29-4)	**	8.90	EM	3732
(RD-Radical)					
CH_2F^+	CH_2F (RN-CAS Registry Number 3744-29-4)	**	9.16 ± 0.02	D	3930
(RD-Radical)					
CH_2F^+	CH_2F_2 (RN-CAS Registry Number 75-10-5)	F	14.06	EM	3732
(TR-Other product(s) thermochemically reasonable)					
CH_2F^+	$CH_2=CF_2$ (RN-CAS Registry Number 75-38-7)	CF	14.84 ± 0.02	PI	3930
(TR-Other product(s) thermochemically reasonable)					
C_2HF^+	C_2H_3F (RN-CAS Registry Number 75-02-5)	H_2	13.72 ± 0.02	PI	3930
(TR-Other product(s) thermochemically reasonable)					
C_2HF^+	$CH_2=CF_2$ (RN-CAS Registry Number 75-38-7)	HF	14.18 ± 0.03	PI	3930
(TR-Other product(s) thermochemically reasonable)					
$C_2H_2F^+$	C_2H_3F (RN-CAS Registry Number 75-02-5)	H	13.56 ± 0.04	PI	3930
(TR-Other product(s) thermochemically reasonable)					
$C_2H_2F^+$	$CH_2=CF_2$ (RN-CAS Registry Number 75-38-7)	F	14.37 ± 0.02	PI	3930
(TR-Other product(s) thermochemically reasonable)					
$C_2H_2F^+$	$CH_2=CFCl$ (RN-CAS-Registry Number 2317-91-1)	Cl	13.7 ± 0.1	EI	4070

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_3F^+$	C_2H_3F (RN-CAS Registry Number 75-02-5)	**	10.35 ± 0.01	PI	3930
$C_2H_4F^+$	CH_3CHF_2 (RN-CAS Registry Number 75-37-6)	F	14.80 ± 0.1	EI	3478
$C_2H_5F^+(^2A')$	C_2H_5F (RN-CAS Registry Number 353-36-6)	**	12.43 (V)	PE	3984
$C_2H_5F^+(^2A'')$	C_2H_5F (RN-CAS Registry Number 353-36-6)	**	12.87 (V)	PE	3984
$C_2H_5F^+(^2A')$	C_2H_5F (RN-CAS Registry Number 353-36-6)	**	13.96 (V)	PE	3984
$C_2H_5F^+(^2A'')$	C_2H_5F (RN-CAS Registry Number 353-36-6)	**	14.57 (V)	PE	3984
$C_2H_5F^+(^2A')$	C_2H_5F (RN-CAS Registry Number 353-36-6)	**	16.00 (V)	PE	3984
$C_2H_5F^+(^2A', ^2A'')$	C_2H_5F (RN-CAS Registry Number 353-36-6)	**	17.23 (V)	PE	3984
C_3HF^+	$CHF_2C \equiv CH$ (RN-CAS Registry Number 18371-25-0)	HF	12.6 ± 0.15	EI	3769
$C_3H_2F^+$	$CHF_2C \equiv CH$ (RN-CAS Registry Number 18371-25-0)	F	14.2 ± 0.2	EI	3769
$C_3H_5F^+$	$CH_2=CHCH_2F$ (RN-CAS Registry Number 818-92-8)	**	10.11	PE	3863
$C_3H_5F^+$	$CH_2=CHCH_2F$ (RN-CAS Registry Number 818-92-8)	**	10.56 (V)	PE	4091
$C_3H_7F^+$	<i>n</i> - C_3H_7F (RN-CAS Registry Number 460-13-9)	**	11.96 (V)	PE	3984
$C_6H_4F^+$ _a	$C_6H_4(F)COOH$ (Benzoic acid, 3-fluoro-) (RN-CAS Registry Number 455-38-9) (MT-Metastable transition(s) observed)	CO + OH	15.25 ± 0.2	EI	3973
$C_6H_4F^+$	$C_6H_4(F)COOH$ (Benzoic acid, 4-fluoro-) (RN-CAS Registry Number 456-22-4) (MT-Metastable transition(s) observed)	CO + OH	15.33 ± 0.2	EI	3973
$C_6H_4F^+$	$C_6H_4FNO_2$ (Benzene, 1-fluoro-3-nitro-) (RN-CAS Registry Number 402-67-5)	NO ₂	12.22 ± 0.1	EI	3447
$C_6H_4F^+$	$C_6H_4FNO_2$ (Benzene, 1-fluoro-4-nitro-) (RN-CAS Registry Number 350-46-9)	NO ₂	12.37 ± 0.1	EI	3447
$C_6H_5F^+$	C_6H_5F (Benzene, fluoro-) (RN-CAS Registry Number 462-06-6)	**	9.20	S	3559

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_5F^{+*}$	C_6H_5F (Benzene, fluoro-) (RN-CAS Registry Number 462-06-6)	**	11.82	S	3559
$C_6H_5F^+$	C_6H_5F (Benzene, fluoro-) (RN-CAS Registry Number 462-06-6)	**	9.11	PE	3955
$C_6H_5F^+$	C_6H_5F (Benzene, fluoro-) (RN-CAS Registry Number 462-06-6)	**	9.19 (V)	PE	3873
$C_6H_5F^+$	C_6H_5F (Benzene, fluoro-) (RN-CAS Registry Number 462-06-6)	**	9.35 ± 0.03 (V)	PE	3713
$C_6H_5F^+$	$C_6H_4FOCH_3$ (Benzene, 1-fluoro-3-methoxy-) (RN-CAS Registry Number 456-49-5)	CH_2O	11.76 ± 0.1	EI	3446
$C_6H_5F^+$	$C_6H_4FOCH_3$ (Benzene, 1-fluoro-4-methoxy-) (RN-CAS Registry Number 459-60-9)	CH_2O	11.55 ± 0.1	EI	3446
$C_7H_6F^+$	$C_6H_4FC_4H_9$ (Benzene, 1-butyl-3-fluoro-) (RN-CAS Registry Number 20651-66-5)		11.69 ± 0.1	EI	3629
$C_7H_6F^+$	$C_6H_4FC_4H_9$ (Benzene, 1-butyl-4-fluoro-) (RN-CAS Registry Number 20651-65-4)		11.25 ± 0.1	EI	3629
$C_7H_7F^+$	$C_6H_5CH_2F$ (Benzene, (fluoromethyl)-) (RN-CAS Registry Number 350-50-5)	**	9.55 (V)	PE	3992
$C_7H_7F^+$	$C_6H_4FC_4H_9$ (Benzene, 1-butyl-3-fluoro-) (RN-CAS Registry Number 20651-66-5)	$CH_2=CHCH_3$	10.21 ± 0.1	EI	3629
$C_7H_7F^+$	$C_6H_4FC_4H_9$ (Benzene, 1-butyl-4-fluoro-) (RN-CAS Registry Number 20651-65-4)	$CH_2=CHCH_3$	10.29 ± 0.1	EI	3629
$C_{10}H_{13}F^+$	$C_6H_4FC_4H_9$ (Benzene, 1-butyl-3-fluoro-) (RN-CAS Registry Number 20651-66-5)	**	9.19 ± 0.1	EI	3629
$C_{10}H_{13}F^+$	$C_6H_4FC_4H_9$ (Benzene, 1-butyl-4-fluoro-) (RN-CAS Registry Number 20651-65-4)	**	9.15 ± 0.1	EI	3629
$C_{10}H_{15}F^+$	$C_{10}H_{15}F$ (Tricyclo[3.3.1.1 ^{3,7}]decane, 2-fluoro-) (RN-CAS Registry Number 16668-83-0) (ON-Other name: 2-Fluoroadamantane)	**	9.46	PE	3886
$C_{12}H_9F^+$	$C_6H_5C_6H_4F$ (1,1'-Biphenyl, 2-fluoro-) (RN-CAS Registry Number 321-60-8)	**	8.20 ± 0.02	PE	3702

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{12}H_9F^+$	$C_6H_5C_6H_4F$ (1,1'-Biphenyl, 4-fluoro-) (RN-CAS Registry Number 324-74-3)	**	8.00 ± 0.02	PE	3702
CHF_2^+	CHF_2 (RN-CAS Registry Number 2670-13-5)	**	≤ 8.90	EM	3732
(RD-Radical)					
CHF_2^+	CH_2F_2 (RN-CAS Registry Number 75-10-5)	H	13.11	EM	3732
CHF_2^+	$CHF_2C \equiv CH$ (RN-CAS Registry Number 18371-25-0)	C_2H	13.8 ± 0.1	EI	3769
$C_2HF_2^+$	$CH_2=CF_2$ (RN-CAS Registry Number 75-38-7)	H	15.80 ± 0.04	PI	3930
$C_2H_2F_2^+$	$CH_2=CF_2$ (RN-CAS Registry Number 75-38-7)	**	10.29 ± 0.01	PI	3930
$C_2H_2F_2^+$	<i>cis</i> -CHF=CHF (RN-CAS Registry Number 1630-77-9)	**	10.43 (V)	PE	3649
$C_2H_2F_2^+$	<i>trans</i> -CHF=CHF (RN-CAS Registry Number 1630-78-0)	**	10.38 (V)	PE	3649
$C_2H_3F_2^+$	CH_3CF_3 (RN-CAS Registry Number 71-55-6)	F	15.14 ± 0.1	EI	3478
$C_3HF_2^+$	$CHF_2C \equiv CH$ (RN-CAS Registry Number 18371-25-0)	H	12.9 ± 0.1	EI	3769
$C_3H_2F_2^+$	$CHF_2C \equiv CH$ (RN-CAS Registry Number 18371-25-0)	**	11.6 ± 0.1	EI	3769
$C_6H_4F_2^+$	$C_6H_4F_2$ (Benzene, 1,2-difluoro-) (RN-CAS Registry Number 367-11-3)	**	9.30 (V)	PE	3873
$C_6H_4F_2^+$	$C_6H_4F_2$ (Benzene, 1,2-difluoro-) (RN-CAS Registry Number 367-11-3)	**	9.6 ± 0.03 (V)	PE	3713
$C_6H_4F_2^+$	$C_6H_4F_2$ (Benzene, 1,3-difluoro-) (RN-CAS Registry Number 372-18-9)	**	9.32 (V)	PE	3873
$C_6H_4F_2^+$	$C_6H_4F_2$ (Benzene, 1,3-difluoro-) (RN-CAS Registry Number 372-18-9)	**	9.6 ± 0.03 (V)	PE	3713
$C_6H_4F_2^+$	$C_6H_4F_2$ (Benzene, 1,4-difluoro-) (RN-CAS Registry Number 540-36-3)	**	9.15 (V)	PE	3873
$C_6H_4F_2^+$	$C_6H_4F_2$ (Benzene, 1,4-difluoro-) (RN-CAS Registry Number 540-36-3)	**	9.4 ± 0.03 (V)	PE	3713

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{12}H_8F_2^+$	(C ₆ H ₄ F) ₂ (1,1'-Biphenyl, 2,2'-difluoro-) (RN-CAS Registry Number 388-82-9)	**	8.35 ± 0.02	PE	3702
$C_{12}H_8F_2^+$	(C ₆ H ₄ F) ₂ (1,1'-Biphenyl, 3,3'-difluoro-) (RN-CAS Registry Number 396-64-5)	**	8.35 ± 0.02	PE	3702
$C_{12}H_8F_2^+$	(C ₆ H ₄ F) ₂ (1,1'-Biphenyl, 4,4'-difluoro-) (RN-CAS Registry Number 398-23-2)	**	8.00 ± 0.02	PE	3702
$C_2HF_3^+$	C ₂ HF ₃ (RN-CAS Registry Number 359-11-5)	**	10.53 (V)	PE	3649
$C_2H_3F_3^+$	CH ₃ CF ₃ (RN-CAS Registry Number 71-55-6)	**	13.26 ± 0.1	EI	3478
$C_3HF_3^+$	CF ₃ C≡CH (RN-CAS Registry Number 661-54-1)	**	11.83	PE	3589
$C_6H_3F_3(^2E'')$	C ₆ H ₃ F ₃ (Benzene, 1,3,5-trifluoro-) (RN-CAS Registry Number 372-38-3) (RS-Average of two Rydberg series limits)	**	9.64	S	3764
$C_6H_3F_3(^2A_2')$	C ₆ H ₃ F ₃ (Benzene, 1,3,5-trifluoro-) (RN-CAS Registry Number 372-38-3)	**	12.35	S	3764
$C_6H_3F_3^+$	C ₆ H ₃ F ₃ (Benzene, 1,3,5-trifluoro-) (RN-CAS Registry Number 372-38-3)	**	9.26 (V)	PE	3873
$C_6H_3F_3(^2E'')$	C ₆ H ₃ F ₃ (Benzene, 1,3,5-trifluoro-) (RN-CAS Registry Number 372-38-3)	**	9.64	PE	3764
$C_6H_3F_3(^2A_2')$	C ₆ H ₃ F ₃ (Benzene, 1,3,5-trifluoro-) (RN-CAS Registry Number 372-38-3)	**	12.35	PE	3764
$C_6H_3F_3^*$	C ₆ H ₃ F ₃ (Benzene, 1,3,5-trifluoro-) (RN-CAS Registry Number 372-38-3)	**	13.58 (V)	PE	3764
$C_6H_2F_4^+$	C ₆ H ₂ F ₄ (Benzene, 1,2,3,4-tetrafluoro-) (RN-CAS Registry Number 551-62-2)	**	9.56 (V)	PE	3873
$C_6H_2F_4^+$	C ₆ H ₂ F ₄ (Benzene, 1,2,3,5-tetrafluoro-) (RN-CAS Registry Number 2367-82-0)	**	9.56 (V)	PE	3873
$C_6H_2F_4^+$	C ₆ H ₂ F ₄ (Benzene, 1,2,4,5-tetrafluoro-) (RN-CAS Registry Number 327-54-8)	**	9.36 (V)	PE	3873
$C_6H_2F_4^+$	C ₆ H ₂ F ₄ (1,2,4,5-Tetrafluorobenzene) (RN-CAS Registry Number 327-54-8)	**	8.92	PE	3522

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6HF_5^+$	C_6HF_5 (Benzene, pentafluoro-) (RN-CAS Registry Number 363-72-4) (RS-Average of two Rydberg series limits)	**	9.82	S	3559
$C_6HF_5^*$	C_6HF_5 (Benzene, pentafluoro-) (RN-CAS Registry Number 363-72-4)	**	12.44	S	3559
$C_6HF_5^+$	C_6HF_5 (Benzene, pentafluoro-) (RN-CAS Registry Number 363-72-4)	**	9.64 (V)	PE	3873
$C_8H_3F_5^+$	$C_6F_5CH=CH_2$ (Benzene, ethenylpentafluoro-) (RN-CAS Registry Number 653-34-9)	**	9.18 ± 0.02	PE	3854
NF^+	NF_2 (RN-CAS Registry Number 3744-07-8) (TR-Other product(s) thermochemically reasonable)	F^-	11.86 ± 0.2	EI	3785
NF^+	NF_2 (RN-CAS Registry Number 3744-07-8) (TR-Other product(s) thermochemically reasonable)	F	15.46 ± 0.2	EI	3785
NF^+	N_2F_4 (RN-CAS Registry Number 10036-47-2) (TR-Other product(s) thermochemically reasonable)	$NF_2 + F$	~ 16.6	EI	3785
NF^+	$(CH_2NF_2)CH_2$ (RN-CAS Registry Number 21298-22-6)		13.0 ± 0.3	EI	3634
NF^+	$(CH_3)_2C(NF_2)_2$ (RN-CAS Registry Number 19309-63-8)		13.9 ± 0.3	EI	3634
N_2F^+	N_2F_4 (RN-CAS Registry Number 10036-47-2) (TR-Other product(s) thermochemically reasonable)	$F_2 + F$	14.2 ± 0.3	EI	3785
N_2F^+	N_2F_4 (RN-CAS Registry Number 10036-47-2) (TR-Other product(s) thermochemically reasonable)	3F	16.7 ± 0.3	EI	3785
$NF_2(^1A_1)$	NF_2 (RN-CAS Registry Number 3744-07-8)	**	12.1 ± 0.1 (V)	PE	3671
(RD-Radical) $NF_2(^1A_1)$	NF_2 (RN-CAS Registry Number 3744-07-8)	**	12.1	PE	3693
(RD-Radical) $NF_2(^3B_1)$	NF_2 (RN-CAS Registry Number 3744-07-8)	**	14.6 ± 0.1 (V)	PE	3671
(RD-Radical) $NF_2(^3B_1)$	NF_2 (RN-CAS Registry Number 3744-07-8)	**	14.6	PE	3693
(RD-Radical) $NF_2(^1B_1, ^3B_2, ^3A_2)$	NF_2 (RN-CAS Registry Number 3744-07-8)	**	$\sim 16.4 \pm 0.1$ (V)	PE	3671
(RD-Radical)					

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
NF_2^+	NF_2 (RN-CAS Registry Number 3744-07-8)	**	16.4	PE	3693
(RD-Radical)					
NF_2^*	NF_2 (RN-CAS Registry Number 3744-07-8)	**	$\sim 17.6 \pm 0.1$ (V)	PE	3671
(RD-Radical)					
$\text{NF}_2(^1\text{B}_2)$	NF_2 (RN-CAS Registry Number 3744-07-8)	**	17.6	PE	3693
(RD-Radical)					
NF_2^+	NF_2 (RN-CAS Registry Number 3744-07-8)	**	11.76 ± 0.1	EI	3785
(RD-Radical)					
NF_2^+	N_2F_4 (RN-CAS Registry Number 10036-47-2)	$\text{F}^- + \text{NF}$	12.40 ± 0.1	DC	3785
NF_2^+	N_2F_4 (RN-CAS Registry Number 10036-47-2)	NF_2	12.70 ± 0.1	DC	3785
(TR-Other product(s) thermochemically reasonable)					
NF_2^+	$(\text{CH}_2\text{NF}_2)\text{CH}_2$ (RN-CAS Registry Number 21298-22-6)		14.8 ± 0.4	EI	3634
NF_2^+	$(\text{CH}_3)_2\text{C}(\text{NF}_2)_2$ (RN-CAS Registry Number 19309-63-8)		13.9 ± 0.4	EI	3634
$\text{N}_2\text{F}_2(^2\text{A}_g)$	<i>trans</i> - N_2F_2 (RN-CAS Registry Number 13776-62-0)	**	12.8	PE	3649
$\text{N}_2\text{F}_2(^2\text{A}_u)$	<i>trans</i> - N_2F_2 (RN-CAS Registry Number 13776-62-0)	**	13.65	PE	3649
$\text{N}_2\text{F}_2(^2\text{A}_u)$	<i>trans</i> - N_2F_2 (RN-CAS Registry Number 13776-62-0)	**	18.0	PE	3649
$\text{N}_2\text{F}_2(^2\text{B}_u)$	<i>trans</i> - N_2F_2 (RN-CAS Registry Number 13776-62-0)	**	19.8 (V)	PE	3649
$\text{N}_2\text{F}_2(^2\text{A}_g)$	<i>trans</i> - N_2F_2 (RN-CAS Registry Number 13776-62-0)	**	21.0 (V)	PE	3649
$\text{N}_2\text{F}_2(^2\text{B}_u)$	<i>trans</i> - N_2F_2 (RN-CAS Registry Number 13776-62-0)	**	22.3	PE	3649
N_2F_2^+	N_2F_4 (RN-CAS Registry Number 10036-47-2)	2F	16.0 ± 0.1	EI	3785
(TR-Other product(s) thermochemically reasonable)					
$\text{NF}_3(^2\text{A}_1)$	NF_3 (RN-CAS Registry Number 7783-54-2)	**	12.97 ± 0.04	PE	3641
NF_3^*	NF_3 (RN-CAS Registry Number 7783-54-2)	**	15.49 ± 0.04	PE	3641
NF_3^*	NF_3 (RN-CAS Registry Number 7783-54-2)	**	16.55 ± 0.05 (V)	PE	3641
$\text{NF}_3(^2\text{E})$	NF_3 (RN-CAS Registry Number 7783-54-2)	**	17.16 ± 0.03	PE	3641
$\text{NF}_3(^2\text{A}_1)$	NF_3 (RN-CAS Registry Number 7783-54-2)	**	19.24 ± 0.03	PE	3641
$\text{NF}_3(^2\text{E})$	NF_3 (RN-CAS Registry Number 7783-54-2)	**	21.14 ± 0.07 (V)	PE	3641

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
NF_3^+	NF_3 (RN-CAS Registry Number 7783-54-2)	**	13.18 ± 0.1	EI	3578
N_2F_4^+	N_2F_4 (RN-CAS Registry Number 10036-47-2)	**	12.00 ± 0.1	EI	3785
$\text{B}_3\text{H}_3\text{N}_3\text{F}_3^+$	$\text{B}_3\text{H}_3\text{N}_3\text{F}_3$ (Borazine, 2,4,6-trifluoro-) (RN-CAS Registry Number 13779-24-3)	**	10.46	PE	3637
$\text{B}_3\text{H}_3\text{N}_3\text{F}_3^+$	$\text{B}_3\text{H}_3\text{N}_3\text{F}_3$ (Borazine, 2,4,6-trifluoro-) (RN-CAS Registry Number 13779-24-3)	**	10.66 (V)	PE	3944
$\text{B}_3\text{H}_3\text{N}_3\text{F}_3^+$	$\text{B}_3\text{H}_3\text{N}_3\text{F}_3$ (Borazine, 2,4,6-trifluoro-) (RN-CAS Registry Number 13779-24-3)	**	10.66 (V)	PE	3673
$\text{CN}_2\text{F}_2(^2\text{B}_1)$	CF_2N_2 (3 <i>H</i> -Diazirine, 3,3-difluoro-) (RN-CAS Registry Number 693-85-6)	**	11.2	PE	3727
$\text{CN}_2\text{F}_2(^2\text{B}_2, ^2\text{A}_1)$	CF_2N_2 (3 <i>H</i> -Diazirine, 3,3-difluoro-) (RN-CAS Registry Number 693-85-6)	**	15.00	PE	3727
$\text{CN}_2\text{F}_2(^2\text{B}_2, ^2\text{A}_1)$	CF_2N_2 (3 <i>H</i> -Diazirine, 3,3-difluoro-) (RN-CAS Registry Number 693-85-6)	**	16.75 (V)	PE	3727
$\text{CN}_2\text{F}_2(^2\text{A}_2)$	CF_2N_2 (3 <i>H</i> -Diazirine, 3,3-difluoro-) (RN-CAS Registry Number 693-85-6)	**	17.8 (V)	PE	3727
$\text{CN}_2\text{F}_2(^2\text{B}_1)$	CF_2N_2 (3 <i>H</i> -Diazirine, 3,3-difluoro-) (RN-CAS Registry Number 693-85-6)	**	19.0	PE	3727
$\text{CN}_2\text{F}_2(^2\text{A}_1, ^2\text{B}_2)$	CF_2N_2 (3 <i>H</i> -Diazirine, 3,3-difluoro-) (RN-CAS Registry Number 693-85-6)	**	20.9 (V)	PE	3727
$\text{CN}_2\text{F}_2(^2\text{A}_1, ^2\text{B}_1)$	CF_2N_2 (3 <i>H</i> -Diazirine, 3,3-difluoro-) (RN-CAS Registry Number 693-85-6)	**	23.4 (V)	PE	3727
$\text{C}_3\text{N}_3\text{F}_3^+$	$\text{C}_3\text{N}_3\text{F}_3$ (1,3,5-Triazine, 2,4,6-trifluoro-) (RN-CAS Registry Number 675-14-9)	**	11.5	PE	3637
C_5NF_5^+	C_5NF_5 (Pyridine, pentafluoro-) (RN-CAS Registry Number 700-16-3)	**	10.08	PE	3637
$\text{C}_2\text{N}_2\text{F}_6^+$	<i>cis</i> - $\text{CF}_3\text{N}=\text{NCF}_3$ (RN-CAS Registry Number XXXXX-XX-X)	**	~ 10.5	PE	3649
$\text{C}_8\text{N}_2\text{F}_6^+$	$\text{C}_8\text{N}_2(\text{F})_6$ (Cinnoline, hexafluoro-) (RN-CAS Registry Number 28734-86-3)	**	9.66 (V)	PE	3959

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8N_2F_6^+$	$C_8N_2(F)_6$ (Phthalazine, hexafluoro-) (RN-CAS Registry Number 25732-35-8)	**	9.90 (V)	PE	3959
$C_8N_2F_6^+$	$C_8N_2(F)_6$ (Quinazoline, hexafluoro-) (RN-CAS Registry Number 28734-87-4)	**	9.43 (V)	PE	3959
$C_8N_2F_6^+$	$C_8N_2(F)_6$ (Quinoxaline, hexafluoro-) (RN-CAS Registry Number 21271-15-8)	**	9.65 (V)	PE	3959
$C_9NF_7^+$	C_9NF_7 (Isoquinoline, heptafluoro-) (RN-CAS Registry Number 13180-39-7)	**	9.29 (V)	PE	3723
$C_9NF_7^+$	C_9NF_7 (Quinoline, heptafluoro-) (RN-CAS Registry Number 13180-38-6)	**	9.51 (V)	PE	3723
CH_2NF^+	$(CH_2NF_2)CH_2$ (RN-CAS Registry Number 21298-22-6)		11.9 ± 0.2	EI	3634
CH_2NF^+	$CH_2(NF_2)CH(NF_2)CH_3$ (RN-CAS Registry Number 15403-25-5)	$CH_3C(NF_2)FH?$	11.5 ± 0.2	EI	3634
$C_2H_3NF^+$	$(CH_2NF_2)CH_2$ (RN-CAS Registry Number 21298-22-6)		16.8 ± 0.4	EI	3634
$C_3H_6NF^+$	$CH_2(NF_2)CH(NF_2)CH_3$ (RN-CAS Registry Number 15403-25-5)		14.6 ± 0.3	EI	3634
$C_6H_6NF^+$	$C_6H_4FNHCOCH_3$ (Acetamide, <i>N</i> -(2-fluorophenyl)-) (RN-CAS Registry Number 399-31-5)	$CH_2=C=O$	9.80 ± 0.03	EI	3483
$C_6H_6NF^+$	$C_6H_4FNHCOCH_3$ (Acetamide, <i>N</i> -(4-fluorophenyl)-) (RN-CAS Registry Number 351-83-7)	$CH_2=C=O$	10.12 ± 0.03	EI	3483
$CHNF_2^+$	$(CH_2NF_2)CH_2$ (RN-CAS Registry Number 21298-22-6)		13.7 ± 0.3	EI	3634
$CHNF_2^+$	$(CH_3)_2C(NF_2)_2$ (RN-CAS Registry Number 19309-63-8)		13.2 ± 0.3	EI	3634
$CH_2NF_2^+$	$(CH_2NF_2)CH_2$ (RN-CAS Registry Number 21298-22-6)		13.6 ± 0.3	EI	3634
$CH_2NF_2^+$	$CH_2(NF_2)CH(NF_2)CH_3$ (RN-CAS Registry Number 15403-25-5)		13.1 ± 0.2	EI	3634
$C_2H_6NF_2^+$	$(CH_2NF_2)CH_2$ (RN-CAS Registry Number 21298-22-6)		11.8 ± 0.3	EI	3634
$C_2H_6NF_2^+$	$CH_2(NF_2)CH(NF_2)CH_3$ (RN-CAS Registry Number 15403-25-5)		10.8 ± 0.2	EI	3634
$C_2H_6NF_2^+$	$(CH_3)_2C(NF_2)_2$ (RN-CAS Registry Number 19309-63-8)		11.1 ± 0.3	EI	3634

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_5NF_2^+$	$C_6H_5F_2NHCOCH_3$ (Acetamide, <i>N</i> -(2,4-difluorophenyl)-) (RN-CAS Registry Number 399-36-0)	$CH_2=C=O$	9.70 ± 0.03	EI	3480
$C_6H_5NF_2^+$	$C_6H_5F_2NHCOCH_3$ (Acetamide, <i>N</i> -(2,6-difluorophenyl)-) (RN-CAS Registry Number 3896-29-5)	$CH_2=C=O$	9.52 ± 0.03	EI	3480
$C_8H_4N_2F_2^+$	$C_8H_4N_2(F)_2$ (Quinoxaline, 2,3-difluoro-) (RN-CAS Registry Number 7066-36-6)	**	9.30 (V)	PE	3959
$C_8H_2N_2F_4^+$	$C_8H_2N_2(F)_4$ (Quinoxaline, 5,6,7,8-tetrafluoro-) (RN-CAS Registry Number 33319-19-6)	**	9.50 (V)	PE	3959
$C_6H_2NF_5^+$	$C_6F_5NH_2$ (Benzenamine, 2,3,4,5,6-pentafluoro-) (RN-CAS Registry Number 771-60-8)	**	8.40 ± 0.02	PE	3890
$C_6H_2NF_5^+$	$C_6F_5NH_2$ (Benzenamine, 2,3,4,5,6-pentafluoro-) (RN-CAS Registry Number XXXXX-XX-X)	**	8.60	PE	3955
$C_6H_7NF_6^+$	$(CH_3)_2NC(CF_3)=C(CF_3)H$ (RN-CAS Registry Number 35186-00-6)	**	8.22	PE	3589
$C_4H_{12}BN_2F^+$	$((CH_3)_2N)_2BF_2$ (RN-CAS Registry Number 383-90-4)	**	8.04	PE	3584
$C_2H_6BNF_2^+$	$(CH_3)_2NBF_2$ (RN-CAS Registry Number 359-18-2)	**	9.71	PE	3584
$C_3H_9B_3N_3F_3^+$	$C_3H_9B_3N_3F_3$ (Borazine, 2,4,6-trifluoro-1,3,5-trimethyl-) (RN-CAS Registry Number 13722-15-1)	**	9.48 (V)	PE	3944
OF^+	OF (RN-CAS Registry Number 12061-70-0)	**	12.79 ± 0.1	D	3920
(RD-Radical)					
OF^+	OF_2 (RN-CAS Registry Number 7783-41-7)	F	≤ 14.438	PI	3920
(TV-Threshold value approximately corrected to 0°K)					
OF_2^+	OF_2 (RN-CAS Registry Number 7783-41-7)	**	13.11 ± 0.01	PI	3920
$OF_2(^2B_2)$	OF_2 (RN-CAS Registry Number 7783-41-7)	**	13.11	PE	3649
$OF_2(^2B_1)$	OF_2 (RN-CAS Registry Number 7783-41-7)	**	13.26 (V)	PE	3694
$OF_2(^2A_1)$	OF_2 (RN-CAS Registry Number 7783-41-7)	**	15.74	PE	3649
$OF_2(^2B_2)$	OF_2 (RN-CAS Registry Number 7783-41-7)	**	16.17 (V)	PE	3694

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{OF}_2(^2\text{B}_1)$	OF_2 (RN-CAS Registry Number 7783-41-7)	**	16.44 (V)	PE	3649
$\text{OF}_2(^2\text{A}_2)$	OF_2 (RN-CAS Registry Number 7783-41-7)	**	16.47 (V)	PE	3694
$\text{OF}_2(^2\text{A}_2)$	OF_2 (RN-CAS Registry Number 7783-41-7)	**	~ 17.9	PE	3649
OF_2^+	OF_2 (RN-CAS Registry Number 7783-41-7)	**	18.68 (V)	PE	3694
OF_2^+	OF_2 (RN-CAS Registry Number 7783-41-7)	**	19.50 (V)	PE	3694
$\text{OF}_2(^2\text{B}_1, ^2\text{A}_1)$	OF_2 (RN-CAS Registry Number 7783-41-7)	**	19.55 (V)	PE	3649
$\text{OF}_2(^2\text{B}_2)$	OF_2 (RN-CAS Registry Number 7783-41-7)	**	20.7 (V)	PE	3649
OF_2^+	OF_2 (RN-CAS Registry Number 7783-41-7)	**	20.9 (V)	PE	3694
HOF^+	HOF (RN-CAS Registry Number 14034-79-8)	**	12.71 ± 0.01	PI	3932
$\text{HOF}^+(^2\text{A}')$	HOF (RN-CAS Registry Number 14034-79-8)	**	12.69 ± 0.03	PE	3831
$\text{HOF}^+(^2\text{A}')$	HOF (RN-CAS Registry Number 14034-79-8)	**	14.50 ± 0.03	PE	3831
$\text{HOF}^+(^2\text{A}')$	HOF (RN-CAS Registry Number 14034-79-8)	**	15.9 ± 0.05	PE	3831
BOF^+	BOF (RN-CAS-Registry Number 23361-56-0)	**	14 ± 1	EI	4054
BOF_2^+	BOF_2 (RN-CAS-Registry Number 12006-82-5)	**	17 ± 1	EI	4054
$\text{COF}_2(^2\text{B}_1)$	CF_2O (RN-CAS Registry Number 353-50-4)	**	13.02	PE	3649
$\text{COF}_2(^2\text{B}_2)$	CF_2O (RN-CAS Registry Number 353-50-4)	**	13.04	PE	3726
$\text{COF}_2(^2\text{B}_2)$	CF_2O (RN-CAS Registry Number 353-50-4)	**	14.09	PE	3649
COF_2^+	CF_2O (RN-CAS Registry Number 353-50-4)	**	≤ 14.26	PE	3726
$\text{COF}_2(^2\text{A}_1, ^2\text{B}_1, ^2\text{A}_2)$	CF_2O (RN-CAS Registry Number 353-50-4)	**	16.1	PE	3649
COF_2^+	CF_2O (RN-CAS Registry Number 353-50-4)	**	16.6 (V)	PE	3726
$\text{COF}_2(^2\text{B}_1)$	CF_2O (RN-CAS Registry Number 353-50-4)	**	16.90	PE	3726
$\text{COF}_2(^2\text{A}_1, ^2\text{B}_1, ^2\text{A}_2)$	CF_2O (RN-CAS Registry Number 353-50-4)	**	16.91	PE	3649
COF_2^+	CF_2O (RN-CAS Registry Number 353-50-4)	**	19.06	PE	3726
$\text{COF}_2(^2\text{A}_1)$	CF_2O (RN-CAS Registry Number 353-50-4)	**	19.15	PE	3649

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
COF_2^+	CF_2O (RN-CAS Registry Number 353-50-4)	**	19.46	PE	3726
$\text{COF}_2(^2\text{B}_2)$	CF_2O (RN-CAS Registry Number 353-50-4)	**	19.8 (V)	PE	3649
$\text{COF}_2(^2\text{B}_1)$	CF_2O (RN-CAS Registry Number 353-50-4)	**	21.1 (V)	PE	3649
$\text{COF}_2(^2\text{A}_1)$	CF_2O (RN-CAS Registry Number 353-50-4)	**	~22.7	PE	3649
C_2OF_3^+	$(\text{CF}_3)_2\text{CO}$ (RN-CAS Registry Number 684-16-2)		11.65	EI	3550
$\text{CF}_4\text{O}^+(^2\text{A}')$	CF_3OF (RN-CAS Registry Number 373-91-1)	**	13.6 (V)	PE	3941
CF_4O^{++}	CF_3OF (RN-CAS Registry Number 373-91-1)	**	16.6 (V)	PE	3941
CF_4O^{++}	CF_3OF (RN-CAS Registry Number 373-91-1)	**	17.5 (V)	PE	3941
CF_4O^{++}	CF_3OF (RN-CAS Registry Number 373-91-1)	**	19.0 (V)	PE	3941
CF_4O^{++}	CF_3OF (RN-CAS Registry Number 373-91-1)	**	20.40 (V)	PE	3941
C_3OF_5^+	$(\text{CF}_3)_2\text{CO}$ (RN-CAS Registry Number 684-16-2)		16	EI	3550
$\text{C}_3\text{F}_6\text{O}^+$	$(\text{CF}_3)_2\text{CO}$ (RN-CAS Registry Number 684-16-2)	**	11.44	PE	3649
$\text{C}_6\text{H}_4\text{OF}^+$	$\text{C}_6\text{H}_4\text{FOCH}_3$ (Benzene, 1-fluoro-3-methoxy-) (RN-CAS Registry Number 456-49-5)	CH_3	12.53 ± 0.1	EI	3446
$\text{C}_6\text{H}_4\text{OF}^+$	$\text{C}_6\text{H}_4\text{FOCH}_3$ (Benzene, 1-fluoro-4-methoxy-) (RN-CAS Registry Number 459-60-9)	CH_3	11.99 ± 0.1	EI	3446
$\text{C}_6\text{H}_4\text{OF}^+$	$\text{C}_6\text{H}_4\text{FNO}_2$ (Benzene, 1-fluoro-3-nitro-) (RN-CAS Registry Number 402-67-5)	NO	10.25 ± 0.1	EI	3447
$\text{C}_6\text{H}_4\text{OF}^+$	$\text{C}_6\text{H}_4\text{FNO}_2$ (Benzene, 1-fluoro-4-nitro-) (RN-CAS Registry Number 350-46-9)	NO	10.64 ± 0.1	EI	3447
$\text{C}_6\text{H}_5\text{OF}^+$	$\text{C}_6\text{H}_4\text{FOOCCH}_3$ (Phenol, 2-fluoro-, acetate) (RN-CAS Registry Number 29650-44-0)	$\text{CH}_2=\text{C}=\text{O}$	9.17 ± 0.03	EI	3483
$\text{C}_6\text{H}_5\text{OF}^+$	$\text{C}_6\text{H}_4\text{FOOCCH}_3$ (Phenol, 4-fluoro-, acetate) (RN-CAS Registry Number 405-51-6)	$\text{CH}_2=\text{C}=\text{O}$	9.55 ± 0.03	EI	3483
$\text{C}_7\text{H}_4\text{OF}^+$	$\text{C}_6\text{H}_4(\text{F})\text{COOH}$ (Benzoic acid, 3-fluoro-) (RN-CAS Registry Number 455-38-9)	OH	12.50 ± 0.2	EI	3973

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_4OF^+$	$C_6H_4(F)COOH$ (Benzoic acid, 4-fluoro-) (RN-CAS Registry Number 456-22-4)	OH	12.33 ± 0.2	EI	3973
$C_7H_7OF^+$	$C_6H_4FOCH_3$ (Benzene, 1-fluoro-3-methoxy-) (RN-CAS Registry Number 456-49-5)	**	8.70 ± 0.1	EI	3446
$C_7H_7OF^+$	$C_6H_4FOCH_3$ (Benzene, 1-fluoro-4-methoxy-) (RN-CAS Registry Number 459-60-9)	**	8.58 ± 0.1	EI	3446
$C_7H_5O_2F^+$	$C_6H_4(F)COOH$ (Benzoic acid, 3-fluoro-) (RN-CAS Registry Number 455-38-9)	**	9.91 ± 0.2	EI	3973
$C_7H_5O_2F^+$	$C_6H_4(F)COOH$ (Benzoic acid, 4-fluoro-) (RN-CAS Registry Number 456-22-4)	**	9.91 ± 0.2	EI	3973
$C_8H_7O_2F^+$	$C_6H_4FOOCCH_3$ (Phenol, 2-fluoro-, acetate) (RN-CAS Registry Number 29650-44-0)	**	8.78 ± 0.03	EI	3483
$C_8H_7O_2F^+$	$C_6H_4FOOCCH_3$ (Phenol, 4-fluoro-, acetate) (RN-CAS Registry Number 405-51-6)	**	8.27 ± 0.03	EI	3483
$C_6H_4OF_2^+$	$C_6H_3F_2OOCCH_3$ (Phenol, 2,4-difluoro-, acetate) (RN-CAS Registry Number 36914-77-9)	$CH_2=C=O$	9.63 ± 0.03	EI	3480
$C_6H_4OF_2^+$	$C_6H_3F_2OOCCH_3$ (Phenol, 2,6-difluoro-, acetate) (RN-CAS Registry Number 36914-78-0)	$CH_2=C=O$	9.69 ± 0.03	EI	3480
$C_8H_6O_2F_2^+$	$C_6H_3F_2OOCCH_3$ (Phenol, 2,4-difluoro-, acetate) (RN-CAS Registry Number 36914-77-9)	**	8.60 ± 0.03	EI	3480
$C_8H_6O_2F_2^+$	$C_6H_3F_2OOCCH_3$ (Phenol, 2,6-difluoro-, acetate) (RN-CAS Registry Number 36914-78-0)	**	8.88 ± 0.03	EI	3480
$C_2H_3OF_3^+$	CF_3CH_2OH (RN-CAS Registry Number 75-89-8)	**	11.7 (V)	PE	3941
$C_2HO_2F_3^+$	CF_3COOH (RN-CAS Registry Number 76-05-1)	**	11.46	PE	3718
$C_2HO_2F_3^+$	CF_3COOH (RN-CAS Registry Number 76-05-1)	**	12.00 ± 0.03 (V)	PE	3734
$C_2HO_2F_3^+$	CF_3COOH (RN-CAS Registry Number 76-05-1)	**	12.00 (V)	PE	3874
$C_3H_3O_2F_3^+$	$HCOOCH_2CF_3$ (RN-CAS Registry Number 32042-38-9)	**	11.31	PE	3718

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_4H_5O_2F_3^+$	$CF_3COOC_2H_5$ (RN-CAS Registry Number 383-63-1)	**	~ 11.6 (V)	PE	3718
$C_4H_5O_2F_3^+$	$CH_3COOCH_2CF_3$ (RN-CAS Registry Number 406-95-1)	**	10.84	PE	3718
$C_5H_5O_2F_3^+$	$CF_3COCH_2COCH_3$ (RN-CAS Registry Number 367-57-7)	**	9.92 ± 0.07 (V)	PE	3682
$C_6H_3O_2F_3^+$	$C_4H_3OCOCF_3$ (Ethanone, 2,2,2-trifluoro-1-(2-furanyl)-) (RN-CAS Registry Number 18207-47-1)	**	9.77 ± 0.05	EI	3482
$C_8H_{11}O_2F_3^+$	$(CH_3)_3CCOCH_2COCF_3$ (RN-CAS Registry Number 22767-90-4)	**	9.87 ± 0.07 (V)	PE	3682
$C_4H_5O_4F_3^+$	$(CF_3COOH)(CH_3COOH)$ (RN-CAS Registry Number XXXXX-XX-X)	**	11.1 (V)	PE	3734
$C_5H_7O_4F_3^+$	$(C_2H_5COOH)(CF_3COOH)$ (RN-CAS Registry Number XXXXX-XX-X)	**	10.9 (V)	PE	3734
$C_6H_9O_4F_3^+$	$(iso-C_3H_7COOH)(CF_3COOH)$ (RN-CAS Registry Number XXXXX-XX-X)	**	10.7 (V)	PE	3734
$C_3H_3OF_5^+$	$C_2F_5CH_2OH$ (RN-CAS Registry Number 422-05-9)	**	11.68 (V)	PE	3941
$C_6HOF_5^+$	C_6F_5OH (Phenol, pentafluoro-) (RN-CAS Registry Number 771-61-9)	**	9.20 ± 0.02	PE	3890
$C_7H_3OF_5^+$	$C_6F_5OCH_3$ (Benzene, pentafluoromethoxy-) (RN-CAS Registry Number 389-40-2)	**	9.10 ± 0.02	PE	3890
$C_3H_2OF_6^+$	$CF_3CH(OH)CF_3$ (RN-CAS Registry Number 920-66-1)	**	12.23 (V)	PE	3941
$C_5H_2O_2F_6^+$	$CF_3COCH_2COCF_3$ (RN-CAS Registry Number 1522-22-1)	**	10.74 ± 0.07 (V)	PE	3682
$C_{10}H_2O_4F_{12}Be^+$	$(CF_3COCHCOCF_3)_2Be$ (Beryllium, bis(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato- <i>O,O'</i>)-, (<i>T</i> -4)-) (RN-CAS Registry Number 19648-82-9)	**	10.39 ± 0.07 (V)	PE	3682
$NOF_3(^2E)$	NOF_3 (RN-CAS Registry Number 13847-65-9)	**	13.36 ± 0.01	PE	3641
(This value probably corresponds to the first vibrationally excited state of the ion.)					
NOF_3^{+*}	NOF_3 (RN-CAS Registry Number 13847-65-9)	**	14.83 ± 0.06	PE	3641

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
NOF_3^{+*}	NOF_3 (RN-CAS Registry Number 13847-65-9)	**	16.34 ± 0.03	PE	3641
$\text{NOF}_3^{+2}\text{E}$	NOF_3 (RN-CAS Registry Number 13847-65-9)	**	19.90 ± 0.02	PE	3641
$\text{NOF}_3^{+2}\text{A}_1$	NOF_3 (RN-CAS Registry Number 13847-65-9)	**	21.1 ± 0.1 (V)	PE	3641
C_2NOF_6^+ (RD-Radical)	$(\text{CF}_3)_2\text{NO}$ (RN-CAS Registry Number 2154-71-4)	**	10.7 ± 0.1 (V)	PE	3671
$\text{C}_8\text{H}_8\text{NOF}^+$	$\text{C}_6\text{H}_4\text{FNHCOCH}_3$ (Acetamide, <i>N</i> -(2-fluorophenyl)-) (RN-CAS Registry Number 399-31-5)	**	8.27 ± 0.03	EI	3483
$\text{C}_8\text{H}_8\text{NOF}^+$	$\text{C}_6\text{H}_4\text{FNHCOCH}_3$ (Acetamide, <i>N</i> -(4-fluorophenyl)-) (RN-CAS Registry Number 351-83-7)	**	8.20 ± 0.03	EI	3483
$\text{C}_6\text{H}_4\text{NO}_2\text{F}^+$	$\text{C}_6\text{H}_4\text{FNO}_2$ (Benzene, 1-fluoro-3-nitro-) (RN-CAS Registry Number 402-67-5)	**	9.93 ± 0.1	EI	3447
$\text{C}_6\text{H}_4\text{NO}_2\text{F}^+$	$\text{C}_6\text{H}_4\text{FNO}_2$ (Benzene, 1-fluoro-4-nitro-) (RN-CAS Registry Number 350-46-9)	**	10.00 ± 0.1	EI	3447
$\text{C}_8\text{H}_7\text{NOF}_2^+$	$\text{C}_6\text{H}_3\text{F}_2\text{NHCOCH}_3$ (Acetamide, <i>N</i> -(2,4-difluorophenyl)-) (RN-CAS Registry Number 399-36-0)	**	8.21 ± 0.03	EI	3480
$\text{C}_8\text{H}_7\text{NOF}_2^+$	$\text{C}_6\text{H}_3\text{F}_2\text{NHCOCH}_3$ (Acetamide, <i>N</i> -(2,6-difluorophenyl)-) (RN-CAS Registry Number 3896-29-5)	**	8.52 ± 0.03	EI	3480
$\text{C}_6\text{H}_4\text{NOF}_3^+$	$\text{C}_4\text{H}_4\text{NCOCF}_3$ (Ethanone, 2,2,2-trifluoro-1-(1 <i>H</i> -pyrrol-2-yl)-) (RN-CAS Registry Number 2557-70-2)	**	9.18 ± 0.05	EI	3482
$\text{Ne}^+(^2\text{P}_{3/2})$	Ne (RN-CAS Registry Number 7440-01-9)	**	21.56471 ± 0.00001 S		3754
Na^+	Na (RN-CAS Registry Number 7440-23-5)	**	5.3 ± 0.2	EI	3609
Na^+	NaF (RN-CAS Registry Number 7681-49-4)		~ 12	EI	3464
Na_2^+	Na_2 (RN-CAS Registry Number 25681-79-2)	**	$\leq 6 \pm 2$	EI	3609
Mg^+	$(\text{C}_5\text{H}_5)_2\text{Mg}$ (Magnesium, bis(η^5 -2,4-cyclopentadien-1-yl)-) (RN-CAS Registry Number 1284-72-6) (ON-Other name: Magnesocene)		13.9 ± 0.5	RPD	3793

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_5H_5Mg^+$	(C ₅ H ₅) ₂ Mg (Magnesium, bis(η^5 -2,4-cyclopentadien-1-yl)-) (RN-CAS Registry Number 1284-72-6) (ON-Other name: Magnesocene)		11.0±0.2	RPD	3793
$C_{10}H_{10}Mg^+$	(C ₅ H ₅) ₂ Mg (Magnesium, bis(η^5 -2,4-cyclopentadien-1-yl)-) (RN-CAS Registry Number 1284-72-6) (ON-Other name: Magnesocene)	**	8.11 (V)	PE	3688
$C_{10}H_{10}Mg^+$	(C ₅ H ₅) ₂ Mg (Magnesium, bis(η^5 -2,4-cyclopentadien-1-yl)-) (RN-CAS Registry Number 1284-72-6) (ON-Other name: Magnesocene)	**	8.0±0.1	RPD	3793
$C_{12}H_{14}Mg^+$	(C ₅ H ₄ CH ₃) ₂ Mg (Magnesocene, 1,1'-dimethyl-) (RN-CAS Registry Number 40672-08-0)	**	7.78 (V)	PE	3688
Al^+	Al (RN-CAS Registry Number 7429-90-5)	**	6.6±0.6	EI	3440
Al_2^+	Al ₂ (RN-CAS Registry Number 32752-94-6)	**	5.4±1.0	EI	4005
Al_2^+	Al ₂ (RN-CAS Registry Number 37361-48-1)	**	5.4±1.0	EI	4014
Al_2^+	Al ₂ O (RN-CAS Registry Number 12004-36-3)		15.2±0.5	EI	4005
AlC^+	AlC ₂ ? (RN-CAS Registry Number 37297-57-7)		14.0±1.0	EI	4014
AlC_2^+	AlC ₂ (RN-CAS Registry Number 37297-57-7)	**	9.3±1.0	EI	4014
$Al_2C_2^+$	Al ₂ C ₂ (RN-CAS Registry Number 12122-01-9)	**	8.0±0.5	EI	4014
$C_{18}H_{15}Al^+$	(C ₆ H ₅) ₃ Al (Aluminum, triphenyl-) (RN-CAS-Registry Number 841-76-9)	**	8.53±0.03	PI	4055
AlO^+	AlO (RN-CAS Registry Number 14457-64-8)	**	9.5±1	EI	3617
AlO^+	AlO (RN-CAS Registry Number 14457-64-8)	**	9.53±0.15	EI	3816
AlO^+	AlO (RN-CAS Registry Number 14457-64-8)	**	9±1	EI	3463
AlO^+	AlO (RN-CAS Registry Number 14457-64-8)	**	10±1	EI	3620
AlO^+	Al ₂ O (RN-CAS Registry Number 12004-36-3)		15.1±0.3	EI	4005

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
AlO_2^+	AlO_2 (RN-CAS Registry Number 11092-32-3)	**	10 ± 1	EI	3463
AlO_2^+	AlO_2 (RN-CAS Registry Number 11092-32-3)	**	10 ± 1	EI	3617
Al_2O^+	Al_2O (RN-CAS Registry Number 12004-36-3)	**	7.7 ± 0.2	EI	4005
Al_2O^+	Al_2O (RN-CAS Registry Number 12004-36-3)	**	7.7 ± 0.5	EI	3985
Al_2O^+	Al_2O (RN-CAS Registry Number 12004-36-3)	**	8.20 ± 0.15	EI	3816
Al_2O^+	Al_2O (RN-CAS Registry Number 12004-36-3)	**	8.5 ± 1	EI	3617
Al_2O^+	Al_2O (RN-CAS Registry Number 12004-36-3)	**	9 ± 1	EI	3620
Al_2O_2^+	Al_2O_2 (RN-CAS Registry Number 12252-63-0)	**	10 ± 1	EI	3617
AlF^+	AlF (RN-CAS Registry Number 13595-82-9)	**	9	EI	3606
AlF_2^+	AlF_2 (RN-CAS Registry Number 13569-23-8)	**	10	EI	3606
AlOF^+	AlOF (RN-CAS Registry Number 13596-12-8)	**	10.5 ± 1	EI	3462
AlOF^+	AlOF (RN-CAS Registry Number 13596-12-8)	**	11	EI	3606
AlOF_2^+	AlOF_2 (RN-CAS Registry Number 38344-66-0)	**	13 ± 1	EI	3606
$\text{C}_{15}\text{H}_{12}\text{O}_6\text{F}_9\text{Al}^+$	$(\text{CF}_3\text{COCHCOCH}_3)_3\text{Al}$ (Aluminum, tris(1,1,1-trifluoro-2,4-pentanedionato- <i>O,O'</i>)-) (RN-CAS Registry Number 14354-59-7)	**	9.22 ± 0.07 (V)	PE	3682
$\text{C}_{15}\text{H}_3\text{O}_6\text{F}_{18}\text{Al}^+$	$(\text{CF}_3\text{COCHCOCF}_3)_3\text{Al}$ (Aluminum, tris(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato- <i>O,O'</i>)-, (<i>OC</i> -6-11)-) (RN-CAS Registry Number 15306-18-0)	**	10.33 ± 0.07 (V)	PE	3682
Si^+	Si (RN-CAS Registry Number 7440-21-3)	**	8.1 ± 0.5	EI	3969
Si^+	Si (RN-CAS Registry Number 7440-21-3)	**	8.5 ± 0.5	EI	3610
Si^+	SiH_4 (RN-CAS Registry Number 7803-62-5)		13.3	DC	3813
$\text{SiH}^+(\text{X}^1\Sigma^+)$	SiH (RN-CAS Registry Number 13774-94-2)	**	7.91	D	3564

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
SiH^+	SiH_4 (RN-CAS Registry Number 7803-62-5)		14.7	DC	3813
SiH_2^+	SiH_4 (RN-CAS Registry Number 7803-62-5)	H_2	11.8	DC	3813
SiH_2^+	SiH_4 (RN-CAS Registry Number 7803-62-5)	$2\text{H}^?$	16.2	DC	3813
SiH_3^+	SiH_4 (RN-CAS Registry Number 7803-62-5)	H	12.2	DC	3813
$\text{SiH}_4(^2\text{B}_2)$	SiH_4 (RN-CAS Registry Number 7803-62-5)	**	11.60	PE	3716
$\text{SiH}_4(^2\text{A}_1)$	SiH_4 (RN-CAS Registry Number 7803-62-5)	**	17.95	PE	3716
$\text{Si}_2\text{H}_6\text{Te}^+$	$(\text{SiH}_3)_2\text{Te}$ (RN-CAS Registry Number 19415-73-7)	**	8.63 (V)	PE	3656
SiC_2^+	SiC_2 (RN-CAS Registry Number 12071-27-1)	**	10.1 ± 0.5	EI	4005
SiC_2^+	SiC_2 (RN-CAS Registry Number 12071-27-1)	**	10.3 ± 0.5	EI	3969
Si_2C^+	Si_2C (RN-CAS Registry Number XXXXX-XX-X)	**	9.0 ± 0.5	EI	4005
Si_2C^+	Si_2C (RN-CAS Registry Number XXXXX-XX-X)	**	9.5 ± 0.5	EI	3969
CH_3Si^+	$\text{CH}_2=\text{CHSi}(\text{CH}_3)_3$ (RN-CAS Registry Number 754-05-2)		~ 15	EI	3809
CH_5Si^+	$\text{CH}_2=\text{CHSi}(\text{CH}_3)_3$ (RN-CAS Registry Number 754-05-2)		~ 15	EI	3809
$\text{C}_2\text{H}_6\text{Si}^+$	$1-\text{C}_4\text{H}_8$ (RN-CAS Registry Number 7291-09-0)	**	10.37 (V)	PE	3950
$\text{C}_2\text{H}_6\text{Si}^+$	$\text{CH}_2=\text{CHSiH}_3$ (RN-CAS Registry Number 7291-09-0)	**	10.4 (V)	PE	3940
$\text{C}_2\text{H}_7\text{Si}^+$	$\text{CH}_2=\text{CHSi}(\text{CH}_3)_3$ (RN-CAS Registry Number 754-05-2)		~ 13	EI	3809
$\text{C}_3\text{H}_8\text{Si}^+$	$\text{CH}_2=\text{CHCH}_2\text{SiH}_3$ (RN-CAS Registry Number 18191-59-8)	**	9.49 (V)	PE	3950
$\text{C}_3\text{H}_8\text{Si}^+$	$\text{C}_3\text{H}_8\text{Si}$ (Silacyclobutane) (RN-CAS Registry Number 287-29-6)	**	10.05 (V)	PE	4077
$\text{C}_3\text{H}_8\text{Si}^+$	$\text{CH}_2=\text{CHSi}(\text{CH}_3)_3$ (RN-CAS Registry Number 754-05-2)	C_2H_4	~ 10	EI	3809

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3H_9Si^+$	$(CH_3)_4Si$ (RN-CAS Registry Number 75-76-3)	CH_3	10.53 ± 0.20	EI	3548
$C_3H_9Si^+$	$CH_2=CHSi(CH_3)_3$ (RN-CAS Registry Number 754-05-2)	C_2H_3	~ 11	EI	3809
$C_3H_9Si^+$	$(CH_3)_3SiSi(CH_3)_3$ (RN-CAS Registry Number 1450-14-2)	$(CH_3)_3Si$	10.22 ± 0.18	EI	3548
$C_3H_9Si^+$	$C_6H_5Si_2(CH_3)_5$ (Disilane, pentamethylphenyl-) (RN-CAS Registry Number 1130-17-2)	$C_6H_5Si(CH_3)_2$	10.08 ± 0.09	EI	3549
(TR-Other product(s) thermochemically reasonable)					
$C_3H_9Si^+$	$(C_6H_5)_2SiCH_3Si(CH_3)_3$ (Disilane, 1,1,1,2-tetramethyl-2,2-diphenyl-) (RN-CAS Registry Number 1450-16-4)		10.59 ± 0.03	EI	3549
(TR-Other product(s) thermochemically reasonable)					
(OP-the other product(s) is(are): $(C_6H_5)_2SiCH_3$)					
$C_3H_9Si^+$	$(C_6H_5)(CH_3)_2Si)_2$ (Disilane, 1,1,2,2-tetramethyl-1,2-diphenyl-) (RN-CAS Registry Number 1145-98-8)	$(C_6H_5)_2SiCH_3$	11.04 ± 0.03	EI	3549
(TR-Other product(s) thermochemically reasonable)					
$C_3H_9Si^+$	$(C_6H_5)_3SiSi(CH_3)_3$ (Disilane, 1,1,1-trimethyl-2,2,2-triphenyl-) (RN-CAS Registry Number 1450-18-6)	$(C_6H_5)_3Si$	10.83 ± 0.09	EI	3549
(TR-Other product(s) thermochemically reasonable)					
$C_3H_9Si^+$	$(CH_3)_3SiOSi(CH_3)_3$ (RN-CAS Registry Number 107-46-0)		15.4 ± 0.2	EI	3444
$C_3H_9Si^+$	$(CH_3)_3SiOSi(CH_3)_2OSi(CH_3)_3$ (RN-CAS Registry Number 107-51-7)		15.8 ± 0.2	EI	3444
$C_3H_9Si^+$	$(CH_3)_3SiOSi(CH_3)(C_2H_5)OSi(CH_3)_3$ (RN-CAS Registry Number 5356-85-4)		15.4 ± 0.2	EI	3444
$C_3H_9Si^+$	$(CH_3)_3SiOSi(CH_3)(C_2H_5)OSi(CH_3)_3$ (RN-CAS Registry Number 17861-60-8)		15.3 ± 0.2	EI	3444
$C_3H_9Si^+$	$(CH_3)_3SiGe(CH_3)_3$ (RN-CAS Registry Number 31608-80-7)	$(CH_3)_3Ge$	10.19 ± 0.12	EI	3548
$C_3H_9Si^+$	$(CH_3)_3SiSn(CH_3)_3$ (RN-CAS Registry Number 16393-88-7)	$(CH_3)_3Sn$	10.18 ± 0.26	EI	3548
$C_4H_9Si^+$	$CH_2=CHSi(CH_3)_3$ (RN-CAS Registry Number 754-05-2)	CH_3	~ 9	EI	3809
$C_4H_{12}Si^+$	$(CH_3)_4Si$ (RN-CAS Registry Number 75-76-3)	**	9.42 ± 0.1	PE	3677
$C_4H_{12}Si^+$	$(CH_3)_4Si$ (RN-CAS Registry Number 75-76-3)	**	9.79 ± 0.04	PE	3880
$C_4H_{12}Si^+(^2A_1)$	$(CH_3)_4Si$ (RN-CAS Registry Number 75-76-3)	**	15.62 (V)	PE	3503
$C_4H_{12}Si^+$	$(CH_3)_4Si$ (RN-CAS Registry Number 75-76-3)	**	9.85 ± 0.16	EI	3548
$C_5H_{10}Si^+$	$(CH_3)_3SiC \equiv CH$ (RN-CAS Registry Number 1066-54-2)	**	9.9 ± 0.1	PE	4002

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_5H_{12}Si^+$	$(CH_3)_3SiCH=CH_2$ (RN-CAS Registry Number 754-05-2)	**	9.8 (V)	PE	3940
$C_5H_{12}Si^+$	$(CH_3)_3SiCH=CH_2$ (RN-CAS Registry Number 754-05-2)	**	9.8 (V)	PE	3908
$C_5H_{12}Si^+$	$CH_2=CHSi(CH_3)_3$ (RN-CAS Registry Number 754-05-2)	**	9.2	EI	3809
$C_5H_{12}Si^+$	$C_3H_6Si(CH_3)_2$ (Silacyclobutane, 1,1-dimethyl-) (RN-CAS Registry Number 2295-12-7)	**	9.40 (V)	PE	4077
$C_6H_8Si^+$	$C_6H_5SiH_3$ (Silane, phenyl-) (RN-CAS Registry Number 694-53-1)	**	9.09	PE	3868
$C_6H_8Si^+$	$C_6H_5SiH_3$ (Silane, phenyl-) (RN-CAS Registry Number 694-53-1)	**	9.25	PE	3922
$C_6H_{12}Si^+$	$(C_2H_5)_2Si(CH_3)_2$ (RN-CAS Registry Number 10519-87-6)	**	9.8 (V)	PE	3994
$C_6H_{14}Si^+$	$(CH_3)_3SiCH_2CH=CH_2$ (RN-CAS Registry Number 762-72-1)	**	9.0 (V)	PE	3908
$C_6H_{14}Si^+$	$(CH_3)_3SiCH_2CH=CH_2$ (RN-CAS Registry Number 762-72-1)	**	9.0 (V)	PE	3940
$C_6H_{14}Si^+$	$C_3H_5Si(CH_3)_3$ (Silacyclobutane, 1,1,2-trimethyl-) (RN-CAS Registry Number 30681-90-4)	**	9.20 (V)	PE	4077
$C_6H_{14}Si^+$	$C_4H_8Si(CH_3)_2$ (Silacyclopentane, 1,1-dimethyl-) (RN-CAS Registry Number 1072-54-4)	**	9.75 (V)	PE	4077
$C_8H_{11}Si^+$	$C_6H_5Si(CH_3)_2H$ (Silane, dimethylphenyl-) (RN-CAS Registry Number 766-77-8)	H	10.43 ± 0.04	EI	3549
$C_8H_{11}Si^+$	(TR-Other product(s) thermochemically reasonable)				
$C_8H_{11}Si^+$	$C_6H_5Si(CH_3)_3$ (Silane, trimethylphenyl-) (RN-CAS Registry Number 768-32-1)	CH_3	10.26 ± 0.03	EI	3549
$C_8H_{11}Si^+$	(TR-Other product(s) thermochemically reasonable)				
$C_8H_{11}Si^+$	$C_6H_5Si_2(CH_3)_5$ (Disilane, pentamethylphenyl-) (RN-CAS Registry Number 1130-17-2)	$Si(CH_3)_3$	9.86 ± 0.06	EI	3549
$C_8H_{11}Si^+$	(TR-Other product(s) thermochemically reasonable)				
$C_8H_{11}Si^+$	$(C_6H_5)_2SiCH_3Si(CH_3)_3$ (Disilane, 1,1,1,2-tetramethyl-2,2-diphenyl-) (RN-CAS Registry Number 1450-16-4)	$C_6H_5Si(CH_3)_2$	9.75 ± 0.04	EI	3549
$C_8H_{11}Si^+$	(TR-Other product(s) thermochemically reasonable)				
$C_8H_{11}Si^+$	$(C_6H_5)(CH_3)_2Si_2$ (Disilane, 1,1,2,2-tetramethyl-1,2-diphenyl-) (RN-CAS Registry Number 1145-98-8)	$C_6H_5Si(CH_3)_2$	9.87 ± 0.08	EI	3549
$C_8H_{11}Si^+$	(TR-Other product(s) thermochemically reasonable)				

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_{11}Si^+$	(C ₆ H ₅) ₃ SiSi(CH ₃) ₃ (Disilane, 1,1,1-trimethyl-2,2,2-triphenyl-) (RN-CAS Registry Number 1450-18-6) (TR-Other product(s) thermochemically reasonable)	(C ₆ H ₅) ₂ SiCH ₃	10.13±0.03	EI	3549
$C_8H_{12}Si^+$	(C ₂ H ₃) ₄ Si (RN-CAS Registry Number 1112-55-6)	**	9.7 (V)	PE	3994
$C_8H_{12}Si^+$	C ₆ H ₅ Si(CH ₃) ₂ H (Silane, dimethylphenyl-) (RN-CAS Registry Number 766-77-8)	**	8.92±0.15	EI	3549
$C_9H_{14}Si^+$	C ₆ H ₅ Si(CH ₃) ₃ (Silane, trimethylphenyl-) (RN-CAS Registry Number 768-32-1)	**	8.81±0.15	EI	3549
$C_9H_{14}Si^+$	C ₆ H ₅ Si(CH ₃) ₃ (Silane, trimethylphenyl-) (RN-CAS Registry Number 768-32-1)	**	8.79	CTS	3922
$C_{10}H_{10}Si^+$	C ₁₀ H ₇ SiH ₃ (Silane, 1-naphthalenyl-) (RN-CAS Registry Number 38274-75-8)	**	8.12	CTS	3922
$C_{10}H_{14}Si^+$	C ₈ H ₈ Si(CH ₃) ₂ (1-Silaindan, 1,1-dimethyl-) (RN-CAS Registry Number 17158-48-4)	**	8.54	CTS	3546
$C_{10}H_{14}Si^+$	C ₈ H ₈ Si(CH ₃) ₂ (1 <i>H</i> -2-Silaindene, 2,3-dihydro-2,2-dimethyl-) (RN-CAS Registry Number 2764-87-6)	**	8.41	CTS	3546
$C_{10}H_{16}Si^+$	C ₆ H ₅ CH ₂ Si(CH ₃) ₃ (Silane, trimethyl(phenylmethyl)-) (RN-CAS Registry Number 770-09-2)	**	8.27	CTS	3922
$C_{10}H_{16}Si^+$	C ₆ H ₅ CH ₂ Si(CH ₃) ₃ (Silane, trimethyl(phenylmethyl)-) (RN-CAS Registry Number 770-09-2)	**	8.37	CTS	3546
$C_{11}H_{16}Si^+$	C ₆ H ₅ CH=CHSi(CH ₃) ₃ (Silane, trimethyl(2-phenylethenyl)-, (E)-) (RN-CAS Registry Number 19372-00-0)	**	7.89±0.04	RPD	4097
$C_{11}H_{16}Si^+$	C ₆ H ₅ CH=CHSi(CH ₃) ₃ (Silane, trimethyl(2-phenylethenyl)-, (Z)-) (RN-CAS Registry Number 19319-11-0)	**	8.19±0.04	RPD	4097
$C_{11}H_{16}Si^+$	C ₆ H ₅ C(Si(CH ₃) ₃)=CH ₂ (Silane, trimethyl(1-phenylethenyl)-) (RN-CAS Registry Number 1923-01-9)	**	8.23±0.04	RPD	4097
$C_{12}H_{16}Si^+$	C ₉ H ₇ Si(CH ₃) ₃ (Silane, 1 <i>H</i> -inden-1-yltrimethyl-) (RN-CAS Registry Number 18053-75-3)	**	7.65±0.01	EI	3805

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{12}H_{18}Si^+$	$C_9H_9Si(CH_3)_3$ (Silane, (2,3-dihydro-1 <i>H</i> -inden-1-yl)trimethyl-) (RN-CAS Registry Number 18036-88-9)	**	7.87 ± 0.01	EI	3805
$C_{12}H_{18}Si^+$	$C_9H_9Si(CH_3)_3$ (Silane, 1-indanyltrimethyl-) (RN-CAS Registry Number 18036-88-9)	**	8.13	CTS	3546
$C_{12}H_{18}Si^+$	$C_6H_5CH=CHCH_2Si(CH_3)_3$ (Silane, trimethyl(3-phenyl-2-propenyl)-, (E)-) (RN-CAS Registry Number 40595-34-4)	**	7.61 ± 0.04	RPD	4097
$C_{12}H_{18}Si^+$	$C_6H_5CH=CHCH_2Si(CH_3)_3$ (Silane, trimethyl(3-phenyl-2-propenyl)-, (Z)-) (RN-CAS Registry Number 40595-35-5)	**	7.77 ± 0.04	RPD	4097
$C_{13}H_{13}Si^+$	$(C_6H_5)_2Si(CH_3)H$ (Silane, methyldiphenyl-) (RN-CAS Registry Number 776-76-1)	H	10.97 ± 0.12	EI	3549
$C_{13}H_{13}Si^+$	$(C_6H_5)_2SiCH_3Si(CH_3)_3$ (Disilane, 1,1,1,2-tetramethyl-2,2-diphenyl-) (RN-CAS Registry Number 1450-16-4)	$(CH_3)_3Si$	9.63 ± 0.02	EI	3549
$C_{13}H_{13}Si^+$	$(C_6H_5)(CH_3)_2Si_2$ (Disilane, 1,1,2,2-tetramethyl-1,2-diphenyl-) (RN-CAS Registry Number 1145-98-8)	$(CH_3)_3Si$	9.60 ± 0.02	EI	3549
$C_{13}H_{13}Si^+$	$((C_6H_5)_2CH_3Si)_2$ (Disilane, 1,2-dimethyl-1,1,2,2-tetraphenyl-) (RN-CAS Registry Number 1172-76-5)	$(C_6H_5)_2SiCH_3$	9.51 ± 0.05	EI	3549
$C_{13}H_{14}Si^+$	$(C_6H_5)_2Si(CH_3)H$ (Silane, methyldiphenyl-) (RN-CAS Registry Number 776-76-1)	**	8.75 ± 0.15	EI	3549
$C_{13}H_{16}Si^+$	$C_{10}H_7Si(CH_3)_3$ (Silane, trimethyl-1-naphthalenyl-) (RN-CAS Registry Number 18052-80-7)	**	8.03	CTS	3758
$C_{14}H_{14}Si^+$	$C_{12}H_8Si(CH_3)_2$ (5 <i>H</i> -Dibenzosilole, 5,5-dimethyl-) (RN-CAS Registry Number 13688-68-1)	**	7.9 (V)	PE	4081
$C_{14}H_{18}Si^+$	$C_{10}H_7CH_2Si(CH_3)_3$ (Silane, trimethyl(1-naphthalenylmethyl)-) (RN-CAS Registry Number 18410-58-7)	**	7.83	CTS	3922
$C_{14}H_{18}Si^+$	$C_{10}H_7CH_2Si(CH_3)_3$ (Silane, trimethyl(1-naphthalenylmethyl)-) (RN-CAS Registry Number 18410-58-7)	**	7.83	CTS	3758

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{17}H_{18}Si^+$	$C_9H_7Si(CH_3)_2C_6H_5$ (Silane, 1 <i>H</i> -inden-1-yl dimethylphenyl-) (RN-CAS Registry Number 27490-90-0)	**	7.69 ± 0.04	EI	3805
$C_{17}H_{20}Si^+$	$C_9H_9Si(CH_3)_2C_6H_5$ (Silane, (2,3-dihydro-1 <i>H</i> -inden-1-yl) dimethylphenyl-) (RN-CAS Registry Number 41273-54-5)	**	7.94 ± 0.01	EI	3805
$C_{18}H_{15}Si^+$	$(C_6H_5)_3SiH$ (Silane, triphenyl-) (RN-CAS Registry Number 789-25-3)	H	9.58 ± 0.08	EI	3549
(TR—Other product(s) thermochemically reasonable)					
$C_{18}H_{15}Si^+$	$(C_6H_5)_4Si$ (Silane, tetraphenyl-) (RN-CAS-Registry Number 1048-08-4)	C_6H_5	9.7	PI	4055
$C_{18}H_{15}Si^+$	$(C_6H_5)_4Si$ (Silane, tetraphenyl-) (RN-CAS Registry Number 1048-08-4)	C_6H_5	9.93 ± 0.08	EI	3549
(TR—Other product(s) thermochemically reasonable)					
$C_{18}H_{15}Si^+$	$(C_6H_5)_3SiSi(CH_3)_3$ (Disilane, 1,1,1-trimethyl-2,2,2-triphenyl-) (RN-CAS Registry Number 1450-18-6)	$(CH_3)_3Si$	9.35 ± 0.03	EI	3549
(TR—Other product(s) thermochemically reasonable)					
$C_{18}H_{15}Si^+$	$((C_6H_5)_2CH_3Si)_2$ (Disilane, 1,2-dimethyl-1,1,2,2-tetraphenyl-) (RN-CAS Registry Number 1172-76-5)	$C_6H_5Si(CH_3)_2$	9.35 ± 0.03	EI	3549
(TR—Other product(s) thermochemically reasonable)					
$C_{18}H_{15}Si^+$	$((C_6H_5)_3Si)_2$ (Disilane, hexaphenyl-) (RN-CAS Registry Number 1450-23-3)	$(C_6H_5)_3Si$	9.61 ± 0.09	EI	3549
(TR—Other product(s) thermochemically reasonable)					
$C_{18}H_{16}Si^+$	$(C_6H_5)_3SiH$ (Silane, triphenyl-) (RN-CAS Registry Number 789-25-3)	**	8.80 ± 0.15	EI	3549
$C_{22}H_{20}Si^+$	$C_{10}H_7Si(CH_3)_2C_{10}H_7$ (Silane, dimethyl-di-1-naphthalenyl-) (RN-CAS Registry Number 18753-19-0)	**	8.03	CTS	3758
$C_{24}H_{16}Si^+$	$C_{24}H_{16}Si$ (5,5'-Spiro[5 <i>H</i> -dibenzosilole]) (RN-CAS Registry Number 159-68-2)	**	7.85 (V)	PE	4081
$C_{24}H_{20}Si^+$	$(C_6H_5)_4Si$ (Silane, tetraphenyl-) (RN-CAS-Registry Number 1048-08-4)	**	8.50 ± 0.03	PI	4055
$C_{24}H_{20}Si^+$	$(C_6H_5)_4Si$ (Silane, tetraphenyl-) (RN-CAS Registry Number 1048-08-4)	**	8.65 ± 0.15	EI	3549

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_{18}Si_2^+$	$(CH_3)_3SiSi(CH_3)_3$ (RN-CAS Registry Number 1450-14-2)	**	8.69 (V)	PE	3504
$C_6H_{18}Si_2^+$	$(CH_3)_3SiSi(CH_3)_3$ (RN-CAS Registry Number 1450-14-2)	**	8.35 ± 0.12	EI	3548
$C_6H_{18}Si_2^+$	$(CH_3)_3SiSi(CH_3)_3$ (RN-CAS Registry Number 1450-14-2)	**	8.46 ± 0.15	EI	3549
$C_{11}H_{20}Si_2^+$	$C_6H_5Si_2(CH_3)_5$ (Disilane, pentamethylphenyl-) (RN-CAS Registry Number 1130-17-2)	**	8.35 (V)	PE	3946
$C_{11}H_{20}Si_2^+$	$C_6H_5Si_2(CH_3)_5$ (Disilane, pentamethylphenyl-) (RN-CAS Registry Number 1130-17-2)	**	8.35 ± 0.15	EI	3549
$C_{11}H_{20}Si_2^+$	$C_6H_5Si_2(CH_3)_5$ (Disilane, pentamethylphenyl-) (RN-CAS Registry Number 1130-17-2)	**	8.37	CTS	3946
$C_{12}H_{10}Si_2^+$	$C_8H_8Si(CH_3)Si(CH_3)_3$ (2-Silaindan, 2-methyl-2-(trimethylsilyl)-) (RN-CAS Registry Number 27490-20-6)	**	8.37	CTS	3546
$C_{12}H_{22}Si_2^+$	$C_6H_5CH_2Si_2(CH_3)_5$ (Disilane, pentamethyl(phenylmethyl)-) (RN-CAS Registry Number 3098-82-6)	**	8.27	CTS	3546
$C_{13}H_{22}Si_2^+$	$C_6H_5CH=CHSi_2(CH_3)_5$ (Disilane, pentamethyl(2-phenylethenyl)-, (E)-) (RN-CAS Registry Number 40595-36-6)	**	7.73 ± 0.04	RPD	4097
$C_{14}H_{24}Si_2^+$	$C_9H_9Si_2(CH_3)_5$ (Disilane, 1-indanylpentamethyl-) (RN-CAS Registry Number 27490-23-9)	**	8.07	CTS	3546
$C_{14}H_{24}Si_2^+$	$C_6H_5CH=C(Si(CH_3)_3)_2$ (Silane, (phenylethenylidene)bis[trimethyl-]) (RN-CAS Registry Number 18415-23-1)	**	8.12 ± 0.04	RPD	4097
$C_{15}H_{22}Si_2^+$	$C_{10}H_7Si_2(CH_3)_5$ (Disilane, pentamethyl-1-naphthalenyl-) (RN-CAS Registry Number 38446-40-1)	**	7.95	CTS	3758
$C_{15}H_{24}Si_2^+$	$C_9H_6(Si(CH_3)_3)_2$ (Silane, 1 <i>H</i> -indene-1,2-diylbis[trimethyl-]) (RN-CAS Registry Number 26205-36-7)	**	7.54 ± 0.01	EI	3805
$C_{16}H_{22}Si_2^+$	$(C_6H_5)_2SiCH_3Si(CH_3)_3$ (Disilane, 1,1,1,2-tetramethyl-2,2-diphenyl-) (RN-CAS Registry Number 1450-16-4)	**	8.38 ± 0.15	EI	3549
$C_{16}H_{22}Si_2^+$	$(C_6H_5(CH_3)_2Si)_2$ (Disilane, 1,1,2,2-tetramethyl-1,2-diphenyl-) (RN-CAS Registry Number 1145-98-8)	**	8.11 ± 0.15	EI	3549

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{21}H_{24}Si_2^+$	$(C_6H_5)_3SiSi(CH_3)_3$ (Disilane, 1,1,1-trimethyl-2,2,2-triphenyl-) (RN-CAS Registry Number 1450-18-6)	**	8.30 ± 0.15	EI	3549
$C_{24}H_{26}Si_2^+$	$C_{10}H_7(Si(CH_3)_2)_2C_{10}H_7$ (Disilane, 1,1,2,2-tetramethyl-1,2-di-1-naphthalenyl-) (RN-CAS Registry Number 38446-41-2)	**	7.91	CTS	3758
$C_{26}H_{26}Si_2^+$	$((C_6H_5)_2CH_3Si)_2$ (Disilane, 1,2-dimethyl-1,1,2,2-tetraphenyl-) (RN-CAS Registry Number 1172-76-5)	**	8.05 ± 0.15	EI	3549
$C_{36}H_{30}Si_2^+$	$((C_6H_5)_3Si)_2$ (Disilane, hexaphenyl-) (RN-CAS Registry Number 1450-23-3)	**	8.16 ± 0.15	EI	3549
$C_8H_{24}Si_3^+$	$Si_3(CH_3)_8$ (RN-CAS Registry Number 3704-44-7)	**	8.19 (V)	PE	3504
$C_{17}H_{28}Si_3^+$	$C_{10}H_7Si_3(CH_3)_7$ (Trisilane, 1,1,1,2,2,3,3-heptamethyl-3-(1-naphthalenyl)-) (RN-CAS Registry Number 38446-42-3)	**	7.93	CTS	3758
$C_{17}H_{28}Si_3^+$	$C_{10}H_7Si(Si(CH_3)_3)_2CH_3$ (Trisilane, 1,1,1,2,3,3,3-heptamethyl-2-)(-naphthalenyl)-) (RN-CAS Registry Number 38446-43-4)	**	7.85	CTS	3758
$C_{26}H_{32}Si_3^+$	$C_{10}H_7(Si(CH_3)_2)_3C_{10}H_7$ (Trisilane, 1,1,2,2,3,3-hexamethyl-1,3-di-1-naphthalenyl-) (RN-CAS Registry Number 38580-43-7)	**	7.92	CTS	3758
$C_6H_{16}Si_4^+$	$C_6H_{16}Si_4$ (1,3,5,7-Tetrasilatricyclo[3.3.1.1 ^{3,7}]decane) (RN-CAS Registry Number 281-44-7) (ON-Other name: 1,3,5,7-Tetrasiladamantane)	**	9.0 ± 0.05	PE	3855
$C_6H_{16}Si_4^+$	$C_6H_{16}Si_4$ (1,3,5,7-Tetrasilatricyclo[3.3.1.1 ^{3,7}]decane) (RN-CAS Registry Number 281-44-7) (ON-Other name: Silamantane)	**	9.7 (V)	PE	4000
$C_{10}H_{24}Si_4^+$	$C_6H_{12}Si_4(CH_3)_4$ (1,3,5,7-Tetrasilatricyclo[3.3.1.1 ^{3,7}]decane, 1,3,5,7-tetramethyl-) (RN-CAS Registry Number 17995-33-4) (ON-Other name: 1,3,5,7-Tetramethyl-1,3,5,7-tetrasiladamantane)	**	8.45 ± 0.05	PE	3855
$C_{10}H_{30}Si_4^+$	$n-Si_4(CH_3)_{10}$ (RN-CAS Registry Number 865-76-9)	**	7.98 (V)	PE	3504
$C_{10}H_{30}Si_5^+$	$Si_5(CH_3)_{10}$ (Cyclopentasilane, decamethyl-) (RN-CAS Registry Number 13452-92-1)	**	7.94 (V)	PE	3504

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{12}H_{36}Si_5^+$	$Si(Si(CH_3)_3)_4$ (RN-CAS Registry Number 4098-98-0)	**	8.24 (V)	PE	3504
$C_{12}H_{36}Si_6^+$	$Si_6(CH_3)_{12}$ (Cyclohexasilane, dodecamethyl-) (RN-CAS Registry Number 4098-30-0)	**	7.79 (V)	PE	3504
$C_{16}H_{36}Si_7^+$	$C_{10}H_{18}Si_7(CH_3)_6$ (2 <i>H</i> -1,5,8,12-Dimethano-3,6a,10-metheno-1,3,5,6a,8,10,12-heptasilaoctalene, dodecahydro-1,3,5,8,10,12-hexamethyl-) (RN-CAS Registry Number 26393-20-4) (ON-Other name: Carborundane)	**	7.9 ± 0.05	PE	3855
Si_2N^+	Si_2N (RN-CAS Registry Number XXXXX-XX-X)	**	9.5 ± 0.5	EI	3810
$SiH_3N_3(^2A'')$	SiH_3N_3 (RN-CAS Registry Number 13847-60-4)	**	10.33 ± 0.02 (V)	PE	3670
$Si_3H_9N^+$	$(SiH_3)_3N$ (RN-CAS Registry Number 13862-16-3)	**	9.7 ± 0.1 (V)	PE	3661
$C_2H_9NSi^+$	$(CH_3)_2NSiH_3$ (RN-CAS Registry Number 2875-98-1)	**	8.5 ± 0.1 (V)	PE	3661
$C_8H_{13}NSi^+$	$C_5H_4NS(CH_3)_3$ (Pyridine, 2-(trimethylsilyl)-) (RN-CAS Registry Number 13737-04-7)	**	8.90 ± 0.05 (V)	PE	3685
$C_8H_{13}NSi^+$	$C_5H_4NS(CH_3)_3$ (Pyridine, 4-(trimethylsilyl)-) (RN-CAS Registry Number 18301-46-7)	**	9.30 ± 0.05 (V)	PE	3685
$C_3H_9N_3Si^+$	$(CH_3)_3SiN_3$ (RN-CAS Registry Number 4648-54-8)	**	9.7 ± 0.1 (V)	PE	3670
$C_8H_{24}N_4Si^+$	$((CH_3)_2N)_4Si$ (RN-CAS Registry Number 1624-01-7)	**	8.39 (V)	PE	3503
$CH_9NSi_2^+$	$(SiH_3)_2NCH_3$ (RN-CAS Registry Number 4459-06-7)	**	9.2 ± 0.1 (V)	PE	3661
$C_{11}H_{21}NSi_2^+$	$C_5H_3N(S(CH_3)_3)_2$ (Pyridine, 2,5-bis(trimethylsilyl)-) (RN-CAS Registry Number 35505-51-2)	**	8.65 ± 0.05 (V)	PE	3685
$C_{11}H_{21}NSi_2^+$	$C_5H_3N(S(CH_3)_3)_2$ (Pyridine, 2,6-bis(trimethylsilyl)-) (RN-CAS Registry Number 35505-52-3)	**	8.50 ± 0.05 (V)	PE	3685
SiO^+	SiO (RN-CAS Registry Number 10097-28-6)	**	10.2 ± 0.5	EI	3985
SiO^+	SiO (RN-CAS Registry Number 10097-28-6)	**	11.3 ± 0.3	EI	4005

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
SiO^+	SiO (RN-CAS Registry Number 10097-28-6)	**	11.3 ± 0.5	EI	3810
SiO^+	SiO (RN-CAS Registry Number 10097-28-6)	**	11.5 ± 0.3	EI	3610
$\text{Si}_2\text{H}_6\text{O}^+ (^2\text{B}_1)$	$(\text{SiH}_3)_2\text{O}$ (RN-CAS Registry Number 13597-73-4)	**	11.17 (V)	PE	3656
$\text{Si}_2\text{H}_6\text{O}^+$	$(\text{SiH}_3)_2\text{O}$ (RN-CAS Registry Number 13597-73-4)	**	11.19 (V)	PE	3844
CH_6OSi^+	CH_3OSiH_3 (RN-CAS Registry Number 2171-96-2)	**	10.61 (V)	PE	3844
$\text{C}_3\text{H}_9\text{SiO}^+$	$(\text{CH}_3)_3\text{SiOSi}(\text{CH}_3)_3$ (RN-CAS Registry Number 107-46-0)		21.8 ± 0.2	EI	3444
$\text{C}_3\text{H}_9\text{SiO}^+$	$(\text{CH}_3)_3\text{SiOSi}(\text{CH}_3)_2\text{OSi}(\text{CH}_3)_3$ (RN-CAS Registry Number 107-51-7)		21.8 ± 0.2	EI	3444
$\text{C}_3\text{H}_9\text{SiO}^+$	$(\text{CH}_3)_3\text{SiOSi}(\text{CH}_3)(\text{C}_2\text{H}_5)\text{OSi}(\text{CH}_3)_3$ (RN-CAS Registry Number 5356-85-4)		23.6 ± 0.2	EI	3444
$\text{C}_3\text{H}_9\text{SiO}^+$	$(\text{CH}_3)_3\text{SiOSi}(\text{CH}_3)(\text{C}_2\text{H}_5)\text{OSi}(\text{CH}_3)_3$ (RN-CAS Registry Number 17861-60-8)		21.8 ± 0.2	EI	3444
$\text{C}_{10}\text{H}_{16}\text{OSi}^+$	$\text{C}_6\text{H}_4(\text{OCH}_3)\text{Si}(\text{CH}_3)_3$ (Silane, (4-methoxyphenyl)trimethyl-) (RN-CAS Registry Number 877-68-9)	**	8.03	CTS	3758
$\text{C}_{13}\text{H}_{18}\text{OSi}^+$	$\text{C}_9\text{H}_7\text{Si}(\text{CH}_3)_2\text{OC}_2\text{H}_5$ (Silane, ethoxy-1 <i>H</i> -inden-1-yl dimethyl-) (RN-CAS Registry Number 41273-57-8)	**	7.63 ± 0.01	EI	3805
$\text{C}_{13}\text{H}_{20}\text{OSi}^+$	$\text{C}_9\text{H}_9\text{Si}(\text{CH}_3)_2\text{OC}_2\text{H}_5$ (Silane, (2,3-dihydro-1 <i>H</i> -inden-1-yl)ethoxydimethyl-) (RN-CAS Registry Number 41273-53-4)	**	7.81 ± 0.01	EI	3805
$\text{C}_5\text{H}_{12}\text{O}_2\text{Si}^+$	$\text{C}_3\text{H}_6\text{Si}(\text{OCH}_3)_2$ (Silacyclobutane, 1,1-dimethoxy-) (RN-CAS Registry Number 33446-84-3)	**	10.15 (V)	PE	4077
$\text{C}_8\text{H}_{20}\text{O}_4\text{Si}^+$	$(\text{C}_2\text{H}_5\text{O})_4\text{Si}$ (RN-CAS Registry Number 78-10-4)	**	9.77 (V)	PE	3503
$\text{C}_{12}\text{H}_{22}\text{OSi}_2^+$	$\text{C}_6\text{H}_4(\text{OCH}_3)\text{Si}_2(\text{CH}_3)_5$ (Disilane, (4-methoxyphenyl)pentamethyl-) (RN-CAS Registry Number 4199-03-5)	**	7.85	CTS	3758
Si_2NO^+	Si_2NO (RN-CAS Registry Number 12033-47-5)	**	10.8 ± 0.5	EI	3810
CH_3NOSi^+	SiH_3NCO (RN-CAS Registry Number 13730-13-7)	**	$11.10 \pm 0.02 \text{ (V)}$	PE	3670

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{C}_4\text{H}_9\text{NOSi}^+$	$(\text{CH}_3)_3\text{SiNCO}$ (RN-CAS Registry Number 1118-02-1)	**	10.3 ± 0.1 (V)	PE	3670
$\text{SiF}_4(^2\text{T}_1)$	SiF_4 (RN-CAS Registry Number 7783-61-1)	**	16.46 ± 0.04 (V)	PE	3880
$\text{SiF}_4(^2\text{T}_2)$	SiF_4 (RN-CAS Registry Number 7783-61-1)	**	17.55 ± 0.04 (V)	PE	3880
$\text{SiF}_4(^2\text{A}_1)$	SiF_4 (RN-CAS Registry Number 7783-61-1)	**	18.09 ± 0.04 (V)	PE	3880
$\text{SiF}_4(^2\text{E})$	SiF_4 (RN-CAS Registry Number 7783-61-1)	**	19.51 ± 0.04 (V)	PE	3880
Si_2F_6^+	Si_2F_6 (RN-CAS Registry Number 13830-68-7)	**	13.20 ± 0.02 (V)	PE	4026
$\text{SiH}_3\text{F}^+(^2\text{E})$	SiH_3F (RN-CAS Registry Number 13537-33-2)	**	12.58 (V)	PE	3511
$\text{SiH}_3\text{F}^+(^2\text{E})$	SiH_3F (RN-CAS Registry Number 13537-33-2)	**	12.6 ± 0.1 (V)	PE	3510
$\text{SiH}_3\text{F}^+(^2\text{A}_1)$	SiH_3F (RN-CAS Registry Number 13537-33-2)	**	~ 16 (V)	PE	3510
SiH_3F^+	SiH_3F (RN-CAS Registry Number 13537-33-2)	**	16.1 ± 0.1 (V)	PE	3502
$\text{SiH}_3\text{F}^+(^2\text{A}_1)$	SiH_3F (RN-CAS Registry Number 13537-33-2)	**	~ 16.13 (V)	PE	3511
$\text{SiH}_3\text{F}^+(^2\text{E})$	SiH_3F (RN-CAS Registry Number 13537-33-2)	**	16.2 ± 0.1 (V)	PE	3510
$\text{SiH}_3\text{F}^+(^2\text{E})$	SiH_3F (RN-CAS Registry Number 13537-33-2)	**	~ 16.58 (V)	PE	3511
$\text{SiH}_3\text{F}^+(^2\text{A}_1)$	SiH_3F (RN-CAS Registry Number 13537-33-2)	**	19.29 (V)	PE	3511
$\text{SiH}_2\text{F}_2(^2\text{B}_1)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	12.85 (V)	PE	3511
$\text{SiH}_2\text{F}_2(^2\text{B}_1)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	12.85 (V)	PE	3694
$\text{SiH}_2\text{F}_2(^2\text{B}_1)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	12.9 ± 0.1 (V)	PE	3510
$\text{SiH}_2\text{F}_2(^2\text{A}_1)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	15.20 (V)	PE	3511
$\text{SiH}_2\text{F}_2(^2\text{A}_1)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	15.20 (V)	PE	3694
$\text{SiH}_2\text{F}_2(^2\text{B}_2)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	16.07 (V)	PE	3511
$\text{SiH}_2\text{F}_2(^2\text{B}_2)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	16.07 (V)	PE	3694
$\text{SiH}_2\text{F}_2(^2\text{A}_2)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	16.37 (V)	PE	3511
$\text{SiH}_2\text{F}_2(^2\text{A}_2)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	16.37 (V)	PE	3694
$\text{SiH}_2\text{F}_2(^2\text{B}_1)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	17.60 (V)	PE	3511

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{SiH}_2\text{F}_2(^2\text{B}_1)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	17.60 (V)	PE	3694
$\text{SiH}_2\text{F}_2(^2\text{A}_1)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	17.93 (V)	PE	3511
$\text{SiH}_2\text{F}_2(^2\text{B}_2)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	17.93 (V)	PE	3694
$\text{SiH}_2\text{F}_2(^2\text{B}_1)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	18.30 (V)	PE	3511
$\text{SiH}_2\text{F}_2(^2\text{A}_1)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	18.30 (V)	PE	3694
$\text{SiH}_2\text{F}_2(^2\text{A}_1)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	20.19 (V)	PE	3511
$\text{SiH}_2\text{F}_2(^2\text{A}_1)$	SiH_2F_2 (RN-CAS Registry Number 13824-36-7)	**	20.19 (V)	PE	3694
$\text{SiHF}_3(^2\text{A}_1)$	SiHF_3 (RN-CAS Registry Number 13465-71-9)	**	14.48 ± 0.02 (V)	PE	4026
$\text{SiHF}_3(^2\text{A}_2)$	SiHF_3 (RN-CAS Registry Number 13465-71-9)	**	15.94 ± 0.02 (V)	PE	4026
$\text{SiHF}_3(^2\text{E})$	SiHF_3 (RN-CAS Registry Number 13465-71-9)	**	16.38 ± 0.02 (V)	PE	4026
$\text{SiHF}_3(^2\text{E})$	SiHF_3 (RN-CAS Registry Number 13465-71-9)	**	17.24 ± 0.02 (V)	PE	4026
$\text{SiHF}_3(^2\text{A}_1)$	SiHF_3 (RN-CAS Registry Number 13465-71-9)	**	18.20 ± 0.02 (V)	PE	4026
$\text{SiHF}_3(^2\text{E})$	SiHF_3 (RN-CAS Registry Number 13465-71-9)	**	18.61 ± 0.02 (V)	PE	4026
$\text{SiHF}_3(^2\text{A}_1)$	SiHF_3 (RN-CAS Registry Number 13465-71-9)	**	20.94 ± 0.02 (V)	PE	4026
$\text{SiF}_3\text{C}^+(^2\text{A}_1)$	SiF_3Cl (RN-CAS Registry Number 14049-36-6)	**	20.86 ± 0.02 (V)	PE	4026
$\text{C}_5\text{H}_9\text{SiF}^+$	$(\text{CH}_3)_3\text{SiC}\equiv\text{CF}$ (RN-CAS Registry Number 38346-22-4)	**	9.8 ± 0.1	PE	4002
$\text{CH}_3\text{F}_3\text{Si}^+$	CH_3SiF_3 (RN-CAS Registry Number 373-74-0)	**	13.24 ± 0.02 (V)	PE	4026
$\text{C}_7\text{H}_{10}\text{F}_6\text{Si}^+$	<i>cis</i> -(CH_3) ₃ SiC(CF ₃)=C(CF ₃)H (RN-CAS Registry Number 35186-03-9)	**	9.86	PE	3589
$\text{C}_6\text{H}_{12}\text{F}_4\text{Si}_4^+$	$\text{C}_6\text{H}_{12}\text{Si}_4\text{F}_4$ (1,3,5,7-Tetrasilatricyclo[3.3.1.1 ^{3,7}]decane, 1,3,5,7-tetrafluoro-) (RN-CAS Registry Number 33664-21-0) (ON-Other name: 1,3,5,7-Tetrafluoro-1,3,5,7-tetrasiladamantane)	**	9.8 ± 0.05	PE	3855
SiAl^+	SiAl (RN-CAS Registry Number 12042-55-6)	**	6.5 ± 1.0	EI	4005
SiAlO^+	SiAlO (RN-CAS Registry Number 37361-47-0)	**	6.3 ± 1.0	EI	4005

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
SiAlO^+	AlSiO (RN-CAS Registry Number 37361-47-0)	**	8.0 ± 1	EI	3985
P^+	P_2 (RN-CAS Registry Number 12185-09-0)		15.9	EI	3472
P^+	PH_3 (RN-CAS Registry Number 7803-51-2)	$\text{H}_2 + \text{H}$	16.3	DC	3811
P^+	PCl_3 (RN-CAS Registry Number 7719-12-2)	$\text{Cl}_2 + \text{Cl}$	18.5 ± 0.7	EDD	3556
P^+	(TR-Other product(s) thermochemically reasonable) PBr_3 (RN-CAS Registry Number 7789-60-8) (TR-Other product(s) thermochemically reasonable)	$\text{Br}_2 + \text{Br}$	16.7 ± 0.7	EDD	3556
P_2^+	P_2 (RN-CAS Registry Number 12185-09-0) (RS-Average of two Rydberg series limits)	**	10.7 ± 0.1	S	3567
$\text{P}_2^+(\Pi_u)$	P_2 (RN-CAS Registry Number 12185-09-0)	**	10.60	PE	3695
$\text{P}_2^+(\Sigma_g)$	P_2 (RN-CAS Registry Number 12185-09-0)	**	10.84 (V)	PE	3695
P_2^+	P_2 (RN-CAS Registry Number 12185-09-0)	**	9.7 ± 0.5	EI	3458
P_2^+	P_2 (RN-CAS Registry Number 12185-09-0)	**	9.7	EI	4001
P_2^+	P_2 (RN-CAS Registry Number 12185-09-0)	**	11.2	EI	3472
P_2^+	P_2 (RN-CAS Registry Number 12185-09-0)	**	11.4 ± 0.5	EI	4098
P_2^+	P_2 (RN-CAS Registry Number 12185-09-0)	**	11.8 ± 0.5	EI	3555
P_4^+	P_4 (RN-CAS Registry Number 12185-10-3)	**	9.10 ± 0.05	PE	3683
$\text{P}_4^+(\text{E})$	P_4 (RN-CAS Registry Number 12185-10-3)	**	9.2	PE	3643
$\text{P}_4^+(\text{T}_2)$	P_4 (RN-CAS Registry Number 12185-10-3)	**	10.2	PE	3643
$\text{P}_4^+(\text{A}_1)$	P_4 (RN-CAS Registry Number 12185-10-3)	**	11.80 ± 0.07	PE	3643
$\text{P}_4^+(\text{T}_2)$	P_4 (RN-CAS Registry Number 12185-10-3)	**	~ 14.2	PE	3643
P_4^+	P_4 (RN-CAS Registry Number 12185-10-3)	**	10.0 ± 0.5	EI	4098
P_4^+	P_4 (RN-CAS Registry Number 12185-10-3)	**	10.8 ± 0.3	EI	3555
PH^+	PH_3 (RN-CAS Registry Number 7803-51-2)	H_2	12.9	DC	3811

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
PH_2^+	PH_3 (RN-CAS Registry Number 7803-51-2)	H	13.4	DC	3811
$\text{PH}_3(^2\text{A}_1)$	PH_3 (RN-CAS Registry Number 7803-51-2)	**	9.96 ± 0.01	PE	3703
$\text{PH}_3(^2\text{A}_1)$	PH_3 (RN-CAS Registry Number 7803-51-2)	**	9.96	PE	3719
$\text{PH}_3(^2\text{E})$	PH_3 (RN-CAS Registry Number 7803-51-2)	**	12.40 ± 0.02	PE	3703
$\text{PH}_3(^2\text{E})$	PH_3 (RN-CAS Registry Number 7803-51-2)	**	12.64 ± 0.02	PE	3719
$\text{PH}_3(^2\text{A}_1)$	PH_3 (RN-CAS Registry Number 7803-51-2)	**	19.0 (V)	PE	3719
PH_3^+	PH_3 (RN-CAS Registry Number 7803-51-2)	**	10.0	DC	3811
BP^+	BP (RN-CAS Registry Number 20205-91-8)	**	$\leq 13 \pm 2$	EI	3619
PC^+	PC (RN-CAS Registry Number 12326-85-1)	**	10.5 ± 0.5	EI	3458
C_2P^+	C_2P (RN-CAS Registry Number 12602-39-0)	**	10.9 ± 0.5	EI	3458
CP_2^+	CP_2 (RN-CAS Registry Number 12601-93-3)	**	9.4 ± 0.5	EI	3458
$\text{CHP}^+(\text{X}^2\text{II})$	HCP (RN-CAS Registry Number 6829-52-3)	**	10.79 ± 0.01	PE	3840
$\text{CHP}^+(\text{A}^2\Sigma)$	HCP (RN-CAS Registry Number 6829-52-3)	**	12.86 ± 0.01	PE	3840
CH_3P^+	CH_3PH_2 (RN-CAS Registry Number 593-54-4)	**	9.6 ± 0.1 (V)	PE	3661
$\text{C}_3\text{H}_9\text{P}^+$	$(\text{CH}_3)_3\text{P}$ (RN-CAS Registry Number 594-09-2)	**	8.6 ± 0.1 (V)	PE	3661
$\text{C}_4\text{H}_{11}\text{P}^+$	$(\text{C}_2\text{H}_5)_2\text{PH}$ (RN-CAS Registry Number 627-49-6)	**	8.69	PE	3589
$\text{C}_5\text{H}_5\text{P}^+$	$\text{C}_5\text{H}_5\text{P}$ (Phosphorin) (RN-CAS Registry Number 289-68-9)	**	9.2 (V)	PE	3832
$\text{C}_{10}\text{H}_9\text{P}^+$	$\text{C}_6\text{H}_5\text{C}_4\text{H}_4\text{P}$ (1 <i>H</i> -Phosphole, 1-phenyl-) (RN-CAS Registry Number 20342-00-1)	**	8.45 (V)	PE	4090

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{10}H_{13}P^+$	$C_6H_5C_4H_8P$ (Phospholane, 1-phenyl-) (RN-CAS Registry Number 3302-87-2)	**	8.35 (V)	PE	4090
$C_{12}H_{13}P^+$	$C_6H_5C_4H_2P(CH_3)_2$ (1 <i>H</i> -Phosphole, 2,5-dimethyl-1-phenyl-) (RN-CAS Registry Number 13904-58-0)	**	8.0 (V)	PE	4090
$C_{12}H_{17}P^+$	$C_6H_5C_4H_6P(CH_3)_2$ (Phospholane, 2,5-dimethyl-1-phenyl-) (RN-CAS Registry Number 40358-68-7)	**	8.35 (V)	PE	4090
$C_{15}H_{11}P^+$	$C_9H_6PC_6H_5$ (Phosphinoline, 2-phenyl-) (RN-CAS-Registry Number 39768-04-2)	**	7.65	PE	4066
$C_{17}H_{29}P^+$	$C_5H_2P(C(CH_3)_3)_3$ (Phosphorin, 2,4,6-tris(1,1-dimethylethyl)-) (RN-CAS Registry Number 17420-29-0)	**	8.0 (V)	PE	3934
$C_{19}H_{13}P^+$	$C_{13}H_8PC_6H_5$ (Acridophosphine, 10-phenyl-) (RN-CAS Registry Number 20995-81-7)	**	7.25 (V)	PE	3896
$C_{29}H_{25}P^+$	$C_9H_6P(C_6H_5)(CH_2C_6H_5)_2$ (Phosphinoline, 1,1-dihydro-2-phenyl-1,1-bis(phenylmethyl)-) (RN-CAS-Registry Number 39767-95-8)	**	6.00	PE	4066
$C_6H_{18}N_3P^+$	$((CH_3)_2N)_3P$ (RN-CAS Registry Number 1608-26-0)	**	7.61 (V)	PE	3825
$C_6H_{18}N_3P^+$	$((CH_3)_2N)_3P)_2Mo(CO)_4$ (RN-CAS Registry Number 27342-90-1)		10.1 ± 0.05	EI	3952
$C_8H_{18}N_3P^+$	$((CH_3)_2N)_3P)_2Mo(CO)_4$ (RN-CAS Registry Number 27342-90-1)		10.1 ± 0.05	EI	3952
PO^+	PO (RN-CAS Registry Number 14452-66-5)	**	8.231	S	3762
PO^+	PO (RN-CAS Registry Number 14452-66-5)	**	8.38	S	3560
PO^+	PO (RN-CAS Registry Number 14452-66-5)	**	8.5 ± 1	EI	3819
PO^+	PO (RN-CAS Registry Number 14452-66-5)	**	9.5 ± 0.5	EI	4098
PO^+	P_2O_3 (RN-CAS Registry Number 1314-24-5)		13.5 ± 1.0	EI	4098
PO^+	$(CH_3O)_3PO$ (RN-CAS Registry Number 512-56-1)	$O + CH_3O + 2H$	18.90 ± 0.50	EI	3989
PO_2^+	PO_2 (RN-CAS Registry Number 12164-97-5)	**	10.5 ± 1	EI	3819

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
PO_2^+	PO_2 (RN-CAS Registry Number 12164-97-5)	**	11.5 ± 0.5	EI	4098
PO_2^+	P_2O_3 (RN-CAS Registry Number 1314-24-5)		15.4 ± 1.0	EI	4098
P_2O_3^+	P_2O_3 (RN-CAS Registry Number 1314-24-5)	**	10.4 ± 0.5	EI	4098
P_2O_4^+	P_2O_4 (RN-CAS Registry Number XXXXX-XX-X)	**	10.8 ± 1.0	EI	4098
P_2O_5^+	P_2O_5 (RN-CAS Registry Number 1314-56-3)	**	12.0 ± 1.0	EI	4098
P_3O_6^+	P_3O_6 (RN-CAS Registry Number XXXXX-XX-X)	**	12.3 ± 1.0	EI	4098
P_3O_7^+	P_4O_9 (RN-CAS Registry Number XXXXX-XX-X)		15.0 ± 1.0	EI	4098
P_4O_7^+	P_4O_7 (RN-CAS Registry Number 12065-80-4)	**	11.4 ± 0.5	EI	4098
P_4O_8^+	P_4O_8 (RN-CAS Registry Number 12037-06-8)	**	11.9 ± 0.5	EI	4098
P_4O_9^+	P_4O_9 (RN-CAS Registry Number XXXXX-XX-X)	**	12.4 ± 0.5	EI	4098
$\text{P}_4\text{O}_{10}^+$	P_4O_{10} (RN-CAS Registry Number XXXXX-XX-X)	**	13.0 ± 0.5	EI	4098
CH_4OP^+	$(\text{CH}_3\text{O})_2\text{P}(\text{CH}_3\text{S})\text{S}$ (RN-CAS Registry Number 2953-29-9)		13.40 ± 0.30	EI	3989
$\text{CH}_4\text{O}_2\text{P}^+$	$(\text{CH}_3\text{O})_3\text{PO}$ (RN-CAS Registry Number 512-56-1)	$2\text{HCHO} + \text{H}$	14.90 ± 0.20	EI	3989
$\text{CH}_4\text{O}_2\text{P}^+$	$(\text{CH}_3\text{O})_2\text{P}(\text{CH}_3\text{S})\text{O}$ (RN-CAS Registry Number 152-20-5) (MT-Metastable transition(s) observed)	$\text{CH}_3\text{S} + \text{HCHO}$	12.25 ± 0.20	EI	3989
$\text{CH}_4\text{O}_2\text{P}^+$	$(\text{CH}_3\text{O})_2\text{P}(\text{CH}_3\text{S})\text{S}$ (RN-CAS Registry Number 2953-29-9) (MT-Metastable transition(s) observed)	$\text{CH}_3\text{S} + \text{HCHS}$	12.75 ± 0.20	EI	3989
$\text{CH}_4\text{O}_2\text{P}^+$	$(\text{CH}_3\text{S})_2\text{P}(\text{CH}_3\text{O})\text{O}$ (RN-CAS Registry Number 22608-53-3)	$\text{CH}_3\text{S} + \text{HCHS}$	11.90 ± 0.10	EI	3989
$\text{CH}_5\text{O}_2\text{P}^+$	$(\text{CH}_3\text{O})_3\text{PO}$ (RN-CAS Registry Number 512-56-1)	2HCHO	12.91 ± 0.10	EI	3989
$\text{CH}_5\text{O}_2\text{P}^+$	$(\text{CH}_3\text{O})_2\text{P}(\text{CH}_3\text{S})\text{O}$ (RN-CAS Registry Number 152-20-5) (MT-Metastable transition(s) observed)	$\text{HCHS} + \text{HCHO}$	12.35 ± 0.20	EI	3989

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_6O_2P^+$	$(CH_3O)_2P(CH_3S)S$ (RN-CAS Registry Number 2953-29-9)		10.40 ± 0.10	EI	3989
$C_{19}H_{35}O_2P^+$	$C_5H_2P(OCH_3)_2(C_4H_9)_3$ (Phosphorin, 2,4,6-tris(1,1-dimethylethyl)-1,1-dihydro-1,1-dimethoxy-) (RN-CAS-Registry Number 37912-85-9)	**	6.7 (V)	PE	4053
$CH_4O_3P^+$	$(CH_3O)_3PO$ (RN-CAS Registry Number 512-56-1) (MT-Metastable transition(s) observed)	$HCHO + CH_3$	13.90 ± 0.20	EI	3989
$CH_4O_3P^+$	$(CH_3O)_2P(CH_3S)O$ (RN-CAS Registry Number 152-20-5)	$HCHS + CH_3$	13.20 ± 0.20	EI	3989
$C_2H_6O_3P^+$	$(CH_3O)_3PO$ (RN-CAS Registry Number 512-56-1)	$HCHO + H$	14.1 ± 0.20	EI	3989
$C_2H_6O_3P^+$	$(CH_3O)_2P(CH_3S)O$ (RN-CAS Registry Number 152-20-5)	CH_3S	11.90 ± 0.10	EI	3989
$C_2H_7O_3P^+$	$(CH_3O)_3PO$ (RN-CAS Registry Number 512-56-1) (MT-Metastable transition(s) observed)	$HCHO$	11.62 ± 0.10	EI	3989
$C_2H_7O_3P^+$	$(CH_3O)_2P(CH_3S)O$ (RN-CAS Registry Number 152-20-5) (MT-Metastable transition(s) observed)	$HCHS$	11.00 ± 0.10	EI	3989
$C_3H_8O_4P^+$	$(CH_3O)_3PO$ (RN-CAS Registry Number 512-56-1)	H	12.73 ± 0.20	EI	3989
$C_3H_9O_4P^+$	$(CH_3O)_3PO$ (RN-CAS Registry Number 512-56-1)	**	10.70 ± 0.10	EI	3989
$PF_3(^2A_1)$	PF_3 (RN-CAS Registry Number 7783-55-3)	**	11.57 ± 0.01	PE	3703
$PF_3(^2A_1)$	PF_3 (RN-CAS Registry Number 7783-55-3)	**	11.66 ± 0.01	PE	3641
PF_3^+	PF_3 (RN-CAS Registry Number 7783-55-3)	**	12.23 ± 0.02 (V)	PE	3662
$PF_3^+(^2A_2)$	PF_3 (RN-CAS Registry Number 7783-55-3)	**	15.31 ± 0.05	PE	3641
$PF_3(^2E)$	PF_3 (RN-CAS Registry Number 7783-55-3)	**	16.31 ± 0.07 (V)	PE	3641
$PF_3(^2E)$	PF_3 (RN-CAS Registry Number 7783-55-3)	**	17.08 ± 0.01	PE	3641
$PF_3(^2A_1)$	PF_3 (RN-CAS Registry Number 7783-55-3)	**	18.26 ± 0.01	PE	3641
$PF_3(^2E)$	PF_3 (RN-CAS Registry Number 7783-55-3)	**	19.06 ± 0.01	PE	3641
$PF_3(^2A_1)$	PF_3 (RN-CAS Registry Number 7783-55-3)	**	22.6 (V)	PE	3641
PF_3^+	PF_3 (RN-CAS Registry Number 7783-55-3)	**	11.72 ± 0.1	EI	3578

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
PF_5^+	PF_5 (RN-CAS Registry Number 7647-19-0)	**	15.54 (V)	PE	3872
PF_5^+	PF_5 (RN-CAS Registry Number 7647-19-0)	**	15.6 (V)	PE	3669
P_2F_4^+	P_2F_4 (RN-CAS Registry Number 13824-74-3)	**	9.64 (V)	PE	3662
PHF_2^+	PF_2H (RN-CAS Registry Number 14984-74-8)	**	11.0 ± 0.1 (V)	PE	3662
$\text{BH}_3\text{F}_3\text{P}^+$	$(\text{PF}_3)(\text{BH}_3)$ (RN-CAS Registry Number 14931-39-6)	**	11.02 ± 0.03	PE	3699
$\text{B}_3\text{H}_5\text{F}_3\text{P}^+$	$\text{B}_3\text{H}_7\text{PF}_3$ (RN-CAS Registry Number 11126-95-7)		10.8 ± 0.3	EI	3652
PH_2NF_2^+	PF_2NH_2 (RN-CAS Registry Number 25757-74-8)	**	10.9 (V)	PE	3662
CNF_2P^+	PF_2CN (RN-CAS Registry Number 14118-40-2)	**	11.9 ± 0.1 (V)	PE	3662
$\text{C}_4\text{H}_{12}\text{N}_2\text{PF}^+$	$((\text{CH}_3)_2\text{N})_2\text{PF}$ (RN-CAS Registry Number 1735-82-6)	**	8.18 (V)	PE	3825
$\text{C}_2\text{H}_6\text{NPF}_2^+$	$(\text{CH}_3)_2\text{NPF}_2$ (RN-CAS Registry Number 814-97-1)	**	9.58 (V)	PE	3825
$\text{C}_2\text{H}_6\text{NF}_2\text{P}^+$	$(\text{CH}_3)_2\text{NPF}_2$ (RN-CAS Registry Number 814-97-1)	**	9.6 (V)	PE	3662
$\text{C}_2\text{H}_6\text{NF}_2\text{P}^+$	$(\text{CH}_3)_2\text{NF}_2\text{P}$ (RN-CAS Registry Number 814-97-1)	**	10.2 ± 0.3	EI	3652
$\text{C}_6\text{H}_{18}\text{N}_3\text{F}_2\text{P}^+$	$((\text{CH}_3)_2\text{N})_3\text{PF}_2$ (RN-CAS Registry Number 7549-83-9)	**	8.04 (V)	PE	3825
$\text{C}_4\text{H}_{12}\text{N}_2\text{F}_3\text{P}^+$	$((\text{CH}_3)_2\text{N})_2\text{PF}_3$ (RN-CAS Registry Number 1735-83-7)	**	8.84 (V)	PE	3825
$\text{C}_2\text{H}_6\text{NF}_4\text{P}^+$	$(\text{CH}_3)_2\text{NPF}_4$ (RN-CAS Registry Number 2353-98-2)	**	10.35 (V)	PE	3825
$\text{C}_2\text{H}_9\text{BNF}_2\text{P}^+$	$(\text{CH}_3)_2\text{NF}_2\text{PBH}_3?$ (RN-CAS Registry Number 2851-73-2)	**	12.2 ± 0.3	EI	3652
$\text{C}_2\text{H}_{11}\text{B}_3\text{NF}_2\text{P}^+$	$(\text{CH}_3)_2\text{NF}_2\text{PB}_3\text{H}_7$ (RN-CAS Registry Number 11126-93-5)		10.4 ± 0.3	EI	3652
$\text{C}_2\text{H}_{12}\text{B}_3\text{NF}_2\text{P}^+$	$(\text{CH}_3)_2\text{NF}_2\text{PB}_3\text{H}_7$ (RN-CAS Registry Number 11126-93-5)	H	10.5 ± 0.3	EI	3652

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_{12}B_4NF_2P^+$	$(CH_3)_2NF_2PB_4H_8$ (RN-CAS Registry Number 12602-24-3)		10.0 ± 0.3	EI	3652
$C_2H_{14}B_4NF_2P^+$	$(CH_3)_2NF_2PB_4H_8$ (RN-CAS Registry Number 12602-24-3)	**	9.6 ± 0.3	EI	3652
$POF_3(^2E)$	POF_3 (RN-CAS Registry Number 13478-20-1)	**	12.77 ± 0.04	PE	3641
$POF_3(^2A_1)$	POF_3 (RN-CAS Registry Number 13478-20-1)	**	15.16 ± 0.04	PE	3641
$POF_3(^2A_2)$	POF_3 (RN-CAS Registry Number 13478-20-1)	**	16.69 ± 0.05	PE	3641
$POF_3(^2E)$	POF_3 (RN-CAS Registry Number 13478-20-1)	**	17.68 (V)	PE	3641
$POF_3(^2E)$	POF_3 (RN-CAS Registry Number 13478-20-1)	**	18.45 ± 0.02	PE	3641
$POF_3(^2A_1)$	POF_3 (RN-CAS Registry Number 13478-20-1)	**	19.61 (V)	PE	3641
$POF_3(^2E)$	POF_3 (RN-CAS Registry Number 13478-20-1)	**	20.36 ± 0.02	PE	3641
$POF_3(^2A_1)$	POF_3 (RN-CAS Registry Number 13478-20-1)	**	23.4 ± 0.1 (V)	PE	3641
$P_2OF_4^+$	PF_2OPF_2 (RN-CAS Registry Number 13812-07-2)	**	11.2 (V)	PE	3662
$CNOF_2P^+$	PF_2NCO (RN-CAS Registry Number 461-59-6)	**	11.05 ± 0.02 (V)	PE	3662
$NaPO_2^+$	$NaPO_2$ (RN-CAS Registry Number XXXXX-XX-X)	**	8.6	EI	4098
PSi^+	PSi (RN-CAS Registry Number 12137-64-3)	**	9.1 ± 0.5	EI	4102
PSi_2^+	PSi_2 (RN-CAS Registry Number 37347-46-9)	**	8.4 ± 0.5	EI	4102
P_2Si^+	P_2Si (RN-CAS Registry Number 12137-68-7)	**	9.0 ± 0.5	EI	4102
SiH_3P^+	SiH_3PH_2 (RN-CAS Registry Number 14616-47-8)	**	9.9 ± 0.1 (V)	PE	3661
$Si_3H_9P^+$	$(SiH_3)_3P$ (RN-CAS Registry Number 15110-33-5)	**	9.3 ± 0.1 (V)	PE	3661
$CSiP^+$	$CSiP$ (RN-CAS Registry Number 37342-74-8)	**	8.9 ± 0.5	EI	4102

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_{19}SiP^+$	$(CH_3)_3P=CHSi(CH_3)_3$ (RN-CAS Registry Number 3272-86-4)	**	6.80	PE	3782
$C_9H_{25}Si_2P^+$	$(CH_3)_3P=CHSi_2(CH_3)_5$ (RN-CAS Registry Number 29947-67-9)	**	6.87	PE	3782
S^+	S (RN-CAS Registry Number 7704-34-9)	**	10.3 ± 0.3	EI	3449
S^+	S (RN-CAS Registry Number 7704-34-9)	**	10.5 ± 0.3	EI	3616
S^+	S (RN-CAS Registry Number 7704-34-9)	**	$\sim 11 \pm 0.5$	EI	3448
S^+	H_2S (RN-CAS Registry Number 7783-06-4)	H_2	13.5	DC	3967
S^+	CS_2 (RN-CAS Registry Number 75-15-0) (CD-Metastable transition indicates <0.25 eV kinetic energy release) (PC-Appearance potential of the corresponding metastable transition)	CS	15 ± 1	EI	3812
S^+	CS_2 (RN-CAS Registry Number 75-15-0) (CD-Metastable transition indicates <0.25 eV kinetic energy release) (PC-Appearance potential of the corresponding metastable transition)	CS	17 ± 1	EI	3812
S^+	COS (RN-CAS Registry Number 463-58-1)	CO	13.7	EI	3779
S_2^+	S_2 (RN-CAS Registry Number 12185-11-4)	**	9.42 ± 0.10	EI	3616
S_2^+	S_2 (RN-CAS Registry Number 12185-11-4)	**	9.8 ± 0.5	EI	3615
S_2^+	$C_3H_6S_2$ (1,3-Dithiolane) (RN-CAS Registry Number 4829-04-3) (TR-Other product(s) thermochemically reasonable)	$CH_2=CHCH_3$	10.7 ± 0.1	EI	3598
S_2^+	S_2F_2 (RN-CAS Registry Number 13709-35-8)		17.6 ± 0.4	EI	3738
S_8^+	S_8 (RN-CAS Registry Number 10544-50-0)	**	9.23 (V)	PE	3846
HS^+	H_2S (RN-CAS Registry Number 7783-06-4)	H	14.4	DC	3967
$H_2S^+(^2B_1)$	H_2S (RN-CAS-Registry Number 7783-06-4)	**	10.43	PE	4073
H_2S^+	H_2S (RN-CAS Registry Number 7783-06-4)	**	10.47	PE	3678
$H_2S^+(^2B_1)$	H_2S (RN-CAS Registry Number 7783-06-4)	**	10.47	PE	3719
H_2S^+	H_2S (RN-CAS Registry Number 7783-06-4)	**	10.48	PE	3697
$H_2S^+(^2A_1)$	H_2S (RN-CAS Registry Number 7783-06-4)	**	12.752	PE	3515

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{H}_2\text{S}^+(\text{}^2\text{A}_1)$	H_2S (RN-CAS Registry Number 7783-06-4)	**	12.78	PE	3719
$\text{H}_2\text{S}^{+\ast}$	H_2S (RN-CAS Registry Number 7783-06-4)	**	13.21 (V)	PE	3697
$\text{H}_2\text{S}^+(\text{}^2\text{B}_2)$	H_2S (RN-CAS Registry Number 7783-06-4)	**	14.78	PE	3719
$\text{H}_2\text{S}^+(\text{}^2\text{A}_1)$	H_2S (RN-CAS Registry Number 7783-06-4)	**	22.2 (V)	PE	3719
H_2S^+	H_2S (RN-CAS Registry Number 7783-06-4)	**	10.45	DC	3967
H_3S^+	$\text{C}_2\text{H}_5\text{SH}$ (RN-CAS Registry Number 75-08-1) (MT-Metastable transition(s) observed) (TR-Other product(s) thermochemically reasonable)	C_2H_3	12.41 ± 0.02	RPD	3487
H_3S^+	$(\text{CH}_3)_2\text{S}$ (RN-CAS Registry Number 75-18-3) (MT-Metastable transition(s) observed) (TR-Other product(s) thermochemically reasonable)	$\text{C}_2\text{H}_2 + \text{H}$	14.14 ± 0.02	RPD	3487
$\text{BHS}^+(\text{X}^2\Pi)$	HBS (RN-CAS Registry Number 14457-85-3)	**	11.11 ± 0.03	PE	3982
BHS^+	HBS (RN-CAS Registry Number 14457-85-3)	**	11.12	PE	3871
$\text{BHS}^+(\text{A}^2\Sigma^+)$	HBS (RN-CAS Registry Number 14457-85-3)	**	13.54 ± 0.03	PE	3982
$\text{BHS}^+(\text{B}^2\Sigma^+)$	HBS (RN-CAS Registry Number 14457-85-3)	**	15.83 ± 0.1	PE	3982
$\text{CS}^+(\text{X}^2\Sigma_g^+)$	CS (RN-CAS Registry Number 2944-05-0) (RD-Radical)	**	11.33 ± 0.01	PE	3691
CS^+	CS (RN-CAS Registry Number 2944-05-0) (RD-Radical)	**	11.33 ± 0.02	PE	3696
$\text{CS}^+(\text{X}^2\Sigma)$	CS (RN-CAS Registry Number 2944-05-0) (RD-Radical)	**	11.34 ± 0.02	PE	3690
$\text{CS}^+(\text{X}^2\Sigma)$	CS (RN-CAS Registry Number 2944-05-0) (RD-Radical)	**	11.34	PE	3689
$\text{CS}^{+\ast}$	CS (RN-CAS Registry Number 2944-05-0) (RD-Radical)	**	12.56 ± 0.02	PE	3696
$\text{CS}^+(\text{A}^2\Pi)$	CS (RN-CAS Registry Number 2944-05-0) (RD-Radical)	**	12.78 ± 0.02	PE	3690
$\text{CS}^+(\text{A}^2\Pi)$	CS (RN-CAS Registry Number 2944-05-0) (RD-Radical)	**	12.78	PE	3689

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{CS}^+(\text{A}^2\Pi_u)$	CS (RN-CAS Registry Number 2944-05-0)	**	12.79 ± 0.01	PE	3691
(RD-Radical)					
$\text{CS}^+(\text{B}^2\Sigma)$	CS (RN-CAS Registry Number 2944-05-0)	**	15.83 ± 0.02	PE	3690
(RD-Radical)					
$\text{CS}^+(\text{B}^2\Sigma)$	CS (RN-CAS Registry Number 2944-05-0)	**	15.83	PE	3689
(RD-Radical)					
$\text{CS}^+(\text{B}^2\Sigma_u^+)$	CS (RN-CAS Registry Number 2944-05-0)	**	15.84 ± 0.01	PE	3691
(RD-Radical)					
$\text{CS}^+(\text{E}^2\Sigma_u^+)$	CS (RN-CAS Registry Number 2944-05-0)	**	18.00 ± 0.01	PE	3691
(RD-Radical)					
$\text{CS}^+(\text{C}^2\Sigma)$	CS (RN-CAS Registry Number 2944-05-0)	**	18.03 ± 0.02	PE	3690
(RD-Radical)					
$\text{CS}^+(\text{C}^2\Sigma)$	CS (RN-CAS Registry Number 2944-05-0)	**	18.03	PE	3689
(RD-Radical)					
CS^+	CS (RN-CAS Registry Number 2944-05-0)	**	11.39 ± 0.10	EI	3616
(RD-Radical)					
CS^+	CS ₂ (RN-CAS Registry Number 75-15-0) (CD-Metastable transition indicates <0.40 eV kinetic energy release) (PC-Appearance potential of the corresponding metastable transition)	S	16.3 ± 1	EI	3812
CS^+	COS (RN-CAS Registry Number 463-58-1)	O?	16.7	EI	3779
$\text{CS}_2^+(\text{A}^2\Pi_{1/2u})$	CS ₂ (RN-CAS Registry Number 75-15-0)	**	12.586	S	3573
$\text{CS}_2^+(\text{X}^2\Pi_g)$	CS ₂ (RN-CAS Registry Number 75-15-0)	**	10.06 ± 0.01	PE	3965
$\text{CS}_2^+(\text{X}^2\Pi_{3/2})$	CS ₂ (RN-CAS-Registry Number 75-15-0)	**	10.06	PE	4073
CS_2^+	CS ₂ (RN-CAS Registry Number 75-15-0)	**	10.06	PE	3697
$\text{CS}_2^+(\text{A}^2\Pi_u)$	CS ₂ (RN-CAS Registry Number 75-15-0)	**	12.67 ± 0.01	PE	3965
CS_2^{+*}	CS ₂ (RN-CAS Registry Number 75-15-0)	**	12.83 (V)	PE	3697
$\text{CS}_2^+(\text{B}^2\Sigma_u^+)$	CS ₂ (RN-CAS Registry Number 75-15-0)	**	14.47 ± 0.01	PE	3965
$\text{CS}_2^+(\text{C}^2\Sigma_g^+)$	CS ₂ (RN-CAS Registry Number 75-15-0)	**	16.18 ± 0.01	PE	3965
CS_2^{+*}	CS ₂ (RN-CAS Registry Number 75-15-0)	**	16.70 ± 0.01	PE	3965
CS_2^+	CS ₂ (RN-CAS Registry Number 75-15-0)	**	10.07 ± 0.10	EI	3616

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
CHS ⁺	C ₃ H ₆ S ₂ (1,3-Dithiolane) (RN-CAS Registry Number 4829-04-3) (MT-Metastable transition(s) observed)	CHS + CH ₄ ?	13±0.4	EI	3598
CHS ⁺	C ₃ H ₆ OS (1,3-Oxathiolane) (RN-CAS Registry Number 2094-97-5)		12.9±0.2	EI	3598
CH ₂ S ⁺ (² B ₂)	CH ₂ S (RN-CAS Registry Number 865-36-1)	**	9.338±0.010	PE	3697
CH ₂ S ⁺ (² B ₁)	CH ₂ S (RN-CAS Registry Number 865-36-1)	**	11.78±0.01	PE	3697
CH ₂ S ⁺	CH ₃ SH (RN-CAS Registry Number 74-93-1)	H ₂	10.8±0.1	PI	4025
CH ₂ S ⁺	(CH ₃) ₂ S (RN-CAS Registry Number 75-18-3)	CH ₄	10.46±0.08	PI	4025
CH ₂ S ⁺	(C ₂ H ₅) ₂ S (RN-CAS Registry Number 352-93-2)	C ₂ H ₄ + CH ₄	11.75±0.03	PI	4025
CH ₂ S ⁺	C ₃ H ₆ S ₂ (1,3-Dithiolane) (RN-CAS Registry Number 4829-04-3)		11±0.4	EI	3598
CH ₂ S ⁺	C ₃ H ₆ OS (1,3-Oxathiolane) (RN-CAS Registry Number 2094-97-5)		12.5±0.2	EI	3598
CH ₂ S ⁺	C ₅ H ₁₀ O ₂ S (1,3,6-Dioxathiocane) (RN-CAS Registry Number 2094-92-0) (TR-Other product(s) thermochemically reasonable)	2HCHO + C ₂ H ₄	12.55±0.1	EI	3903
CH ₃ S ⁺	CH ₃ SH (RN-CAS Registry Number 74-93-1)	H	11.37±0.05	PI	4025
CH ₃ S ⁺	(CH ₃) ₂ S (RN-CAS Registry Number 75-18-3)	CH ₃	10.79±0.04	PI	4025
CH ₃ S ⁺	(C ₂ H ₅) ₂ S (RN-CAS Registry Number 352-93-2)	C ₂ H ₄ + CH ₃	12.00±0.05	PI	4025
CH ₃ S ⁺	C ₃ H ₆ S ₂ (1,3-Dithiolane) (RN-CAS Registry Number 4829-04-3)		11.4±0.4	EI	3598
CH ₃ S ⁺	(CH ₃ O) ₂ P(CH ₃ S)O (RN-CAS Registry Number 152-20-5)		13.1±0.30	EI	3989
CH ₃ S ⁺	(CH ₃ S) ₂ P(CH ₃ O)O (RN-CAS Registry Number 22608-53-3)		12.60±0.20	EI	3989
CH ₄ S ⁺	CH ₃ SH (RN-CAS Registry Number 74-93-1)	**	9.44±0.01	PI	4025
CH ₄ S ⁺	CH ₃ SH (RN-CAS Registry Number 74-93-1)	**	9.415	PE	3697
CH ₄ S ⁺ (² A'')	CH ₃ SH (RN-CAS Registry Number 74-93-1)	**	9.42	PE	3678
CH ₄ S ⁺ (² A'')	CH ₃ SH (RN-CAS Registry Number 74-93-1)	**	9.44	PE	4032

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
CH_4S^+	CH_3SH (RN-CAS Registry Number 74-93-1)	**	9.44	PE	4087
$\text{CH}_4\text{S}^+(\text{}^2\text{A}^{\prime\prime})$	CH_3SH (RN-CAS Registry Number 74-93-1)	**	9.44 (V)	PE	3656
CH_4S^+	CH_3SH (RN-CAS Registry Number 74-93-1)	**	9.44 (V)	PE	3898
CH_4S^{+*}	CH_3SH (RN-CAS Registry Number 74-93-1)	**	11.90 (V)	PE	3697
$\text{CH}_4\text{S}^+(\text{}^2\text{A}')$	CH_3SH (RN-CAS Registry Number 74-93-1)	**	12.0 (V)	PE	3678
$\text{CH}_4\text{S}^+(\text{}^2\text{A}')$	CH_3SH (RN-CAS Registry Number 74-93-1)	**	12.08 (V)	PE	4032
CH_4S^{+*}	CH_3SH (RN-CAS Registry Number 74-93-1)	**	13.50 (V)	PE	3697
$\text{CH}_4\text{S}^+(\text{}^2\text{A}')$	CH_3SH (RN-CAS Registry Number 74-93-1)	**	13.67 (V)	PE	4032
$\text{CH}_4\text{S}^+(\text{}^2\text{A}')$	CH_3SH (RN-CAS Registry Number 74-93-1)	**	13.9 (V)	PE	3678
CH_4S^{+*}	CH_3SH (RN-CAS Registry Number 74-93-1)	**	14.90 (V)	PE	3697
$\text{CH}_4\text{S}^+(\text{}^2\text{A}^{\prime\prime})$	CH_3SH (RN-CAS Registry Number 74-93-1)	**	15.0 (V)	PE	3678
$\text{CH}_4\text{S}^+(\text{}^2\text{A}^{\prime\prime})$	CH_3SH (RN-CAS Registry Number 74-93-1)	**	15.5 (V)	PE	3678
CH_4S^{+*}	CH_3SH (RN-CAS Registry Number 74-93-1)	**	15.5 (V)	PE	3697
$\text{CH}_4\text{S}^+(\text{}^2\text{A}^{\prime\prime})$	CH_3SH (RN-CAS Registry Number 74-93-1)	**	15.63 (V)	PE	4032
$\text{CH}_4\text{S}^+(\text{}^2\text{A}')$	CH_3SH (RN-CAS Registry Number 74-93-1)	**	~20.0 (V)	PE	3678
$\text{C}_2\text{H}_3\text{S}^+$	$\text{C}_3\text{H}_6\text{S}_2$ (1,3-Dithiolane) (RN-CAS Registry Number 4829-04-3)	CH_3S	10.8 ± 0.4	EI	3598
$\text{C}_2\text{H}_3\text{S}^+$	$\text{C}_3\text{H}_6\text{OS}$ (1,3-Oxathiolane) (RN-CAS Registry Number 2094-97-5)	$\text{CH}_2\text{O} + \text{H}$	12.3 ± 0.1	EI	3598
(MT—Metastable transition(s) observed)					
(TR—Other product(s) thermochemically reasonable)					
$\text{C}_2\text{H}_4\text{S}^+$	$\text{C}_2\text{H}_4\text{S}$ (Thiirane) (RN-CAS Registry Number 420-12-2)	**	9.051 ± 0.006	S	3882
(RS—Average of three Rydberg series limits)					
$\text{C}_2\text{H}_4\text{S}^+$	$\text{C}_2\text{H}_4\text{S}$ (Thiirane) (RN-CAS Registry Number 420-12-2)	**	9.00	PE	3861
$\text{C}_2\text{H}_4\text{S}^+$	$\text{C}_2\text{H}_4\text{S}$ (Thiirane) (RN-CAS Registry Number 420-12-2)	**	9.05 (V)	PE	3837
$\text{C}_2\text{H}_4\text{S}^+$	$(\text{C}_2\text{H}_5)_2\text{S}$ (RN-CAS Registry Number 352-93-2)	C_2H_6	9.89 ± 0.3	PI	4025

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_4S^+$	$C_3H_6S_2$ (1,3-Dithiolane) (RN-CAS Registry Number 4829-04-3)	CH_2S	11.2 ± 0.3	EI	3598
$C_2H_4S^+$	C_3H_6OS (1,3-Oxathiolane) (RN-CAS Registry Number 2094-97-5)	CH_2O	10.5 ± 0.1	EI	3598
(MT-Metastable transition(s) observed)					
$C_2H_4S^+$	$C_3H_{10}O_2S$ (1,3,6-Dioxathiocane) (RN-CAS Registry Number 2094-92-0)		10.4 ± 0.02	EI	3903
$C_2H_5S^+$	$(CH_3)_2S$ (RN-CAS Registry Number 75-18-3)	H	10.93 ± 0.02	PI	4025
$C_2H_5S^+$	$(C_2H_5)_2S$ (RN-CAS Registry Number 352-93-2)	C_2H_5	10.23 ± 0.03	PI	4025
$C_2H_5S^+$	$C_3H_6S_2$ (1,3-Dithiolane) (RN-CAS Registry Number 4829-04-3)	CHS	11.4 ± 0.3	EI	3598
(TR-Other product(s) thermochemically reasonable)					
$C_2H_5S^+$	C_3H_6OS (1,3-Oxathiolane) (RN-CAS Registry Number 2094-97-5)	CHO	10.4 ± 0.1	EI	3598
(TR-Other product(s) thermochemically reasonable)					
$C_2H_5S^+$	$C_5H_{10}O_2S$ (1,3,6-Dioxathiocane) (RN-CAS Registry Number 2094-92-0)	$CH_3CO + HCHO$	10.8 ± 0.2	EI	3903
(MT-Metastable transition(s) observed)					
(TR-Other product(s) thermochemically reasonable)					
$C_2H_6S^+$	C_2H_5SH (RN-CAS Registry Number 75-08-1)	**	9.29	PE	4032
$C_2H_6S^+$	$(CH_3)_2S$ (RN-CAS Registry Number 75-18-3)	**	8.706 ± 0.010	S	3970
(RS-Average of three Rydberg series limits)					
$C_2H_6S^+$	$(CH_3)_2S$ (RN-CAS Registry Number 75-18-3)	**	8.69 ± 0.01	PI	4025
$C_2H_6S^+$	$(CH_3)_2S$ (RN-CAS Registry Number 75-18-3)	**	8.57 ± 0.04	PE	3842
$C_2H_6S^+$	$(CH_3)_2S$ (RN-CAS Registry Number 75-18-3)	**	8.65 (V)	PE	3678
$C_2H_6S^+$	$(CH_3)_2S$ (RN-CAS Registry Number 75-18-3)	**	8.67	PE	3867
$C_2H_6S^+$	$(CH_3)_2S$ (RN-CAS Registry Number 75-18-3)	**	8.67 (V)	PE	3898
$C_2H_6S^+$	$(CH_3)_2S$ (RN-CAS Registry Number 75-18-3)	**	8.7	PE	4104
$C_2H_6S^+ (^2B_1)$	$(CH_3)_2S$ (RN-CAS Registry Number 75-18-3)	**	8.71 (V)	PE	3656
$C_2H_6S^+$	$(C_2H_5)_2S$ (RN-CAS Registry Number 352-93-2)	C_2H_4	9.90 ± 0.03	PI	4025

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3H_5S^+$	$C_3H_6S_2$ (1,3-Dithiolane) (RN-CAS Registry Number 4829-04-3)	SH	10.5 ± 0.1	EI	3598
$C_3H_6S^+$	$CH_2=CHCH_2SH$ (RN-CAS Registry Number 870-23-5)	**	9.25	PE	3864
$C_3H_6S^+$	$CH_2=CHSCH_3$ (RN-CAS Registry Number 1822-74-8)	**	8.45 (V)	PE	3898
$C_3H_6S^+$	$C_5H_{10}O_2S$ (1,3,6-Dioxathiocane) (RN-CAS Registry Number 2094-92-0) (TR—Other product(s) thermochemically reasonable)	2HCHO	11.35 ± 0.01	EI	3903
$C_3H_7S^+$	$(C_2H_5)_2S$ (RN-CAS Registry Number 352-93-2)	CH_3	10.16 ± 0.05	PI	4025
$C_3H_8S^+$	$n-C_3H_7SH$ (RN-CAS Registry Number 107-03-9)	**	9.19	PE	4032
$C_3H_8S^+$	$iso-C_3H_7SH$ (RN-CAS Registry Number 75-33-2)	**	9.14	PE	4032
$C_4H_4S^+$	C_4H_4S (Thiophene) (RN-CAS Registry Number 110-02-1)	**	8.874 ± 0.005	S	3731
$C_4H_4S^+$	C_4H_4S (Thiophene) (RN-CAS-Registry Number 110-02-1)	**	8.86 ± 0.01	PI	4058
$C_4H_4S^+$	C_4H_4S (Thiophene) (RN-CAS Registry Number 110-02-1)	**	8.87 (V)	PE	3858
$C_4H_4S^+$	C_4H_4S (Thiophene) (RN-CAS Registry Number 110-02-1)	**	8.90	PE	4017
$C_4H_4S^+$	C_4H_4S (Thiophene) (RN-CAS Registry Number 110-02-1)	**	9.12 ± 0.05	EI	3482
$C_4H_4S^+$	C_4H_4S (Thiophene) (RN-CAS Registry Number 110-02-1)	**	9.05	CTS	3787
$C_4D_4S^+$	C_4D_4S (Thiophene- d_4) (RN-CAS Registry Number 2036-39-7)	**	8.874 ± 0.005	S	3731
$C_4H_6S^+$	C_4H_6S (Thiophene, 2,5-dihydro-) (RN-CAS Registry Number 1708-32-3)	**	8.54 (V)	PE	3995
$C_4H_8S^+$	$CH_3SCH_2CH=CH_2$ (RN-CAS Registry Number 10152-76-8)	**	8.6	PE	4104

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_4H_8S^+$	C_4H_8S (Thiophene, tetrahydro-) (RN-CAS Registry Number 110-01-0)	**	8.40 (V)	PE	3995
$C_4H_8S^+$	C_4H_8S (Thiophene, tetrahydro-) (RN-CAS Registry Number 110-01-0)	**	8.62 ± 0.05	EI	3498
$C_4H_9S^+$	$(C_2H_5)_2S$ (RN-CAS Registry Number 352-93-2)	H	10.2 ± 0.1	PI	4025
$C_4H_{10}S^+$	$(C_2H_5)_2S$ (RN-CAS Registry Number 352-93-2)	**	8.42 ± 0.01	PI	4025
$C_4H_{10}S^+$	$(C_2H_5)_2S$ (RN-CAS Registry Number 352-93-2)	**	8.44 (V)	PE	3898
$C_4H_{10}S^+$	$n-C_4H_9SH$ (RN-CAS Registry Number 109-79-5)	**	9.15	PE	4032
$C_4H_{10}S^+$	$sec-C_4H_9SH$ (RN-CAS Registry Number 513-53-1)	**	9.10	PE	4032
$C_4H_{10}S^+$	$iso-C_4H_9SH$ (RN-CAS Registry Number 513-44-0)	**	9.12	PE	4032
$C_4H_{10}S^+$	$tert-C_4H_9SH$ (RN-CAS Registry Number 75-66-1)	**	9.03	PE	4032
$C_5H_6S^+$	$C_4H_3SCH_3$ (Thiophene, 2-methyl-) (RN-CAS Registry Number 554-14-3)	**	8.63 ± 0.05	EI	3482
$C_5H_6S^+$	$C_4H_3SCH_3$ (Thiophene, 2-methyl-) (RN-CAS Registry Number 554-14-3)	**	8.61	CTS	3787
$C_5H_6S^+$	$C_4H_3SCH_3$ (Thiophene, 3-methyl-) (RN-CAS Registry Number 616-44-4)	**	8.72	EI	3787
$C_5H_6S^+$	$C_4H_3SCH_3$ (Thiophene, 3-methyl-) (RN-CAS Registry Number 616-44-4)	**	8.84	CTS	3787
$C_5H_{10}S^+$	$C_5H_{10}S$ (2H-Thiopyran, tetrahydro-) (RN-CAS Registry Number 1613-51-0)	**	8.45 (V)	PE	3733
$C_6H_6S^+$	C_6H_5SH (Benzenethiol) (RN-CAS Registry Number 108-98-5)	**	8.28	PE	3678
$C_6H_6S^+$	C_6H_5SH (Benzenethiol) (RN-CAS Registry Number 108-98-5)	**	8.95 ± 0.1	EI	3817
$C_6H_8S^+$	$C_4H_2S(CH_3)_2$ (Thiophene, 2,5-dimethyl-) (RN-CAS Registry Number 638-02-8)	**	8.10	EI	3787

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_8S^+$	$C_4H_2S(CH_3)_2$ (Thiophene, 2,5-dimethyl-) (RN-CAS Registry Number 638-02-8)	**	8.18	CTS	3787
$C_6H_8S^+$	$C_4H_3SC_2H_5$ (Thiophene, 2-ethyl-) (RN-CAS Registry Number 872-55-9)	**	8.67 ± 0.05	EI	3482
$C_6H_8S^+$	$C_4H_3SC_2H_5$ (Thiophene, 2-ethyl-) (RN-CAS Registry Number 872-55-9)	**	8.57	CTS	3787
$C_6H_{10}S^+$	$C_6H_{10}S$ (7-Thiabicyclo[2.2.1]heptane) (RN-CAS Registry Number 279-59-4)	**	8.28 ± 0.04	PE	3842
$C_6H_{14}S^+$	$(n-C_3H_7)_2S$ (RN-CAS Registry Number 111-47-7)	**	8.34 (V)	PE	3898
$C_6H_{14}S^+$	$(iso-C_3H_7)_2S$ (RN-CAS Registry Number 625-80-9)	**	8.26 (V)	PE	3898
$C_7H_8S^+$	$C_6H_5CH_2SH$ (Benzenemethanethiol) (RN-CAS Registry Number 100-53-8)	**	8.85 (V)	PE	3678
$C_7H_8S^+$	$C_6H_5SCH_3$ (Benzene, (methylthio)-) (RN-CAS Registry Number 100-68-5)	**	8.07 (V)	PE	3781
$C_7H_8S^+$	$C_6H_5SCH_3$ (Benzene, (methylthio)-) (RN-CAS Registry Number 100-68-5)	**	8.07 (V)	PE	3898
$C_8H_6S^+$	C_8H_6S (Benzo[<i>b</i>]thiophene) (RN-CAS Registry Number 95-15-8)	**	8.20	PE	4017
$C_8H_6S^+$	C_8H_6S (Benzo[<i>c</i>]thiophene) (RN-CAS Registry Number 270-82-6)	**	7.75	PE	4017
$C_8H_{10}S^+$	$C_6H_5CH_2SCH_3$ (Benzene, [(methylthio)methyl]-) (RN-CAS Registry Number 766-92-7)	**	9.01 (V)	PE	3781
$C_8H_{12}S^+$	$C_4H_3SC_4H_9$ (Thiophene, 2-(1,1-dimethylethyl)-) (RN-CAS Registry Number 1689-78-7)	**	8.54 ± 0.05	EI	3482
$C_8H_{18}S^+$	$(tert-C_4H_9)_2S$ (RN-CAS Registry Number 107-47-1)	**	8.07 (V)	PE	3898
$C_9H_{10}S^+$	$C_6H_5CH=CHSCH_3$ (Benzene, [2-(methylthio)ethenyl]-(<i>Z</i>)-) (RN-CAS Registry Number 35822-50-5)	**	7.75 (V)	PE	3781

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_9H_{10}S^+$	$C_6H_5CH=CHSCH_3$ (Benzene, [2-(methylthio)ethenyl]-, (Z)-) (RN-CAS Registry Number 35822-50-5)	**	8.75 (V)	PE	3898
$C_{11}H_{10}S^+$	$C_{10}H_7SCH_3$ (Naphthalene, 1-(methylthio)-) (RN-CAS Registry Number 10075-72-6)	**	7.67 (V)	PE	3781
$C_{11}H_{10}S^+$	$C_{10}H_7SCH_3$ (Naphthalene, 2-(methylthio)-) (RN-CAS Registry Number 7433-79-6)	**	7.71 (V)	PE	3781
$C_{11}H_{10}S^+$	$C_{10}H_7SCH_3$ (Naphthalene, 2-(methylthio)-) (RN-CAS Registry Number 7433-79-6)	**	7.71 (V)	PE	3898
$C_{12}H_8S^+$	$C_{12}H_8S$ (Dibenzothiophene) (RN-CAS Registry Number 132-65-0)	**	8.01 (V)	PE	3852
$C_{12}H_8S^+$	$C_{12}H_8S$ (Dibenzothiophene) (RN-CAS Registry Number 132-65-0)	**	8.34	EI	3787
$C_{12}H_8S^+$	$C_{12}H_8S$ (Dibenzothiophene) (RN-CAS Registry Number 132-65-0)	**	8.23	CTS	3787
$C_{12}H_{10}S^+$	$(C_6H_5)_2S$ (Benzene, 1,1'-thiobis-) (RN-CAS Registry Number 139-66-2)	**	7.88 ± 0.05	EI	3498
$C_{12}H_{10}S^+$	$(C_6H_5)_2S$ (Benzene, 1,1'-thiobis-) (RN-CAS Registry Number 139-66-2)	**	8.45 ± 0.1	EI	3817
$C_{12}H_{10}S^+$	$C_4H_3SCH=CHC_6H_5$ (Thiophene, 2-(2-phenylethenyl)-) (RN-CAS Registry Number 3783-65-1)	**	7.55	EI	3787
$C_{12}H_{10}S^+$	$C_4H_3SCH=CHC_6H_5$ (Thiophene, 2-(2-phenylethenyl)-) (RN-CAS Registry Number 3783-65-1)	**	7.78	CTS	3787
$CH_2S_2^+$	$C_3H_6S_2$ (1,3-Dithiolane) (RN-CAS Registry Number 4829-04-3)	C_2H_4	10.8 ± 0.2	EI	3598
$C_2H_6S_2^+$	CH_3SSCH (RN-CAS Registry Number 624-92-0)	**	8.97 (V)	PE	3898
$C_2H_6S_2^+$	CH_3SSCH_3 (RN-CAS Registry Number 624-92-0)	**	8.82 (V)	PE	3697
$C_3H_5S_2^+$	$C_3H_6S_2$ (1,3-Dithiolane) (RN-CAS Registry Number 4829-04-3)	H	11.2 ± 0.2	EI	3598

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3H_6S_2^+$	$C_3H_6S_2$ (1,3-Dithiolane) (RN-CAS Registry Number 4829-04-3)	**	9.0 ± 0.05	EI	3598
$C_3H_8S_2^+$	$(CH_3S)_2CH_2$ (RN-CAS Registry Number 1618-26-4)	**	8.65 (V)	PE	3898
$C_4H_8S_2^+$	<i>trans</i> - $CH_3SCH=CHSCH_3$ (RN-CAS Registry Number 764-45-4)	**	7.96 (V)	PE	3898
$C_4H_8S_2^+$	$C_4H_8S_2$ (1,2-Dithiane) (RN-CAS Registry Number 505-20-4)	**	8.36 (V)	PE	3898
$C_4H_8S_2^+$	$C_4H_8S_2$ (1,3-Dithiane) (RN-CAS Registry Number 505-23-7)	**	8.33 (V)	PE	3898
$C_4H_8S_2^+$	$C_4H_8S_2$ (1,3-Dithiane) (RN-CAS Registry Number 505-23-7)	**	8.54 (V)	PE	3733
$C_4H_8S_2^+$	$C_4H_8S_2$ (1,4-Dithiane) (RN-CAS Registry Number 505-29-3)	**	8.58 (V)	PE	3733
$C_4H_{10}S_2^+$	$C_2H_5SSC_2H_5$ (RN-CAS Registry Number 110-81-6)	**	8.70 (V)	PE	3898
$C_4H_{10}S_2^+$	$CH_3SCH_2CH_2SCH_3$ (RN-CAS Registry Number 6628-18-8)	**	8.64 (V)	PE	3898
$C_5H_6S_2^+$	$C_4H_3SSCH_3$ (Thiophene, 2-(methylthio)-) (RN-CAS Registry Number 5780-36-9)	**	8.10 ± 0.05	EI	3482
$C_6H_4S_2^+$	$C_6H_4S_2$ (Thieno[2,3- <i>b</i>]thiophene) (RN-CAS Registry Number 250-84-0)	**	8.32	PE	4017
$C_6H_4S_2^+$	$C_6H_4S_2$ (Thieno[3,2- <i>b</i>]thiophene) (RN-CAS Registry Number 251-41-2)	**	8.10	PE	4017
$C_6H_4S_2^+$	$C_6H_4S_2$ (Thieno[3,2- <i>b</i>]thiophene) (RN-CAS Registry Number 251-41-1)	**	8.14 (V)	PE	3852
$C_6H_{10}S_2^+$	<i>cis,cis</i> - $CH_3SCH=CHCH=CHSCH_3$ (RN-CAS Registry Number 35822-49-2)	**	7.48 (V)	PE	3898
$C_6H_{14}S_2^+$	$(CH_3)_2CHSSCH(CH_3)_2$ (RN-CAS Registry Number 4253-89-8)	**	8.54 (V)	PE	3898
$C_6H_{14}S_2^+$	$(n-C_3H_7)_2S_2$ (RN-CAS Registry Number 629-19-6)	**	8.62 (V)	PE	3898

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_{10}S_2^+$	$C_6H_4(SCH_3)_2$ (Benzene, 1,4-bis(methylthio)-) (RN-CAS Registry Number 699-20-7)	**	7.93 (V)	PE	3781
$C_8H_{18}S_2^+$	$(CH_3)_3CSSC(CH_3)_3$ (RN-CAS Registry Number 110-06-5)	**	8.17 (V)	PE	3898
$C_3H_6S_3^+$	$C_3H_6S_3$ (1,3,5-Trithiane) (RN-CAS Registry Number XXXXX-XX-X)	**	8.76 (V)	PE	3733
$C_5H_4S_3^+$	$C_5H_4S_3$ ([1,2]Dithiolo[1,5- <i>b</i>][1,2]dithiole-7- S^{IV}) (RN-CAS Registry Number 252-09-5) (ON-Other name: Thiathiophthene)	**	8.11 (V)	PE	3569
$C_6H_6S_3^+$	$C_5H_3S_3CH_3$ ([1,2]Dithiolo[1,5- <i>b</i>][1,2]dithiole-7- S^{IV} , 2-methyl-) (RN-CAS Registry Number 20718-55-2) (ON-Other name: 2-Methylthiathiophthene)	**	7.83 (V)	PE	3569
$C_7H_8S_3^+$	$C_5H_2S_3(CH_3)_2$ ([1,2]Dithiolo[1,5- <i>b</i>][1,2]dithiole-7- S^{IV} , 2,5-dimethyl-) (RN-CAS Registry Number 2080-35-5) (ON-Other name: 2,5-Dimethylthiathiophthene)	**	7.73 (V)	PE	3569
$C_7H_8S_3^+$	$C_5H_2S_3(CH_3)_2$ ([1,2]Dithiolo[1,5- <i>b</i>][1,2]dithiole-7- S^{IV} , 3,4-dimethyl-) (RN-CAS Registry Number 29977-00-2) (ON-Other name: 3,4-Dimethylthiathiophthene)	**	7.63 (V)	PE	3569
$C_{10}H_{12}S_3^+$	$C_8H_6S_3(CH_3)_2$ (3 <i>H</i> -[1,2]Dithiolo[4,5,1- <i>hi</i>][1,2]benzodithiole-8- S^{IV} , 4,5-dihydro-2,6-dimethyl-) (RN-CAS Registry Number 35437-21-9)	**	7.34 (V)	PE	3569
$C_{12}H_{16}S_3^+$	$C_8H_6S_3(C_2H_5)_2$ (3 <i>H</i> -[1,2]Dithiolo[4,5,1- <i>hi</i>][1,2]benzodithiole-8- S^{IV} , 2,6-diethyl-4,5-dihydro-) (RN-CAS Registry Number 35505-46-5)	**	7.33 (V)	PE	3569
$C_{14}H_{20}S_3^+$	$C_8H_6S_3(C_3H_7)_2$ (3 <i>H</i> -[1,2]Dithiolo[4,5,1- <i>hi</i>][1,2]benzodithiole-8- S^{IV} , 4,5-dihydro-2,6-bis(1-methylethyl)-) (RN-CAS Registry Number 35505-47-6)	**	7.19 (V)	PE	3569
$C_{17}H_{12}S_3^+$	$C_5H_2S_3(C_6H_5)_2$ ([1,2]Dithiolo[1,5- <i>b</i>][1,2]dithiole-7- S^{IV} , 3,4-diphenyl-) (RN-CAS Registry Number 25730-47-6) (ON-Other name: 3,4-Diphenylthiathiophthene)	**	7.57 (V)	PE	3569
$C_6H_4S_4^+$	$C_6H_4S_4$ (1,3-Dithiole, 2-(1,3-dithiol-2-ylidene)-) (RN-CAS Registry Number 31366-25-3) (ON-Other name: Tetrathiofulvalene)	**	6.83 (V)	PE	3981

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{10}H_{18}S_6^+$	$C_4H_8S_2$ (1,4-Dithiane) (RN-CAS Registry Number 505-29-3)	**	8.46 (V)	PE	3898
$C_3H_9BS^+$	$(CH_3)_2BSCH_3$ (RN-CAS-Registry Number 19163-05-4)	**	9.40 (V)	PE	4065
$C_3H_9BS_2^+$	$(CH_3S)_2BCH_3$ (RN-CAS-Registry Number 19163-08-7)	**	8.74 (V)	PE	4065
$C_3H_9BS_3^+$	$B(SCH_3)_3$ (RN-CAS-Registry Number 997-49-9)	**	8.74 (V)	PE	4065
$CHNS^+(^2A'')$	HNCS (RN-CAS Registry Number 3129-90-6)	**	9.94 ± 0.02 (V)	PE	3670
$CHNS^+(^2A')$	HNCS (RN-CAS Registry Number 3129-90-6)	**	10.3 ± 0.1 (V)	PE	3670
$CHNS^{++}$	HNCS (RN-CAS Registry Number 3129-90-6)	**	13.31 ± 0.02 (V)	PE	3670
$CHNS^{++}$	HNCS (RN-CAS Registry Number 3129-90-6)	**	15.12 ± 0.02 (V)	PE	3670
$C_2H_3NS^+$	CH_3NCS (RN-CAS Registry Number 556-61-6)	**	9.37 ± 0.02 (V)	PE	3670
$C_3H_3NS^+$	C_3H_3NS (Isothiazole) (RN-CAS Registry Number 288-16-4)	**	9.55	PE	3587
$C_3H_3NS^+$	C_3H_3NS (Isothiazole) (RN-CAS Registry Number 288-16-4)	**	9.55	PE	3736
$C_3H_3NS^+$	C_3H_3NS (Isothiazole) (RN-CAS Registry Number 288-16-4)	**	9.80	EI	3587
$C_4H_5NS^+$	$C_3H_2NS(CH_3)$ (Isothiazole, 3-methyl-) (RN-CAS Registry Number 693-92-5)	**	9.60	EI	3587
$C_4H_5NS^+$	$C_3H_2NS(CH_3)$ (Isothiazole, 4-methyl-) (RN-CAS Registry Number 693-90-3)	**	9.25	PE	3587
$C_4H_5NS^+$	$C_3H_2NS(CH_3)$ (Isothiazole, 4-methyl-) (RN-CAS Registry Number 693-90-3)	**	9.25	PE	3736
$C_4H_5NS^+$	$C_3H_2NS(CH_3)$ (Isothiazole, 4-methyl-) (RN-CAS Registry Number 693-90-3)	**	9.65	EI	3587
$C_4H_5NS^+$	$C_3H_2NS(CH_3)$ (Isothiazole, 5-methyl-) (RN-CAS Registry Number 693-97-0)	**	9.65	EI	3587

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_5H_3NS^+$	C_4H_3SCN (2-Thiophenecarbonitrile) (RN-CAS Registry Number 1003-31-2)	**	9.83 ± 0.05	EI	3482
$C_5H_5NS^+$	$C_5H_4N(SH)$ (2-Pyridinethiol) (RN-CAS Registry Number 2637-34-5)	**	8.92 ± 0.02	EI	3636
$C_5H_5NS^+$	$C_5H_4N(SH)$ (3-Pyridinethiol) (RN-CAS Registry Number 16133-26-9)	**	9.41 ± 0.02	EI	3636
$C_5H_5NS^+$	$C_5H_4N(SH)$ (4-Pyridinethiol) (RN-CAS Registry Number 4556-23-4)	**	9.50 ± 0.02	EI	3636
$C_6H_7NS^+$	$C_5H_4N(SCH_3)$ (Pyridine, 2-(methylthio)-) (RN-CAS Registry Number 18438-38-5)	**	8.47 ± 0.02	EI	3636
$C_6H_7NS^+$	$C_5H_4N(SCH_3)$ (Pyridine, 3-(methylthio)-) (RN-CAS Registry Number 18794-33-7)	**	8.93 ± 0.02	EI	3636
$C_6H_7NS^+$	$C_5H_4N(SCH_3)$ (Pyridine, 4-(methylthio)-) (RN-CAS Registry Number 22581-72-2)	**	9.00 ± 0.02	EI	3636
$C_6H_7NS^+$	$C_5H_4N(=S)CH_3$ (2(1H)-Pyridinethione, 1-methyl-) (RN-CAS Registry Number 2044-27-1)	**	7.84 ± 0.02	EI	3636
$C_6H_7NS^+$	$C_5H_4N(=S)CH_3$ (4(1H)-Pyridinethione, 1-methyl-) (RN-CAS Registry Number 6887-59-8)	**	7.54 ± 0.02	EI	3636
$C_{10}H_9NS^+$	$C_6H_5CH_2(C_3H_2NS)$ (Isothiazole, 4-(phenylmethyl)-) (RN-CAS Registry Number 36412-26-7)	**	9.05	PE	3587
$C_{10}H_9NS^+$	$C_6H_5CH_2(C_3H_2NS)$ (Isothiazole, 4-(phenylmethyl)-) (RN-CAS Registry Number 36412-26-7)	**	9.35	EI	3587
$C_{10}H_9NS^+$	$C_3H_2NSCH_2C_6H_5$ (Isothiazole, 4-(phenylmethyl)-) (RN-CAS Registry Number 36412-26-7)	**	9.05	PE	3736
$C_{12}H_9NS^+$	$C_{12}H_9NS$ (10H-Phenothiazine) (RN-CAS Registry Number 92-84-2)	**	6.74 ± 0.07	CTS	4079
$C_{12}H_9NS^+$	$C_{12}H_9NS$ (10H-Phenothiazine) (RN-CAS Registry Number 92-84-2)	**	6.87	CTS	4035
$C_{13}H_{11}NS^+$	$C_{12}H_8NSCH_3$ (10H-Phenothiazine, 10-methyl-) (RN-CAS Registry Number 1207-72-3)	**	6.73 ± 0.07	CTS	4079

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{C}_3\text{H}_6\text{N}_2\text{S}^+$	$\text{C}_2\text{H}_3\text{N}_2\text{SCH}_3$ (1,2,5-Thia(S^{IV})diazole, 3,4-dihydro-3-methyl-) (RN-CAS Registry Number 24692-43-1)	**	8.92 (V)	PE	4024
$\text{C}_4\text{H}_2\text{N}_2\text{S}^+$	$\text{C}_3\text{H}_2\text{NS}(\text{CN})$ (4-Isothiazolecarbonitrile) (RN-CAS Registry Number 3912-37-6)	**	10.55	EI	3587
$\text{C}_4\text{H}_8\text{N}_2\text{S}^+$	$\text{C}_2\text{H}_2\text{N}_2\text{S}(\text{CH}_3)_2$ (1,2,5-Thia(S^{IV})diazole, 3,4-dihydro-3,3-dimethyl-) (RN-CAS Registry Number 24692-45-3)	**	9.62 (V)	PE	4024
$\text{C}_6\text{H}_4\text{N}_2\text{S}^+$	$\text{C}_6\text{H}_4\text{N}_2\text{S}$ (1,2,3-Benzothiadiazole) (RN-CAS Registry Number 273-77-8)	**	9.15 (V)	PE	3852
$\text{C}_6\text{H}_4\text{N}_2\text{S}^+$	$\text{C}_6\text{H}_4\text{N}_2\text{S}$ (2,1,3-Benzothiadiazole) (RN-CAS Registry Number 273-13-2)	**	8.98	PE	4017
$\text{C}_6\text{H}_4\text{N}_2\text{S}^+$	$\text{C}_6\text{H}_4\text{N}_2\text{S}$ (2,1,3-Benzothiadiazole) (RN-CAS Registry Number 273-13-2)	**	9.00 (V)	PE	3852
$\text{C}_8\text{H}_{18}\text{N}_2\text{S}^+$	$((\text{CH}_3)_3\text{CN})_2\text{S}$ (RN-CAS Registry Number 2056-74-8)	**	8.65 (V)	PE	4024
$\text{C}_{16}\text{H}_{18}\text{N}_2\text{S}^+$	$\text{C}_{12}\text{H}_8\text{NSCH}_2\text{CH}_2\text{N}(\text{CH}_3)_2$ (10 <i>H</i> -Phenothiazine-10-ethanamine, <i>N,N</i> -dimethyl-) (RN-CAS Registry Number 522-24-7) (ON-Other name: Ethizine)	**	8.25 ± 0.07	CTS	4079
$\text{C}_{17}\text{H}_{20}\text{N}_2\text{S}^+$	$\text{C}_{12}\text{H}_8\text{NS}(\text{CH}_2)_3\text{N}(\text{CH}_3)_2$ (10 <i>H</i> -Phenothiazine-10-propanamine, <i>N,N</i> -dimethyl-) (RN-CAS Registry Number 58-40-2) (ON-Other name: Promazine)	**	8.22 ± 0.07	CTS	4079
$\text{C}_{18}\text{H}_{22}\text{N}_2\text{S}^+$	$\text{C}_{12}\text{H}_8\text{NSCH}_2\text{CH}_2\text{N}(\text{C}_2\text{H}_5)_2$ (10 <i>H</i> -Phenothiazine-10-ethanamine, <i>N,N</i> -diethyl-) (RN-CAS Registry Number 60-91-3) (ON-Other name: Dinezine)	**	7.85 ± 0.07	CTS	4079
$\text{C}_{20}\text{H}_{25}\text{N}_3\text{S}^+$	$\text{C}_{12}\text{H}_8\text{NS}(\text{CH}_2)_3\text{C}_4\text{H}_8\text{N}_2\text{CH}_3$ (10 <i>H</i> -Phenothiazine, 10-[3-(4-methyl-1-piperazinyl)propyl]-) (RN-CAS Registry Number 84-97-9) (ON-Other name: Perazine)	**	6.87 ± 0.07	CTS	4079
$\text{SO}^+(^2\Pi)$ (RD-Radical)	$\text{SO}(^3\Sigma^-)$ (RN-CAS Registry Number 13827-32-2)	**	10.32	PE	3701
$\text{SO}^+(^4\Pi)$ (RD-Radical)	$\text{SO}(^3\Sigma^-)$ (RN-CAS Registry Number 13827-32-2)	**	~ 11.3	PE	3701

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{SO}^+(\text{}^4\Sigma^-)$	$\text{SO}(\text{}^3\Sigma^-)$ (RN-CAS Registry Number 13827-32-2)	**	14.96	PE	3701
(RD-Radical)					
SO^+	SO (RN-CAS Registry Number 13827-32-2)	**	10.28 ± 0.02	EI	3816
(RD-Radical)					
SO^+	COS (RN-CAS Registry Number 463-58-1)	C	19.8	EI	3779
$\text{SO}_2(\text{}^2A_1)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	12.3	PE	3865
$\text{SO}_2(\text{}^2A_1)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	12.31	PE	4092
$\text{SO}_2(\text{}^2A_1)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	12.50 (V)	PE	3879
$\text{SO}_2(\text{}^2A_1)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	12.54 (V)	PE	4024
$\text{SO}_2(\text{}^2A_2)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	13.01 (V)	PE	4092
$\text{SO}_2(\text{}^2A_2)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	13.24 (V)	PE	3879
$\text{SO}_2(\text{}^2A_2)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	13.25 (V)	PE	4024
$\text{SO}_2(\text{}^2B_2)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	13.30 (V)	PE	4092
$\text{SO}_2(\text{}^2B_2)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	13.47 (V)	PE	3879
$\text{SO}_2(\text{}^2B_2)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	13.56 (V)	PE	4024
$\text{SO}_2(\text{}^2B_1)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	15.99	PE	3879
$\text{SO}_2(\text{}^2B_2)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	15.992 ± 0.003	PE	3865
$\text{SO}_2(\text{}^2A_1)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	16.324 ± 0.004	PE	3865
$\text{SO}_2(\text{}^2A_1)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	16.33	PE	3879
$\text{SO}_2(\text{}^2B_1)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	16.498 ± 0.004	PE	3865
$\text{SO}_2(\text{}^2B_1)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	16.57 (V)	PE	4092
$\text{SO}_2(\text{}^2B_1, \text{}^2B_2)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	~ 16.6 (V)	PE	4024
$\text{SO}_2(\text{}^2B_2, \text{}^2A_1)$	SO_2 (RN-CAS Registry Number 7446-09-5)	**	16.65 (V)	PE	4092
SO_2^*	SO_2 (RN-CAS Registry Number 7446-09-5)	**	20.06 ± 0.05	PE	3865
$\text{S}_2\text{O}^+(\text{}^2A')$	S_2O (RN-CAS Registry Number 20901-21-7)	**	10.52	PE	4092
$\text{S}_2\text{O}^+(\text{}^2A')$	S_2O (RN-CAS Registry Number 20901-21-7)	**	10.53 ± 0.02	PE	3841

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$S_2O^+(^2A')$	S_2O (RN-CAS Registry Number 20901-21-7)	**	10.62	PE	3692
$S_2O^+(^2A'')$	SSO (RN-CAS Registry Number 20901-21-7)	**	11.22	PE	4092
$S_2O^+(^2A')$	S_2O (RN-CAS Registry Number 20901-21-7)	**	11.25 ± 0.02	PE	3841
$S_2O^+(^2A'')$	S_2O (RN-CAS Registry Number 20901-21-7)	**	11.31 ± 0.02	PE	3841
$S_2O^+(^2A')$	S_2O (RN-CAS Registry Number 20901-21-7)	**	11.32	PE	3692
$S_2O^+(^2A')$	SSO (RN-CAS Registry Number 20901-21-7)	**	11.34	PE	4092
$S_2O^+(^2A'')$	S_2O (RN-CAS Registry Number 20901-21-7)	**	11.37	PE	3692
$S_2O^+(^2A')$	S_2O (RN-CAS Registry Number 20901-21-7)	**	14.3 ± 0.02	PE	3841
$S_2O^+(^2A'')$	S_2O (RN-CAS Registry Number 20901-21-7)	**	14.3	PE	3692
$S_2O^+(^2A'')$	SSO (RN-CAS Registry Number 20901-21-7)	**	14.62 (V)	PE	4092
$S_2O^+(^2A')$	SSO (RN-CAS Registry Number 20901-21-7)	**	14.84 (V)	PE	4092
$S_2O^+(^2A'')$	S_2O (RN-CAS Registry Number 20901-21-7)	**	14.9 ± 0.02	PE	3841
$S_2O^+(^2A')$	S_2O (RN-CAS Registry Number 20901-21-7)	**	15.5 ± 0.02	PE	3841
$S_2O^+(^2A')$	S_2O (RN-CAS Registry Number 20901-21-7)	**	15.5	PE	3692
$S_2O^+(^2A')$	SSO (RN-CAS Registry Number 20901-21-7)	**	15.80 (V)	PE	4092
$S_2O^+(^2A')$	SSO (RN-CAS Registry Number 20901-21-7)	**	18.50 (V)	PE	4092
$COS^+(X^2\Pi)$	COS (RN-CAS Registry Number 463-58-1)	**	11.18 ± 0.01	PE	3965
$COS^+(X^2\Pi_{3/2})$	COS (RN-CAS-Registry Number 463-58-1)	**	11.22	PE	4073
$COS^+(A^2\Pi)$	COS (RN-CAS Registry Number 463-58-1)	**	15.09 ± 0.01	PE	3965
$COS^+(B^2\Sigma^+)$	COS (RN-CAS Registry Number 463-58-1)	**	16.05 ± 0.01	PE	3965
$COS^+(C^2\Sigma^+)$	COS (RN-CAS Registry Number 463-58-1)	**	17.96 ± 0.01	PE	3965
COS^+	COS (RN-CAS Registry Number 463-58-1)	**	11.3	EI	3779
CH_2OS^+	C_3H_6OS (1,3-Oxathiolane) (RN-CAS Registry Number 2094-97-5)	C_2H_4	10.4 ± 0.3	EI	3598

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_4OS^+$	C_2H_4SO (Thiirane, 1-oxide) (RN-CAS Registry Number 7117-41-1)	**	9.66 (V)	PE	3646
$C_2H_6OS^+$	$(CH_3)_2SO$ (RN-CAS Registry Number 67-68-5)	**	9.01 (V)	PE	3646
$C_2H_6OS^+$	$(CH_3)_2SO$ (RN-CAS Registry Number 67-68-5)	**	9.11 (V)	PE	3705
$C_2H_6OS^+$	$(CH_3)_2SO$ (Sulfinylbis(methane)) (RN-CAS Registry Number 67-68-5)	**	9.20 ± 0.05	EI	3498
$C_3H_5OS^+$	C_3H_6OS (1,3-Oxathiolane) (RN-CAS Registry Number 2094-97-5)	H	10.8 ± 0.1	EI	3598
$C_3H_6OS^+$	C_3H_6OS (1,3-Oxathiolane) (RN-CAS Registry Number 2094-97-5)	**	9 ± 0.05	EI	3598
$C_4H_8OS^+$	C_4H_8OS (1,4-Oxathiane) (RN-CAS Registry Number 15980-15-1)	**	8.67 (V)	PE	3733
$C_4H_8OS^+$	C_4H_8SO (Thiophene, tetrahydro-1-oxide) (RN-CAS Registry Number 1600-44-8)	**	8.77 (V)	PE	3646
$C_4H_8OS^+$	C_4H_8SO (Thiophene, tetrahydro-, 1-oxide) (RN-CAS Registry Number 1600-44-8)	**	9.07 ± 0.05	EI	3498
$C_4H_8OS^+$	$C_5H_{10}O_2S$ (1,3,6-Dioxathiocane) (RN-CAS Registry Number 2094-92-0)	HCHO	9.1 ± 0.01	EI	3903
(MT—Metastable transition(s) observed) (TR—Other product(s) thermochemically reasonable)					
$C_4H_{10}OS^+$	$(CH_3CH_2)_2SO$ (RN-CAS Registry Number 70-29-1)	**	8.76 (V)	PE	3646
$C_5H_4OS^+$	C_4H_3SCHO (2-Thiophenecarboxaldehyde) (RN-CAS Registry Number 98-03-3)	**	9.55 ± 0.05	EI	3482
$C_5H_6OS^+$	$C_4H_3SOCH_3$ (Thiophene, 2-methoxy-) (RN-CAS Registry Number 16839-97-7)	**	8.30 ± 0.05	EI	3482
$C_6H_6OS^+$	$C_4H_3SCOCH_3$ (Ethanone, 1-(2-thienyl)-) (RN-CAS Registry Number 88-15-3)	**	9.20 ± 0.05	EI	3482

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_6OS^+$	$C_4H_3SCOCH_3$ (Ethanone, 1-(3-thienyl)-) (RN-CAS Registry Number 1468-83-3)	**	9.32 ± 0.05	EI	3482
$C_6H_{11}OS^+$	$C_4H_5OS(CH_3)_3$ (1,3-Oxathiane, 2,4,6-trimethyl-, (2 α ,4 α ,6 α)-) (RN-CAS Registry Number 22521-88-6)	CH_3	8.54 ± 0.01	EI	3803
$C_6H_{11}OS^+$	$C_4H_5OS(CH_3)_3$ (1,3-Oxathiane, 2,4,6-trimethyl-, (2 α ,4 α ,6 β)-) (RN-CAS Registry Number 22425-91-8)	CH_3	8.67	EI	3803
$C_6H_{11}OS^+$	$C_4H_5OS(CH_3)_3$ (1,3-Oxathiane, 2,4,6-trimethyl-, (2 α ,4 β ,6 α)-) (RN-CAS Registry Number 22425-90-7)	CH_3	8.64	EI	3803
$C_6H_{12}OS^+$	$C_4H_6OS(CH_3)_2$ (1,3-Oxathiane, 4,6-dimethyl-, <i>cis</i> -) (RN-CAS Registry Number 22452-25-1)	**	8.75	EI	3803
$C_6H_{12}OS^+$	$C_4H_6OS(CH_3)_2$ (1,3-Oxathiane, 4,6-dimethyl-, <i>trans</i> -) (RN-CAS Registry Number 22452-26-2)	**	8.67 ± 0.01	EI	3803
$C_6H_{14}OS^+$	$((CH_3)_2CH)_2SO$ (RN-CAS Registry Number 2211-89-4)	**	8.46 (V)	PE	3646
$C_7H_{13}OS^+$	$C_4H_4OS(CH_3)_4$ (1,3-Oxathiane, 2,2,4,6-tetramethyl-, <i>cis</i> -) (RN-CAS Registry Number 34560-79-7)	CH_3	8.63 ± 0.01	EI	3803
$C_7H_{13}OS^+$	$C_4H_4OS(CH_3)_4$ (1,3-Oxathiane, 2,2,4,6-tetramethyl-, <i>trans</i> -) (RN-CAS Registry Number 34560-78-6)	CH_3	8.54 ± 0.01	EI	3803
$C_7H_{14}OS^+$	$C_4H_5OS(CH_3)_3$ (1,3-Oxathiane, 2,4,6-trimethyl-, (2 α ,4 α ,6 α)-) (RN-CAS Registry Number 22521-88-6)	**	8.55	EI	3803
$C_7H_{14}OS^+$	$C_4H_5OS(CH_3)_3$ (1,3-Oxathiane, 2,4,6-trimethyl-, (2 α ,4 α ,6 β)-) (RN-CAS Registry Number 22425-91-8)	**	8.54	EI	3803
$C_7H_{14}OS^+$	$C_4H_5OS(CH_3)_3$ (1,3-Oxathiane, 2,4,6-trimethyl-, (2 α ,4 β ,6 α)-) (RN-CAS Registry Number 22425-90-7)	**	8.58	EI	3803
$C_8H_{16}OS^+$	$C_4H_4OS(CH_3)_4$ (1,3-Oxathiane, 2,2,4,6-tetramethyl-, <i>cis</i> -) (RN-CAS Registry Number 34560-79-7)	**	8.48 ± 0.02	EI	3803
$C_8H_{16}OS^+$	$C_4H_4OS(CH_3)_4$ (1,3-Oxathiane, 2,2,4,6-tetramethyl-, <i>trans</i> -) (RN-CAS Registry Number 34560-78-6)	**	8.45 ± 0.01	EI	3803
$C_8H_{18}OS^+$	$((CH_3)_3C)_2SO$ (RN-CAS Registry Number 2211-92-9)	**	8.18 (V)	PE	3646

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{12}H_{10}OS^+$	$(C_6H_5)_2SO$ (RN-CAS Registry Number 945-51-7)	**	9.02 ± 0.05	EI	3498
$C_2H_6O_2S^+$	$(CH_3)_2SO_2$ (RN-CAS Registry Number 67-71-0)	**	10.80 (V)	PE	3993
$C_2H_6O_2S^+$	$(CH_3)_2SO_2$ (RN-CAS Registry Number 67-71-0)	**	10.97 (V)	PE	3705
$C_3H_6SO_2^+$	$CH_2=CHS(CH_3)O_2$ (RN-CAS Registry Number 3680-02-2)	**	10.82 (V)	PE	3993
$C_4H_6SO_2^+$	$(C_2H_3)_2SO_2$ (RN-CAS Registry Number 77-77-0)	**	10.62 (V)	PE	3993
$C_5H_4O_2S^+$	C_4H_3SCOOH (2-Thiophenecarboxylic acid) (RN-CAS Registry Number 527-72-0)	**	9.35	EI	3804
$C_5H_{10}O_2S^+$	$C_5H_{10}O_2S$ (1,3,6-Dioxathiocane) (RN-CAS Registry Number 2094-92-0)	**	8.67 ± 0.05	EI	3903
$C_6H_6O_2S^+$	$C_4H_3SCOOCH_3$ (2-Thiophenecarboxylic acid, methyl ester) (RN-CAS Registry Number 5380-42-7)	**	9.22 ± 0.05	EI	3482
$C_{14}H_9O_2S^+$	$C_6H_4(COSC_6H_5)_2$ (1,2-Benzenedicarbothioic acid <i>S,S</i> -diphenyl ester) (RN-CAS-Registry Number 42797-33-1)	C_6H_5S	10.3 ± 0.2	EI	4062
$C_{14}H_9O_2S^+$	$C_8H_4O(=O)(SC_6H_5)_2$ (1(3 <i>H</i>)-Isobenzofuranone, 3,3-bis(phenylthio)-) (RN-CAS-Registry Number 4792-31-8)	C_6H_5S	10.3 ± 0.2	EI	4062
$C_{15}H_{11}O_2S^+$	$C_6H_4(COSC_6H_4CH_3)_2$ (1,2-Benzenedicarbothioic acid <i>S,S</i> -bis(4-methylphenyl)ester) (RN-CAS-Registry Number 42797-34-2)	$C_6H_4(S)CH_3$	10.1 ± 0.2	EI	4062
$C_{15}H_{11}O_2S^+$	$C_8H_4O(=O)(SC_6H_4CH_3)_2$ (1(3 <i>H</i>)-Isobenzofuranone, 3,3-bis[(4-methylphenyl)thio]-) (RN-CAS-Registry Number 42797-36-4)	$C_6H_4(S)CH_3$	9.9 ± 0.2	EI	4062
$C_2H_4O_3S^+$	$C_2H_4O_2SO$ (1,3,2-Dioxathiolane 2-oxide) (RN-CAS Registry Number 3741-38-6)	**	10.93 (V)	PE	3646
$C_2H_4O_3S^+$	$C_2H_4O_2SO$ (1,3,2-Dioxathiolane 2-oxide) (RN-CAS Registry Number 3741-38-6)	**	10.30 ± 0.05	EI	3498
$C_2H_6O_3S^+$	$(CH_3O)_2SO$ (RN-CAS Registry Number 616-42-2)	**	10.25 (V)	PE	3646

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_4H_3NSO^+$	$C_3H_2NS(CHO)$ (5-Isothiazolecarboxaldehyde) (RN-CAS Registry Number 5242-57-9)	**	10.25	EI	3587
$C_4H_9NOS^+$	$(CH_3)_3CNSO$ (RN-CAS Registry Number 38662-39-4)	**	10.54 (V)	PE	4024
$C_6H_7NOS^+$	$C_5H_2NH(=S)(OH)CH_3$ (2(1 <i>H</i>)-Pyridinethione, 3-hydroxy-6-methyl-) (RN-CAS Registry Number 22989-67-9)	**	8.04 ± 0.05	EI	3635
$C_6H_7NOS^+$	$C_5H_3N(OH)SCH_3$ (3-Pyridinol, 2-(methylthio)-) (RN-CAS Registry Number 32637-37-9)	**	8.53 ± 0.05	EI	3977
$C_6H_{11}NOS^+$	$C_6H_{11}NSO$ (Cyclohexanamine, <i>N</i> -sulfinyl-) (RN-CAS Registry Number 30980-11-1)	**	~ 10.0 (V)	PE	4024
$C_7H_5NOS^+$	$C_7H_5NS(O)$ (Thiazolo[3,2- <i>a</i>]pyridinium, 3-hydroxy-, hydroxide, inner salt) (RN-CAS Registry Number 42715-25-3)	**	6.92 ± 0.05	EI	3977
$C_7H_9NOS^+$	$C_5H_2N(OH)(CH_3)SCH_3$ (3-Pyridinol, 6-methyl-2-(methylthio)-) (RN-CAS Registry Number 23003-25-0)	**	8.24 ± 0.05	EI	3635
$C_8H_7NOS^+$	$C_7H_4NS(O)CH_3$ (Thiazolo[3,2- <i>a</i>]pyridinium, 3-hydroxy-2-methyl-, hydroxide, inner salt) (RN-CAS Registry Number 35143-56-7)	**	6.82 ± 0.05	EI	3977
$C_8H_7NOS^+$	$C_7H_4NS(O)CH_3$ (Thiazolo[3,2- <i>a</i>]pyridinium, 8-hydroxy-5-methyl-, hydroxide, inner salt) (RN-CAS Registry Number 30277-17-9)	**	7.03 ± 0.05	EI	3635
$C_8H_9NOS^+$	$C_7H_6NOS(CH_3)$ (1,4-Oxathiino[3,2- <i>b</i>]pyridine, 2,3-dihydro-6-methyl-) (RN-CAS Registry Number 35688-70-1)	**	8.03 ± 0.05	EI	3635
$C_8H_9NOS^+$	$C_5H_2N(=S)(OH)(CH_3)C_2H_5$ (2(1 <i>H</i>)-Pyridinethione, 1-ethenyl-3-hydroxy-6-methyl-) (RN-CAS Registry Number 35688-69-8)	**	7.73 ± 0.05	EI	3635
$C_8H_9NOS^+$	$C_7H_6NS(O)CH_3$ (Thiazolo[3,2- <i>a</i>]pyridinium, 2,3-dihydro-8-hydroxy-5-methyl-, hydroxide, inner salt) (RN-CAS Registry Number 23003-43-2)	**	7.35 ± 0.05	EI	3635
$C_8H_{11}NOS^+$	$C_5H_2N(=S)(OH)(CH_3)C_2H_5$ (2(1 <i>H</i>)-Pyridinethione, 1-ethyl-3-hydroxy-6-methyl-) (RN-CAS Registry Number 24207-15-6)	**	7.75 ± 0.05	EI	3635
$C_{13}H_9NOS^+$	$C_7H_4NS(O)C_6H_5$ (Thiazolo[3,2- <i>a</i>]pyridinium, 3-hydroxy-2-phenyl-, hydroxide, inner salt) (RN-CAS Registry Number 32044-03-4)	**	6.70 ± 0.05	EI	3977

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3H_2N_2OS^+$	C_3H_2NSNO (Isothiazole, 4-nitro-) (RN-CAS Registry Number 931-07-7)	**	10.45	PE	3736
$C_4H_{12}N_2OS^+$	$((CH_3)_2N)_2SO$ (RN-CAS Registry Number 3768-60-3)	**	8.53 (V)	PE	3646
$C_{17}H_{18}N_2OS^+$	$C_{12}H_8NSCOCH_2CH_2N(CH_3)_2$ (10 <i>H</i> -Phenothiazine, 10-[3-(dimethylamino)-1-oxopropyl]-) (RN-CAS Registry Number 3576-44-1)	**	8.26 ± 0.07	CTS	4079
$C_{18}H_{22}N_2OS^+$	$C_{12}H_7NS(OCH_3)CH_2CH(CH_3)N(CH_3)_2$ (10 <i>H</i> -Phenothiazine-10-ethanamine, 2-methoxy- <i>N,N</i> , α -trimethyl-) (RN-CAS Registry Number 7624-74-0) (ON-Other name: Thisercine)	**	8.18 ± 0.07	CTS	4079
$C_{19}H_{22}N_2OS^+$	$C_{12}H_8NSCOCH_2CH_2N(C_2H_5)_2$ (10 <i>H</i> -Phenothiazine, 10-[3-(diethylamino)-1-oxopropyl]-) (RN-CAS Registry Number 3576-47-4) (ON-Other name: Acizine)	**	7.85 ± 0.07	CTS	4079
$C_{20}H_{24}N_2OS^+$	$C_{12}H_8NSCO(CH_2)_3N(C_2H_5)_2$ (10 <i>H</i> -Phenothiazine, 10-[4-(diethylamino)-1-oxobutyl]-) (RN-CAS Registry Number 51307-45-0)	**	7.88 ± 0.07	CTS	4079
$C_{19}H_{23}N_3OS^+$	$C_{12}H_7NS(CH_3)NHCOCH_2N(C_2H_5)_2$ (Acetamide, 2-(diethylamino)- <i>N</i> -(10-methyl-10 <i>H</i> -phenothiazin-3-yl)-) (RN-CAS Registry Number 1952-62-1)	**	7.13 ± 0.07	CTS	4079
$C_{22}H_{27}N_3OS^+$	$C_{22}H_{27}N_3OS$ (Ethanone, 1-[10-[3-(4-methyl-1-piperazinyl)propyl]-10 <i>H</i> -phenothiazin-2-yl]-) (RN-CAS Registry Number 1053-74-3)	**	9.05 ± 0.07	CTS	4079
$C_{23}H_{29}N_3OS^+$	$C_{23}H_{29}N_3OS$ (1-Propanone, 1-[10-[3-(4-methyl-1-piperazinyl)propyl]-10 <i>H</i> -phenothiazin-2-yl]-) (RN-CAS Registry Number 20686-45-7)	**	9.08 ± 0.07	CTS	4079
$C_3H_7NO_2S^+$	$SHCH_2CH(NH_2)COOH$ (RN-CAS Registry Number 3374-22-9)	**	~9	PI	3766
$C_4H_3NO_2S^+$	$C_4H_3SNO_2$ (Thiophene, 2-nitro-) (RN-CAS Registry Number 609-40-5)	**	9.77 ± 0.05	EI	3482
$C_5H_{11}NO_2S^+$	$CH_3SCH_2CH_2CH(NH_2)COOH$ (RN-CAS Registry Number 59-51-8)	**	~9	PI	3766
$C_7H_5NO_2S^+$	$C_7H_4NS(O)OH$ (Thiazolo[3,2- <i>a</i>]pyridinium, 3,8-dihydroxy-, hydroxide, inner salt) (RN-CAS Registry Number 35143-55-6)	**	8.70 ± 0.05	EI	3977

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_7NO_2S^+$	$C_7H_3NS(O)(OH)CH_3$ (Thiazolo[3,2- <i>a</i>]pyridinium, 3,8-dihydroxy-2-methyl-, hydroxide, inner salt) (RN-CAS Registry Number 35191-20-9)	**	8.60 ± 0.05	EI	3977
$C_8H_9NO_2S^+$	$C_5H_3N(SCH_3)OCOCH_3$ (3-Pyridinol, 2-(methylthio)- acetate (ester)) (RN-CAS Registry Number 42715-30-0)	**	7.91 ± 0.05	EI	3977
$C_{13}H_9NO_2S^+$	$C_7H_3NS(O)(OH)C_6H_5$ (Thiazolo[3,2- <i>a</i>]pyridinium, 3,8-dihydroxy-2-phenyl-, hydroxide, inner salt) (RN-CAS Registry Number 35143-57-8)	**	8.42 ± 0.05	EI	3977
$C_3H_2N_2O_2S^+$	$C_3H_2NS(NO_2)$ (Isothiazole, 4-nitro-) (RN-CAS Registry Number 931-07-7)	**	10.45	PE	3587
$C_3H_2N_2O_2S^+$	$C_3H_2NS(NO_2)$ (Isothiazole, 4-nitro-) (RN-CAS Registry Number 931-07-7)	**	10.80	EI	3587
$C_{15}H_{11}NO_3S^+$	$C_7H_3NOS(OCOCH_3)C_6H_5$ (Thiazolo[3,2- <i>a</i>]pyridinium, 8-(acetyloxy)-3-hydroxy-2-phenyl-, hydroxide, inner salt) (RN-CAS Registry Number 32002-92-9)	**	6.27 ± 0.05	EI	3977
$C_{22}H_{30}N_4O_2S_2^+$	$C_{22}H_{30}N_4O_2S_2$ (10 <i>H</i> -Phenothiazine-2-sulfonamide, <i>N,N</i> -dimethyl-10[3-(4-methyl-1-piperazinyl)propyl]-) (RN-CAS Registry Number 316-81-4) (ON-Other name: Majeptil)	**	6.81 ± 0.07	CTS	4079
SF^+ (RD-Radical)	SF (RN-CAS Registry Number 16068-96-5)	**	10.09 ± 0.10	EI	3818
SF^+	SF ₆ (RN-CAS Registry Number 2551-62-4)		30.5 ± 0.5	EI	3818
SF_2^+ (RD-Radical)	SF ₂ (RN-CAS Registry Number 13814-25-0)	**	10.29 ± 0.10	EI	3818
SF_2^+	SF ₄ (RN-CAS Registry Number 7783-60-0)		17.4 ± 0.5	EI	3818
SF_2^+	SF ₆ (RN-CAS Registry Number 2551-62-4)		27.5 ± 0.5	EI	3818
SF_2^+	S ₂ F ₂ (RN-CAS Registry Number 13709-35-8)		16.2 ± 0.4	EI	3738
SF_3^+	SF ₄ (RN-CAS Registry Number 7783-60-0)	F	12.63 ± 0.10	EI	3818
SF_3^+	SF ₆ (RN-CAS Registry Number 2551-62-4)		20.0 ± 0.5	EI	3818
SF_4^+	SF ₄ (RN-CAS Registry Number 7783-60-0)	**	12.03 ± 0.05	EI	3578

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
SF_4^+	SF_4 (RN-CAS Registry Number 7783-60-0)	**	12.08 ± 0.10	EI	3818
SF_4^+	SF_6 (RN-CAS Registry Number 2551-62-4)	2F	18.44 ± 0.10	EI	3818
SF_5^+	SF_6 (RN-CAS Registry Number 2551-62-4)	F	15.50 ± 0.10	EI	3818
S_2F^+	S_2F_2 (RN-CAS Registry Number 13709-35-8)		14.0 ± 0.4	EI	3738
S_2F_2^+	S_2F_2 (RN-CAS Registry Number 13709-35-8)	**	11.6 ± 0.4	EI	3738
$\text{CF}_2\text{S}^+(\text{}^2\text{B}_2)$	F_2CS (RN-CAS Registry Number 420-32-6)	**	10.45 ± 0.01	PE	3708
$\text{CF}_2\text{S}^+(\text{}^2\text{B}_2)$	F_2CS (RN-CAS Registry Number 420-32-6) (HB-Threshold value approximately corrected for hot bands)	**	10.52	PE	4080
CSF_2^+	F_2CS (RN-CAS Registry Number 420-32-6)	**	10.64 (V)	PE	3746
$\text{CF}_2\text{S}^+(\text{}^2\text{B}_1)$	F_2CS (RN-CAS Registry Number 420-32-6)	**	11.34 ± 0.01	PE	3708
$\text{CF}_2\text{S}^+(\text{}^2\text{B}_1)$	F_2CS (RN-CAS Registry Number 420-32-6)	**	11.39	PE	4080
$\text{CF}_2\text{S}^+(\text{}^2\text{A}_1)$	F_2CS (RN-CAS Registry Number 420-32-6)	**	14.87	PE	3708
CF_2S^{+*}	F_2CS (RN-CAS Registry Number 420-32-6) (HB-Threshold value approximately corrected for hot bands)	**	14.91	PE	4080
CF_2S^{+*}	F_2CS (RN-CAS Registry Number 420-32-6)	**	15.87 (V)	PE	4080
CF_2S^{+*}	F_2CS (RN-CAS Registry Number 420-32-6)	**	16.48 (V)	PE	4080
CF_2S^{+*}	F_2CS (RN-CAS Registry Number 420-32-6)	**	17.65	PE	3708
$\text{CF}_2\text{S}^+(\text{}^2\text{B}_1)$	F_2CS (RN-CAS Registry Number 420-32-6)	**	17.67 (V)	PE	4080
CF_2S^{+*}	F_2CS (RN-CAS Registry Number 420-32-6)	**	18.76 (V)	PE	4080
CF_2S^{+*}	F_2CS (RN-CAS Registry Number 420-32-6)	**	19.20 (V)	PE	4080
CF_2S^+	F_2CS (RN-CAS Registry Number 420-32-6)	**	10.53 ± 0.10	EI	3818
$\text{NSF}^+(\text{}^2\text{A}')$	NSF (RN-CAS Registry Number 18820-63-8)	**	11.49 ± 0.02	PE	3665
$\text{NSF}^+(\text{}^2\text{A}')$	NSF (RN-CAS Registry Number 18820-63-8)	**	11.54 ± 0.01	PE	3666
$\text{NSF}^+(\text{}^2\text{A}')$	NSF (RN-CAS Registry Number 18820-63-8)	**	11.82 (V)	PE	3518

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{NSF}^+(\text{}^2\text{A}')$	NSF (RN-CAS Registry Number 18820-63-8)	**	11.82 (V)	PE	3660
$\text{NSF}^+(\text{}^2\text{A}')$	NSF (RN-CAS Registry Number 18820-63-8)	**	13.382 ± 0.004	PE	3666
$\text{NSF}^+(\text{}^2\text{A}')$	(HB-Threshold value approximately corrected for hot bands) NSF (RN-CAS Registry Number 18820-63-8)	**	13.39 ± 0.02	PE	3665
$\text{NSF}^+(\text{}^2\text{A}')$	NSF (RN-CAS Registry Number 18820-63-8)	**	13.50 (V)	PE	3518
$\text{NSF}^+(\text{}^2\text{A}')$	NSF (RN-CAS Registry Number 18820-63-8)	**	13.50 (V)	PE	3660
$\text{NSF}^+(\text{}^2\text{A}'')$	NSF (RN-CAS Registry Number 18820-63-8)	**	13.775 ± 0.005	PE	3666
$\text{NSF}^+(\text{}^2\text{A}'')$	NSF (RN-CAS Registry Number 18820-63-8)	**	13.78 ± 0.02	PE	3665
$\text{NSF}^+(\text{}^2\text{A}'')$	NSF (RN-CAS Registry Number 18820-63-8)	**	13.87 (V)	PE	3518
$\text{NSF}^+(\text{}^2\text{A}'')$	NSF (RN-CAS Registry Number 18820-63-8)	**	13.87 (V)	PE	3660
$\text{NSF}^+(\text{}^2\text{A}')$	NSF (RN-CAS Registry Number 18820-63-8)	**	14.93 ± 0.01	PE	3666
$\text{NSF}^+(\text{}^2\text{A}')$	NSF (RN-CAS Registry Number 18820-63-8)	**	15.35 ± 0.02	PE	3665
$\text{NSF}^+(\text{}^2\text{A}')$	NSF (RN-CAS Registry Number 18820-63-8)	**	15.61 (V)	PE	3518
$\text{NSF}^+(\text{}^2\text{A}')$	NSF (RN-CAS Registry Number 18820-63-8)	**	15.61 (V)	PE	3660
$\text{NSF}^+(\text{}^2\text{A}', \text{}^2\text{A}'')$	NSF (RN-CAS Registry Number 18820-63-8)	**	~ 16.3	PE	3665
$\text{NSF}^+(\text{}^2\text{A}')$	NSF (RN-CAS Registry Number 18820-63-8)	**	16.47 (V)	PE	3518
$\text{NSF}^+(\text{}^2\text{A}'')$	NSF (RN-CAS Registry Number 18820-63-8)	**	16.56 ± 0.03 (V)	PE	3666
$\text{NSF}^+(\text{}^2\text{A}')$	NSF (RN-CAS Registry Number 18820-63-8)	**	17.24 ± 0.08 (V)	PE	3666
$\text{NSF}^+(\text{}^2\text{A}')$	NSF (RN-CAS Registry Number 18820-63-8)	**	21.1 ± 0.1 (V)	PE	3666
$\text{NSF}_3(\text{}^2\text{E})$	NSF ₃ (RN-CAS Registry Number 15930-75-3)	**	12.50 (V)	PE	3660
$\text{NSF}_3(\text{}^2\text{A}_1)$	NSF ₃ (RN-CAS Registry Number 15930-75-3)	**	14.15 (V)	PE	3660
$\text{NSF}_3(\text{}^2\text{E})$	NSF ₃ (RN-CAS Registry Number 15930-75-3)	**	16.65 (V)	PE	3660
$\text{NSF}_3(\text{}^2\text{A}_2?)$	NSF ₃ (RN-CAS Registry Number 15930-75-3)	**	18.35 (V)	PE	3660
$\text{C}_{21}\text{H}_{24}\text{N}_3\text{F}_3\text{S}^+$	$\text{C}_{12}\text{H}_7\text{NS}(\text{CF}_3)(\text{CH}_2)_3\text{C}_4\text{H}_8\text{N}_2\text{CH}_3$ ** (10 <i>H</i> -Phenothiazine, 10-[3-(4-methyl-1-piperazinyl)propyl]-2-(trifluoromethyl)-) (RN-CAS Registry Number 117-89-5) (ON-Other name: Triphthazine)	**	7.10 ± 0.07	CTS	4079

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{SO}_3\text{F}^+(\text{}^2\text{A}_2)$ (RD-Radical)	SO_3F (RN-CAS Registry Number 21549-02-0)	**	12.85 ± 0.1 (V)	PE	3671
$\text{SOF}_2^+(\text{}^2\text{A}')$	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	12.19	PE	3705
$\text{SOF}_2^+(\text{}^2\text{A}')$	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	12.25	PE	3879
SOF_2^+	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	12.58 (V)	PE	3646
$\text{SOF}_2^+(\text{}^2\text{A}')$	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	12.6 (V)	PE	3694
$\text{SOF}_2^+(\text{}^2\text{A}'')$	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	~ 13.4	PE	3879
$\text{SOF}_2^+(\text{}^2\text{A}'')$	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	14.04 (V)	PE	3705
$\text{SOF}_2^+(\text{}^2\text{A}'')$	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	14.14 (V)	PE	3694
$\text{SOF}_2^+(\text{}^2\text{A}')$	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	14.54	PE	3705
$\text{SOF}_2^+(\text{}^2\text{A}'')$	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	14.55	PE	3879
$\text{SOF}_2^+(\text{}^2\text{A}')$	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	14.8 (V)	PE	3694
$\text{SOF}_2^+(\text{}^2\text{A}')$	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	16.2 (V)	PE	3694
SOF_2^+	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	16.4 (V)	PE	3705
$\text{SOF}_2^+(\text{}^2\text{A}'')$	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	16.6 (V)	PE	3879
SOF_2^+	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	16.97 (V)	PE	3705
$\text{SOF}_2^+(\text{}^2\text{A}'')$	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	17.0 (V)	PE	3694
$\text{SOF}_2^+(\text{}^2\text{A}')$	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	17.0 (V)	PE	3879
SOF_2^+	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	18.03	PE	3705
SOF_2^+	SOF_2 (RN-CAS Registry Number 7783-42-8)	**	12.58 ± 0.10	EI	3818
$\text{SO}_2\text{F}_2^+(\text{}^2\text{B}_2)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	~ 13.0	PE	3879
$\text{SO}_2\text{F}_2^+(\text{}^2\text{B}_2)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	13.04 ± 0.01	PE	3675
$\text{SO}_2\text{F}_2^+(\text{}^2\text{A}_2)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	13.43 (V)	PE	3705
$\text{SO}_2\text{F}_2^+(\text{}^2\text{A}_2)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	13.55	PE	3879
$\text{SO}_2\text{F}_2^+(\text{}^2\text{B}_1)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	13.55 (V)	PE	3694

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{SO}_2\text{F}_2(^2\text{A}_2)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	13.57 ± 0.02	PE	3675
$\text{SO}_2\text{F}_2(^2\text{A}_2)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	13.61 (V)	PE	3694
$\text{SO}_2\text{F}_2(^2\text{B}_2)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	13.78 (V)	PE	3705
$\text{SO}_2\text{F}_2(^2\text{A}_1)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	14.8	PE	3705
$\text{SO}_2\text{F}_2(^2\text{B}_1)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	14.85 ± 0.01	PE	3675
$\text{SO}_2\text{F}_2(^2\text{B}_1)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	14.89	PE	3879
$\text{SO}_2\text{F}_2(^2\text{B}_2)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	15.18 (V)	PE	3694
$\text{SO}_2\text{F}_2(^2\text{A}_1)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	15.181 ± 0.006	PE	3675
$\text{SO}_2\text{F}_2(^2\text{A}_2)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	15.23	PE	3879
$\text{SO}_2\text{F}_2(^2\text{B}_1)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	15.30 (V)	PE	3705
$\text{SO}_2\text{F}_2(^2\text{A}_2)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	15.35 (V)	PE	3694
$\text{SO}_2\text{F}_2(^2\text{B}_2)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	16.676 ± 0.005	PE	3675
(HB-Threshold value approximately corrected for hot bands)					
SO_2F_2^*	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	16.68	PE	3705
$\text{SO}_2\text{F}_2(^2\text{A}_1)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	16.68	PE	3879
$\text{SO}_2\text{F}_2(^2\text{A}_1)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	16.68 (V)	PE	3694
$\text{SO}_2\text{F}_2(^2\text{B}_1)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	17.89	PE	3879
$\text{SO}_2\text{F}_2(^2\text{B}_1)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	18.07 ± 0.03	PE	3675
SO_2F_2^*	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	18.29 (V)	PE	3705
$\text{SO}_2\text{F}_2(^2\text{B}_2)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	18.34 (V)	PE	3694
$\text{SO}_2\text{F}_2(^2\text{B}_2)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	19.175 ± 0.007	PE	3675
$\text{SO}_2\text{F}_2(^2\text{A}_1)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	19.699 ± 0.007	PE	3675
$\text{SO}_2\text{F}_2(^2\text{B}_2)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	19.70	PE	3879
SO_2F_2^*	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	19.80 (V)	PE	3705
SO_2F_2^*	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	19.89 (V)	PE	3694
$\text{SO}_2\text{F}_2(^2\text{A}_1)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	20.5	PE	3879

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
SO_2F_2^+	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	~21 (V)	PE	3694
$\text{SO}_2\text{F}_2(^2\text{A}_1)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	24.2 ± 0.1 (V)	PE	3675
$\text{SO}_2\text{F}_2(^2\text{B}_1)$	SO_2F_2 (RN-CAS Registry Number 2699-79-8)	**	27.7 ± 0.1 (V)	PE	3675
$\text{CH}_3\text{O}_2\text{FS}^+$	$\text{CH}_3\text{SO}_2\text{F}$ (RN-CAS Registry Number 558-25-8)	**	12.61 (V)	PE	3705
$\text{C}_6\text{H}_3\text{OF}_3\text{S}^+$	$\text{C}_4\text{H}_3\text{SCOCF}_3$ (Ethanone, 2,2,2-trifluoro-1-(2-thienyl)-) (RN-CAS Registry Number 651-70-7)	**	9.70 ± 0.05	EI	3482
$\text{C}_6\text{H}_3\text{OF}_3\text{S}^+$	$\text{C}_4\text{H}_3\text{SCOCF}_3$ (Ethanone, 2,2,2-trifluoro-1-(3-thienyl)-) (RN-CAS Registry Number 30933-31-4)	**	9.63 ± 0.05	EI	3482
$\text{C}_{20}\text{H}_{21}\text{N}_2\text{OF}_3\text{S}^+$	$\text{C}_{12}\text{H}_7\text{NS}(\text{CF}_3)\text{COCH}_2\text{CH}_2\text{N}(\text{C}_2\text{H}_5)_2^*$ (10 <i>H</i> -Phenothiazine, 10-[3-(diethylamino)-1-oxopropyl]-2-(trifluoromethyl)-) (RN-CAS Registry Number 30223-48-4) (ON-Other name: Fluoracizine)		7.89 ± 0.07	CTS	4079
$\text{C}_{22}\text{H}_{26}\text{N}_3\text{OF}_3\text{S}^+$	$\text{C}_{22}\text{H}_{26}\text{N}_3\text{OF}_3\text{S}$ (1-Piperazineethanol, 4-[3-[2-(trifluoromethyl)-10 <i>H</i> -phenothiazin-10-yl]propyl]-) (RN-CAS Registry Number 69-23-8) (ON-Other name: Fluorphenazine)	**	8.64 ± 0.07	CTS	4079
$\text{C}_{20}\text{H}_{19}\text{N}_2\text{O}_2\text{F}_3\text{S}^+$	$\text{C}_{12}\text{H}_7\text{NS}(\text{CF}_3)\text{COCH}_2\text{CH}_2\text{C}_4\text{H}_8\text{NO}^*$ (10 <i>H</i> -Phenothiazine, 10-[3-(4-morpholinyl)-1-oxopropyl]-2-(trifluoromethyl)-) (RN-CAS Registry Number 33414-29-8)		8.54 ± 0.07	CTS	4079
$\text{C}_{22}\text{H}_{24}\text{N}_3\text{O}_2\text{F}_3\text{S}^+$	$\text{C}_{22}\text{H}_{24}\text{N}_3\text{O}_2\text{F}_3\text{S}$ (10 <i>H</i> -Phenothiazine, 10-[3-[4-(2-hydroxyethyl)-1-piperazinyl]-1-oxopropyl]-2-(trifluoromethyl)-) (RN-CAS Registry Number 33414-36-7)	**	8.71 ± 0.07	CTS	4079
$\text{SiH}_4\text{S}^+(^2\text{A}')$	SiH_3SH (RN-CAS Registry Number 14044-97-4)	**	9.97 (V)	PE	3656
$\text{Si}_2\text{H}_6\text{S}^+$	$(\text{SiH}_3)_2\text{S}$ (RN-CAS Registry Number 16544-95-9)	**	9.59 (V)	PE	3867
$\text{Si}_2\text{H}_6\text{S}^+(^2\text{B}_1)$	$(\text{SiH}_3)_2\text{S}$ (RN-CAS Registry Number 16544-95-9)	**	9.70 (V)	PE	3656
CH_6SiS^+	CH_3SSiH_3 (RN-CAS Registry Number 16643-15-5)	**	9.10 (V)	PE	3867
CH_3NSiS^+	SiH_3NCS (RN-CAS Registry Number 14311-54-7)	**	9.54 ± 0.02 (V)	PE	3670

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_4H_9NSiS^+$	(CH ₃) ₃ SiNCS (RN-CAS Registry Number 2290-65-5)	**	9.3 ± 0.1 (V)	PE	3670
PS^+	PS (RN-CAS Registry Number 12281-36-6)	**	9.0	EI	4001
P_4S^+	P_4S (RN-CAS Registry Number XXXXX-XX-X)	**	10.6 ± 0.5	EI	3615
$P_4S_2^+$	P_4S_2 (RN-CAS Registry Number 12165-70-7)	**	10.6 ± 0.5	EI	3615
$P_4S_3^+$	P_4S_3 (RN-CAS Registry Number 1314-85-8)	**	9.7 ± 0.5	EI	3615
$P_4S_4^+$	P_4S_4 (RN-CAS Registry Number XXXXX-XX-X)	**	10.1 ± 0.5	EI	3615
$P_4S_5^+$	P_4S_5 (RN-CAS Registry Number 12137-70-1)	**	10.4 ± 0.5	EI	3615
$P_4S_6^+$	P_4S_6 (RN-CAS Registry Number XXXXX-XX-X)	**	10.0 ± 0.5	EI	3615
$P_4S_7^+$	P_4S_7 (RN-CAS Registry Number 12037-82-0)	**	10.1 ± 0.5	EI	3615
$P_4S_8^+$	P_4S_8 (RN-CAS Registry Number 37295-14-0)	**	9.8 ± 0.5	EI	3615
$P_4S_9^+$	P_4S_9 (RN-CAS Registry Number 25070-46-6)	**	9.8 ± 0.5	EI	3615
$P_4S_{10}^+$	P_4S_{10} (RN-CAS Registry Number 12066-62-5)	**	9.6 ± 0.5	EI	3615
CH_2PS^+	(CH ₃ O) ₂ P(CH ₃ S)S (RN-CAS Registry Number 2953-29-9) (MT-Metastable transition(s) observed)	H + HCHO + HS	14.05 ± 0.30	EI	3989
$C_6H_{18}N_3PS^+$	PS(N(CH ₃) ₂) ₃ (RN-CAS Registry Number 3732-82-9)	**	7.66 ± 0.003	PE	4086
$C_2H_6OPS^+$	(CH ₃ O) ₂ P(CH ₃ S)S (RN-CAS Registry Number 2953-29-9) (MT-Metastable transition(s) observed)	HCHO + HS	11.70 ± 0.20	EI	3989
$C_2H_6O_2PS^+$	(CH ₃ O) ₂ P(CH ₃ S)O (RN-CAS Registry Number 152-20-5)	CH ₃ O	11.82 ± 0.20	EI	3989
$C_2H_6O_2PS^+$	(CH ₃ O) ₂ P(CH ₃ S)S (RN-CAS Registry Number 2953-29-9) (MT-Metastable transition(s) observed)	CH ₃ S	10.10 ± 0.10	EI	3989

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_6O_2PS^+$	$(CH_3S)_2P(CH_3O)O$ (RN-CAS Registry Number 22608-53-3)	CH_3S	10.50 ± 0.10	EI	3989
$C_2H_7O_2PS^+$	$(CH_3O)_2P(CH_3S)O$ (RN-CAS Registry Number 152-20-5) (MT-Metastable transition(s) observed)	HCHO	10.51 ± 0.10	EI	3989
$C_2H_7O_2PS^+$	$(CH_3O)_2P(CH_3S)S$ (RN-CAS Registry Number 2953-29-9)	HCHS	10.35 ± 0.10	EI	3989
$C_2H_7O_2PS^+$	$(CH_3S)_2P(CH_3O)O$ (RN-CAS Registry Number 22608-53-3) (MT-Metastable transition(s) observed)	HCHS	10.10 ± 0.10	EI	3989
$C_2H_6O_3PS^+$	$(CH_3O)_2P(CH_3S)O$ (RN-CAS Registry Number 152-20-5) (MT-Metastable transition(s) observed)	CH_3	10.03 ± 0.10	EI	3989
$C_3H_9O_3PS^+$	$(CH_3O)_2P(CH_3S)O$ (RN-CAS Registry Number 152-20-5)	**	9.55 ± 0.10	EI	3989
$C_2H_6OPS_2^+$	$(CH_3O)_2P(CH_3S)S$ (RN-CAS Registry Number 2953-29-9)	CH_3O	10.20 ± 0.30	EI	3989
$C_2H_6OPS_2^+$	$(CH_3S)_2P(CH_3O)O$ (RN-CAS Registry Number 22608-53-3)	CH_3O	10.15 ± 0.10	EI	3989
$C_2H_7OPS_2^+$	$(CH_3O)_2P(CH_3S)S$ (RN-CAS Registry Number 2953-29-9) (MT-Metastable transition(s) observed)	HCHO	10.00 ± 0.10	EI	3989
$C_2H_7OPS_2^+$	$(CH_3S)_2P(CH_3O)O$ (RN-CAS Registry Number 22608-53-3) (MT-Metastable transition(s) observed)	HCHO	9.90 ± 0.20	EI	3989
$C_2H_6O_2PS_2^+$	$(CH_3O)_2P(CH_3S)S$ (RN-CAS Registry Number 2953-29-9)	CH_3	9.65 ± 0.20	EI	3989
$C_2H_6O_2PS_2^+$	$(CH_3S)_2P(CH_3O)O$ (RN-CAS Registry Number 22608-53-3) (MT-Metastable transition(s) observed)	CH_3	9.47 ± 0.10	EI	3989
$C_3H_9O_2PS_2^+$	$(CH_3O)_2P(CH_3S)S$ (RN-CAS Registry Number 2953-29-9)	**	9.0 ± 0.10	EI	3989
$C_3H_9O_2PS_2^+$	$(CH_3S)_2P(CH_3O)O$ (RN-CAS Registry Number 22608-53-3)	**	9.20 ± 0.10	EI	3989
CNF_2PS^+	PF_2NCS (RN-CAS Registry Number 461-60-9)	**	10.2 ± 0.1 (V)	PE	3662
Cl^+	CH_2Cl_2 (RN-CAS Registry Number 75-09-2) (AD-0.219 eV average translational energy of decomposition at threshold) (TR-Other product(s) thermochemically reasonable)	CH_2Cl	17.4	RPD	3490

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Cl^+	CH_2Cl_2 (RN-CAS Registry Number 75-09-2) (AD-0.22 eV average translational energy of decomposition at threshold) (TR-Other product(s) thermochemically reasonable)	CH_2Cl	17.4 ± 0.1	EI	3442
Cl^+	Ag_3Cl_3 (RN-CAS Registry Number 12444-97-2)		~ 15.5	EI	3605
Cl^{+2}	Cl^+ (RN-CAS Registry Number 14835-24-6)	**	23.8137 ± 0.0002	S	3756
$\text{Cl}_2^+(\pi_g)$	Cl_2 (RN-CAS Registry Number 7782-50-5)	**	11.49	PE	3507
$\text{Cl}_2^+(\pi_u)$	Cl_2 (RN-CAS Registry Number 7782-50-5)	**	14.43 (V)	PE	3507
$\text{Cl}_2^+(\Sigma^+)$	Cl_2 (RN-CAS Registry Number 7782-50-5)	**	16.10 (V)	PE	3507
BCl^+	BCl (RN-CAS Registry Number 20583-55-5)	**	12 ± 1	EI	3465
BCl_2^+	BCl_2 (RN-CAS Registry Number 13842-52-9)	**	12 ± 1.0	EI	3465
$\text{BCl}_3^+(\text{}^2\text{A}_2')$	BCl_3 (RN-CAS Registry Number 10294-34-5)	**	11.62 (V)	PE	3704
$\text{BCl}_3^+(\text{}^2\text{E}')$	BCl_3 (RN-CAS Registry Number 10294-34-5)	**	12.28 (V)	PE	3704
$\text{BCl}_3^+(\text{}^2\text{E}'')$	BCl_3 (RN-CAS Registry Number 10294-34-5)	**	12.53 (V)	PE	3704
$\text{BCl}_3^+(\text{}^2\text{A}_2)$	BCl_3 (RN-CAS Registry Number 10294-34-5)	**	14.35 (V)	PE	3704
$\text{BCl}_3^+(\text{}^2\text{E}')$	BCl_3 (RN-CAS Registry Number 10294-34-5)	**	15.49 (V)	PE	3704
$\text{BCl}_3^+(\text{}^2\text{A}_1')$	BCl_3 (RN-CAS Registry Number 10294-34-5)	**	17.70 (V)	PE	3704
$\text{B}_2\text{Cl}_4^+(\text{}^2\text{A}_1)$	B_2Cl_4 (RN-CAS Registry Number 13701-67-2)	**	$\leq 10.42 \pm 0.02$	PE	3709
$\text{B}_2\text{Cl}_4^+(\text{}^2\text{E})$	B_2Cl_4 (RN-CAS Registry Number 13701-67-2)	**	$\leq 11.49 \pm 0.01$	PE	3709
$\text{B}_2\text{Cl}_4^+(\text{}^2\text{A}_2)$	B_2Cl_4 (RN-CAS Registry Number 13701-67-2)	**	12.25 ± 0.01 (V)	PE	3709
$\text{B}_2\text{Cl}_4^+(\text{}^2\text{B}_1)$	B_2Cl_4 (RN-CAS Registry Number 13701-67-2)	**	12.49 ± 0.01 (V)	PE	3709
$\text{B}_2\text{Cl}_4^+(\text{}^2\text{B}_2)$	B_2Cl_4 (RN-CAS Registry Number 13701-67-2)	**	13.02 ± 0.02 (V)	PE	3709
$\text{B}_2\text{Cl}_4^+(\text{}^2\text{E})$	B_2Cl_4 (RN-CAS Registry Number 13701-67-2)	**	$\leq 13.34 \pm 0.02$	PE	3709
$\text{B}_2\text{Cl}_4^+(\text{}^2\text{E})$	B_2Cl_4 (RN-CAS Registry Number 13701-67-2)	**	$\leq 14.42 \pm 0.02$	PE	3709
$\text{B}_2\text{Cl}_4^+(\text{}^2\text{A}_1)$	B_2Cl_4 (RN-CAS Registry Number 13701-67-2)	**	15.20 ± 0.01 (V)	PE	3709

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$B_2Cl_4(^2B_2)$	B_2Cl_4 (RN-CAS Registry Number 13701-67-2)	**	$\leq 16.60 \pm 0.01$	PE	3709
$B_2Cl_4(^2A_1)$	B_2Cl_4 (RN-CAS Registry Number 13701-67-2)	**	$\leq 17.90 \pm 0.03$	PE	3709
CCl^+	C_2F_3Cl (RN-CAS-Registry Number 79-38-9)	CF_3	16.9 ± 0.1	EI	4070
CCl^+	$CFCI = CFCI$ (RN-CAS-Registry Number 598-88-9)	CF_2Cl	16.4 ± 0.2	EI	4070
CCl_2^+	$CFCI = CFCI$ (RN-CAS-Registry Number 598-88-9) (TR-Other product(s) thermochemically reasonable)	CF_2	13.8 ± 0.1	EI	4070
CCl_3^+	CCl_3 (RN-CAS Registry Number 3170-80-7)	**	8.28	EM	3732
(RD-Radical)					
CCl_3^+	CCl_4 (RN-CAS Registry Number 56-23-5)	Cl	11.37	EM	3732
CCl_3^+	$(CCl_3)_2CO$ (RN-CAS Registry Number 116-16-5)		11.75	EI	3550
$C_6Cl_4^+$	C_6Cl_4 (1,3-Cyclohexadien-5-yne, 1,2,3,4-tetrachloro-) (RN-CAS Registry Number 13280-72-3)	**	10.66 ± 0.2	RPD	3583
$C_6Cl_4^+$	$C_8O_3Cl_4$ (1,3-Isobenzofurandione, 4,5,6,7-tetrachloro-) (RN-CAS Registry Number 117-08-8) (ON-Other name: Tetrachlorophthalic anhydride)		14.31 ± 0.2	RPD	3583
$C_6Cl_4^+$	C_6Cl_5I (Benzene, pentachloroiodo-) (RN-CAS Registry Number 16478-18-5)		14.51 ± 0.2	RPD	3583
$C_6Cl_4^+$	$C_6Cl_4I_2$ (Tetrachloro-1,2-diiodobenzene) (RN-CAS Registry Number XXXXX-XX-X)		12.85 ± 0.2	RPD	3583
$C_6Cl_6^+$	C_6Cl_6 (Benzene, hexachloro-) (RN-CAS Registry Number 118-74-1)	**	9.20 (V)	PE	3873
CH_2Cl^+	CH_2Cl (RN-CAS Registry Number 6806-86-6)	**	8.80	EM	3732
(RD-Radical)					
CH_2Cl^+	CH_3Cl (RN-CAS Registry Number 74-87-3)	H	12.96	EM	3732
CH_2Cl^+	CH_2Cl_2 (RN-CAS Registry Number 75-09-2)	Cl	12.15	EM	3732
	(TR-Other product(s) thermochemically reasonable)				
CH_3Cl^+	CH_3Cl (RN-CAS Registry Number 74-87-3)	**	11.27	EM	3732

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
C_2HCl^+	CH \equiv CCl (RN-CAS Registry Number 593-63-5)	**	11.044 \pm 0.004	S	3876
$C_2H_2Cl^+$	CH $_2$ =CFCl (RN-CAS-Registry Number 2317-91-1)	F	14.8 \pm 0.1	EI	4070
$C_2H_3Cl^+$	C $_2$ H $_3$ Cl (RN-CAS Registry Number 75-01-4)	**	9.99 \pm 0.02	PI	3930
$C_2H_3Cl^+ (^2A')$	C $_2$ H $_3$ Cl (RN-CAS Registry Number 75-01-4)	**	11.65	PI	3930
$C_2H_3Cl^+$	CH $_2$ =CHCl (RN-CAS Registry Number 75-01-4)	**	10.01	PE	3863
$C_2H_5Cl^+$	C $_2$ H $_5$ Cl (RN-CAS Registry Number 75-00-3)	**	11.01 (V)	PE	4076
$C_3H_5Cl^+$	CH $_2$ =CHCH $_2$ Cl (RN-CAS Registry Number 107-05-1)	**	10.05	PE	3863
$C_3H_5Cl^+$	CH $_2$ =CHCH $_2$ Cl (RN-CAS Registry Number 107-05-1)	**	10.34 (V)	PE	4091
$C_3H_7Cl^+$	<i>n</i> -C $_3$ H $_7$ Cl (RN-CAS Registry Number 540-54-5)	**	10.88 (V)	PE	4076
$C_3H_7Cl^+$	<i>iso</i> -C $_3$ H $_7$ Cl (RN-CAS Registry Number 75-29-6)	**	11.0 \pm <0.1	EI	3735
$C_4H_9Cl^+$	<i>n</i> -C $_4$ H $_9$ Cl (RN-CAS Registry Number 109-69-3)	**	10.84 (V)	PE	4076
$C_6H_4Cl^+$	C $_6$ H $_4$ ClNO $_2$ (Benzene, 1-chloro-3-nitro-) (RN-CAS Registry Number 121-73-3)	NO $_2$	12.00 \pm 0.1	EI	3447
$C_6H_4Cl^+$	C $_6$ H $_4$ ClNO $_2$ (Benzene, 1-chloro-4-nitro-) (RN-CAS Registry Number 100-00-5)	NO $_2$	12.30 \pm 0.1	EI	3447
$C_6H_5Cl^+$	C $_6$ H $_5$ Cl (Benzene, chloro-) (RN-CAS Registry Number 108-90-7)	**	9.09 (V)	PE	3873
$C_6H_5Cl^+$	C $_6$ H $_5$ Cl (Benzene, chloro-) (RN-CAS Registry Number 108-90-7)	**	8.99	EI	3845
$C_6H_5Cl^+$	C $_6$ H $_5$ Cl (Benzene, chloro-) (RN-CAS Registry Number 108-90-7)	**	9.12 \pm 0.1	EI	3788
$C_6H_5Cl^+$	C $_6$ H $_4$ ClOCH $_3$ (Benzene, 1-chloro-3-methoxy-) (RN-CAS Registry Number 2845-89-8)	CH $_2$ O	11.68 \pm 0.1	EI	3446
$C_6H_5Cl^+$	C $_6$ H $_4$ ClOCH $_3$ (Benzene, 1-chloro-4-methoxy-) (RN-CAS Registry Number 623-12-1)	HCHO	11.42	EI	3845

(CD-Metastable transition indicates 0.35 eV kinetic energy release)

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_5Cl^+$	$C_6H_4ClOCH_3$ (Benzene, 1-chloro-4-methoxy-) (RN-CAS Registry Number 623-12-1)	CH_2O	11.56 ± 0.1	EI	3446
$C_6H_5Cl^+$	$C_6H_5ClCr(CO)_3$ (Chromium, tricarbonyl(η^6 -chlorobenzene)-) (RN-CAS Registry Number 12082-03-0)		9.15 ± 0.1	EI	3788
$C_6H_{11}Cl^+$	$C_6H_{11}Cl$ (Cyclohexane, chloro-) (RN-CAS Registry Number 542-18-7)	**	10.10 ± 0.01	PI	4078
$C_6H_{11}Cl^+$	$C_6H_{11}Cl$ (Cyclohexane, chloro-) (RN-CAS Registry Number 542-18-7)	**	10.67 (V)	PE	4078
$C_7H_6Cl^+$	$C_6H_4ClCH_2CH_2OCOCH_3$ (Phenethyl alcohol, <i>m</i> -chloro-, acetate) (RN-CAS Registry Number 33709-41-0)		12.90	EI	3590
$C_7H_7Cl^+$	$C_6H_5CH_2Cl$ (Benzene, (chloromethyl)-) (RN-CAS Registry Number 100-44-7)	**	9.30 (V)	PE	3992
$C_7H_7Cl^+$	$C_6H_4ClCH_3$ (Benzene, 1-chloro-2-methyl-) (RN-CAS Registry Number 95-49-8)	**	8.72 ± 0.1	EI	3777
$C_7H_7Cl^+$	$C_6H_4ClCH_3$ (Benzene, 1-chloro-3-methyl-) (RN-CAS Registry Number 108-41-8)	**	8.67 ± 0.1	EI	3777
$C_7H_7Cl^+$	$C_6H_4ClCH_3$ (Benzene, 1-chloro-4-methyl-) (RN-CAS Registry Number 106-43-4)	**	8.78 ± 0.1	EI	3777
$C_8H_7Cl^+$	$C_6H_4ClCH_2CH_2OCOCH_3$ (Phenethyl alcohol, <i>m</i> -chloro-, acetate) (RN-CAS Registry Number 33709-41-0)		8.90	EI	3590
$C_{10}H_{15}Cl^+$	$C_{10}H_{15}Cl$ (Tricyclo[3.3.1.1 ^{3,7}]decane, 1-chloro-) (RN-CAS Registry Number 935-56-8) (ON-Other name: 1-Chloroadamantane)	**	9.30	PE	3886
$C_{12}H_9Cl^+$	$C_6H_5C_6H_4Cl$ (1,1'-Biphenyl, 2-chloro-) (RN-CAS Registry Number 2051-60-7)	**	8.20 ± 0.02	PE	3702
$C_{12}H_9Cl^+$	$C_6H_5C_6H_4Cl$ (1,1'-Biphenyl, 4-chloro-) (RN-CAS Registry Number 2051-62-9)	**	8.10 ± 0.02	PE	3702
$CHCl_2^+$ (RD-Radical)	$CHCl_2$ (RN-CAS Registry Number 3474-12-2)	**	8.45	EM	3732

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
CHCl_2^+	CHCl_3 (RN-CAS Registry Number 67-66-3) (TR-Other product(s) thermochemically reasonable)	Cl	11.52	EM	3732
CHCl_2^+	$\text{CHCl}_2\text{CH}_2\text{Cl}$ (RN-CAS Registry Number 79-00-5) (TR-Other product(s) thermochemically reasonable)	CH_2Cl	11.80	EM	3732
CH_2Cl_2^+	CH_2Cl_2 (RN-CAS Registry Number 75-09-2)	**	11.28	EM	3732
$\text{C}_2\text{H}_2\text{Cl}_2^+$	<i>trans</i> - $\text{CHCl}=\text{CHCl}$ (RN-CAS Registry Number 156-60-5)	**	9.72 (V)	PE	3648
$\text{C}_2\text{H}_2\text{Cl}_2(^2\text{A}_g)$	<i>trans</i> - $\text{CHCl}=\text{CHCl}$ (RN-CAS Registry Number 156-60-5)	**	11.92 (V)	PE	4022
$\text{C}_2\text{H}_2\text{Cl}_2(^2\text{B}_g)$	<i>trans</i> - $\text{CHCl}=\text{CHCl}$ (RN-CAS Registry Number 156-60-5)	**	12.11 (V)	PE	4022
$\text{C}_2\text{H}_2\text{Cl}_2(^2\text{B}_u)$	<i>trans</i> - $\text{CHCl}=\text{CHCl}$ (RN-CAS Registry Number 156-60-5)	**	12.67 (V)	PE	4022
$\text{C}_2\text{H}_2\text{Cl}_2(^2\text{A}_u)$	<i>trans</i> - $\text{CHCl}=\text{CHCl}$ (RN-CAS Registry Number 156-60-5)	**	13.87 (V)	PE	4022
$\text{C}_6\text{H}_2\text{Cl}_2^+$	$\text{C}_6\text{H}_2\text{Cl}_2$ (1,3-Cyclohexadien-5-yne, 1,2-dichloro-) (RN-CAS Registry Number 24634-92-2)	**	9.66 ± 0.2	RPD	3583
$\text{C}_6\text{H}_2\text{Cl}_2^+$	$\text{C}_6\text{H}_2\text{Cl}_2$ (1,3-Cyclohexadien-5-yne, 1,3-dichloro-) (RN-CAS Registry Number 24634-94-4)	**	9.97 ± 0.2	RPD	3583
$\text{C}_6\text{H}_2\text{Cl}_2^+$	$\text{C}_6\text{H}_2\text{Cl}_2$ (1,3-Cyclohexadien-5-yne, 1,4-dichloro-) (RN-CAS Registry Number XXXXX-XX-X)	**	9.11 ± 0.2	RPD	3583
$\text{C}_6\text{H}_2\text{Cl}_2^+$	$\text{C}_6\text{H}_2\text{Cl}_2$ (1,3-Cyclohexadien-5-yne, 2,3-dichloro-) (RN-CAS Registry Number 24634-93-3)	**	9.58 ± 0.2	RPD	3583
$\text{C}_6\text{H}_2\text{Cl}_2^+$	$\text{C}_8\text{H}_2\text{O}_3\text{Cl}_2$ (1,3-Isobenzofurandione, 4,7-dichloro-) (RN-CAS Registry Number 4466-59-5) (ON-Other name: 3,6-Dichlorophthalic anhydride)		13.60 ± 0.2	RPD	3583
$\text{C}_6\text{H}_2\text{Cl}_2^+$	$\text{C}_8\text{H}_2\text{O}_3\text{Cl}_2$ (1,3-Isobenzofurandione, 5,6-dichloro-) (RN-CAS Registry Number 942-06-3) (ON-Other name: 4,5-Dichlorophthalic anhydride)		14.06 ± 0.2	RPD	3583
$\text{C}_6\text{H}_2\text{Cl}_2^+$	$\text{C}_6\text{H}_2\text{Cl}_2\text{I}_2$ (3,4-Dichloro-1,2-diiodobenzene) (RN-CAS Registry Number XXXXX-XX-X)		14.11 ± 0.2	RPD	3583
$\text{C}_6\text{H}_2\text{Cl}_2^+$	$\text{C}_6\text{H}_2\text{Cl}_2\text{I}_2$ (3,5-Dichloro-1,2-diiodobenzene) (RN-CAS Registry Number XXXXX-XX-X)		14.43 ± 0.2	RPD	3583
$\text{C}_6\text{H}_2\text{Cl}_2^+$	$\text{C}_6\text{H}_2\text{Cl}_2\text{I}_2$ (4,5-Dichloro-1,2-diiodobenzene) (RN-CAS Registry Number XXXXX-XX-X)		14.11 ± 0.2	RPD	3583

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_4Cl_2^+$	$C_6H_4Cl_2$ (Benzene, 1,2-dichloro-) (RN-CAS Registry Number 95-50-1)	**	9.08 (V)	PE	3873
$C_6H_4Cl_2^+$	$C_6H_4Cl_2$ (Benzene, 1,3-dichloro-) (RN-CAS Registry Number 541-73-1)	**	9.15 (V)	PE	3873
$C_6H_4Cl_2^+$	$C_6H_4Cl_2$ (Benzene, 1,4-dichloro-) (RN-CAS Registry Number 106-46-7)	**	9.00 (V)	PE	3873
$C_8H_6Cl_2^+$	$C_6H_3(Cl)_2CH=CH_2$ (Benzene, 1,3-dichloro-2-ethenyl-) (RN-CAS Registry Number 28469-92-3)	**	8.70 ± 0.02	PE	3854
$CHCl_3^+$	$CHCl_3$ (RN-CAS Registry Number 67-66-3)	**	11.41	EM	3732
$C_6H_3Cl_3^+$	$C_6H_3Cl_3$ (Benzene, 1,2,3-trichloro-) (RN-CAS Registry Number 87-61-6)	**	9.22 (V)	PE	3873
$C_6H_3Cl_3^+$	$C_6H_3Cl_3$ (Benzene, 1,3,5-trichloro-) (RN-CAS Registry Number 108-70-3)	**	9.36 (V)	PE	3873
$C_6H_2Cl_4^+$	$C_6H_2Cl_4$ (Benzene, 1,2,3,4-tetrachloro-) (RN-CAS Registry Number 634-66-2)	**	9.11 (V)	PE	3873
$C_6H_2Cl_4^+$	$C_6H_2Cl_4$ (Benzene, 1,2,3,5-tetrachloro-) (RN-CAS Registry Number 634-90-2)	**	9.16 (V)	PE	3873
$C_6H_2Cl_4^+$	$C_6H_2Cl_4$ (Benzene, 1,2,4,5-tetrachloro-) (RN-CAS Registry Number 95-94-3)	**	9.06 (V)	PE	3873
$C_6HCl_5^+$	C_6HCl_5 (Benzene, pentachloro-) (RN-CAS Registry Number 608-93-5)	**	9.11 (V)	PE	3873
$B_3H_3N_3Cl_3^+$	$B_3H_3N_3Cl_3$ (Borazine, 2,4,6-trichloro-) (RN-CAS Registry Number 933-18-6)	**	10.55 (V)	PE	3944
$B_3H_3N_3Cl_3^+$	$B_3H_3N_3Cl_3$ (Borazine, 2,4,6-trichloro-) (RN-CAS Registry Number 933-18-6)	**	10.55 (V)	PE	3673
$C_6H_6NCl^+$	$C_6H_4ClNHCOCH_3$ (Acetamide, <i>N</i> -(2-chlorophenyl)-) (RN-CAS Registry Number 533-17-5)	$CH_2=C=O$	10.76 ± 0.03	EI	3483
$C_6H_6NCl^+$	$C_6H_4ClNHCOCH_3$ (Acetamide, <i>N</i> -(4-chlorophenyl)-) (RN-CAS Registry Number 539-03-7)	$CH_2=C=O$	10.11 ± 0.03	EI	3483

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{16}H_{12}NCl^+$	$C_6H_4(Cl)C_3H_3(CN)C_6H_5$ (Cyclopropanecarbonitrile, 1-(<i>p</i> -chlorophenyl)-2-phenyl-) (RN-CAS Registry Number 32589-55-2)	**	8.18 ± 0.10	EDD	3575
$C_6H_5NCl_2^+$	$C_6H_3(Cl)_2NH_2$ (Benzenamine, 2,6-dichloro-) (RN-CAS Registry Number 608-31-1)	**	7.60 ± 0.02	PE	3890
$C_6H_5NCl_2^+$	$C_6H_3Cl_2NHCOCH_3$ $CH_2=C=O$ (Acetamide, <i>N</i> -(2,4-dichlorophenyl)-) (RN-CAS Registry Number 6975-29-7)		10.09 ± 0.03	EI	3480
$C_6H_5NCl_2^+$	$C_6H_3Cl_2NHCOCH_3$ $CH_2=C=O$ (Acetamide, <i>N</i> -(2,6-dichlorophenyl)-) (RN-CAS Registry Number 17700-54-8)		9.93 ± 0.03	EI	3480
$C_4H_{12}BN_2Cl^+$	$B(N(CH_3)_2)_2Cl$ (RN-CAS Registry Number 6562-41-0)	**	8.15 (V)	PE	3704
$C_4H_{12}BN_2Cl^+$	$((CH_3)_2N)_2BCl_2$ (RN-CAS Registry Number 6562-41-0)	**	8.08	PE	3584
$C_2H_6BNCl_2^+$	$(CH_3)_2NBCL_2$ (RN-CAS Registry Number 1113-31-1)	**	9.56	PE	3584
$C_2H_6BNCl_2^+$	$(CH_3)_2NBCL_2$ (RN-CAS Registry Number 1113-31-1)	**	9.68 (V)	PE	3704
$C_3H_9B_3N_3Cl_3^+$	$(CH_3)_3B_3N_3Cl_3$ (Borazine, 2,4,6-trichloro-1,3,5-trimethyl-) (RN-CAS Registry Number 703-86-6)	**	9.45 (V)	PE	3944
ClO_2^+ (RD-Radical)	ClO_2 (RN-CAS Registry Number 10049-04-4)	**	10.36 ± 0.02	PE	3499
$ClO_2(^2A_1)$ (RD-Radical)	ClO_2 (RN-CAS Registry Number 10049-04-4)	**	10.5 ± 0.1 (V)	PE	3671
$ClO_2(^3B_1?)$ (RD-Radical)	ClO_2 (RN-CAS Registry Number 10049-04-4)	**	12.32 ± 0.02	PE	3499
$ClO_2(^3B_1, ^1B_1, ^3B_2)$ (RD-Radical)	ClO_2 (RN-CAS Registry Number 10049-04-4)	**	12.9 ± 0.1 (V)	PE	3671
$ClO_2(^3B_1, ^1B_1, ^3B_2)$ (RD-Radical)	ClO_2 (RN-CAS Registry Number 10049-04-4)	**	13.4 ± 0.1 (V)	PE	3671
$ClO_2(^1B_1?)$ (RD-Radical)	ClO_2 (RN-CAS Registry Number 10049-04-4)	**	15.27 ± 0.02	PE	3499
$ClO_2(^1B_2)$ (RD-Radical)	ClO_2 (RN-CAS Registry Number 10049-04-4)	**	15.5 ± 0.1 (V)	PE	3671

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{ClO}_2^+(\text{}^3\text{A}_2)$ (RD-Radical)	ClO_2 (RN-CAS Registry Number 10049-04-4)	**	> 17 (V)	PE	3671
$\text{Cl}_2\text{O}^+(\text{}^2\text{B}_1)$	Cl_2O (RN-CAS Registry Number 7791-21-1)	**	11.02 (V)	PE	3694
$\text{Cl}_2\text{O}^+(\text{}^2\text{B}_2)$	Cl_2O (RN-CAS Registry Number 7791-21-1)	**	12.37 (V)	PE	3694
$\text{Cl}_2\text{O}^+(\text{}^2\text{A}_1)$	Cl_2O (RN-CAS Registry Number 7791-21-1)	**	12.65 (V)	PE	3694
$\text{Cl}_2\text{O}^+(\text{}^2\text{A}_2)$	Cl_2O (RN-CAS Registry Number 7791-21-1)	**	12.79 (V)	PE	3694
$\text{Cl}_2\text{O}^+(\text{}^2\text{B}_1)$	Cl_2O (RN-CAS Registry Number 7791-21-1)	**	15.90 (V)	PE	3694
Cl_2O^{+*}	Cl_2O (RN-CAS Registry Number 7791-21-1)	**	16.65 (V)	PE	3694
Cl_2O^{+*}	Cl_2O (RN-CAS Registry Number 7791-21-1)	**	17.68 (V)	PE	3694
Cl_2O^{+*}	Cl_2O (RN-CAS Registry Number 7791-21-1)	**	20.64 (V)	PE	3694
COCl_2^+	CCl_2O (RN-CAS Registry Number 75-44-5)	**	~ 11.2	PE	3726
$\text{COCl}_2^+(\text{}^2\text{B}_2)$	CCl_2O (RN-CAS Registry Number 75-44-5)	**	11.55 ± 0.02	PE	3667
COCl_2^{+*}	CCl_2O (RN-CAS Registry Number 75-44-5)	**	~ 12.3 (V)	PE	3726
$\text{COCl}_2^+(\text{}^2\text{B}_1, \text{}^2\text{B}_2)$	CCl_2O (RN-CAS Registry Number 75-44-5)	**	12.6 ± 0.1 (V)	PE	3667
$\text{COCl}_2^+(\text{}^2\text{B}_2?)$	CCl_2O (RN-CAS Registry Number 75-44-5)	**	12.6 (V)	PE	3726
COCl_2^{+*}	CCl_2O (RN-CAS Registry Number 75-44-5)	**	~ 13.0 (V)	PE	3726
$\text{COCl}_2^+(\text{}^2\text{A}_1)$	CCl_2O (RN-CAS Registry Number 75-44-5)	**	13.05 ± 0.05 (V)	PE	3667
COCl_2^{+*}	CCl_2O (RN-CAS Registry Number 75-44-5)	**	13.31	PE	3726
$\text{COCl}_2^+(\text{}^2\text{A}_2)$	CCl_2O (RN-CAS Registry Number 75-44-5)	**	13.39 ± 0.02	PE	3667
$\text{COCl}_2^+(\text{}^2\text{A}_1)$	CCl_2O (RN-CAS Registry Number 75-44-5)	**	15.80 ± 0.02	PE	3667
COCl_2^{+*}	CCl_2O (RN-CAS Registry Number 75-44-5)	**	16.63	PE	3726
$\text{COCl}_2^+(\text{}^2\text{B}_1)$	CCl_2O (RN-CAS Registry Number 75-44-5)	**	16.66 ± 0.02	PE	3667
COCl_2^{+*}	CCl_2O (RN-CAS Registry Number 75-44-5)	**	16.75	PE	3726
COCl_2^{+*}	CCl_2O (RN-CAS Registry Number 75-44-5)	**	17.0 (V)	PE	3726
$\text{COCl}_2^+(\text{}^2\text{B}_2)$	CCl_2O (RN-CAS Registry Number 75-44-5)	**	17.11 ± 0.02 (V)	PE	3667

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{COCl}_2^+(\text{}^2\text{A}_1)$	CCl_2O (RN-CAS Registry Number 75-44-5)	**	19.29 ± 0.02	PE	3667
COCl_2^*	CCl_2O (RN-CAS Registry Number 75-44-5)	**	19.5 (V)	PE	3726
C_2OCl_3^+	$(\text{CCl}_3)_2\text{CO}$ (RN-CAS Registry Number 116-16-5)		12.0	EI	3550
$\text{C}_8\text{O}_3\text{Cl}_4^+$	$\text{C}_8\text{O}_3\text{Cl}_4$ (1,3-Isobenzofurandione, 4,5,6,7-tetrachloro-) (RN-CAS Registry Number 117-08-8) (ON-Other name: Tetrachlorophthalic anhydride)	**	10.77 ± 0.2	RPD	3583
$\text{C}_3\text{H}_5\text{OCl}^+$	$\text{CH}_3\text{COCH}_2\text{Cl}$ (RN-CAS Registry Number 78-95-5)	**	9.91 ± 0.03	PI	3765
$\text{C}_6\text{H}_4\text{OCl}^+$	$\text{C}_6\text{H}_4\text{ClOCH}_3$ (Benzene, 1-chloro-3-methoxy-) (RN-CAS Registry Number 2845-89-8)	CH_3	11.89 ± 0.1	EI	3446
$\text{C}_6\text{H}_4\text{OCl}^+$	$\text{C}_6\text{H}_4\text{ClOCH}_3$ (Benzene, 1-chloro-4-methoxy-) (RN-CAS Registry Number 623-12-1)	CH_3	11.84 ± 0.1	EI	3446
$\text{C}_6\text{H}_4\text{OCl}^+$	$\text{C}_6\text{H}_4\text{ClNO}_2$ (Benzene, 1-chloro-3-nitro-) (RN-CAS Registry Number 121-73-3)	NO	10.31 ± 0.1	EI	3447
$\text{C}_6\text{H}_4\text{OCl}^+$	$\text{C}_6\text{H}_4\text{ClNO}_2$ (Benzene, 1-chloro-4-nitro-) (RN-CAS Registry Number 100-00-5)	NO	10.61 ± 0.1	EI	3447
$\text{C}_6\text{H}_5\text{OCl}^+$	$\text{C}_6\text{H}_4\text{ClOOCCH}_3$ (Acetic acid, 2-chlorophenyl ester) (RN-CAS Registry Number 4525-75-1)	$\text{CH}_2=\text{C}=\text{O}$	9.19 ± 0.03	EI	3483
$\text{C}_6\text{H}_5\text{OCl}^+$	$\text{C}_6\text{H}_4\text{ClOOCCH}_3$ (Acetic acid, 3-chlorophenyl ester) (RN-CAS Registry Number 13031-39-5)	$\text{CH}_2=\text{C}=\text{O}$	10.11 ± 0.2	EI	3484
$\text{C}_6\text{H}_5\text{OCl}^+$	$\text{C}_6\text{H}_4\text{ClOOCCH}_3$ (Acetic acid, 4-chlorophenyl ester) (RN-CAS Registry Number 876-27-7)	$\text{CH}_2=\text{C}=\text{O}$	9.60 ± 0.03	EI	3483
$\text{C}_6\text{H}_5\text{OCl}^+$	$\text{C}_6\text{H}_4\text{ClOOCCH}_3$ (Acetic acid, 4-chlorophenyl ester) (RN-CAS Registry Number 876-27-7)	$\text{CH}_2=\text{C}=\text{O}$	10.17 ± 0.2	EI	3484
$\text{C}_7\text{H}_5\text{OCl}^+$	$\text{C}_6\text{H}_5\text{COCl}$ (Benzoyl chloride) (RN-CAS Registry Number 98-88-4)	**	9.85	EI	3792
$\text{C}_7\text{H}_7\text{OCl}^+$	$\text{C}_6\text{H}_4\text{ClOCH}_3$ (Benzene, 1-chloro-3-methoxy-) (RN-CAS Registry Number 2845-89-8)	**	8.72 ± 0.1	EI	3446
$\text{C}_7\text{H}_7\text{OCl}^+$	$\text{C}_6\text{H}_4\text{ClOCH}_3$ (Benzene, 1-chloro-4-methoxy-) (RN-CAS Registry Number 623-12-1)	**	8.18	EI	3845

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_7OCl^+$	$C_6H_4ClOCH_3$ (Benzene, 1-chloro-4-methoxy-) (RN-CAS Registry Number 623-12-1)	**	8.52 ± 0.1	EI	3446
$C_2H_3O_2Cl^+$	$CH_2ClCOOH$ (RN-CAS Registry Number 79-11-8)	**	10.99 (V)	PE	3874
$C_8H_7O_2Cl^+$	$C_6H_4ClOOCCH_3$ (Acetic acid, 2-chlorophenyl ester) (RN-CAS Registry Number 4525-75-1)	**	8.67 ± 0.03	EI	3483
$C_8H_7O_2Cl^+$	$C_6H_4ClOOCCH_3$ (Acetic acid, 3-chlorophenyl ester) (RN-CAS Registry Number 13031-39-5)	**	8.83 ± 0.2	EI	3484
$C_8H_7O_2Cl^+$	$C_6H_4ClOOCCH_3$ (Acetic acid, 4-chlorophenyl ester) (RN-CAS Registry Number 876-27-7)	**	8.42 ± 0.03	EI	3483
$C_8H_7O_2Cl^+$	$C_6H_4ClOOCCH_3$ (Acetic acid, 4-chlorophenyl ester) (RN-CAS Registry Number 876-27-7)	**	8.79 ± 0.2	EI	3484
$C_6H_4OCl_2^+$	$C_6H_3(Cl)_2OH$ (Phenol, 2,6-dichloro-) (RN-CAS Registry Number 87-65-0)	**	8.65 ± 0.02	PE	3890
$C_6H_4OCl_2^+$	$C_6H_3Cl_2OOCCH_3$ (Phenol, 2,4-dichloro-, acetate) (RN-CAS Registry Number 6341-97-5)	$CH_2=C=O$	9.37 ± 0.03	EI	3480
$C_6H_4OCl_2^+$	$C_6H_3Cl_2OOCCH_3$ (Phenol, 2,6-dichloro-, acetate) (RN-CAS Registry Number 28165-71-1)	$CH_2=C=O$	9.88 ± 0.03	EI	3480
$C_8H_6O_2Cl_2^+$	$C_6H_3Cl_2OOCCH_3$ (Phenol, 2,4-dichloro-, acetate) (RN-CAS Registry Number 6341-97-5)	**	8.16 ± 0.03	EI	3480
$C_8H_6O_2Cl_2^+$	$C_6H_3Cl_2OOCCH_3$ (Phenol, 2,6-dichloro-, acetate) (RN-CAS Registry Number 28165-71-1)	**	8.68 ± 0.03	EI	3480
$C_8H_7NOCl^+$	$C_6H_3Cl_2NHCOCH_3$ (Acetamide, <i>N</i> -(2,4-dichlorophenyl)-) (RN-CAS Registry Number 6975-29-7)		8.81 ± 0.03	EI	3480
$C_8H_7NOCl^+$	$C_6H_3Cl_2NHCOCH_3$ (Acetamide, <i>N</i> -(2,6-dichlorophenyl)-) (RN-CAS Registry Number 17700-54-8)		8.79 ± 0.03	EI	3480
$C_8H_8NOCl^+$	$C_6H_4ClNHCOCH_3$ (Acetamide, <i>N</i> -(2-chlorophenyl)-) (RN-CAS Registry Number 533-17-5)	**	8.07 ± 0.03	EI	3483
$C_8H_8NOCl^+$	$C_6H_4ClNHCOCH_3$ (Acetamide, <i>N</i> -(4-chlorophenyl)-) (RN-CAS Registry Number 539-03-7)	**	8.07 ± 0.03	EI	3483

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{17}H_{14}NOCl^+$	$C_6H_4(Cl)C_3H_3(CN)C_6H_4(OCH_3)$ (Cyclopropanecarbonitrile, 1-(<i>p</i> -chlorophenyl)-2-(<i>p</i> -methoxyphenyl)-) (RN-CAS Registry Number 32589-54-1)	**	7.70 ± 0.05	EDD	3575
$C_6H_4NO_2Cl^+$	$C_6H_4ClNO_2$ (Benzene, 1-chloro-3-nitro-) (RN-CAS Registry Number 121-73-3)	**	9.92 ± 0.1	EI	3447
$C_6H_4NO_2Cl^+$	$C_6H_4ClNO_2$ (Benzene, 1-chloro-4-nitro-) (RN-CAS Registry Number 100-00-5)	**	9.96 ± 0.1	EI	3447
$C_8H_7NOCl_2^+$	$C_6H_3Cl_2NHCOCH_3$ (Acetamide, <i>N</i> -(2,4-dichlorophenyl)-) (RN-CAS Registry Number 6975-29-7)	**	8.09 ± 0.03	EI	3480
$C_8H_7NOCl_2^+$	$C_6H_3Cl_2NHCOCH_3$ (Acetamide, <i>N</i> -(2,6-dichlorophenyl)-) (RN-CAS Registry Number 17700-54-8)	**	8.25 ± 0.03	EI	3480
$ClF^+(^2\Pi_{3/2g})$	ClF (RN-CAS Registry Number 7790-89-8)	**	12.66 ± 0.01	PE	3507
$ClF^+(^2\Pi_{3/2})$	ClF (RN-CAS Registry Number 7790-89-8)	**	12.66 ± 0.01	PE	3680
(HB-Threshold value approximately corrected for hot bands)					
$ClF^+(^2\Pi_{1/2g})$	ClF (RN-CAS Registry Number 7790-89-8)	**	12.74 ± 0.01	PE	3507
$ClF^+(^2\Pi_{1/2})$	ClF (RN-CAS Registry Number 7790-89-8)	**	12.74 ± 0.01	PE	3680
$ClF^+(^2\Pi_{3/2}, ^2\Pi_{1/2})$	ClF (RN-CAS Registry Number 7790-89-8)	**	16.25 ± 0.08	PE	3680
$ClF^+(^2\Pi_u)$	ClF (RN-CAS Registry Number 7790-89-8)	**	16.39 ± 0.01	PE	3507
$ClF^+(^2\Sigma^+)$	ClF (RN-CAS Registry Number 7790-89-8)	**	17.80 ± 0.01	PE	3507
$ClF^+(^2\Sigma^+)$	ClF (RN-CAS Registry Number 7790-89-8)	**	17.81 ± 0.08	PE	3680
$ClF_3(^2B_2, ^2A_1)$	ClF_3 (RN-CAS Registry Number 7790-91-2)	**	12.65 ± 0.05	PE	3680
$ClF_3(^2A_1)$	ClF_3 (RN-CAS Registry Number 7790-91-2)	**	13.76 ± 0.06	PE	3680
$ClF_3(^2B_1)$	ClF_3 (RN-CAS Registry Number 7790-91-2)	**	14.83 ± 0.03 (V)	PE	3680
$ClF_3(^2A_2)$	ClF_3 (RN-CAS Registry Number 7790-91-2)	**	15.36 ± 0.03 (V)	PE	3680
$ClF_3(^2B_2)$	ClF_3 (RN-CAS Registry Number 7790-91-2)	**	16.07 ± 0.01 (V)	PE	3680
$ClF_3(^2B_1)$	ClF_3 (RN-CAS Registry Number 7790-91-2)	**	16.82 ± 0.06	PE	3680
$ClF_3(^2A_1, ^2B_2)$	ClF_3 (RN-CAS Registry Number 7790-91-2)	**	~ 19 (V)	PE	3680

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{ClF}_3(^2\text{B}_1)$	ClF_3 (RN-CAS Registry Number 7790-91-2)	**	~ 19.5 (V)	PE	3680
BClF^+	BClF (RN-CAS Registry Number 22395-93-3)	**	11 ± 1	EI	3465
BClF_2^+	BClF_2 (RN-CAS Registry Number 14720-30-0)	**	13 ± 1	EI	3465
BCl_2F^+	BCl_2F (RN-CAS Registry Number 14720-31-1)	**	14 ± 1	EI	3465
CFCI^+	$\text{C}_2\text{F}_3\text{Cl}$ (RN-CAS Registry Number 79-38-9)	CF_2	15.0 ± 0.1	EI	3539
CFCI^+	$\text{CFCI}=\text{CFCI}$ (RN-CAS Registry Number 598-88-9)	CFCI	15.3 ± 0.15	EI	3539
CFCI^+	CFCI_3 (RN-CAS Registry Number 75-69-4)	2Cl	17.1 ± 0.1	EI	3539
CFCI^+	$\text{CH}_2=\text{CFCI}$ (RN-CAS Registry Number 2317-91-1)	CH_2	16.8 ± 0.1	EI	3539
CF_2Cl^+	$\text{C}_2\text{F}_3\text{Cl}$ (RN-CAS-Registry Number 79-38-9)	CF	14.9 ± 0.1	EI	4070
CF_2Cl^+	(TR-Other product(s) thermochemically reasonable) $(\text{CF}_2\text{Cl})_2\text{CO}$ (RN-CAS Registry Number 127-21-9)		11.95	EI	3550
$\text{C}_2\text{F}_2\text{Cl}^+$	$\text{C}_2\text{F}_3\text{Cl}$ (RN-CAS-Registry Number 79-38-9)	F	15.9 ± 0.2	EI	4070
$\text{C}_2\text{F}_2\text{Cl}^+$	$\text{CFCI}=\text{CFCI}$ (RN-CAS-Registry Number 598-88-9)	Cl	14.8 ± 0.1	EI	4070
$\text{CF}_3\text{Cl}^+(^2\text{E})$	CF_3Cl (RN-CAS Registry Number 75-72-9)	**	13.0 (V)	PE	3914
$\text{CF}_3\text{Cl}^+(^2\text{E})$	CF_3Cl (RN-CAS Registry Number 75-72-9)	**	13.08 ± 0.02 (V)	PE	4026
$\text{CF}_3\text{Cl}^+(^2\text{A}_1)$	CF_3Cl (RN-CAS Registry Number 75-72-9)	**	15.0 (V)	PE	3914
$\text{CF}_3\text{Cl}^+(^2\text{A}_1)$	CF_3Cl (RN-CAS Registry Number 75-72-9)	**	15.15 ± 0.02 (V)	PE	4026
$\text{CF}_3\text{Cl}^+(^2\text{A}_2)$	CF_3Cl (RN-CAS Registry Number 75-72-9)	**	15.55 (V)	PE	3914
$\text{CF}_3\text{Cl}^+(^2\text{A}_2)$	CF_3Cl (RN-CAS Registry Number 75-72-9)	**	15.82 ± 0.02 (V)	PE	4026
$\text{CF}_3\text{Cl}^+(^2\text{E})$	CF_3Cl (RN-CAS Registry Number 75-72-9)	**	16.5 (V)	PE	3914
$\text{CF}_3\text{Cl}^+(^2\text{E})$	CF_3Cl (RN-CAS Registry Number 75-72-9)	**	16.56 ± 0.02 (V)	PE	4026
$\text{CF}_3\text{Cl}^+(^2\text{E})$	CF_3Cl (RN-CAS Registry Number 75-72-9)	**	17.4 (V)	PE	3914
$\text{CF}_3\text{Cl}^+(^2\text{E})$	CF_3Cl (RN-CAS Registry Number 75-72-9)	**	17.53 ± 0.02 (V)	PE	4026

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{CF}_3\text{Cl}^+(\text{}^2\text{A}_1)$	CF_3Cl (RN-CAS Registry Number 75-72-9)	**	20.1 (V)	PE	4026
$\text{CF}_3\text{Cl}^+(\text{}^2\text{E})$	CF_3Cl (RN-CAS Registry Number 75-72-9)	**	~ 21.0 (V)	PE	4026
$\text{C}_2\text{F}_3\text{Cl}^+$	$\text{C}_2\text{F}_3\text{Cl}$ (RN-CAS Registry Number 79-38-9)	**	9.76	S	3776
$\text{C}_2\text{F}_3\text{Cl}^+$	$\text{C}_2\text{F}_3\text{Cl}$ (RN-CAS Registry Number 79-38-9)	**	9.82	PE	3589
$\text{C}_2\text{F}_3\text{Cl}^+$	$\text{C}_2\text{F}_3\text{Cl}$ (RN-CAS-Registry Number 79-38-9)	**	10.6 ± 0.1	EI	4070
CFCl_2^+	$\text{CFCl}=\text{CFCl}$ (RN-CAS-Registry Number 598-88-9) (TR—Other product(s) thermochemically reasonable)	CF	14.3 ± 0.1	EI	4070
C_2FCl_2^+	$\text{CFCl}=\text{CFCl}$ (RN-CAS-Registry Number 598-88-9)	F	15.7 ± 0.1	EI	4070
CF_2Cl_2^+	CF_2Cl_2 (RN-CAS Registry Number 75-71-8)	**	12.3 (V)	PE	3914
$\text{CF}_2\text{CCl}_2^+$	$\text{CF}_2=\text{CCl}_2$ (RN-CAS Registry Number 79-35-6)	**	9.62	PE	3589
$\text{C}_2\text{F}_2\text{Cl}_2^+$	$\text{CFCl}=\text{CFCl}$ (RN-CAS-Registry Number 598-88-9)	**	10.2 ± 0.1	EI	4070
CFCl_3^+	CFCl_3 (RN-CAS Registry Number 75-69-4)	**	11.9 (V)	PE	3914
CH_2FCl^+	CH_2FCl (RN-CAS Registry Number 593-70-4)	**	11.74	PE	3914
C_2HFCI^+	$\text{CH}_2=\text{CFCl}$ (RN-CAS-Registry Number 2317-91-1)	H	16.2 ± 0.2	EI	4070
$\text{C}_2\text{H}_2\text{FCI}^+$	$\text{CH}_2=\text{CFCl}$ (RN-CAS Registry Number 2317-91-1)	**	9.97	S	3776
$\text{C}_2\text{H}_2\text{FCI}^+$	$\text{CH}_2=\text{CFCl}$ (RN-CAS-Registry Number 2317-91-1)	**	10.7 ± 0.2	EI	4070
$\text{C}_2\text{H}_2\text{FCI}^+$	$\text{CH}_2=\text{CFCl}$ (RN-CAS Registry Number 2317-91-1)	**	10.7 ± 0.2	EI	3539
CHF_2Cl^+	CHF_2Cl (RN-CAS Registry Number 75-45-6)	**	12.6 (V)	PE	3914
$\text{C}_2\text{HF}_2\text{Cl}^+$	$\text{CF}_2=\text{CHCl}$ (RN-CAS Registry Number 359-10-4)	**	9.76	S	3776
CHFCI_2^+	CHFCI_2 (RN-CAS Registry Number 75-43-4)	**	12.0 (V)	PE	3914

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{ClO}_3\text{F}^+(\text{}^2\text{A}_2)$	ClO_3F (RN-CAS Registry Number 7616-94-6)	**	12.945 ± 0.005	PE	3675
$\text{ClO}_3\text{F}^+(\text{}^2\text{E})$	ClO_3F (RN-CAS Registry Number 7616-94-6)	**	13.68 ± 0.02	PE	3675
$\text{ClO}_3\text{F}^+(\text{}^2\text{A}_1)$	ClO_3F (RN-CAS Registry Number 7616-94-6)	**	14.29 ± 0.02 (V)	PE	3675
$\text{ClO}_3\text{F}^+(\text{}^2\text{E})$	ClO_3F (RN-CAS Registry Number 7616-94-6)	**	15.385 ± 0.008	PE	3675
$\text{ClO}_3\text{F}^+(\text{}^2\text{E})$	ClO_3F (RN-CAS Registry Number 7616-94-6)	**	19.70 ± 0.01	PE	3675
$\text{ClO}_3\text{F}^+(\text{}^2\text{A}_1)$	ClO_3F (RN-CAS Registry Number 7616-94-6)	**	21.3 ± 0.1 (V)	PE	3675
$\text{ClO}_3\text{F}^+(\text{}^2\text{A}_1)$	ClO_3F (RN-CAS Registry Number 7616-94-6)	**	23.8 ± 0.1 (V)	PE	3675
AlOCl^+	AlOCl (RN-CAS Registry Number 13596-11-7)	**	12 ± 1	EI	3462
SiCl^+	$\text{Cl}_3\text{SiCo}(\text{Co})_2(\text{PF}_3)_2$ (RN-CAS Registry Number 37769-29-2)		16.4 ± 0.5	EI	3653
SiCl^+	$\text{Cl}_3\text{SiCo}(\text{CO})_3\text{PF}_3$ (RN-CAS Registry Number 37769-28-1)		16.2 ± 0.5	EI	3653
$\text{SiCl}_4^+(\text{}^2\text{T}_1)$	SiCl_4 (RN-CAS Registry Number 10026-04-7)	**	12.06 (V)	PE	3514
$\text{SiCl}_4^+(\text{}^2\text{T}_2)$	SiCl_4 (RN-CAS Registry Number 10026-04-7)	**	12.95 (V)	PE	3514
$\text{SiCl}_4^+(\text{}^2\text{E})$	SiCl_4 (RN-CAS Registry Number 10026-04-7)	**	13.44 (V)	PE	3514
$\text{SiH}_3\text{Cl}^+(\text{}^2\text{E})$	SiH_3Cl (RN-CAS Registry Number 13465-78-6)	**	11.61 ± 0.02 (V)	PE	3510
SiH_3Cl^+	SiH_3Cl (RN-CAS Registry Number 13465-78-6)	**	11.61 ± 0.05 (V)	PE	3502
$\text{SiH}_3\text{Cl}^+(\text{}^2\text{E})$	SiH_3Cl (RN-CAS Registry Number 13465-78-6)	**	11.65 (V)	PE	3511
$\text{SiH}_3\text{Cl}^+(\text{}^2\text{A}_1)$	SiH_3Cl (RN-CAS Registry Number 13465-78-6)	**	13.4 ± 0.1 (V)	PE	3510
$\text{SiH}_3\text{Cl}^+(\text{}^2\text{A}_1?)$	SiH_3Cl (RN-CAS Registry Number 13465-78-6)	**	13.51 (V)	PE	3511
$\text{SiH}_3\text{Cl}^+(\text{}^2\text{E})$	SiH_3Cl (RN-CAS Registry Number 13465-78-6)	**	13.7 ± 0.1 (V)	PE	3510
$\text{SiH}_3\text{Cl}^+(\text{}^2\text{E}?)$	SiH_3Cl (RN-CAS Registry Number 13465-78-6)	**	13.99 (V)	PE	3511
$\text{SiH}_3\text{Cl}^+(\text{}^2\text{A}_1)$	SiH_3Cl (RN-CAS Registry Number 13465-78-6)	**	18.04 ± 0.02 (V)	PE	3510
$\text{SiH}_3\text{Cl}^+(\text{}^2\text{A}_1)$	SiH_3Cl (RN-CAS Registry Number 13465-78-6)	**	18.13 (V)	PE	3511
$\text{SiH}_2\text{Cl}_2^+$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	11.64 ± 0.02 (V)	PE	3510

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{SiH}_2\text{Cl}_2(^2\text{B}_2)$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	11.70 (V)	PE	3511
$\text{SiH}_2\text{Cl}_2(^2\text{B}_2)$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	11.70 (V)	PE	3694
$\text{SiH}_2\text{Cl}_2(^2\text{B}_1)$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	12.09 (V)	PE	3511
$\text{SiH}_2\text{Cl}_2(^2\text{B}_1)$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	12.09 (V)	PE	3694
$\text{SiH}_2\text{Cl}_2(^2\text{A}_2)$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	12.53 (V)	PE	3511
$\text{SiH}_2\text{Cl}_2(^2\text{A}_2)$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	12.53 (V)	PE	3694
$\text{SiH}_2\text{Cl}_2(^2\text{A}_1)$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	12.76 (V)	PE	3694
$\text{SiH}_2\text{Cl}_2(^2\text{A}_1)$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	~12.76 (V)	PE	3511
$\text{SiH}_2\text{Cl}_2(^2\text{B}_2?)$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	14.20 (V)	PE	3511
$\text{SiH}_2\text{Cl}_2^*$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	14.20 (V)	PE	3694
$\text{SiH}_2\text{Cl}_2(^2\text{A}_1?)$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	14.45 (V)	PE	3511
$\text{SiH}_2\text{Cl}_2^*$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	14.45 (V)	PE	3694
$\text{SiH}_2\text{Cl}_2(^2\text{B}_1?)$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	14.60 (V)	PE	3511
$\text{SiH}_2\text{Cl}_2^*$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	14.60 (V)	PE	3694
$\text{SiH}_2\text{Cl}_2(^2\text{A}_1)$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	18.32 (V)	PE	3511
$\text{SiH}_2\text{Cl}_2^*$	SiH_2Cl_2 (RN-CAS Registry Number 4109-96-0)	**	18.32 (V)	PE	3694
$\text{SiHCl}_3(^2\text{A}_2)$	SiHCl_3 (RN-CAS Registry Number 10025-78-2)	**	11.94 (V)	PE	3511
$\text{SiHCl}_3(^2\text{A}_1)$	SiHCl_3 (RN-CAS Registry Number 10025-78-2)	**	12.41 (V)	PE	3511
$\text{SiHCl}_3(^2\text{E}')$	SiHCl_3 (RN-CAS Registry Number 10025-78-2)	**	12.41 (V)	PE	3511
$\text{SiHCl}_3(^2\text{E}')$	SiHCl_3 (RN-CAS Registry Number 10025-78-2)	**	13.07 (V)	PE	3511
$\text{SiHCl}_3(^2\text{E})$	SiHCl_3 (RN-CAS Registry Number 10025-78-2)	**	14.75 (V)	PE	3511
$\text{SiHCl}_3(^2\text{A}_1)$	SiHCl_3 (RN-CAS Registry Number 10025-78-2)	**	14.98 (V)	PE	3511
$\text{SiHCl}_3(^2\text{A}_1)$	SiHCl_3 (RN-CAS Registry Number 10025-78-2)	**	18.14 (V)	PE	3511
$\text{C}_3\text{H}_5\text{SiCl}^+$	$(\text{CH}_3)_3\text{SiCl}$ (RN-CAS Registry Number 75-77-4)	**	10.76 (V)	PE	3503

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_4H_9SiCl^+$	$C_3H_6Si(Cl)CH_3$ (Silacyclobutane, 1-chloro-1-methyl-) (RN-CAS Registry Number 2351-34-0)	**	9.95 (V)	PE	4077
$C_4H_{11}SiCl^+$	$(CH_3)_3SiCH_2Cl$ (RN-CAS Registry Number 2344-80-1)	**	10.17 ± 0.1 (V)	PE	3830
$C_5H_9SiCl^+$	$(CH_3)_3SiC \equiv CCl$ (RN-CAS Registry Number 7652-06-4)	**	9.4 ± 0.1	PE	4002
$C_2H_6SiCl_2^+$	$(CH_3)_2SiCl_2$ (RN-CAS Registry Number 75-78-5)	**	10.99 (V)	PE	3503
$C_3H_6SiCl_2^+$	$C_3H_6SiCl_2$ (Silacyclobutane, 1,1-dichloro-) (RN-CAS Registry Number 2351-33-9)	**	10.50 (V)	PE	4077
$C_6H_{12}Si_4Cl_4^+$	$C_6H_{12}Si_4Cl_4$ (1,3,5,7-Tetrasilatricyclo[3.3.1.1 ^{3,7}]decane, 1,3,5,7-tetrachloro-) (RN-CAS Registry Number 18222-89-4) (ON-Other name: 1,3,5,7-Tetrachloro-1,3,5,7-tetrasilaadamantane)	**	9.4 ± 0.05	PE	3855
$C_4H_{12}N_2SiCl_2^+$	$((CH_3)_2N)_2SiCl_2$ (RN-CAS Registry Number 13328-30-8)	**	8.81 (V)	PE	3503
$C_2H_6NSiCl_3^+$	$((CH_3)_2N)SiCl_3$ (RN-CAS Registry Number 13307-04-5)	**	9.30 (V)	PE	3503
$C_6H_{15}O_3SiCl^+$	$(C_2H_5O)_3SiCl$ (RN-CAS Registry Number 4667-99-6)	**	10.52 (V)	PE	3503
$C_4H_{10}O_2SiCl_2^+$	$(C_2H_5O)_2SiCl_2$ (RN-CAS Registry Number 4667-38-3)	**	10.78 (V)	PE	3503
$C_2H_5OSiCl_3^+$	$(C_2H_5O)SiCl_3$ (RN-CAS Registry Number 1825-82-7)	**	11.30 (V)	PE	3503
$SiF_3Cl^+(^2E)$	SiF_3Cl (RN-CAS Registry Number 14049-36-6)	**	13.44 ± 0.02 (V)	PE	4026
$SiF_3Cl^+(^2A_1)$	SiF_3Cl (RN-CAS Registry Number 14049-36-6)	**	15.33 ± 0.02 (V)	PE	4026
$SiF_3Cl^+(^2A_2)$	SiF_3Cl (RN-CAS Registry Number 14049-36-6)	**	16.35 ± 0.02 (V)	PE	4026
$SiF_3Cl^+(^2E)$	SiF_3Cl (RN-CAS Registry Number 14049-36-6)	**	16.70 ± 0.02 (V)	PE	4026
$SiF_3Cl^+(^2E)$	SiF_3Cl (RN-CAS Registry Number 14049-36-6)	**	17.49 ± 0.02 (V)	PE	4026
$SiF_3Cl^+(^2A_1)$	SiF_3Cl (RN-CAS Registry Number 14049-36-6)	**	18.26 ± 0.02 (V)	PE	4026
$SiF_3Cl^+(^2E)$	SiF_3Cl (RN-CAS Registry Number 14049-36-6)	**	18.92 ± 0.02 (V)	PE	4026

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
PCl^+	PCl_3 (RN-CAS Registry Number 7719-12-2)		16.0 ± 0.2	EDD	3556
PCl_2^+	PCl_3 (RN-CAS Registry Number 7719-12-2)	Cl	11.9 ± 0.1	EDD	3556
PCl_2^+	PCl_2Br (RN-CAS Registry Number 13536-48-6)	Br	11.3 ± 0.1	EDD	3556
$\text{PCl}_3(^2\text{A}_1)$	PCl_3 (RN-CAS Registry Number 7719-12-2)	**	10.51 (V)	PE	4023
$\text{PCl}_3(^2\text{A}_1)$	PCl_3 (RN-CAS Registry Number 7719-12-2)	**	10.52 ± 0.03 (V)	PE	3669
$\text{PCl}_3(^2\text{A}_2)$	PCl_3 (RN-CAS Registry Number 7719-12-2)	**	11.69 ± 0.03 (V)	PE	3669
$\text{PCl}_3(^2\text{A}_2)$	PCl_3 (RN-CAS Registry Number 7719-12-2)	**	11.70 (V)	PE	4023
$\text{PCl}_3(^2\text{E})$	PCl_3 (RN-CAS Registry Number 7719-12-2)	**	11.97 ± 0.03 (V)	PE	3669
$\text{PCl}_3(^2\text{E})$	PCl_3 (RN-CAS Registry Number 7719-12-2)	**	12.00 (V)	PE	4023
$\text{PCl}_3(^2\text{E})$	PCl_3 (RN-CAS Registry Number 7719-12-2)	**	12.94 ± 0.03 (V)	PE	3669
$\text{PCl}_3(^2\text{E})$	PCl_3 (RN-CAS Registry Number 7719-12-2)	**	12.97 (V)	PE	4023
$\text{PCl}_3(^2\text{A}_1)$	PCl_3 (RN-CAS Registry Number 7719-12-2)	**	14.23 ± 0.03 (V)	PE	3669
$\text{PCl}_3(^2\text{A}_1)$	PCl_3 (RN-CAS Registry Number 7719-12-2)	**	14.23 (V)	PE	4023
$\text{PCl}_3(^2\text{E})$	PCl_3 (RN-CAS Registry Number 7719-12-2)	**	15.19 ± 0.03 (V)	PE	3669
$\text{PCl}_3(^2\text{E})$	PCl_3 (RN-CAS Registry Number 7719-12-2)	**	15.20 (V)	PE	4023
$\text{PCl}_3(^2\text{A}_1)$	PCl_3 (RN-CAS Registry Number 7719-12-2)	**	18.81 ± 0.03 (V)	PE	3669
PCl_3^+	PCl_3 (RN-CAS Registry Number 7719-12-2)	**	10.5 ± 0.1	EDD	3556
PCl_5^+	PCl_5 (RN-CAS Registry Number 10026-13-8)	**	10.88 (V)	PE	3669
$\text{POCl}^+(^2\text{E})$	POCl (RN-CAS Registry Number 21295-50-1)	**	11.85 (V)	PE	4023
$\text{POCl}^+(^2\text{A}_2)$	POCl (RN-CAS Registry Number 21295-50-1)	**	12.35 (V)	PE	4023
$\text{POCl}^+(^2\text{E}_{3/2})$	POCl (RN-CAS Registry Number 21295-50-1)	**	12.93 (V)	PE	4023
$\text{POCl}^+(^2\text{E}_{1/2})$	POCl (RN-CAS Registry Number 21295-50-1)	**	12.98 (V)	PE	4023
$\text{POCl}^+(^2\text{A}_1)$	POCl (RN-CAS Registry Number 21295-50-1)	**	13.48 (V)	PE	4023
$\text{POCl}^+(^2\text{E})$	POCl (RN-CAS Registry Number 21295-50-1)	**	13.85 (V)	PE	4023

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{POCl}^+(\text{}^2\text{A}_1)$	POCl (RN-CAS Registry Number 21295-50-1)	**	15.37 (V)	PE	4023
$\text{POCl}^+(\text{}^2\text{E})$	POCl (RN-CAS Registry Number 21295-50-1)	**	16.53 (V)	PE	4023
$\text{POCl}_3^+(\text{}^2\text{E})$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	11.36±0.02	PE	3835
$\text{POCl}_3^+(\text{}^2\text{E})$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	11.58±0.05	PE	3641
$\text{POCl}_3^+(\text{}^2\text{E})$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	11.89±0.03 (V)	PE	3669
$\text{POCl}_3^+(\text{}^2\text{A}_2)$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	12.36±0.03 (V)	PE	3669
$\text{POCl}_3^+(\text{}^2\text{A}_2)$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	12.38±0.02 (V)	PE	3835
$\text{POCl}_3^+(\text{}^2\text{A}_2)$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	12.52±0.04 (V)	PE	3641
$\text{POCl}_3^+(\text{}^2\text{E})$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	12.97±0.03 (V)	PE	3669
$\text{POCl}_3^+(\text{}^2\text{E})$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	12.98±0.01 (V)	PE	3835
$\text{POCl}_3^+(\text{}^2\text{E})$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	13.18±0.05 (V)	PE	3641
$\text{POCl}_3^+(\text{}^2\text{A}_1)$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	13.46±0.03 (V)	PE	3669
$\text{POCl}_3^+(\text{}^2\text{A}_1)$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	13.47±0.01 (V)	PE	3835
$\text{POCl}_3^+(\text{}^2\text{A}_1)$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	13.63±0.04 (V)	PE	3641
$\text{POCl}_3^+(\text{}^2\text{E})$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	13.84±0.03 (V)	PE	3669
$\text{POCl}_3^+(\text{}^2\text{E})$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	13.85±0.02 (V)	PE	3835
$\text{POCl}_3^+(\text{}^2\text{E})$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	13.99±0.05 (V)	PE	3641
$\text{POCl}_3^+(\text{}^2\text{A}_1)$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	15.10±0.01	PE	3835
$\text{POCl}_3^+(\text{}^2\text{A}_1)$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	15.35±0.06	PE	3641
$\text{POCl}_3^+(\text{}^2\text{A}_1)$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	15.36±0.03 (V)	PE	3669
$\text{POCl}_3^+(\text{}^2\text{E})$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	16.13±0.02	PE	3835
$\text{POCl}_3^+(\text{}^2\text{E})$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	16.34±0.02	PE	3641
$\text{POCl}_3^+(\text{}^2\text{E})$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	16.53±0.03 (V)	PE	3669
$\text{POCl}_3^+(\text{}^2\text{A}_1)$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	19.48±0.03	PE	3641
$\text{POCl}_3^+(\text{}^2\text{A}_1)$	POCl ₃ (RN-CAS Registry Number 10025-87-3)	**	19.53±0.03 (V)	PE	3669

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{POCl}_3(^2\text{A}_1)$	POCl_3 (RN-CAS Registry Number 10025-87-3)	**	19.55 ± 0.04 (V)	PE	3835
PF_2Cl^+	PF_2Cl (RN-CAS Registry Number 14335-40-1)	**	12.8 ± 0.1 (V)	PE	3662
$\text{CSCl}_2(^2\text{B}_2)$	CCl_2S (RN-CAS Registry Number 463-71-8)	**	9.61 ± 0.02	PE	3667
(HB-Threshold value approximately corrected for hot bands)					
$\text{CSCl}_2(^2\text{B}_2)$	Cl_2CS (RN-CAS Registry Number 463-71-8)	**	9.68	PE	4080
CSCl_2^+	Cl_2CS (RN-CAS Registry Number 463-71-8)	**	9.80 (V)	PE	3746
$\text{CSCl}_2(^2\text{B}_1)$	Cl_2CS (RN-CAS Registry Number 463-71-8)	**	10.63	PE	4080
$\text{CSCl}_2(^2\text{B}_1)$	CCl_2S (RN-CAS Registry Number 463-71-8)	**	10.65 ± 0.02	PE	3667
$\text{CSCl}_2(^2\text{B}_2)$	CCl_2S (RN-CAS Registry Number 463-71-8)	**	11.67 ± 0.02	PE	3667
CSCl_2^*	Cl_2CS (RN-CAS Registry Number 463-71-8)	**	11.93 (V)	PE	4080
CSCl_2^*	Cl_2CS (RN-CAS Registry Number 463-71-8)	**	12.36 (V)	PE	4080
$\text{CSCl}_2(^2\text{A}_1)$	CCl_2S (RN-CAS Registry Number 463-71-8)	**	12.38 ± 0.02 (V)	PE	3667
CSCl_2^*	Cl_2CS (RN-CAS Registry Number 463-71-8)	**	12.68 (V)	PE	4080
$\text{CSCl}_2(^2\text{A}_2)$	CCl_2S (RN-CAS Registry Number 463-71-8)	**	12.69 ± 0.02 (V)	PE	3667
$\text{CSCl}_2(^2\text{A}_1)$	CCl_2S (RN-CAS Registry Number 463-71-8)	**	14.23 ± 0.02	PE	3667
$\text{CSCl}_2(^2\text{B}_1)$	Cl_2CS (RN-CAS Registry Number 463-71-8)	**	14.27	PE	4080
$\text{CSCl}_2(^2\text{B}_1)$	CCl_2S (RN-CAS Registry Number 463-71-8)	**	14.99 ± 0.02	PE	3667
CSCl_2^*	Cl_2CS (RN-CAS Registry Number 463-71-8)	**	15.11 (V)	PE	4080
$\text{CSCl}_2(^2\text{B}_2)$	CCl_2S (RN-CAS Registry Number 463-71-8)	**	15.99 ± 0.02	PE	3667
CSCl_2^*	Cl_2CS (RN-CAS Registry Number 463-71-8)	**	16.22 (V)	PE	4080
$\text{CSCl}_2(^2\text{A}_1)$	CCl_2S (RN-CAS Registry Number 463-71-8)	**	18.09 ± 0.02	PE	3667
CSCl_2^*	Cl_2CS (RN-CAS Registry Number 463-71-8)	**	18.32 (V)	PE	4080
$\text{C}_2\text{S}_2\text{Cl}_4^+$	$\text{C}_2\text{S}_2\text{Cl}_4$ (1,3-Dithietane, 2,2,4,4-tetrachloro-) (RN-CAS Registry Number 20464-23-7)	**	9.69 (V)	PE	3898

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_4H_3SCl^+$	C_4H_3SCl (Thiophene, 2-chloro-) (RN-CAS Registry Number 96-43-5)	**	9.06 ± 0.05	EI	3482
$C_4H_3SCl^+$	C_4H_3SCl (Thiophene, 2-chloro-) (RN-CAS Registry Number 96-43-5)	**	8.83	CTS	3787
$NSCl^+(^2A')$	$NSCl$ (RN-CAS Registry Number 17178-58-4)	**	10.96 (V)	PE	3660
$NSCl^+(^2A', ^2A'')$	$NSCl$ (RN-CAS Registry Number 17178-58-4)	**	11.80 (V)	PE	3660
$NSCl^+(^2A')$	$NSCl$ (RN-CAS Registry Number 17178-58-4)	**	13.77 (V)	PE	3660
$NSCl^+(^2A')$	$NSCl$ (RN-CAS Registry Number 17178-58-4)	**	14.46 (V)	PE	3660
$C_{17}H_{19}N_2SCl^+$	$C_{12}H_7NS(Cl)(CH_2)_3N(CH_3)_2$ (10 <i>H</i> -Phenothiazine-10-propanamine, 2-chloro- <i>N,N</i> -dimethyl-) (RN-CAS Registry Number 50-53-3) (ON-Other name: Aminazine)	**	8.25 ± 0.07	CTS	4079
$C_{20}H_{24}N_3SCl^+$	$C_{12}H_7NS(Cl)(CH_2)_3C_4H_8N_2CH_3$ (10 <i>H</i> -Phenothiazine, 2-chloro-10-[3-(4-methyl-1-piperazinyl)propyl]-) (RN-CAS Registry Number 58-38-8) (ON-Other name: Metherrazine)	**	7.03 ± 0.07	CTS	4079
$SOCl_2^+$	$SOCl_2$ (RN-CAS Registry Number 7719-09-7)	**	11.12 (V)	PE	3705
$SOCl_2^+$	$soCl_2$ (RN-CAS Registry Number 7719-09-7)	**	11.13 (V)	PE	3646
$SOCl_2^+(^2A')$	$SOCl_2$ (RN-CAS Registry Number 7719-09-7)	**	11.3 (V)	PE	3694
$SOCl_2^+(^2A')$	$SOCl_2$ (RN-CAS Registry Number 7719-09-7)	**	11.3 (V)	PE	3879
$SOCl_2^{+*}$	$SOCl_2$ (RN-CAS Registry Number 7719-09-7)	**	11.89 (V)	PE	3705
$SOCl_2^+(^2A'')$	$SOCl_2$ (RN-CAS Registry Number 7719-09-7)	**	11.9 (V)	PE	3694
$SOCl_2^+(^2A'')$	$SOCl_2$ (RN-CAS Registry Number 7719-09-7)	**	11.9 (V)	PE	3879
$SOCl_2^+(^2A')$	$SOCl_2$ (RN-CAS Registry Number 7719-09-7)	**	12.15 (V)	PE	3705
$SOCl_2^+(^2A')$	$SOCl_2$ (RN-CAS Registry Number 7719-09-7)	**	12.21 (V)	PE	3694
$SOCl_2^+(^2A')$	$SOCl_2$ (RN-CAS Registry Number 7719-09-7)	**	12.21 (V)	PE	3879
$SOCl_2^+(^2A'')$	$SOCl_2$ (RN-CAS Registry Number 7719-09-7)	**	12.55 (V)	PE	3694
$SOCl_2^{+*}$	$SOCl_2$ (RN-CAS Registry Number 7719-09-7)	**	12.55 (V)	PE	3705
$SOCl_2^+(^2A'', ^2A')$	$SOCl_2$ (RN-CAS Registry Number 7719-09-7)	**	12.55 (V)	PE	3879

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{SOCl}_2^+(\text{}^2\text{A}', \text{}^2\text{A}'')$	SOCl_2 (RN-CAS Registry Number 7719-09-7)	**	13.04 (V)	PE	3694
$\text{SOCl}_2^+(\text{}^2\text{A}'')$	SOCl_2 (RN-CAS Registry Number 7719-09-7)	**	13.04 (V)	PE	3879
SOCl_2^+	SOCl_2 (RN-CAS Registry Number 7719-09-7)	**	13.15 (V)	PE	3705
SOCl_2^+	SOCl_2 (RN-CAS Registry Number 7719-09-7)	**	13.25 (V)	PE	3705
$\text{SOCl}_2^+(\text{}^2\text{A}')$	SOCl_2 (RN-CAS Registry Number 7719-09-7)	**	15.69 (V)	PE	3705
$\text{SOCl}_2^+(\text{}^2\text{A}')$	SOCl_2 (RN-CAS Registry Number 7719-09-7)	**	15.8 (V)	PE	3694
$\text{SOCl}_2^+(\text{}^2\text{A}')$	SOCl_2 (RN-CAS Registry Number 7719-09-7)	**	16 (V)	PE	3879
SOCl_2^+	SOCl_2 (RN-CAS Registry Number 7719-09-7)	**	16.32 (V)	PE	3705
SO_2Cl_2^+	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	12.05	PE	3879
$\text{SO}_2\text{Cl}_2^+(\text{}^2\text{A}_2, \text{}^2\text{B}_1)$	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	12.4 (V)	PE	3694
SO_2Cl_2^+	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	12.42 (V)	PE	3705
$\text{SO}_2\text{Cl}_2^+(\text{}^2\text{A}_1)$	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	13.0	PE	3879
$\text{SO}_2\text{Cl}_2^+(\text{}^2\text{B}_2)$	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	13.25 (V)	PE	3694
SO_2Cl_2^+	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	13.26 (V)	PE	3705
$\text{SO}_2\text{Cl}_2^+(\text{}^2\text{A}_1)$	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	13.74 (V)	PE	3694
SO_2Cl_2^+	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	13.74 (V)	PE	3879
$\text{SO}_2\text{Cl}_2^+(\text{}^2\text{B}_2?)$	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	13.74 (V)	PE	3879
SO_2Cl_2^+	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	13.81 (V)	PE	3705
$\text{SO}_2\text{Cl}_2^+(\text{}^2\text{A}_2, \text{}^2\text{B}_1)$	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	14.1 (V)	PE	3694
SO_2Cl_2^+	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	14.20 (V)	PE	3705
$\text{SO}_2\text{Cl}_2^+(\text{}^2\text{A}_1?)$	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	16.93	PE	3879
$\text{SO}_2\text{Cl}_2^+(\text{}^2\text{A}_1)$	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	16.93 (V)	PE	3694
SO_2Cl_2^+	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	16.98 (V)	PE	3705
SO_2Cl_2^+	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	17.61 (V)	PE	3694
$\text{SO}_2\text{Cl}_2^+(\text{}^2\text{B}_1)$	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	17.61 (V)	PE	3879

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
SO_2Cl_2^+	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	17.70 (V)	PE	3705
SO_2Cl_2^+	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	18.12 (V)	PE	3694
$\text{SO}_2\text{Cl}_2(^2\text{B}_2)$	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	18.12 (V)	PE	3879
SO_2Cl_2^+	SO_2Cl_2 (RN-CAS Registry Number 7791-25-5)	**	18.20 (V)	PE	3705
$\text{SOCl}_3(^2\text{E})$	SOCl_3 (RN-CAS Registry Number XXXXX-XX-X)	**	9.63 ± 0.02	PE	3835
$\text{SOCl}_3(^2\text{A}_2)$	SOCl_3 (RN-CAS Registry Number XXXXX-XX-X)	**	10.67 ± 0.02	PE	3835
$\text{SOCl}_3(^2\text{A}_1)$	SOCl_3 (RN-CAS Registry Number XXXXX-XX-X)	**	~ 12.4 (V)	PE	3835
$\text{SOCl}_3(^2\text{E})$	SOCl_3 (RN-CAS Registry Number XXXXX-XX-X)	**	12.54 ± 0.01 (V)	PE	3835
$\text{SOCl}_3(^2\text{E})$	SOCl_3 (RN-CAS Registry Number XXXXX-XX-X)	**	13.39 ± 0.02 (V)	PE	3835
$\text{SOCl}_3(^2\text{A}_1)$	SOCl_3 (RN-CAS Registry Number XXXXX-XX-X)	**	14.54 ± 0.01	PE	3835
$\text{SOCl}_3(^2\text{E})$	SOCl_3 (RN-CAS Registry Number XXXXX-XX-X)	**	15.36 ± 0.01	PE	3835
$\text{SOCl}_3(^2\text{A}_1)$	SOCl_3 (RN-CAS Registry Number XXXXX-XX-X)	**	~ 18.7 (V)	PE	3835
$\text{CH}_3\text{O}_2\text{SCl}^+$	$\text{CH}_3\text{SO}_2\text{Cl}$ (RN-CAS Registry Number 124-63-0)	**	11.74 (V)	PE	3705
$\text{C}_{17}\text{H}_{17}\text{N}_2\text{OSCl}^+$	$\text{C}_{12}\text{H}_7\text{NS}(\text{Cl})\text{COCH}_2\text{CH}_2\text{N}(\text{CH}_3)_2$ ** (10 <i>H</i> -Phenothiazine, 2-chloro-10-[3-(dimethylamino)-1-oxopropyl]-) (RN-CAS Registry Number 3576-45-2)	**	8.24 ± 0.07	CTS	4079
$\text{C}_{19}\text{H}_{21}\text{N}_2\text{OSCl}^+$	$\text{C}_{12}\text{H}_7\text{NS}(\text{Cl})\text{COCH}_2\text{CH}_2\text{N}(\text{C}_2\text{H}_5)_2$ ** (10 <i>H</i> -Phenothiazine, 2-chloro-10-[3-(diethylamino)-1-oxopropyl]-) (RN-CAS Registry Number 800-22-6) (ON-Other name: Chloracizine)	**	7.87 ± 0.07	CTS	4079
$\text{C}_{21}\text{H}_{26}\text{N}_3\text{OSCl}^+$	$\text{C}_{21}\text{H}_{26}\text{N}_3\text{OSCl}$ ** (1-Piperazineethanol, 4-[3-(2-chloro-10 <i>H</i> -phenothiazin-10-yl)propyl]-) (RN-CAS Registry Number 58-39-9) (ON-Other name: Ethaperazine)	**	8.63 ± 0.07	CTS	4079
SF_5Cl^+	SF_5Cl (RN-CAS Registry Number 13780-57-9)	**	12.335 ± 0.005	PE	3655
CFSCl^+	FCICS (RN-CAS Registry Number 1495-18-7)	**	10.20 (V)	PE	3746
SO_2FCl^+	SO_2FCl (RN-CAS Registry Number 13637-84-8)	**	12.61 (V)	PE	3705

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
SO_2FCl^+	SO_2FCl (RN-CAS Registry Number 13637-84-8)	**	13.36 (V)	PE	3705
SO_2FCl^+	SO_2FCl (RN-CAS Registry Number 13637-84-8)	**	14.14 (V)	PE	3705
SO_2FCl^+	SO_2FCl (RN-CAS Registry Number 13637-84-8)	**	14.63 (V)	PE	3705
SO_2FCl^+	SO_2FCl (RN-CAS Registry Number 13637-84-8)	**	15.04 (V)	PE	3705
SO_2FCl^+	SO_2FCl (RN-CAS Registry Number 13637-84-8)	**	16.58 (V)	PE	3705
SO_2FCl^+	SO_2FCl (RN-CAS Registry Number 13637-84-8)	**	16.8 (V)	PE	3705
SO_2FCl^+	SO_2FCl (RN-CAS Registry Number 13637-84-8)	**	18.8 (V)	PE	3705
$\text{PSCl}_3(^2\text{E})$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	9.71 ± 0.003	PE	4086
$\text{PSCl}_3(^2\text{E})$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	10.11 (V)	PE	4023
$\text{PSCl}_3(^2\text{E})$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	10.13 ± 0.03 (V)	PE	3669
$\text{PSCl}_3(^2\text{A}_2)$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	11.74 ± 0.1	PE	4086
$\text{PSCl}_3(^2\text{A}_2)$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	11.99 (V)	PE	4023
$\text{PSCl}_3(^2\text{A}_2)$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	12.01 ± 0.03 (V)	PE	3669
$\text{PSCl}_3(^2\text{A}_1)$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	12.15 ± 0.1	PE	4086
$\text{PSCl}_3(^2\text{A}_1)$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	12.56 ± 0.03 (V)	PE	3669
$\text{PSCl}_3(^2\text{A}_1)$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	~ 12.65 (V)	PE	4023
$\text{PSCl}_3(^2\text{E})$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	~ 12.65 (V)	PE	4023
$\text{PSCl}_3(^2\text{E})$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	12.68 ± 0.1 (V)	PE	4086
$\text{PSCl}_3(^2\text{E})$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	13.11 ± 0.1	PE	4086
$\text{PSCl}_3(^2\text{E})$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	13.39 ± 0.03 (V)	PE	3669
$\text{PSCl}_3(^2\text{E})$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	13.39 (V)	PE	4023
$\text{PSCl}_3(^2\text{A}_1)$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	14.59 ± 0.1	PE	4086
$\text{PSCl}_3(^2\text{A}_1)$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	14.77 ± 0.03 (V)	PE	3669
$\text{PSCl}_3(^2\text{A}_1)$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	14.78 (V)	PE	4023
$\text{PSCl}_3(^2\text{E})$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	15.37 ± 0.1	PE	4086

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{PSCl}_3^+(\text{E})$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	15.80 ± 0.03 (V)	PE	3669
$\text{PSCl}_3^+(\text{E})$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	15.80 (V)	PE	4023
$\text{PSCl}_3^+(\text{A}_1)$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	18.34 ± 0.1	PE	4086
$\text{PSCl}_3^+(\text{A}_1)$	PSCl_3 (RN-CAS Registry Number 3982-91-0)	**	18.62 ± 0.03 (V)	PE	3669
$\text{C}_4\text{H}_{12}\text{N}_2\text{PSCl}^+$	$\text{PSCl}(\text{N}(\text{CH}_3)_2)_2$ (RN-CAS Registry Number 3732-81-8)	**	8.23 ± 0.003	PE	4086
$\text{C}_2\text{H}_6\text{NPSCl}_2^+$	$\text{PSCl}_2\text{N}(\text{CH}_3)_2$ (RN-CAS Registry Number 1498-65-3)	**	8.97 ± 0.003	PE	4086
$\text{Ar}^+(\text{P}_{3/2})$	Ar (RN-CAS Registry Number 7440-37-1)	**	15.75973 ± 0.00001 S		3923
$\text{Ar}^+(\text{P}_{3/2})$	Ar (RN-CAS Registry Number 7440-37-1)	**	15.753 ± 0.002	TPE	3525
$\text{Ar}^+(\text{P}_{1/2})$	Ar (RN-CAS Registry Number 7440-37-1)	**	15.930 ± 0.002	TPE	3525
$\text{Ar}^+(\text{P}_{3/2})$	Ar (RN-CAS Registry Number 7440-37-1)	**	15.713 ± 0.003	PEN	3541
Ar^{+2}	Ar (RN-CAS Registry Number 7440-37-1)	**	43.7 ± 0.5	SRP	3625
Ar^{+2}	Ar (RN-CAS Registry Number 7440-37-1)	**	~ 43	EI	3445
Ar^{+3}	Ar (RN-CAS Registry Number 7440-37-1)	**	~ 84	EI	3445
Ar^{+4}	Ar (RN-CAS Registry Number 7440-37-1)	**	~ 145	EI	3445
Ca^+	Ca (RN-CAS Registry Number 7440-70-2)	**	~ 6.1	EI	3486
Ca^{+2}	Ca (RN-CAS Registry Number 7440-70-2)	**	18	EI	3486
Ca^{+3}	Ca (RN-CAS Registry Number 7440-70-2)	**	~ 69	EI	3486
$\text{Ca}^{+3}(\text{P}_{3/2})$	Ca^{+2} (RN-CAS-Registry Number 14127-61-8)	**	50.91357 ± 0.0003	S	4059
$\text{Ca}^{+3}(\text{P}_{1/2})$	Ca^{+2} (RN-CAS-Registry Number 14127-61-8)	**	51.30014 ± 0.0003	S	4059
Sc^+	Sc (RN-CAS Registry Number 7440-20-2)	**	6.7	EI	3600

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Sc^{+3}	Sc^{+2} (RN-CAS Registry Number 14336-96-0)	**	24.75700 ± 0.00006 S	S	3905
Sc^{+3}	Sc^{+2} (RN-CAS Registry Number 14336-96-0)	**	24.75704 ± 0.00001 S	S	4007
$\text{Sc}^{+4}({}^2\text{P}_{3/2})$	Sc^{+3} (RN-CAS-Registry Number 22537-29-7)	**	$73.49004 \pm .00037$ S	S	4064
$\text{Sc}^{+4}({}^2\text{P}_{1/2})$	Sc^{+3} (RN-CAS-Registry Number 22537-29-7)	**	$74.02635 \pm .00037$ S	S	4064
ScC_2^+	ScC_2 (RN-CAS Registry Number 12175-91-6)	**	7.7 ± 0.2	EI	3470
$\text{C}_{15}\text{H}_3\text{O}_6\text{F}_{18}\text{Sc}^+$	$(\text{CF}_3\text{COCHCOCF}_3)_3\text{Sc}$ (Scandium, tris(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato- <i>O,O'</i>)-, (<i>OC</i> -6-11)-) (RN-CAS Registry Number 18990-42-6)	**	10.13 ± 0.07 (V)	PE	3682
Ti^+	Ti (RN-CAS Registry Number 7440-32-6)	**	6.6 ± 0.5	EI	3449
Ti^+	Ti (RN-CAS Registry Number 7440-32-6)	**	7.3 ± 0.6	EI	3902
Ti^+	Ti (RN-CAS Registry Number 7440-32-6)	**	7.4 ± 0.5	EI	3594
Ti^+	TiO (RN-CAS Registry Number 12137-20-1)		14.5 ± 0.7	EI	3594
Ti^+	TiO (RN-CAS Registry Number 12137-20-1)	O	14.51 ± 0.36	EI	4103
TiC_2^+	TiC_2 (RN-CAS Registry Number 12071-32-8)	**	8.2 ± 0.6	EI	3902
TiO^+	TiO (RN-CAS Registry Number 12137-20-1)	**	6.8 ± 0.5	EI	3449
TiO^+	TiO (RN-CAS Registry Number 12137-20-1)	**	7.22 ± 0.35	EI	4103
TiO^+	TiO (RN-CAS Registry Number 12137-20-1)	**	7.3 ± 0.5	EI	3594
TiO_2^+	TiO_2 (RN-CAS Registry Number 13463-67-7)	**	8.5 ± 0.5	EI	3594
TiO_2^+	TiO_2 (RN-CAS Registry Number 13463-67-7)	**	11.56 ± 0.14	EI	4103
$\text{C}_{15}\text{H}_3\text{O}_6\text{F}_{18}\text{Ti}^+$	$(\text{CF}_3\text{COCHCOCF}_3)_3\text{Ti}$ (Titanium, tris(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato- <i>O,O'</i>)-, (<i>OC</i> -6-11)-) (RN-CAS Registry Number 22854-59-7)	**	7.94 ± 0.07 (V)	PE	3682
$\text{C}_{15}\text{H}_3\text{O}_6\text{F}_{18}\text{Ti}^+$	$(\text{CF}_3\text{COCHCOCF}_3)_3\text{Ti}$ (Titanium, tris(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato- <i>O,O'</i>)-, (<i>OC</i> -6-11)-) (RN-CAS Registry Number 22854-59-7)	**	7.98 (V)	PE	3681

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
TiS ⁺	TiS (RN-CAS Registry Number 12039-07-5)	**	7.1±0.3	EI	3449
V ⁺	V (RN-CAS Registry Number 7440-62-2)	**	7±1	EI	3801
VN ⁺	VN (RN-CAS Registry Number 24646-85-3)	**	8±1	EI	3801
VO ⁺	VO (RN-CAS Registry Number 12035-98-2)	**	8±1	EI	3620
VO ₂ ⁺	VO ₂ (RN-CAS Registry Number 12036-21-4)	**	10±2	EI	3620
V ₄ O ₈ ⁺	V ₄ O ₈ (RN-CAS Registry Number 12503-87-6)	**	13±1	EI	3620
V ₄ O ₁₀ ⁺	V ₄ O ₁₀ (RN-CAS Registry Number 12503-98-9)	**	12±1	EI	3620
C ₁₅ H ₃ O ₆ F ₁₈ V ⁺	(CF ₃ COCHCOCF ₃) ₃ V (Vanadium, tris(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato- <i>O,O'</i>)-, (OC-6-11)-) (RN-CAS Registry Number 15695-77-9)	**	8.68±0.07 (V)	PE	3682
C ₁₅ H ₃ O ₆ F ₁₈ V ⁺	(CF ₃ COCHCOCF ₃) ₃ V (Vanadium, tris(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato- <i>O,O'</i>)-, (OC-6-11)-) (RN-CAS Registry Number 15695-77-9)	**	8.68 (V)	PE	3681
Cr ⁺	C ₆ H ₆ Cr(CO) ₃ (Chromium, (η ⁶ -benzene)tricarbonyl-) (RN-CAS Registry Number 12082-08-5) (MT-Metastable transition(s) observed)	C ₆ H ₆ +3CO	12.2±0.2	EI	3786
Cr ⁺	C ₆ H ₆ Cr(CO) ₃ (Chromium, (η ⁶ -benzene)tricarbonyl-) (RN-CAS Registry Number 12082-08-5) (MT-Metastable transition(s) observed)	C ₆ H ₆ +3CO	13.50±0.1	EI	3788
Cr ⁺	C ₆ H ₅ CH ₃ Cr(CO) ₃ (Chromium, tricarbonyl[(1,2,3,4,5,6-η)-methylbenzene]-) (RN-CAS Registry Number 12083-24-8) (MT-Metastable transition(s) observed)	C ₆ H ₅ CH ₃ +3CO	13.42±0.1	EI	3788
Cr ⁺	C ₆ H ₄ (CH ₃) ₂ Cr(CO) ₃ (Chromium, tricarbonyl[(1,2,3,4,5,6-η)-1,2-dimethylbenzene]-) (RN-CAS Registry Number 12129-29-2) (MT-Metastable transition(s) observed)		13.06±0.1	EI	3788
Cr ⁺	C ₆ H ₃ (CH ₃) ₃ Cr(CO) ₃ (Chromium, tricarbonyl[(1,2,3,4,5,6-η)-1,3,5-trimethylbenzene]-) (RN-CAS Registry Number 12129-67-8) (OP-The other product(s) is(are): C ₆ H ₄ (CH ₃) ₂ +3CO) (MT-Metastable transition(s) observed)		13.90±0.1	EI	3788

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Cr^+	$\text{C}_6(\text{CH}_3)_6\text{Cr}(\text{CO})_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-hexamethylbenzene]-) (RN-CAS Registry Number 12088-11-8)	$\text{C}_6(\text{CH}_3)_6 + 3\text{CO}$	13.00 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)	$\text{C}_6\text{H}_5\text{CH}_2\text{OHCr}(\text{CO})_3$ (Chromium, [(1,2,3,4,5,6- η)-benzenemethanol]tricarbonyl-) (RN-CAS Registry Number 12116-45-9)		14.01 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)	(OP-The other product(s) is(are): $\text{C}_6\text{H}_5\text{CH}_2\text{OH} + 3\text{CO}$)				
Cr^+	$\text{C}_6\text{H}_5\text{OCH}_3\text{Cr}(\text{CO})_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methoxybenzene]-) (RN-CAS Registry Number 12116-44-8)		12.65 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)	(OP-The other product(s) is(are): $\text{C}_6\text{H}_5\text{OCH}_3 + 3\text{CO}$)				
Cr^+	$\text{C}_6\text{H}_5\text{COOCH}_3\text{Cr}(\text{CO})_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methylbenzoate]-) (RN-CAS Registry Number 12125-87-0)		14.00 ± 0.1	EI	3788
(OP-The other product(s) is(are): $\text{C}_6\text{H}_5\text{COOCH}_3 + 3\text{CO}$)					
(MT-Metastable transition(s) observed)					
Cr^+	$\text{C}_6\text{H}_5\text{NH}_2\text{Cr}(\text{CO})_3$ (Chromium, (η^6 -benzenamine)tricarbonyl-) (RN-CAS Registry Number 12108-11-1)	$\text{C}_6\text{H}_5\text{NH}_2 + 3\text{CO}$	13.17 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)					
Cr^+	$((\text{CH}_3)_2\text{N})_3\text{PCr}(\text{CO})_5$ (RN-CAS Registry Number XXXXX-XX-X)		22.3 ± 0.05	EI	3952
Cr^+	$(((\text{CH}_3)_2\text{N})_3\text{P})_2\text{Cr}(\text{CO})_4$ (RN-CAS Registry Number 19976-85-3)		22.2 ± 0.05	EI	3952
Cr^+	$\text{C}_6\text{H}_5\text{ClCr}(\text{CO})_3$ (Chromium, tricarbonyl(η^6 -chlorobenzene)-) (RN-CAS Registry Number 12082-03-0)	$\text{C}_6\text{H}_5\text{Cl} + 3\text{CO}$	14.10 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)					
$\text{C}_6\text{H}_6\text{Cr}^+$	$\text{C}_6\text{H}_6\text{Cr}(\text{CO})_3$ (Chromium, (η^6 -benzene)tricarbonyl-) (RN-CAS Registry Number 12082-08-5)	3CO	9.0 ± 0.2	EI	3786
(MT-Metastable transition(s) observed)					
$\text{C}_6\text{H}_6\text{Cr}^+$	$\text{C}_6\text{H}_6\text{Cr}(\text{CO})_3$ (Chromium, (η^6 -benzene)tricarbonyl-) (RN-CAS Registry Number 12082-08-5)	3CO	10.34 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)					
$\text{C}_7\text{H}_8\text{Cr}^+$	$\text{C}_6\text{H}_5\text{CH}_3\text{Cr}(\text{CO})_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methylbenzene]-) (RN-CAS Registry Number 12083-24-8)	3CO	10.04 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)					
$\text{C}_8\text{H}_{10}\text{Cr}^+$	$\text{C}_6\text{H}_4(\text{CH}_3)_2\text{Cr}(\text{CO})_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-1,2-dimethylbenzene]-) (RN-CAS Registry Number 12129-29-2)	3CO	9.60 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)					

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_9H_{12}Cr^+$	$C_6H_3(CH_3)_3Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-1,3,5-trimethylbenzene]-) (RN-CAS Registry Number 12129-67-8) (MT-Metastable transition(s) observed)	3CO	10.35 ± 0.1	EI	3788
$C_{10}H_{10}Cr^+$	$(C_5H_5)_2Cr$ (Chromocene) (RN-CAS Registry Number 1271-24-5)	**	5.50	PE	3725
$C_{11}H_{11}Cr^+$	$C_5H_5CrC_6H_6$ (Chromium, (η^6 -benzene)(η^5 -2,4-cyclopentadien-1-yl)-) (RN-CAS Registry Number 12093-16-2)	**	6.20 ± 0.1 (V)	PE	3686
$C_{12}H_{12}Cr^+$	$(C_6H_6)_2Cr$ (Chromium, bis(benzene)-) (RN-CAS Registry Number 1271-54-1)	**	5.4 ± 0.1 (V)	PE	3686
$C_{12}H_{18}Cr^+$	$C_6(CH_3)_6Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-hexamethylbenzene]-) (RN-CAS Registry Number 12088-11-8) (MT-Metastable transition(s) observed)	3CO	9.82 ± 0.1	EI	3788
$C_{14}H_{16}Cr^+$	$(C_6H_5CH_3)_2Cr$ (Chromium, bis(η^6 -methyl benzene)-) (RN-CAS Registry Number 12087-58-0)	**	5.24 ± 0.1 (V)	PE	3686
$C_{20}H_{44}Cr^+$	$((CH_3)_3CCH_2)_4Cr$ (RN-CAS Registry Number 37007-84-4)	**	7.25 ± 0.1 (V)	PE	3830
$C_6H_7NCr^+$	$C_6H_5NH_2Cr(CO)_3$ (Chromium, (η^6 -benzenamine)tricarbonyl-) (RN-CAS Registry Number 12108-11-1) (MT-Metastable transition(s) observed)	3CO	9.96 ± 0.1	EI	3788
$CrCO^{+2}$	$CrCO$ (RN-CAS Registry Number XXXXX-XX-X)	**	17.3 ± 1.0	EI	3572
$C_6O_6Cr^+$	$Cr(CO)_6$ (RN-CAS Registry Number 13007-92-6)	**	8.40 ± 0.02 (V)	PE	3979
$C_6O_6Cr^+$	$Cr(CO)_6$ (RN-CAS Registry Number 13007-92-6)	**	8.19 ± 0.1	EI	3582
$C_7H_6OCr^+$	$C_6H_6Cr(CO)_3$ (Chromium, (η^6 -benzene)tricarbonyl-) (RN-CAS Registry Number 12082-08-5) (MT-Metastable transition(s) observed)	2CO	7.9 ± 0.2	EI	3786
$C_7H_6OCr^+$	$C_6H_6Cr(CO)_3$ (Chromium, (η^6 -benzene)tricarbonyl-) (RN-CAS Registry Number 12082-08-5) (MT-Metastable transition(s) observed)	2CO	8.09 ± 0.1	EI	3788

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_8OCr^+$	$C_6H_5CH_2OHCr(CO)_3$ (Chromium, [(1,2,3,4,5,6- η)-benzenemethanol]tricarbonyl-) (RN-CAS Registry Number 12116-45-9)	3CO	10.35 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)					
$C_7H_8OCr^+$	$C_6H_5OCH_3Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methoxybenzene]-) (RN-CAS Registry Number 12116-44-8)	3CO	9.90 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)					
$C_8H_8OCr^+$	$C_6H_5CH_3Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methylbenzene]-) (RN-CAS Registry Number 12083-24-8)	2CO	8.11 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)					
$C_9H_{10}OCr^+$	$C_6H_4(CH_3)_2Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-1,2-dimethylbenzene]-) (RN-CAS Registry Number 12129-29-2)	2CO	7.85 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)					
$C_{10}H_{12}OCr^+$	$C_6H_3(CH_3)_3Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-1,3,5-trimethylbenzene]-) (RN-CAS Registry Number 12129-67-8)	2CO	8.00 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)					
$C_{13}H_{18}OCr^+$	$C_6(CH_3)_6Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-hexamethylbenzene]-) (RN-CAS Registry Number 12088-11-8)	2CO	7.70 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)					
$C_8H_6O_2Cr^+$	$C_6H_6Cr(CO)_3$ (Chromium, (η^6 -benzene)tricarbonyl-) (RN-CAS Registry Number 12082-08-5)	CO	7.25 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)					
$C_8H_6O_2Cr^+$	$C_6H_6Cr(CO)_3$ (Chromium, (η^6 -benzene)tricarbonyl-) (RN-CAS Registry Number 12082-08-5)	CO	7.4 ± 0.2	EI	3786
(MT-Metastable transition(s) observed)					
$C_8H_8O_2Cr^+$	$C_6H_5CH_2OHCr(CO)_3$ (Chromium, [(1,2,3,4,5,6- η)-benzenemethanol]tricarbonyl-) (RN-CAS Registry Number 12116-45-9)	2CO	8.19 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)					
$C_8H_8O_2Cr^+$	$C_6H_5OCH_3Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methoxybenzene]-) (RN-CAS Registry Number 12116-44-8)	2CO	7.90 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)					
$C_8H_8O_2Cr^+$	$C_6H_5COOCH_3Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methylbenzoate]-) (RN-CAS Registry Number 12125-87-0)	3CO	10.00 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)					

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_9H_8O_2Cr^+$	C ₆ H ₅ CH ₃ Cr(CO) ₃ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methylbenzene]-) (RN-CAS Registry Number 12083-24-8) (MT-Metastable transition(s) observed)	CO	7.09±0.1	EI	3788
$C_{10}H_{10}O_2Cr^+$	C ₆ H ₄ (CH ₃) ₂ Cr(CO) ₃ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-1,2-dimethylbenzene]-) (RN-CAS Registry Number 12129-29-2) (MT-Metastable transition(s) observed)	CO	7.00±0.1	EI	3788
$C_{11}H_{12}O_2Cr^+$	C ₆ H ₃ (CH ₃) ₃ Cr(CO) ₃ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-1,3,5-trimethylbenzene]-) (RN-CAS Registry Number 12129-67-8) (MT-Metastable transition(s) observed)	CO	6.69±0.1	EI	3788
$C_{14}H_{18}O_2Cr^+$	C ₆ (CH ₃) ₆ Cr(CO) ₃ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-hexamethylbenzene]-) (RN-CAS Registry Number 12088-11-8) (MT-Metastable transition(s) observed)	CO	6.45±0.1	EI	3788
$C_9H_6O_3Cr^+$	C ₆ H ₆ Cr(CO) ₃ (Chromium, (η^6 -benzene)tricarbonyl-) (RN-CAS Registry Number 12082-08-5)	**	6.74±0.1	EI	3788
$C_9H_6O_3Cr^+$	C ₆ H ₆ Cr(CO) ₃ (Chromium, (η^6 -benzene)tricarbonyl-) (RN-CAS Registry Number 12082-08-5)	**	7.0±0.2	EI	3786
$C_9H_6O_3Cr^+$	C ₆ H ₆ Cr(CO) ₃ (Chromium, (η^6 -benzene)tricarbonyl-) (RN-CAS Registry Number 12082-08-5) (AV-Average of two values)	**	7.28	CTS	4029
$C_9H_8O_3Cr^+$	C ₆ H ₅ CH ₂ OHCr(CO) ₃ (Chromium, [(1,2,3,4,5,6- η)-benzenemethanol]tricarbonyl-) (RN-CAS Registry Number 12116-45-9) (MT-Metastable transition(s) observed)	CO	7.32±0.1	EI	3788
$C_9H_8O_3Cr^+$	C ₆ H ₅ OCH ₃ Cr(CO) ₃ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methoxybenzene]-) (RN-CAS Registry Number 12116-44-8) (MT-Metastable transition(s) observed)	CO	6.95±0.1	EI	3788
$C_9H_8O_3Cr^+$	C ₆ H ₅ COOCH ₃ Cr(CO) ₃ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methylbenzoate]-) (RN-CAS Registry Number 12125-87-0) (MT-Metastable transition(s) observed)	2CO	8.27±0.1	EI	3788
$C_{10}H_8O_3Cr^+$	C ₆ H ₅ CH ₃ Cr(CO) ₃ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methylbenzene]-) (RN-CAS Registry Number 12083-24-8)	**	6.69±0.1	EI	3788
$C_{10}H_8O_3Cr^+$	C ₆ H ₅ CH ₃ Cr(CO) ₃ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methylbenzene]-) (RN-CAS Registry Number 12083-24-8) (AV-Average of two values)	**	7.29	CTS	4029

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{11}H_{10}O_3Cr^+$	$C_6H_4(CH_3)_2Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-1,2-dimethylbenzene]-) (RN-CAS Registry Number 12129-29-2)	**	6.70 ± 0.1	EI	3788
$C_{11}H_{10}O_3Cr^+$	$C_6H_4(CH_3)_2Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-1,2-dimethylbenzene]-) (RN-CAS Registry Number 12129-29-2)	**	7.29	CTS	4029
(AV-Average of two values)					
$C_{12}H_{12}O_3Cr^+$	$C_6H_3(CH_3)_3Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-1,3,5-trimethylbenzene]-) (RN-CAS Registry Number 12129-67-8)	**	6.60 ± 0.1	EI	3788
$C_{12}H_{12}O_3Cr^+$	$C_6H_3(CH_3)_3Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-1,3,5-trimethylbenzene]-) (RN-CAS Registry Number 12129-67-8)	**	7.29	CTS	4029
(AV-Average of two values)					
$C_{15}H_{18}O_3Cr^+$	$C_6(CH_3)_6Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-hexamethylbenzene]-) (RN-CAS Registry Number 12088-11-8)	**	6.35 ± 0.1	EI	3788
$C_{10}H_8O_4Cr^+$	$C_6H_5CH_2OHCr(CO)_3$ (Chromium, [(1,2,3,4,5,6- η)-benzenemethanol]tricarbonyl-) (RN-CAS Registry Number 12116-45-9)	**	6.92 ± 0.1	EI	3788
$C_{10}H_8O_4Cr^+$	$C_6H_5OCH_3Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methoxybenzene]-) (RN-CAS Registry Number 12116-44-8)	**	6.75 ± 0.1	EI	3788
$C_{10}H_8O_4Cr^+$	$C_6H_5OCH_3Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methoxybenzene]-) (RN-CAS Registry Number 12116-44-8)	**	7.32	CTS	4029
(AV-Average of two values)					
$C_{10}H_8O_4Cr^+$	$C_6H_5COOCH_3Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methylbenzoate]-) (RN-CAS Registry Number 12125-87-0)	CO	7.60 ± 0.1	EI	3788
(MT-Metastable transition(s) observed)					
$C_{11}H_8O_5Cr^+$	$C_6H_5COOCH_3Cr(CO)_3$ (Chromium, tricarbonyl[(1,2,3,4,5,6- η)-methylbenzoate]-) (RN-CAS Registry Number 12125-87-0)	**	7.02 ± 0.1	EI	3788
$C_8H_6O_6Cr^+$	$(CO)_5CrC(OCH_3)CH_3$ (Chromium, pentacarbonyl(1-methoxyethylidene)-, (OC-6-21)) (RN-CAS Registry Number 20540-69-6)	**	7.46 ± 0.1	EI	3582
$C_{13}H_8O_6Cr^+$	$C_6H_5C(OCH_3)Cr(CO)_5$ (Chromium, pentacarbonyl(methoxyphenylmethylene)-, (OC-6-21)-) (RN-CAS Registry Number 27436-93-7)	**	7.26 ± 0.1	EI	3582
$C_{14}H_{10}O_6Cr^+$	$C_6H_4(CH_3)C(OCH_3)Cr(CO)_5$ (Chromium, pentacarbonyl(methoxy(4-methylphenyl)methylene)-, (OC-6-21)-) (RN-CAS Registry Number 29160-36-9)	**	7.13 ± 0.1	EI	3582

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{15}H_{21}O_6Cr^+$	(CH ₃ COCHCOCH ₃) ₃ Cr (Chromium, tris(2,4-pentanedionato- <i>O,O'</i>)-, (<i>OC</i> -6-11)-) (RN-CAS Registry Number 21679-31-2)	**	7.46±0.07 (V)	PE	3682
$C_{14}H_{10}O_7Cr^+$	C ₆ H ₄ (OCH ₃)C(OCH ₃)Cr(CO) ₅ (Chromium, pentacarbonyl(<i>o</i> , <i>α</i> -dimethoxybenzylidene)-) (RN-CAS Registry Number 27436-99-3)	**	7.05±0.1	EI	3582
$C_7H_7NOCr^+$	C ₆ H ₅ NH ₂ Cr(CO) ₃ (Chromium, (<i>η</i> ⁶ -benzenamine)tricarbonyl-) (RN-CAS Registry Number 12108-11-1) (MT-Metastable transition(s) observed)	2CO	7.84±0.1	EI	3788
$C_8H_7NO_2Cr^+$	C ₆ H ₅ NH ₂ Cr(CO) ₃ (Chromium, (<i>η</i> ⁶ -benzenamine)tricarbonyl-) (RN-CAS Registry Number 12108-11-1) (MT-Metastable transition(s) observed)	CO	6.75±0.1	EI	3788
$C_7H_5NO_3Cr^+$	C ₅ H ₅ Cr(NO)(CO) ₂ (Chromium, dicarbonyl(<i>η</i> ⁵ -2,4-cyclopentadien-1-yl)nitrosyl-) (RN-CAS Registry Number 36312-04-6)	**	7.80	EI	3579
$C_9H_7NO_3Cr^+$	C ₆ H ₅ NH ₂ Cr(CO) ₃ (Chromium, (<i>η</i> ⁶ -benzenamine)tricarbonyl-) (RN-CAS Registry Number 12108-11-1)	**	6.52±0.1	EI	3788
$C_{11}H_{11}NO_3Cr^+$	C ₆ H ₅ N(CH ₃) ₂ Cr(CO) ₃ (Chromium, tricarbonyl(<i>N,N</i> -dimethylbenzenamine)-) (RN-CAS Registry Number 12109-10-3)	**	7.38	CTS	4029
$C_{13}H_7O_6FCr^+$	C ₆ H ₄ FC(OCH ₃)Cr(CO) ₅ (Chromium, pentacarbonyl[(4-fluorophenyl)methoxymethylene]-, (<i>OC</i> -6-21)-) (RN-CAS Registry Number 27436-94-8)	**	7.32±0.1	EI	3582
$C_{14}H_7O_6F_3Cr^+$	C ₆ H ₄ (CF ₃)C(OCH ₃)Cr(CO) ₅ (Chromium, pentacarbonyl[<i>α</i> -methoxy- <i>o</i> -(trifluoromethyl)benzylidene]-) (RN-CAS Registry Number 32011-10-2)	**	7.34±0.1	EI	3582
$C_{14}H_7O_6F_3Cr^+$	C ₆ H ₄ (CF ₃)C(OCH ₃)Cr(CO) ₅ (Chromium, pentacarbonyl[methoxy[4-(trifluoromethyl)phenyl]methylene]-, (<i>OC</i> -6-21)-) (RN-CAS Registry Number 27637-27-0)	**	7.42±0.1	EI	3582
$C_{15}H_{12}O_6F_9Cr^+$	(CF ₃ COCHCOCH ₃) ₃ Cr (Chromium, tris(1,1,1-trifluoro-2,4-pentanedionato- <i>O,O'</i>)-) (RN-CAS Registry Number 14592-89-3)	**	8.58±0.07 (V)	PE	3682
$C_{15}H_3O_6F_{18}Cr^+$	(CF ₃ COCHCOCF ₃) ₃ Cr (Chromium, tris(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato- <i>O,O'</i>)-, (<i>OC</i> -6-11)-) (RN-CAS Registry Number 14592-80-4)	**	9.53 (V)	PE	3681
$C_{15}H_3O_6F_{18}Cr^+$	(CF ₃ COCHCOCF ₃) ₃ Cr (Chromium, tris(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato- <i>O,O'</i>)-, (<i>OC</i> -6-11)-) (RN-CAS Registry Number 14592-80-4)	**	9.57±0.07 (V)	PE	3682

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{16}H_{44}Si_4Cr^+$	$((CH_3)_3SiCH_2)_4Cr$ (RN-CAS Registry Number 35394-18-4)	**	7.26 ± 0.1 (V)	PE	3830
$C_6H_{18}N_3PCr^+$	$((CH_3)_2N)_3PCr(CO)_5$ (RN-CAS Registry Number XXXXX-XX-X)	5CO	12.5 ± 0.05	EI	3952
$C_6H_{18}N_3PCr^+$	$((CH_3)_2N)_3P_2Cr(CO)_4$ (RN-CAS Registry Number 19976-85-3)		11.0 ± 0.05	EI	3952
$C_7H_{18}N_3OPCr^+$	$((CH_3)_2N)_3PCr(CO)_5$ (RN-CAS Registry Number XXXXX-XX-X)	4CO	9.8 ± 0.05	EI	3952
$C_9H_{18}N_3O_3PCr^+$	$((CH_3)_2N)_3PCr(CO)_5$ (RN-CAS Registry Number XXXXX-XX-X)	2CO	8.6 ± 0.05	EI	3952
$C_{10}H_{18}N_3O_4PCr^+$	$((CH_3)_2N)_3PCr(CO)_5$ (RN-CAS Registry Number XXXXX-XX-X)	CO	7.6 ± 0.05	EI	3952
$C_{11}H_{18}N_3O_5PCr^+$	$((CH_3)_2N)_3PCr(CO)_5$ (RN-CAS Registry Number XXXXX-XX-X)	**	6.6 ± 0.05	EI	3952
$C_{15}H_{36}N_6O_3P_2Cr^+$	$((CH_3)_2N)_3P_2Cr(CO)_4$ (RN-CAS Registry Number 19976-85-3)	CO	9.5 ± 0.05	EI	3952
$C_{16}H_{36}N_6O_4P_2Cr^+$	$((CH_3)_2N)_3P_2Cr(CO)_4$ (RN-CAS Registry Number 19976-85-3)	**	6.5 ± 0.05	EI	3952
$CrP_6F_{18}^+$	$Cr(PF_3)_6$ (RN-CAS Registry Number 26117-61-3)	**	9.0	PE	4021
$C_9H_8O_5SCr^+$	$C_4H_8SCr(CO)_5$ ((OC-6-22)-Pentacarbonyl(tetrahydrothiophene)chromium) (RN-CAS Registry Number 15038-40-1)	**	7.45 ± 0.05	EI	3498
$C_7H_6O_6SCr^+$	$SO(CH_3)_2Cr(CO)_5$ ((OC-6-22)-Pentacarbonyl(sulfinylbis(methane)-S)chromium) (RN-CAS Registry Number 36083-80-4)	**	7.64 ± 0.05	EI	3498
$C_7H_4O_8SCr^+$	$C_2H_4O_2SOCr(CO)_5$ ((OC-6-22)-Pentacarbonyl(1,3,2-dioxathiolane 2-oxide-S)chromium) (RN-CAS Registry Number 36252-44-5)	**	7.80 ± 0.05	EI	3498
$C_6H_5ClCr^+$	$C_6H_5ClCr(CO)_3$ (Chromium, tricarbonyl(η^6 -chlorobenzene)-) (RN-CAS Registry Number 12082-03-0) (MT-Metastable transition(s) observed)	3CO	10.10 ± 0.1	EI	3788
$C_7H_5OClCr^+$	$C_6H_5ClCr(CO)_3$ (Chromium, tricarbonyl(η^6 -chlorobenzene)-) (RN-CAS Registry Number 12082-03-0) (MT-Metastable transition(s) observed)	2CO	8.18 ± 0.1	EI	3788

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_5O_2ClCr^+$	$C_6H_5ClCr(CO)_3$ (Chromium, tricarbonyl(η^6 -chlorobenzene)-) (RN-CAS Registry Number 12082-03-0) (MT-Metastable transition(s) observed)	CO	7.45 ± 0.1	EI	3788
$C_9H_5O_3ClCr^+$	$C_6H_5ClCr(CO)_3$ (Chromium, tricarbonyl(η^6 -chlorobenzene)-) (RN-CAS Registry Number 12082-03-0)	**	7.00 ± 0.1	EI	3788
$C_{13}H_7O_6ClCr^+$	$C_6H_4ClC(OCH_3)Cr(CO)_5$ (Chromium, pentacarbonyl[(4-chlorophenyl)methoxymethylene]-, (OC-6-21)-) (RN-CAS Registry Number 29160-37-0)	**	7.34 ± 0.1	EI	3582
Mn^+	$HMn(CO)_5$ (RN-CAS Registry Number 16972-33-1)	17.3	EI	3814	
Mn^+	$(CH_3)_3SiMn(CO)_5$ (RN-CAS Registry Number 26500-16-3)	21.7	EI	3814	
Mn^+	$(CH_3)_3SiMn(CO)_4PF_3$ (RN-CAS Registry Number 33989-27-4)	21.9	EI	3814	
MnH^+	$HMn(CO)_5$ (RN-CAS Registry Number 16972-33-1)	5CO	13.8	EI	3814
$C_{10}H_{10}Mn^+$	$(C_5H_5)_2Mn$ (Manganocene) (RN-CAS Registry Number 1271-27-8)	**	6.55	PE	3725
$C_{11}H_{11}Mn^+$	$C_5H_5MnC_6H_6$ (Manganese, (η^6 -benzene)(η^5 -2,4-cyclopentadien-1-yl)-) (RN-CAS Registry Number 1271-43-8)	**	6.36 ± 0.1 (V)	PE	3686
$C_{32}H_{16}N_8Mn^+$	$C_{32}H_{16}N_8Mn$ (Manganese, [29 <i>H</i> ,31 <i>H</i> -phthalocyaninato(2 ⁻)- <i>N</i> ²⁹ , <i>N</i> ³⁰ , <i>N</i> ³¹ , <i>N</i> ³²]- (SP-4-1)-) (RN-CAS Registry Number 14325-24-7) (ON-Other name: Manganese phthalocyanine)	**	7.26 ± 0.10	EI	3829
$MnCO^+$	$(CH_3)_3SiMn(CO)_5$ (RN-CAS Registry Number 26500-16-3)	17.9	EI	3814	
$MnC_2O_2^+$	$HMn(CO)_5$ (RN-CAS Registry Number 16972-33-1)	13.7	EI	3814	
$MnC_3O_3^+$	$HMn(CO)_5$ (RN-CAS Registry Number 16972-33-1)	13.2	EI	3814	
$MnC_4O_4^+$	$HMn(CO)_5$ (RN-CAS Registry Number 16972-33-1)	11.2	EI	3814	
$CHOMn^+$	$HMn(CO)_5$ (RN-CAS Registry Number 16972-33-1)	4CO	12.7	EI	3814

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2HO_2Mn^+$	HMn(CO) ₅ (RN-CAS Registry Number 16972-33-1)	3CO	10.3	EI	3814
$C_3HO_3Mn^+$	HMn(CO) ₅ (RN-CAS Registry Number 16972-33-1)	2CO	9.9	EI	3814
$C_8H_5O_3Mn^+$	C ₅ H ₅ Mn(CO) ₃ (Manganese, tricarbonyl(η^5 -2,4-cyclopentadien-1-yl)-) (RN-CAS Registry Number 12079-65-1)	**	8.12±0.1	EI	3578
$C_4HO_4Mn^+$	HMn(CO) ₅ (RN-CAS Registry Number 16972-33-1)	CO	8.7	EI	3814
$C_5HO_5Mn^+$	HMn(CO) ₅ (RN-CAS Registry Number 16972-33-1)	**	8.5±0.1	EI	3814
$C_{15}H_{21}O_6Mn^+$	(CH ₃ COCHCOCH ₃) ₃ Mn (Manganese, tris(2,4-pentanedionato- <i>O,O'</i>)-, (OC-6-11)-) (RN-CAS Registry Number 14284-89-0)	**	7.32±0.07 (V)	PE	3682
MnF^+	MnF (RN-CAS Registry Number 13569-25-0) (TW-Threshold value approximately corrected to 298°K)	**	8.51±0.2	EI	3623
MnF^+	MnF ₂ (RN-CAS Registry Number 7782-64-1) (TW-Threshold value approximately corrected to 298°K)		13.60±0.2	EI	3623
MnF_2^+	MnF ₂ (RN-CAS Registry Number 7782-64-1) (TW-Threshold value approximately corrected to 298°K)	**	11.38±0.2	EI	3623
MnF_2^+	MnF ₃ (RN-CAS Registry Number 7783-53-1) (TW-Threshold value approximately corrected to 298°K)		14.79±0.2	EI	3623
MnF_3^+	MnF ₃ (RN-CAS Registry Number 7783-53-1) (TW-Threshold value approximately corrected to 298°K)	**	12.57±0.2	EI	3623
MnF_3^+	MnF ₄ (RN-CAS Registry Number 15195-58-1) (TW-Threshold value approximately corrected to 298°K)		15.50±0.2	EI	3623
MnF_4^+	MnF ₄ (RN-CAS Registry Number 15195-58-1) (TW-Threshold value approximately corrected to 298°K)	**	13.46±0.2	EI	3623
$C_{15}H_3O_6F_{18}Mn^+$	(CF ₃ COCHCOCF ₃) ₃ Mn (Manganese, tris(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato- <i>O,O'</i>)-, (OC-6-11)-) (RN-CAS Registry Number 14354-50-8)	**	9.2 (V)	PE	3682

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{19}H_3O_{10}F_{18}Mn^+$	(CF ₃ COCHCOCF ₃) ₃ (CO) ₄ Mn (Tris(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato)manganese tetracarbonyl) (RN-CAS Registry Number XXXXX-XX-X)	**	8.11 ± 0.07 (V)	PE	3682
$C_3H_9SiMn^+$	(CH ₃) ₃ SiMn(CO) ₅ (RN-CAS Registry Number 26500-16-3)		12.8	EI	3814
$C_4H_9OSiMn^+$	(CH ₃) ₃ SiMn(CO) ₅ (RN-CAS Registry Number 26500-16-3)	4CO	12.0	EI	3814
$C_4H_9OSiMn^+$	(CH ₃) ₃ SiMn(CO) ₄ PF ₃ (RN-CAS Registry Number 33989-27-4)	3CO + PF ₃	12.7	EI	3814
$C_5H_9O_2SiMn^+$	(CH ₃) ₃ SiMn(CO) ₅ (RN-CAS Registry Number 26500-16-3)	3CO	10.8	EI	3814
$C_5H_9O_2SiMn^+$	(CH ₃) ₃ SiMn(CO) ₄ PF ₃ (RN-CAS Registry Number 33989-27-4)	2CO + PF ₃	11.1	EI	3814
$C_6H_9O_3SiMn^+$	(CH ₃) ₃ SiMn(CO) ₅ (RN-CAS Registry Number 26500-16-3)	2CO	10.2	EI	3814
$C_7H_9O_4SiMn^+$	(CH ₃) ₃ SiMn(CO) ₅ (RN-CAS Registry Number 26500-16-3)	CO	9.2	EI	3814
$C_7H_9O_4SiMn^+$	(CH ₃) ₃ SiMn(CO) ₄ PF ₃ (RN-CAS Registry Number 33989-27-4)	PF ₃	9.9	EI	3814
$C_5H_3O_5SiMn^+$	SiH ₃ Mn(CO) ₅ (RN-CAS Registry Number 15770-61-3)	**	8.99 ± 0.02 (V)	PE	3827
$C_8H_9O_5SiMn^+$	Si(CH ₃) ₃ Mn(CO) ₅ (RN-CAS Registry Number XXXXX-XX-X)	**	9.0 ± 0.1 (V)	PE	3827
$C_8H_9O_5SiMn^+$	(CH ₃) ₃ SiMn(CO) ₅ (RN-CAS Registry Number 26500-16-3)	**	8.7 ± 0.2	EI	3814
$C_7H_9O_4F_3SiPMn^+$	(CH ₃) ₃ SiMn(CO) ₄ PF ₃ (RN-CAS Registry Number 33989-27-4)	**	8.7 ± 0.2	EI	3814
$C_6H_9O_3F_6SiP_2Mn^+$	(CH ₃) ₃ SiMn(CO) ₃ (PF ₃) ₂ (RN-CAS Registry Number 36087-62-4)	**	8.1 ± 0.1	EI	3814
$C_5H_9O_2F_9SiP_3Mn^+$	(CH ₃) ₃ SiMn(CO) ₂ (PF ₃) ₃ (RN-CAS Registry Number 36087-61-3)	**	9.1 ± 0.2	EI	3814
$C_{10}H_{15}SMn^+$	C ₄ H ₈ SC ₅ H ₄ CH ₃ Mn(CO) ₂ (Dicarbonyl((1,2,3,4,5-)-1-methyl-2,4-cyclopentadien-1-yl)(tetrahydrothiophene)manganese) (RN-CAS Registry Number 12153-94-5)	2CO	7.9 ± 0.1	EI	3498
$C_{18}H_{17}SMn^+$	(C ₆ H ₅) ₂ SC ₅ H ₄ CH ₃ Mn(CO) ₂ (Dicarbonyl((1,2,3,4,5-)-1-methyl-2,4-cyclopentadien-1-yl)(1,1'-thiobis(benzene)-S)manganese) (RN-CAS Registry Number 36154-47-9)	2CO	8.0 ± 0.1	EI	3498

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_{13}OSMn^+$	$C_5H_4CH_3Mn(CO)_2SO(CH_3)_2$ (Dicarbonyl((1,2,3,4,5-)-1-methyl-2,4-cyclopentadien-1-yl)(sulfinylbis(methane)- <i>S</i>)manganese) (RN-CAS Registry Number 12153-02-5)	2CO	7.9 ± 0.1	EI	3498
$C_{10}H_{15}OSMn^+$	$C_4H_8SOC_5H_4CH_3Mn(CO)_2$ (Dicarbonyl((1,2,3,4,5-)-1-methyl-2,4-cyclopentadiene-1-yl)(tetrahydrothiophene 1-oxide- <i>S</i>)manganese) (RN-CAS Registry Number 12153-95-6)	2CO	7.5 ± 0.1	EI	3498
$C_{18}H_{17}OSMn^+$	$(C_6H_5)_2SOC_5H_4CH_3Mn(CO)_2$ (Dicarbonyl((1,2,3,4,5- η)-1-methyl-2,4-cyclopentadien-1-yl)(1,1'-sulfinylbis(benzene)- <i>S</i>)manganese) (RN-CAS Registry Number 36154-49-1)	2CO	7.8 ± 0.1	EI	3498
$C_{12}H_{15}O_2SMn^+$	$C_4H_8SC_5H_4CH_3Mn(CO)_2$ (Dicarbonyl((1,2,3,4,5- η)-1-methyl-2,4-cyclopentadien-1-yl)(tetrahydrothiophene)manganese) (RN-CAS Registry Number 12153-94-5)	**	6.45 ± 0.05	EI	3498
$C_{20}H_{17}O_2SMn^+$	$(C_6H_5)_2SC_5H_4CH_3Mn(CO)_2$ (Dicarbonyl((1,2,3,4,5-)-1-methyl-2,4-cyclopentadien-1-yl)(1,1'-thiobis(benzene)- <i>S</i>)manganese) (RN-CAS Registry Number 36154-47-9)	**	6.27 ± 0.05	EI	3498
$C_8H_{11}O_3SMn^+$	$C_2H_4O_2SOC_5H_4CH_3Mn(CO)_2$ (Dicarbonyl(1,3,2-dioxathiolane 2-oxide- <i>S</i>)((1,2,3,4,5- η)-1-methyl-2,4-cyclopentadien-1-yl)manganese) (RN-CAS Registry Number 12152-97-5)	2CO	7.75 ± 0.1	EI	3498
$C_{10}H_{13}O_3SMn^+$	$C_5H_4CH_3Mn(CO)_2SO(CH_3)_2$ (Dicarbonyl((1,2,3,4,5-)-1-methyl-2,4-cyclopentadien-1-yl)(sulfinylbis(methane)- <i>S</i>)manganese) (RN-CAS Registry Number 12153-02-5)	**	7.19 ± 0.05	EI	3498
$C_{12}H_{15}O_3SMn^+$	$C_4H_8SOC_5H_4CH_3Mn(CO)_2$ (Dicarbonyl((1,2,3,4,5- η)-1-methyl-2,4-cyclopentadiene-1-yl)(tetrahydrothiophene 1-oxide- <i>S</i>)manganese) (RN-CAS Registry Number 12153-95-6)	**	6.79 ± 0.05	EI	3498
$C_{20}H_{17}O_3SMn^+$	$(C_6H_5)_2SOC_5H_4CH_3Mn(CO)_2$ (Dicarbonyl((1,2,3,4,5- η)-1-methyl-2,4-cyclopentadien-1-yl)(1,1'-sulfinylbis(benzene)- <i>S</i>)manganese) (RN-CAS Registry Number 36154-49-1)	**	6.76 ± 0.05	EI	3498
$C_{10}H_{11}O_5SMn^+$	$C_2H_4O_2SOC_5H_4CH_3Mn(CO)_2$ (Dicarbonyl(1,3,2-dioxathiolane 2-oxide- <i>S</i>)((1,2,3,4,5- η)-1-methyl-2,4-cyclopentadien-1-yl)manganese) (RN-CAS Registry Number 12152-97-5)	**	7.38 ± 0.05	EI	3498

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_5O_5ClMn^+$	$Mn(CO)_5Cl$ (RN-CAS Registry Number 14100-30-2)	**	8.94 (V)	PE	3866
Fe^+	$(C_5H_5)_2Fe$ (Ferrocene) (RN-CAS Registry Number 102-54-5)		12.0 ± 1.5	RPD	3793
Fe^+	$(C_5H_5)_2Fe$ (Ferrocene) (RN-CAS-Registry Number 102-54-5)		14.10 ± 0.15	EDD	4072
Fe^+	$(C_5H_5)_2Fe$ (Ferrocene) (RN-CAS Registry Number 102-54-5)	$(C_5H_5)_2$	14.00 ± 0.25	DC	3628
	(MT-Metastable transition(s) observed)				
Fe^+	$(C_5H_5)_2Fe$ (Ferrocene) (RN-CAS Registry Number 102-54-5)	$(C_5H_5)_2$	14.4 ± 0.5	EI	3628
	(PC-Appearance potential of the corresponding metastable transition)				
Fe^+	$(C_5H_5)_2Fe$ (Ferrocene) (RN-CAS Registry Number 102-54-5)	$2C_5H_5$	18.9 ± 0.5	EI	3628
	(PC-Appearance potential of the corresponding metastable transition)				
Fe^+	$((CH_3)_2N)_3PFe(CO)_4$ (RN-CAS Registry Number 19372-47-5)		17.0 ± 0.05	EI	3952
$C_3H_3Fe^+$	$(C_5H_5)_2Fe$ (Ferrocene) (RN-CAS-Registry Number 102-54-5)		17.75 ± 0.2	EDD	4072
$C_3H_3Fe^+$	$(C_5H_5)_2Fe$ (Ferrocene) (RN-CAS Registry Number 102-54-5)		18.06 ± 0.10	EI	3628
$C_5H_5Fe^+$	$(C_5H_5)_2Fe$ (Ferrocene) (RN-CAS Registry Number 102-54-5)		13.9 ± 0.2	RPD	3793
$C_5H_5Fe^+$	$(C_5H_5)_2Fe$ (Ferrocene) (RN-CAS-Registry Number 102-54-5)		12.95 ± 0.15	EDD	4072
$C_5H_5Fe^+$	$(C_5H_5)_2Fe$ (Ferrocene) (RN-CAS Registry Number 102-54-5)	C_5H_5	14.25 ± 0.25	DC	3628
	(MT-Metastable transition(s) observed)				
$C_5H_5Fe^+$	$(C_5H_5)_2Fe$ (Ferrocene) (RN-CAS Registry Number 102-54-5)	C_5H_5	14.0 ± 0.5	EI	3628
	(PC-Appearance potential of the corresponding metastable transition)				
$C_{10}H_{10}Fe^+$	$(C_5H_5)_2Fe$ (Ferrocene) (RN-CAS Registry Number 102-54-5)	**	6.78 ± 0.05	PI	3729
$C_{10}H_{10}Fe^+$	$(C_5H_5)_2Fe$ (Ferrocene) (RN-CAS Registry Number 102-54-5)	**	6.72	PE	3725

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{10}H_{10}Fe^+$	(C ₅ H ₅) ₂ Fe (Ferrocene) (RN-CAS Registry Number 102-54-5)	**	6.88 (V)	PE	3688
$C_{10}H_{10}Fe^+$	(C ₅ H ₅) ₂ Fe (Ferrocene) (RN-CAS Registry Number 102-54-5)	**	~7.0 (V)	PE	3527
$C_{10}H_{10}Fe^+$	(C ₅ H ₅) ₂ Fe (Ferrocene) (RN-CAS-Registry Number 102-54-5)	**	7.10 (V)	PE	4072
$C_{10}H_{10}Fe^+$	(C ₅ H ₅) ₂ Fe (Ferrocene) (RN-CAS Registry Number 102-54-5)	**	6.9±0.1	RPD	3793
$C_{10}H_{10}Fe^+$	(C ₅ H ₅) ₂ Fe (Ferrocene) (RN-CAS-Registry Number 102-54-5)	**	6.90±0.1	EDD	4072
$C_{10}H_{10}Fe^+$	(C ₅ H ₅) ₂ Fe (Ferrocene) (RN-CAS Registry Number 102-54-5)	**	6.75±0.25	DC	3628
$C_{12}H_{12}Fe^+$	C ₅ H ₅ FeC ₅ H ₄ C ₂ H ₃ (Ferrocene, ethenyl-) (RN-CAS Registry Number 1271-51-8)	**	6.75±0.05	PI	3729
$C_{12}H_{14}Fe^+$	(C ₅ H ₄ CH ₃) ₂ Fe (Ferrocene, 1,1'-dimethyl-) (RN-CAS Registry Number 1291-47-0)	**	6.72 (V)	PE	3688
$C_{12}H_{14}Fe^+$	C ₅ H ₅ FeC ₅ H ₄ C ₂ H ₅ (Ferrocene, ethyl-) (RN-CAS Registry Number 1273-89-8)	**	6.70±0.05	PI	3729
$C_{32}H_{16}N_8Fe^+$	C ₃₂ H ₁₆ N ₈ Fe (Iron, [29 <i>H</i> ,31 <i>H</i> -phthalocyaninato(2 ⁻)- <i>N</i> ²⁹ , <i>N</i> ³⁰ , <i>N</i> ³¹ , <i>N</i> ³²]- (<i>SP</i> -4-1)-) (RN-CAS Registry Number 132-16-1) (ON-Other name: Iron phthalocyanine)	**	7.22±0.10	EI	3829
$C_{15}H_{21}O_6Fe^+$	(CH ₃ COCHCOCH ₃) ₃ Fe (Iron, tris(2,4-pentanedionato- <i>O,O'</i>)-, (<i>OC</i> -6-11)-) (RN-CAS Registry Number 14024-18-1)	**	8.10±0.07 (V)	PE	3682
$C_{33}H_{57}O_6Fe^+$	((CH ₃) ₃ CCOCHCOC(CH ₃) ₃) ₃ Fe (Iron, tris(2,2,6,6-tetramethyl-3,5-heptanedionato- <i>O,O'</i>)-) (RN-CAS Registry Number 14876-47-2)	**	7.92±0.07 (V)	PE	3682
$C_{15}H_{12}O_6F_9Fe^+$	(CF ₃ COCHCOCH ₃) ₃ Fe (Iron, tris(1,1,1-trifluoro-2,4-pentanedionato- <i>O,O'</i>)-) (RN-CAS Registry Number 14526-22-8)	**	9.18±0.07 (V)	PE	3682
$C_{15}H_3O_6F_{18}Fe^+$	(CF ₃ COCHCOCF ₃) ₃ Fe (Iron, tris(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato- <i>O,O'</i>)-, (<i>OC</i> -6-11)-) (RN-CAS Registry Number 17786-67-3)	**	10.13±0.07 (V)	PE	3682

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{13}H_{18}SiFe^+$	$C_5H_5FeC_5H_4Si(CH_3)_3$ (Ferrocene, (trimethylsilyl)-) (RN-CAS Registry Number 12215-68-8)	**	9.5 ± 0.10	PI	3729
$C_6H_{18}N_3PFe^+$	$((CH_3)_2N)_3PFe(CO)_4$ (RN-CAS Registry Number 19372-47-5)	4CO	10.2 ± 0.05	EI	3952
$C_{12}H_{36}N_6P_2Fe^+$	$((CH_3)_2N)_3P)_2Fe(CO)_3$ (RN-CAS Registry Number 19372-46-4)	3CO	11.7 ± 0.05	EI	3952
$C_7H_{18}N_3OPFe^+$	$((CH_3)_2N)_3PFe(CO)_4$ (RN-CAS Registry Number 19372-47-5)	3CO	10.2 ± 0.05	EI	3952
$C_8H_{18}N_3O_2PFe^+$	$((CH_3)_2N)_3PFe(CO)_4$ (RN-CAS Registry Number 19372-47-5)	2CO	9.8 ± 0.05	EI	3952
$C_9H_{18}N_3O_3PFe^+$	$((CH_3)_2N)_3PFe(CO)_4$ (RN-CAS Registry Number 19372-47-5)	CO	9.4 ± 0.05	EI	3952
$C_{10}H_{18}N_3O_4PFe^+$	$((CH_3)_2N)_3PFe(CO)_4$ (RN-CAS Registry Number 19372-47-5)	**	9.0 ± 0.05	EI	3952
$C_{13}H_{36}N_6OP_2Fe^+$	$((CH_3)_2N)_3P)_2Fe(CO)_3$ (RN-CAS Registry Number 19372-46-4)	2CO	10.2 ± 0.05	EI	3952
$C_{14}H_{36}N_6O_2P_2Fe^+$	$((CH_3)_2N)_3P)_2Fe(CO)_3$ (RN-CAS Registry Number 19372-46-4)	CO	9.7 ± 0.05	EI	3952
$C_{15}H_{36}N_6O_3P_2Fe^+$	$((CH_3)_2N)_3P)_2Fe(CO)_3$ (RN-CAS Registry Number 19372-46-4)	**	7.7 ± 0.05	EI	3952
$FeP_5F_{15}^+$	$Fe(PF_3)_5$ (RN-CAS Registry Number 13815-34-4)	**	8.9	PE	4021
$C_{10}H_9ClFe^+$	$C_5H_5FeC_5H_4Cl$ (Ferrocene, chloro-) (RN-CAS Registry Number 1273-74-1)	**	6.83 ± 0.05	PI	3729
$C_{10}H_8Cl_2Fe^+$	$(C_5H_4Cl)_2Fe$ (Ferrocene, 1,1'-dichloro-) (RN-CAS Registry Number 1293-67-0)	**	7.03 (V)	PE	3688
Co^+	$(C_5H_5)_2Co$ (Cobaltocene) (RN-CAS-Registry Number 1277-43-6)		14.10 ± 0.15	EDD	4072
Co^+	$Cl_3SiCo(CO)_3PF_3$ (RN-CAS Registry Number 37769-28-1)		18.9 ± 0.5	EI	3653
Co^+	$Cl_3SiCo(CO)_2(PF_3)_2$ (RN-CAS Registry Number 37769-29-2)		18.9 ± 0.4	EI	3653

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3H_3Co^+$	(C ₅ H ₅) ₂ Co (Cobaltocene) (RN-CAS-Registry Number 1277-43-6)		17.50±0.2	EDD	4072
$C_5H_5Co^+$	(C ₅ H ₅) ₂ Co (Cobaltocene) (RN-CAS Registry Number 1277-43-6)		14.0±0.3	RPD	3793
$C_5H_5Co^+$	(C ₅ H ₅) ₂ Co (Cobaltocene) (RN-CAS-Registry Number 1277-43-6)		13.20±0.2	EDD	4072
$C_{10}H_{10}Co^+$	(C ₅ H ₅) ₂ Co (Cobaltocene) (RN-CAS Registry Number 1277-43-6)	**	5.7±0.2	RPD	3793
$C_{10}H_{10}Co^+$	(C ₅ H ₅) ₂ Co (Cobaltocene) (RN-CAS-Registry Number 1277-43-6)	**	5.95±0.1	EDD	4072
$C_{11}H_{13}BCo^+$	C ₅ H ₅ CoC ₅ H ₅ BCH ₃ (Cobalt, (η ⁵ -2,4-cyclopentadien-1-yl)[(1,2,3,4,5,6-η)-1-methylboratabenzene]-) (RN-CAS Registry Number 36534-25-5)	**	6.56±0.1	EI	3545
$C_{12}H_{16}B_2Co^+$	(C ₅ H ₅ BCH ₃) ₂ Co (Cobalt, bis[(1,2,3,4,5,6-η)-1-methylboratabenzene]-) (RN-CAS Registry Number 36534-27-7)	**	7.15±0.1	EI	3545
$C_{16}H_{15}BCo^+$	C ₅ H ₅ CoC ₅ H ₅ BC ₆ H ₅ (Cobalt, (η ⁵ -2,4-cyclopentadien-1-yl)[(1,2,3,4,5,6-η)-1-phenylboratabenzene]-) (RN-CAS Registry Number 36682-12-9)	**	6.63±0.1	EI	3545
$C_{22}H_{20}B_2Co^+$	(C ₅ H ₅ BC ₆ H ₅) ₂ Co (Cobalt, bis[(1,2,3,4,5,6-η)-1-phenylboratabenzene]-) (RN-CAS Registry Number 36534-31-3)	**	7.25±0.1	EI	3545
$C_{32}H_{16}N_8Co^+$	C ₃₂ H ₁₆ N ₈ Co (Cobalt, [29 <i>H</i> ,31 <i>H</i> -phthalocyaninato(2 ⁻)- <i>N</i> ²⁹ , <i>N</i> ³⁰ , <i>N</i> ³¹ , <i>N</i> ³²]- (<i>SP</i> -4-1)-) (RN-CAS Registry Number 3317-67-7) (ON-Other name: Cobalt phthalocyanine)	**	7.46±0.10	EI	3829
$CoCo^+$	Cl ₃ SiCo(CO) ₃ PF ₃ (RN-CAS Registry Number 37769-28-1)		16.7±0.3	EI	3653
$CoCo^+$	Cl ₃ SiCo(CO) ₂ (PF ₃) ₂ (RN-CAS Registry Number 37769-29-2)		16.9±0.4	EI	3653
$C_2O_2Co^+$	Cl ₃ SiCo(CO) ₃ PF ₃ (RN-CAS Registry Number 37769-28-1)		15.5±0.4	EI	3653
$C_2O_2Co^+$	Cl ₃ SiCo(CO) ₂ (PF ₃) ₂ (RN-CAS Registry Number 37769-29-2)		15.5±0.3	EI	3653
$C_4HO_4Co^+$	HCo(CO) ₄ (RN-CAS Registry Number 16842-03-8)	**	8.90±0.02 (V)	PE	3827

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{15}H_{21}O_6Co^+$	(CH ₃ COCHCOCH ₃) ₃ Co (Cobalt, tris(2,4-pentanedionato- <i>O,O'</i>)-, (<i>OC</i> -6-11)-) (RN-CAS Registry Number 21679-46-9)	**	7.52 ± 0.07 (V)	PE	3682
$C_{12}H_{16}B_2O_2Co^+$	(C ₅ H ₅ BOCH ₃) ₂ Co (Cobalt, bis[(1,2,3,4,5,6- η)-1-methoxyboratabenzene]-) (RN-CAS Registry Number 36534-20-0)	**	7.02 ± 0.1	EI	3545
$C_{15}H_3O_6F_{18}Co^+$	(CF ₃ COCHCOCF ₃) ₃ Co (Cobalt, tris(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato- <i>O,O'</i>)-, (<i>OC</i> -6-11)-) (RN-CAS Registry Number 16702-37-7)	**	9.73 ± 0.07 (V)	PE	3682
$C_4H_3O_4SiCo^+$	SiH ₃ Co(CO) ₄ (RN-CAS Registry Number 14652-62-1)	**	8.85 ± 0.02 (V)	PE	3827
F_3PCo^+	Cl ₃ SiCo(CO) ₃ PF ₃ (RN-CAS Registry Number 37769-28-1)		16.9 ± 0.4	EI	3653
F_3PCo^+	Cl ₃ SiCo(CO) ₂ (PF ₃) ₂ (RN-CAS Registry Number 37769-29-2)		16.7 ± 0.3	EI	3653
$ClCo^+$	Cl ₃ SiCo(CO) ₃ PF ₃ (RN-CAS Registry Number 37769-28-1)		18.7 ± 0.4	EI	3653
$ClCo^+$	Cl ₃ SiCo(CO) ₂ (PF ₃) ₂ (RN-CAS Registry Number 37769-29-2)		18.9 ± 0.5	EI	3653
$SiCl_2Co^+$	Cl ₃ SiCo(CO) ₃ PF ₃ (RN-CAS Registry Number 37769-28-1)		18.4 ± 0.6	EI	3653
$SiCl_2Co^+$	Cl ₃ SiCo(CO) ₂ (PF ₃) ₂ (RN-CAS Registry Number 37769-29-2)		18.4 ± 0.3	EI	3653
$SiCl_3Co^+$	Cl ₃ SiCo(CO) ₃ PF ₃ (RN-CAS Registry Number 37769-28-1)		13.5 ± 0.4	EI	3653
$SiCl_3Co^+$	Cl ₃ SiCo(CO) ₂ (PF ₃) ₂ (RN-CAS Registry Number 37769-29-2)		13.6 ± 0.2	EI	3653
$COSiCl_3Co^+$	Cl ₃ SiCo(CO) ₃ PF ₃ (RN-CAS Registry Number 37769-28-1)		11.9 ± 0.3	EI	3653
$COSiCl_3Co^+$	Cl ₃ SiCo(CO) ₂ (PF ₃) ₂ (RN-CAS Registry Number 37769-29-2)		11.9 ± 0.3	EI	3653
$C_2O_2SiCl_3Co^+$	Cl ₃ SiCo(CO) ₃ PF ₃ (RN-CAS Registry Number 37769-28-1)		10.8 ± 0.4	EI	3653
$C_2O_2SiCl_3Co^+$	Cl ₃ SiCo(CO) ₂ (PF ₃) ₂ (RN-CAS Registry Number 37769-29-2)		11.0 ± 0.2	EI	3653
$C_3O_3SiCl_3Co^+$	Cl ₃ SiCo(CO) ₃ PF ₃ (RN-CAS Registry Number 37769-28-1)		9.6 ± 0.3	EI	3653
$F_3SiPCL_3Co^+$	Cl ₃ SiCo(CO) ₃ PF ₃ (RN-CAS Registry Number 37769-28-1)		10.2 ± 0.5	EI	3653

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{F}_3\text{SiPCl}_3\text{Co}^+$	$\text{Cl}_3\text{SiCo}(\text{CO})_2(\text{PF}_3)_2$ (RN-CAS Registry Number 37769-29-2)		10.2 ± 0.4	EI	3653
$\text{C}_3\text{O}_3\text{F}_3\text{SiPCl}_2\text{Co}^+$	$\text{Cl}_3\text{SiCo}(\text{CO})_3\text{PF}_3$ (RN-CAS Registry Number 37769-28-1)		9.8 ± 0.2	EI	3653
$\text{COF}_3\text{SiPCl}_3\text{Co}^+$	$\text{Cl}_3\text{SiCo}(\text{CO})_3\text{PF}_3$ (RN-CAS Registry Number 37769-28-1)		10.7 ± 0.3	EI	3653
$\text{COF}_3\text{SiPCl}_3\text{Co}^+$	$\text{Cl}_3\text{SiCo}(\text{CO})_2(\text{PF}_3)_2$ (RN-CAS Registry Number 37769-29-2)		10.9 ± 0.2	EI	3653
$\text{C}_3\text{O}_3\text{F}_3\text{SiPCl}_3\text{Co}^+$	$\text{Cl}_3\text{SiCo}(\text{CO})_3\text{PF}_3$ (RN-CAS Registry Number 37769-28-1)	**	9.4 ± 0.2	EI	3653
$\text{COF}_6\text{SiP}_2\text{Cl}_3\text{Co}^+$	$\text{Cl}_3\text{SiClCo}(\text{CO})_2(\text{PF}_3)_2$ (RN-CAS Registry Number 37769-29-2)		9.7 ± 0.2	EI	3653
$\text{C}_2\text{O}_2\text{F}_6\text{SiP}_2\text{Cl}_3\text{Co}^+$	$\text{Cl}_3\text{SiCo}(\text{CO})_2(\text{PF}_3)_2$ (RN-CAS Registry Number 37769-29-2)	**	9.3 ± 0.2	EI	3653
Ni^+	$(\text{C}_5\text{H}_5)_2\text{Ni}$ (Nickelocene) (RN-CAS Registry Number 1271-28-9)		13.9 ± 0.4	RPD	3793
Ni^+	$(\text{C}_5\text{H}_5)_2\text{Ni}$ (Nickelocene) (RN-CAS Registry Number 1271-28-9)	$(\text{C}_5\text{H}_5)_2$	13.00 ± 0.25	DC	3628
(MT-Metastable transition(s) observed)					
Ni^+	$(\text{C}_5\text{H}_5)_2\text{Ni}$ (Nickelocene) (RN-CAS Registry Number 1271-28-9)	$(\text{C}_5\text{H}_5)_2$	14.3 ± 0.5	EI	3628
(PC-Appearance potential of the corresponding metastable transition)					
Ni^+	$(\text{C}_5\text{H}_5)_2\text{Ni}$ (Nickelocene) (RN-CAS Registry Number 1271-28-9)	$2\text{C}_5\text{H}_5$	17.7 ± 0.5	EI	3628
Ni^+	$\text{C}_5\text{H}_5\text{NiNO}$ (Nickel, (η^5 -2,4-cyclopentadien-1-yl)nitrosyl-) (RN-CAS Registry Number 12071-73-7)		14.8	EI	4015
$\text{C}_3\text{H}_3\text{Ni}^+$	$(\text{C}_5\text{H}_5)_2\text{Ni}$ (Nickelocene) (RN-CAS Registry Number 1271-28-9)		16.7 ± 0.1	EI	3628
$\text{C}_5\text{H}_5\text{Ni}^+$	$(\text{C}_5\text{H}_5)_2\text{Ni}$ (Nickelocene) (RN-CAS Registry Number 1271-28-9)		12.6 ± 0.2	RPD	3793
$\text{C}_5\text{H}_5\text{Ni}^+$	$(\text{C}_5\text{H}_5)_2\text{Ni}$ (Nickelocene) (RN-CAS Registry Number 1271-28-9)	C_5H_5	13.00 ± 0.25	DC	3628
(MT-Metastable transition(s) observed)					

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_5H_5Ni^+$	$(C_5H_5)_2Ni$ (Nickelocene) (RN-CAS Registry Number 1271-28-9) (PC—Appearance potential of the corresponding metastable transition)	C_5H_5	13.0 ± 0.5	EI	3628
$C_5H_5Ni^+$	C_5H_5NiNO (Nickel, (η^5 -2,4-cyclopentadien-1-yl)nitrosyl-) (RN-CAS Registry Number 12071-73-7)		10.5	EI	4015
$C_6H_{10}Ni^+$	$(C_5H_5)_2Ni$ (Nickel, bis(η^3 -2-propenyl)-) (RN-CAS Registry Number 12077-85-9)	**	7.33 ± 0.04	PE	3711
$C_8H_8Ni^+$	$(C_5H_5)_2Ni$ (Nickelocene) (RN-CAS Registry Number 1271-28-9) (MT—Metastable transition(s) observed)	C_2H_2	12.6 ± 0.1	EI	3628
$C_{10}H_{10}Ni^+$	$(C_5H_5)_2Ni$ (Nickelocene) (RN-CAS Registry Number 1271-28-9)	**	6.2	PE	3725
$C_{10}H_{10}Ni^+$	$(C_5H_5)_2Ni$ (Nickelocene) (RN-CAS Registry Number 1271-28-9)	**	6.8 ± 0.1	RPD	3793
$C_{10}H_{10}Ni^+$	$(C_5H_5)_2Ni$ (Nickelocene) (RN-CAS Registry Number 1271-28-9)	**	6.50 ± 0.25	DC	3628
$C_{32}H_{16}N_8Ni^+$	$C_{32}H_{16}N_8Ni$ (Nickel, [29 <i>H</i> ,31 <i>H</i> -phthalocyaninato(2 ⁻)- <i>N</i> ²⁹ , <i>N</i> ³⁰ , <i>N</i> ³¹ , <i>N</i> ³²]- (<i>SP</i> -4-1)-) (RN-CAS Registry Number 14055-02-8) (ON—Other name: Nickel phthalocyanine)	**	7.45 ± 0.10	EI	3829
$C_5H_5NONi^+$	C_5H_5NiNO (Nickel, (η^5 -2,4-cyclopentadien-1-yl)nitrosyl-) (RN-CAS Registry Number 12071-73-7)	**	8.5	EI	4015
$C_{12}H_{18}N_2O_2Ni^+$	$C_{12}H_{18}O_2N_2Ni$ (Nickel, [[4,4'-(1,2-ethanediyl)dinitrilo]bis[2-pentanonato]](2 ⁻)- <i>N,N',O,O'</i>]-) (RN-CAS Registry Number 13878-48-3)	**	6.80 (V)	PE	3822
Cu^+	Cu (RN-CAS Registry Number 7440-50-8)	**	7.72634 ± 0.00002 S		4011
Cu^+	Cu (RN-CAS Registry Number 7440-50-8)	**	7.71 ± 0.05	RPD	3745
Cu^+	$Cu_3Cl_3?$ (RN-CAS Registry Number 11093-65-5)		14.0 ± 0.5	EI	3455
Cu^+	$Cu_4Cl_4?$ (RN-CAS Registry Number 11093-67-7)		14.0 ± 0.5	EI	3455
Cu^+	Cu_3I_3 (RN-CAS Registry Number XXXXX-XX-X)		15.2 ± 0.5	EI	3603

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Cu_2^+	Cu_2 (RN-CAS Registry Number 34015-11-7)	**	7.8	EI	3775
Cu_2^+	Cu_3I_3 (RN-CAS Registry Number XXXXX-XX-X)		15.2 ± 0.5	EI	3603
Cu_3^+	Cu_3I_3 (RN-CAS Registry Number XXXXX-XX-X)		17.0 ± 0.5	EI	3603
$\text{C}_{32}\text{H}_{16}\text{N}_8\text{Cu}^+$	$\text{C}_{32}\text{H}_{16}\text{N}_8\text{Cu}$ (Copper, [29 <i>H</i> ,31 <i>H</i> -phthalocyaninato(2 ⁻)- <i>N</i> ²⁹ , <i>N</i> ³⁰ , <i>N</i> ³¹ , <i>N</i> ³²]- (<i>SP</i> -4-1)-) (RN-CAS Registry Number 147-14-8) (ON-Other name: Copper phthalocyanine)	**	7.37 ± 0.10	EI	3829
$\text{C}_{12}\text{H}_{18}\text{N}_2\text{O}_2\text{Cu}^+$	$\text{C}_{12}\text{H}_{18}\text{O}_2\text{N}_2\text{Cu}$ (Copper, [[4,4'-(1,2-ethanediyldinitrilo)bis[2-pentanonato]](2 ⁻)- <i>N,N',O,O'</i>]-) (RN-CAS Registry Number 14263-53-7)	**	7.00 (V)	PE	3822
CuCl^+	CuCl (RN-CAS Registry Number 7758-89-6)	**	10.7 ± 0.3	EI	3901
Cu_2Cl^+	Cu_3Cl_3 (RN-CAS Registry Number 11093-65-5)	CuCl_2	12.0 ± 0.5	EI	3455
Cu_2Cl^+	Cu_3Cl_3 (RN-CAS Registry Number 11093-65-5)	$\text{CuCl}^? + \text{Cl}^?$	14.8 ± 0.5	EI	3455
Cu_2Cl^+	$\text{Cu}_4\text{Cl}_4^?$ (RN-CAS Registry Number 11093-67-7)	$\text{CuCl}_2^? + \text{Cl}^?$	14.8 ± 0.5	EI	3455
Cu_2Cl^+	$\text{Cu}_4\text{Cl}_4^?$ (RN-CAS Registry Number 11093-67-7)	$\text{Cu}_2\text{Cl}_2^? + \text{Cl}^?$	14.8 ± 0.5	EI	3455
Cu_2Cl_2^+	Cu_2Cl_2 (RN-CAS Registry Number 12258-96-7)	**	9.6 ± 0.03	EI	3901
Cu_2Cl_2^+	Cu_4Cl_4 (RN-CAS Registry Number 11093-67-7)		14.0 ± 0.5	EI	3455
Cu_3Cl_2^+	$\text{Cu}_3\text{Cl}_3^?$ (RN-CAS Registry Number 11093-65-5)		12.7 ± 0.5	EI	3455
Cu_3Cl_2^+	$\text{Cu}_4\text{Cl}_4^?$ (RN-CAS Registry Number 11093-67-7)	$\text{CuCl}_2^?$	12.7 ± 0.5	EI	3455
Cu_3Cl_3^+	Cu_3Cl_3 (RN-CAS Registry Number 11093-65-5)	**	9.9 ± 0.5	EI	3455
Cu_4Cl_3^+	Cu_4Cl_4 (RN-CAS Registry Number 11093-67-7)		12.4 ± 0.5	EI	3455
Cu_4Cl_4^+	Cu_4Cl_4 (RN-CAS Registry Number 11093-67-7)	**	9.9 ± 0.5	EI	3455
Cu_5Cl_4^+	Cu_5Cl_5 (RN-CAS Registry Number 11093-68-8)		10.6 ± 0.5	EI	3455

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Cu_5Cl_5^+	Cu_5Cl_5 (RN-CAS Registry Number 11093-68-8)	**	9.7 ± 0.5	EI	3455
Zn^+	Zn (RN-CAS Registry Number 7440-66-6)	**	9.57 ± 0.07	RPD	3745
$\text{C}_{32}\text{H}_{16}\text{N}_8\text{Zn}^+$	$\text{C}_{32}\text{H}_{16}\text{N}_8\text{Zn}$ (Zinc, [29 <i>H</i> ,31 <i>H</i> -phthalocyaninato(2 ⁻)- <i>N</i> ²⁹ , <i>N</i> ³⁰ , <i>N</i> ³¹ , <i>N</i> ³²]- (<i>SP</i> -4-1)-) (RN-CAS Registry Number 14320-04-8) (ON-Other name: Zinc phthalocyanine)	**	7.37 ± 0.10	EI	3829
$\text{ZnCl}_2(^2\Pi_g)$	ZnCl_2 (RN-CAS Registry Number 7646-85-7)	**	11.7 (V)	PE	3963
ZnCl_2^+	ZnCl_2 (RN-CAS Registry Number 7646-85-7)	**	11.87 ± 0.05 (V)	PE	3833
$\text{ZnCl}_2(^2\Pi_u)$	ZnCl_2 (RN-CAS Registry Number 7646-85-7)	**	12.3 (V)	PE	3963
$\text{ZnCl}_2(^2\Pi_u)$	ZnCl_2 (RN-CAS Registry Number 7646-85-7)	**	12.39 ± 0.05 (V)	PE	3833
$\text{ZnCl}_2(^2\Sigma_u)$	ZnCl_2 (RN-CAS Registry Number 7646-85-7)	**	13.0 (V)	PE	3963
$\text{ZnCl}_2(^2\Sigma_u)$	ZnCl_2 (RN-CAS Registry Number 7646-85-7)	**	13.07 ± 0.05 (V)	PE	3833
$\text{ZnCl}_2(^2\Sigma_g)$	ZnCl_2 (RN-CAS Registry Number 7646-85-7)	**	14.0 (V)	PE	3963
$\text{ZnCl}_2(^2\Sigma_g)$	ZnCl_2 (RN-CAS Registry Number 7646-85-7)	**	14.10 ± 0.05 (V)	PE	3833
ZnCl_2^*	ZnCl_2 (RN-CAS Registry Number 7646-85-7)	**	19.02 ± 0.05 (V)	PE	3833
Ga^+	Ga (RN-CAS Registry Number 7440-55-3)	**	6.1	EI	3472
Ga^+	$(\text{CH}_3)_3\text{Ga}$ (RN-CAS Registry Number 1445-79-0) (MT-Metastable transition(s) observed)	$\text{C}_2\text{H}_6 + \text{CH}_3$	13.24 ± 0.03	EI	3474
Ga^+	$(\text{CH}_2=\text{CH})_3\text{Ga}$ (RN-CAS Registry Number 1188-13-2) (MT-Metastable transition(s) observed)	$\text{C}_4\text{H}_6 + \text{C}_2\text{H}_3$	11.17 ± 0.05	EI	3474
CH_3Ga^+	$(\text{CH}_3)_3\text{Ga}$ (RN-CAS Registry Number 1445-79-0) (MT-Metastable transition(s) observed)	2CH_3	13.65 ± 0.07	EI	3474
$\text{C}_2\text{H}_3\text{Ga}^+$	$(\text{CH}_2=\text{CH})_3\text{Ga}$ (RN-CAS Registry Number 1188-13-2)	C_4H_6	10.95 ± 0.05	EI	3474
$\text{C}_2\text{H}_4\text{Ga}^+$	$(\text{CH}_2=\text{CH})_3\text{Ga}$ (RN-CAS Registry Number 1188-13-2) (MT-Metastable transition(s) observed)	$\text{C}_2\text{H}_3 + \text{C}_2\text{H}_2$	11.85 ± 0.05	EI	3474

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_6Ga^+$ (MT—Metastable transition(s) observed)	$(CH_3)_3Ga$ (RN—CAS Registry Number 1445-79-0)	CH_3	10.16 ± 0.03	EI	3474
$C_3H_9Ga^+$	$(CH_3)_3Ga$ (RN—CAS Registry Number 1445-79-0)	**	9.87 ± 0.02	EI	3474
$C_4H_6Ga^+$	$(CH_2=CH)_3Ga$ (RN—CAS Registry Number 1188-13-2)	C_2H_3	11.04 ± 0.08	EI	3474
$C_6H_9Ga^+$	$(CH_2=CH)_3Ga$ (RN—CAS Registry Number 1188-13-2)	**	10.81 ± 0.1	EI	3474
$C_{12}H_{10}Ga^+$	$(C_6H_5)_3Ga$ (Gallium, triphenyl-) (RN—CAS—Registry Number 1088-02-4)	C_6H_5	8.63	PI	4055
$C_{18}H_{15}Ga^+$	$(C_6H_5)_3Ga$ (Gallium, triphenyl-) (RN—CAS—Registry Number 1088-02-4)	**	8.46 ± 0.03	PI	4055
GaF^+	GaF (RN—CAS Registry Number 13966-78-4)	**	10.7 ± 0.6	EI	3613
GaF_2^+	GaF_3 (RN—CAS Registry Number 7783-51-9)		15.1 ± 0.5	EI	3613
$Ga_2F_5^+$	Ga_2F_6 (RN—CAS Registry Number 38586-87-7)		15.6 ± 0.5	EI	3613
$C_{15}H_3O_6F_{18}Ga^+$	$(CF_3COCHCOCF_3)_3Ga$ (Gallium, tris(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato- <i>O,O'</i>)-, (<i>OC</i> -6-11)-) (RN—CAS Registry Number 19648-92-1)	**	10.19 ± 0.07 (V)	PE	3682
GaP^+	GaP (RN—CAS Registry Number 12063-98-8)	**	≤ 9	EI	3472
Ge^+	Ge (RN—CAS Registry Number 7440-56-4)	**	8.0 ± 0.3	EI	3610
Ge_2^+	Ge_2 (RN—CAS Registry Number 12596-05-3)	**	7.8	EI	3775
$GeH_4(^2B_2)$	GeH_4 (RN—CAS Registry Number 7782-65-2)	**	11.34	PE	3716
$GeH_4(^2T_2)$	GeH_4 (RN—CAS Registry Number 7782-65-2)	**	12.0 (V)	PE	3508
$GeH_4(^2A_1)$	GeH_4 (RN—CAS Registry Number 7782-65-2)	**	18.21	PE	3716
$GeH_4(^2A_1)$	GeH_4 (RN—CAS Registry Number 7782-65-2)	**	18.65 (V)	PE	3508

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3H_9Ge^+$	$(CH_3)_4Ge$ (RN-CAS Registry Number 865-52-1)	CH_3	10.05 ± 0.14	EI	3548
$C_3H_9Ge^+$	$(CH_3)_3CGe(CH_3)_3$ (RN-CAS Registry Number 1184-91-4)	$(CH_3)_3C$	9.91 ± 0.22	EI	3548
$C_3H_9Ge^+$	$(CH_3)_3GeGe(CH_3)_3$ (RN-CAS Registry Number 993-52-2)	$(CH_3)_3Ge$	9.96 ± 0.16	EI	3548
$C_3H_9Ge^+$	$(CH_3)_3SiGe(CH_3)_3$ (RN-CAS Registry Number 31608-80-7)	$(CH_3)_3Si$	9.99 ± 0.14	EI	3548
$C_3H_9Ge^+$	$(CH_3)_3GeCl$ (RN-CAS Registry Number 1529-47-1)	Cl	11.75 ± 0.04	EI	3939
$C_3H_9Ge^+$	$C_5H_5(CO)_3CrGe(CH_3)_3$ (Tricarbonyl(η^5 -2,4-cyclopentadien-1-yl)(trimethylgermyl)chromium) (RN-CAS Registry Number 34962-34-0)	$C_5H_5(CO)_3Cr?$	9.06 ± 0.1	EI	3495
$C_3H_9Ge^+$	$C_5H_5(CO)_3MoGe(CH_3)_3$ (Tricarbonyl(η^5 -2,4-cyclopentadien-1-yl)(trimethylgermyl)molybdenum) (RN-CAS Registry Number 33306-91-1)	$C_5H_5(CO)_3Mo?$	9.63 ± 0.14	EI	3495
$C_3H_9Ge^+$	$(CH_3)_3GeSn(CH_3)_3$ (RN-CAS Registry Number 16393-89-8)	$(CH_3)_3Sn$	10.01 ± 0.18	EI	3548
$C_3H_9Ge^+$	$C_5H_5(CO)_3WGe(CH_3)_3$ (Tricarbonyl(η^5 -2,4-cyclopentadien-1-yl)(trimethylgermyl)tungsten) (RN-CAS Registry Number 33306-93-3)	$C_5H_5(CO)_3W?$	9.84 ± 0.1	EI	3495
$C_4H_{12}Ge^+$	$(CH_3)_4Ge$ (RN-CAS Registry Number 865-52-1)	**	9.33 ± 0.04	PE	3880
$C_4H_{12}Ge^+$	$(CH_3)_4Ge$ (RN-CAS Registry Number 865-52-1)	**	9.38 ± 0.1	PE	3677
$C_4H_{12}Ge^+$	$(CH_3)_4Ge$ (RN-CAS Registry Number 865-52-1)	**	9.29 ± 0.14	EI	3548
$C_7H_{18}Ge^+$	$(CH_3)_3CGe(CH_3)_3$ (RN-CAS Registry Number 1184-91-4)	**	8.98 ± 0.12	EI	3548
$C_8H_{18}Ge^+$	$CH_2=CHGe(C_2H_5)_3$ (RN-CAS Registry Number 6207-41-6)	**	9.2 (V)	PE	3850
$C_8H_{20}Ge^+$	$(C_2H_5)_4Ge$ (RN-CAS Registry Number 597-63-7)	**	9.3 (V)	PE	3850
$C_9H_{14}Ge^+$	$C_6H_5Ge(CH_3)_3$ (Germane, trimethylphenyl-) (RN-CAS Registry Number 1626-00-2)	**	~ 8.75	CTS	3922
$C_9H_{20}Ge^+$	$CH_2=CHCH_2Ge(C_2H_5)_3$ (RN-CAS Registry Number 1793-90-4)	**	8.8 (V)	PE	3850
$C_{10}H_{14}Ge^+$	$C_8H_8Ge(CH_3)_2$ (1 <i>H</i> -2-Benzogermole, 2,3-dihydro-2,2-dimethyl-) (RN-CAS Registry Number 27490-21-7)	**	8.39	CTS	3546
$C_{10}H_{16}Ge^+$	$C_6H_5CH_2Ge(CH_3)_3$ (Germane, trimethyl(phenylmethyl)-) (RN-CAS Registry Number 2848-62-6)	**	8.19	CTS	3922

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{10}H_{16}Ge^+$	$C_6H_5CH_2Ge(CH_3)_3$ (Germane, trimethyl(phenylmethyl)-) (RN-CAS Registry Number 2848-62-6)	**	8.26	CTS	3546
$C_{12}H_{18}Ge^+$	$C_9H_9Ge(CH_3)_3$ (Germane, 1-indanyltrimethyl-) (RN-CAS Registry Number 27490-24-0)	**	8.02	CTS	3546
$C_{13}H_{15}Ge^+$	$C_{10}H_7Ge(CH_3)_3$ (Germane, trimethyl-1-naphthalenyl-) (RN-CAS Registry Number XXXXX-XX-X)	**	8.00	CTS	3922
$C_{14}H_{18}Ge^+$	$C_{10}H_7CH_2Ge(CH_3)_3$ (Germane, trimethyl(1-naphthalenylmethyl)-) (RN-CAS Registry Number 51220-35-0)	**	7.78	CTS	3922
$C_6H_{18}Ge_2^+$	$(CH_3)_3GeGe(CH_3)_3$ (RN-CAS Registry Number 993-52-2)	**	8.18 ± 0.11	EI	3548
$GeH_3N_3(^2A'')$	GeH_3N_3 (RN-CAS Registry Number 21138-22-7)	**	10.01 ± 0.02 (V)	PE	3670
$Ge_3H_9N^+$	$(GeH_3)_3N$ (RN-CAS Registry Number 22856-27-5)	**	9.2 ± 0.1 (V)	PE	3661
GeO^+	GeO (RN-CAS Registry Number 20619-16-3)	**	11.0 ± 0.3	EI	3610
$Ge_2H_6O^+(^2B_1)$	$(GeH_3)_2O$ (RN-CAS Registry Number 14939-17-4)	**	10.40 (V)	PE	3656
CH_3NOGe^+	GeH_3NCO (RN-CAS Registry Number 6928-42-3)	**	10.76 ± 0.02 (V)	PE	3670
GeF_2^+	GeF_2 (RN-CAS Registry Number 13940-63-1)	**	12.9 ± 0.3	EI	3570
$GeF_4(^2T_1)$	GeF_4 (RN-CAS Registry Number 7783-58-6)	**	16.06 ± 0.04 (V)	PE	3880
$GeF_4(^2T_2)$	GeF_4 (RN-CAS Registry Number 7783-58-6)	**	16.08 (V)	PE	3508
GeF_4^*	GeF_4 (RN-CAS Registry Number 7783-58-6)	**	16.50 (V)	PE	3508
$GeF_4(^2T_2)$	GeF_4 (RN-CAS Registry Number 7783-58-6)	**	16.55 ± 0.04 (V)	PE	3880
GeF_4^*	GeF_4 (RN-CAS Registry Number 7783-58-6)	**	17.04 (V)	PE	3508
$GeF_4(^2A_1)$	GeF_4 (RN-CAS Registry Number 7783-58-6)	**	17.06 ± 0.04 (V)	PE	3880
$GeF_4(^2T_2)$	GeF_4 (RN-CAS Registry Number 7783-58-6)	**	18.55 ± 0.04 (V)	PE	3880

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
GeF_4^+	GeF_4 (RN-CAS Registry Number 7783-58-6)	**	18.60 (V)	PE	3508
$\text{GeF}_4^+(\text{}^2\text{A}_1)$	GeF_4 (RN-CAS Registry Number 7783-58-6)	**	21.3 (V)	PE	3508
Ge_2F_4^+	Ge_2F_4 (RN-CAS Registry Number 12332-08-0)	**	13.1 ± 0.3	EI	3570
$\text{GeH}_3\text{F}^+(\text{}^2\text{E})$	GeH_3F (RN-CAS Registry Number 13537-30-9)	**	12.3 ± 0.1 (V)	PE	3510
$\text{GeH}_3\text{F}^+(\text{}^2\text{A}_1)$	GeH_3F (RN-CAS Registry Number 13537-30-9)	**	~15 (V)	PE	3510
GeH_3F^+	GeH_3F (RN-CAS Registry Number 13537-30-9)	**	15.0 ± 0.1 (V)	PE	3502
$\text{GeH}_3\text{F}^+(\text{}^2\text{E})$	GeH_3F (RN-CAS Registry Number 13537-30-9)	**	15.0 ± 0.1 (V)	PE	3510
GeH_2F_2^+	GeH_2F_2 (RN-CAS Registry Number 14986-65-3)	**	13.0 ± 0.1 (V)	PE	3510
GeOF_2^+	GeOF_2 (RN-CAS Registry Number XXXXX-XX-X)	**	12.3 ± 0.3	EI	3570
$\text{C}_6\text{H}_{18}\text{SiGe}^+$	$(\text{CH}_3)_3\text{SiGe}(\text{CH}_3)_3$ (RN-CAS Registry Number 31608-80-7)	**	8.31 ± 0.10	EI	3548
GeH_5P^+	GeH_3PH_2 (RN-CAS Registry Number 13573-06-3)	**	9.7 ± 0.1 (V)	PE	3661
$\text{Ge}_3\text{H}_9\text{P}^+$	$(\text{GeH}_3)_3\text{P}$ (RN-CAS Registry Number 15587-38-9)	**	9.0 ± 0.1 (V)	PE	3661
$\text{GeH}_4\text{S}^+(\text{}^2\text{A}''')$	GeH_3SH (RN-CAS Registry Number 21847-06-3)	**	9.69 (V)	PE	3656
$\text{Ge}_2\text{H}_6\text{S}^+(\text{}^2\text{B}_1)$	$(\text{GeH}_3)_2\text{S}$ (RN-CAS Registry Number 18852-54-5)	**	9.25 (V)	PE	3656
CH_3NSGe^+	GeH_3NCS (RN-CAS Registry Number 16475-45-9)	**	9.14 ± 0.02 (V)	PE	3670
Cl_3Ge^+	GeCl_4 (RN-CAS Registry Number 10038-98-9)	Cl	12.12 ± 0.04	EI	3939
Cl_3Ge^+	CH_3GeCl_3 (RN-CAS Registry Number 993-10-2)	CH_3	12.22 ± 0.05	EI	3939
Cl_4Ge^+	GeCl_4 (RN-CAS Registry Number 10038-98-9)	**	11.68 ± 0.05	EI	3939
$\text{GeH}_3\text{Cl}^+(\text{}^2\text{E})$	GeH_3Cl (RN-CAS Registry Number 13637-65-5)	**	11.30 ± 0.02 (V)	PE	3510

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
GeH_3Cl^+	GeH_3Cl (RN-CAS Registry Number 13637-65-5)	**	11.34 ± 0.05 (V)	PE	3502
$\text{GeH}_3\text{Cl}^+ (^2\text{A}_1)$	GeH_3Cl (RN-CAS Registry Number 13637-65-5)	**	13.05 ± 0.02 (V)	PE	3510
$\text{GeH}_3\text{Cl}^+ (^2\text{E})$	GeH_3Cl (RN-CAS Registry Number 13637-65-5)	**	13.3 ± 0.1 (V)	PE	3510
$\text{GeH}_2\text{Cl}_2^+$	GeH_2Cl_2 (RN-CAS Registry Number 15230-48-5)	**	11.42 ± 0.02 (V)	PE	3510
$\text{C}_2\text{H}_6\text{ClGe}^+$	$(\text{CH}_3)_3\text{GeCl}$ (RN-CAS Registry Number 1529-47-1)	CH_3	10.44 ± 0.04	EI	3939
$\text{C}_2\text{H}_6\text{ClGe}^+$	$(\text{CH}_3)_2\text{GeCl}_2$ (RN-CAS Registry Number 1529-48-2)	Cl	11.56 ± 0.04	EI	3939
$\text{C}_3\text{H}_9\text{ClGe}^+$	$(\text{CH}_3)_3\text{GeCl}$ (RN-CAS Registry Number 1529-47-1)	**	9.62 ± 0.04	EI	3939
$\text{CH}_3\text{Cl}_2\text{Ge}^+$	$(\text{CH}_3)_2\text{GeCl}_2$ (RN-CAS Registry Number 1529-48-2)	CH_3	11.08 ± 0.05	EI	3939
$\text{CH}_3\text{Cl}_2\text{Ge}^+$	CH_3GeCl_3 (RN-CAS Registry Number 993-10-2)	Cl	11.78 ± 0.05	EI	3939
$\text{C}_2\text{H}_6\text{Cl}_2\text{Ge}^+$	$(\text{CH}_3)_2\text{GeCl}_2$ (RN-CAS Registry Number 1529-48-2)	**	10.18 ± 0.05	EI	3939
$\text{CH}_3\text{Cl}_3\text{Ge}^+$	CH_3GeCl_3 (RN-CAS Registry Number 993-10-2)	**	11.11 ± 0.04	EI	3939
$\text{C}_8\text{H}_{14}\text{CrGe}^+$	$\text{C}_5\text{H}_5(\text{CO})_3\text{CrGe}(\text{CH}_3)_3$ (Tricarbonyl(η^5 -2,4-cyclopentadien-1-yl)(trimethylgermyl)chromium) (RN-CAS Registry Number 34962-34-0)	3CO	10.57 ± 0.24	EI	3495
$\text{C}_9\text{H}_{14}\text{OCrGe}^+$	$\text{C}_5\text{H}_5(\text{CO})_3\text{CrGe}(\text{CH}_3)_3$ (Tricarbonyl(η^5 -2,4-cyclopentadien-1-yl)(trimethylgermyl)chromium) (RN-CAS Registry Number 34962-34-0)	2CO	9.53 ± 0.15	EI	3495
$\text{C}_{10}\text{H}_{14}\text{O}_2\text{CrGe}^+$	$\text{C}_5\text{H}_5(\text{CO})_3\text{CrGe}(\text{CH}_3)_3$ (Tricarbonyl(η^5 -2,4-cyclopentadien-1-yl)(trimethylgermyl)chromium) (RN-CAS Registry Number 34962-34-0)	CO	9.13 ± 0.1	EI	3495
$\text{C}_{11}\text{H}_{14}\text{O}_3\text{CrGe}^+$	$\text{C}_5\text{H}_5(\text{CO})_3\text{CrGe}(\text{CH}_3)_3$ (Tricarbonyl(η^5 -2,4-cyclopentadien-1-yl)(trimethylgermyl)chromium) (RN-CAS Registry Number 34962-34-0)	**	7.79 ± 0.1	EI	3495
$\text{C}_5\text{H}_3\text{O}_5\text{MnGe}^+$	$\text{GeH}_3\text{Mn}(\text{CO})_5$ (RN-CAS Registry Number 25069-08-3)	**	8.90 ± 0.02 (V)	PE	3827
$\text{C}_4\text{H}_3\text{O}_4\text{GeCo}^+$	$\text{GeH}_3\text{Co}(\text{CO})_4$ (RN-CAS Registry Number 28360-37-4)	**	8.80 ± 0.02 (V)	PE	3827

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
GeCu^+	GeCu (RN-CAS Registry Number 12394-89-7)	**	7.5	EI	3775
As^+	As (RN-CAS Registry Number 7440-38-2)	**	> 10.0	EI	3475
As_2^+	As_2 (RN-CAS Registry Number 23878-46-8)	**	10.1 ± 0.2	S	3567
As_2^+	$\text{As}_2?$ (RN-CAS Registry Number 23878-46-8)	**	9.7 ± 0.7	EI	3475
As_2^+	As_2 (RN-CAS Registry Number 23878-46-8)	**	11.0 ± 0.5	EI	3555
As_4^+	$\text{As}_4?$ (RN-CAS Registry Number 12597-17-0)	**	8.5 ± 0.7	EI	3475
As_4^+	As_4 (RN-CAS Registry Number 12597-17-0)	**	9.9 ± 0.2	EI	3555
$\text{AsH}_3(^2\text{A}_1)$	AsH_3 (RN-CAS Registry Number 7784-42-1)	**	9.89	PE	3719
$\text{AsH}_3(^2\text{E})$	AsH_3 (RN-CAS Registry Number 7784-42-1)	**	12.12 ± 0.03	PE	3719
$\text{C}_2\text{H}_7\text{As}^+$	$(\text{CH}_3)_2\text{AsH}$ (RN-CAS Registry Number 593-57-7)	**	8.58	PE	3589
$\text{C}_5\text{H}_5\text{As}^+$	$\text{C}_5\text{H}_5\text{As}$ (Arsenin) (RN-CAS Registry Number 289-31-6)	**	8.8 (V)	PE	3832
$\text{C}_{12}\text{H}_{13}\text{As}^+$	$\text{C}_6\text{H}_5\text{C}_4\text{H}_2\text{As}(\text{CH}_3)_2$ (1 <i>H</i> -Arsole, 2,5-dimethyl-1-phenyl-) (RN-CAS Registry Number 20527-10-0)	**	8.0 (V)	PE	4090
$\text{C}_{19}\text{H}_{13}\text{As}^+$	$\text{C}_{13}\text{H}_8\text{AsC}_6\text{H}_5$ (Acridarsine, 10-phenyl-) (RN-CAS Registry Number 28660-45-9)	**	7.05 (V)	PE	3896
AsF_3^+	AsF_3 (RN-CAS Registry Number 7784-35-2)	**	12.84 ± 0.05	EI	3578
$\text{C}_6\text{H}_7\text{F}_6\text{As}^+$	<i>cis</i> -(CH_3) ₂ AsC(CF ₃)=C(CF ₃)H (RN-CAS Registry Number 4648-64-0)	**	8.61	PE	3589
$\text{C}_6\text{H}_7\text{F}_6\text{As}^+$	<i>trans</i> -(CH_3) ₂ AsC(CF ₃)=C(CF ₃)H (RN-CAS Registry Number 4648-63-9)	**	8.71	PE	3589
$\text{C}_8\text{H}_{11}\text{F}_6\text{As}^+$	$(\text{C}_2\text{H}_5)_2\text{AsC}(\text{CF}_3)=\text{C}(\text{CF}_3)\text{H}$ (RN-CAS Registry Number XXXXX-XX-X)	**	8.44	PE	3589
$\text{Si}_3\text{H}_9\text{As}^+$	$(\text{SiH}_3)_3\text{As}$ (RN-CAS Registry Number 15110-34-6)	**	9.3 ± 0.1 (V)	PE	3661

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
AsP^+	AsP (RN-CAS Registry Number 12255-33-3)	**	11.2 ± 0.5	EI	3555
AsP_3^+	AsP_3 (RN-CAS Registry Number 12511-95-4)	**	10.3 ± 0.3	EI	3555
As_2P_2^+	As_2P_2 (RN-CAS Registry Number 12512-03-7)	**	10.3 ± 0.3	EI	3555
As_3P^+	As_3P (RN-CAS Registry Number 12512-11-7)	**	10.0 ± 0.3	EI	3555
AsS^+	AsS? (RN-CAS Registry Number 12044-79-0)	**	9.0 ± 0.7	EI	3475
As_2S_2^+	$\text{As}_2\text{S}_2?$ (RN-CAS Registry Number 1303-32-8)	**	9.0 ± 0.7	EI	3475
As_3S_2^+	$\text{As}_3\text{S}_2?$ (RN-CAS Registry Number 39350-11-3)	**	$\sim 11.0 \pm 0.7$	EI	3475
As_3S_3^+	As_4S_4 (RN-CAS Registry Number 12279-90-2)		9.0 ± 0.7	EI	3475
As_4S_3^+	$\text{As}_4\text{S}_3?$ (RN-CAS Registry Number 12512-13-9)	**	8.7 ± 0.7	EI	3475
As_4S_4^+	As_4S_4 (RN-CAS Registry Number 12279-90-2)	**	9.0 ± 0.7	EI	3475
AsCl_3^+	AsCl_3 (RN-CAS Registry Number 7784-34-1)	**	10.55 ± 0.025	PE	3626
AsCl_3^+	AsCl_3 (RN-CAS Registry Number 7784-34-1)	**	10.57 ± 0.03	EDD	3626
Se^+	Se (RN-CAS Registry Number 7782-49-2)	**	9.9 ± 0.5	EI	3600
Se^+	H_2Se (RN-CAS Registry Number 7783-07-5)		12.6 ± 0.1	EI	3633
Se^{+4}	Se^{+3} (RN-CAS Registry Number 14700-98-2)	**	42.947 ± 0.003	S	3562
SeH^+	SeH (RN-CAS Registry Number 13940-22-2)	**	9.79	S	3742
SeH^+	H_2Se (RN-CAS Registry Number 7783-07-5)	H	13.8 ± 0.2	EI	3633
$\text{H}_2\text{Se}^+(\text{}^2\text{B}_1)$	H_2Se (RN-CAS Registry Number 7783-07-5)	**	9.88	PE	3719
$\text{H}_2\text{Se}^+(\text{}^2\text{B}_1)$	H_2Se (RN-CAS-Registry Number 7783-07-5)	**	9.93	PE	4073

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{H}_2\text{Se}^+(\text{}^2\text{A}_1)$	H_2Se (RN-CAS Registry Number 7783-07-5)	**	12.40	PE	3719
$\text{H}_2\text{Se}^+(\text{}^2\text{B}_2)$	H_2Se (RN-CAS Registry Number 7783-07-5)	**	14.11	PE	3719
$\text{H}_2\text{Se}^+(\text{}^2\text{A}_1)$	H_2Se (RN-CAS Registry Number 7783-07-5)	**	21.0 (V)	PE	3719
$\text{CSe}_2(\text{}^2\text{X}^2\Pi_{3/2})$	CSe_2 (RN-CAS Registry Number 506-80-9)	**	9.27 ± 0.01	PE	3965
$\text{CSe}_2(\text{}^2\text{X}^2\Pi_{1/2})$	CSe_2 (RN-CAS Registry Number 506-80-9)	**	9.54 ± 0.01	PE	3965
$\text{CSe}_2(\text{}^2\text{A}^2\Pi_u)$	CSe_2 (RN-CAS Registry Number 506-80-9)	**	11.49 ± 0.01	PE	3965
$\text{CSe}_2(\text{}^2\text{B}^2\Sigma_u^+)$	CSe_2 (RN-CAS Registry Number 506-80-9)	**	13.63 ± 0.01	PE	3965
$\text{CSe}_2(\text{}^2\text{C}^2\Sigma_g^+)$	CSe_2 (RN-CAS Registry Number 506-80-9)	**	15.90 ± 0.01	PE	3965
$\text{C}_2\text{H}_5\text{Se}^+$	$\text{CH}_3\text{SeCH}_2\text{CH}_2\text{CH}(\text{NH}_2)\text{COOH}$ (RN-CAS Registry Number 1464-42-2)		12.03 ± 0.06	EI	3443
$\text{C}_2\text{H}_6\text{Se}^+$	$(\text{CH}_3)_2\text{Se}$ (RN-CAS Registry Number 593-79-3) (RS-Average of three Rydberg series limits)	**	8.400 ± 0.010	S	3970
$\text{C}_2\text{H}_6\text{Se}^+(\text{}^2\text{B}_1)$	$(\text{CH}_3)_2\text{Se}$ (RN-CAS Registry Number 593-79-3)	**	8.40 (V)	PE	3656
$\text{C}_3\text{H}_7\text{Se}^+$	$\text{CH}_3\text{SeCH}_2\text{CH}_2\text{CH}(\text{NH}_2)\text{COOH}$ $\text{C}_2\text{H}_4\text{NO}_2$ (RN-CAS Registry Number 1464-42-2) (MT-Metastable transition(s) observed)		9.34 ± 0.15	EI	3443
$\text{C}_4\text{H}_4\text{Se}^+$	$\text{C}_4\text{H}_4\text{Se}$ (Selenophene) (RN-CAS Registry Number 288-05-1)	**	8.80 (V)	PE	3858
$\text{C}_4\text{H}_4\text{Se}^+$	$\text{C}_4\text{H}_4\text{Se}$ (Selenophene) (RN-CAS Registry Number 288-05-1)	**	≤ 8.92 (V)	PE	3804
$\text{C}_4\text{H}_4\text{Se}^+$	$\text{C}_4\text{H}_4\text{Se}$ (Selenophene) (RN-CAS Registry Number 288-05-1)	**	9.01 ± 0.05	EI	3482
$\text{C}_5\text{H}_6\text{Se}^+$	$\text{C}_4\text{H}_3\text{SeCH}_3$ (Selenophene, 2-methyl-) (RN-CAS Registry Number 7559-42-4)	**	8.38 ± 0.1	EI	3804
$\text{C}_3\text{H}_6\text{NSe}^+$	$\text{CH}_3\text{SeCH}_2\text{CH}_2\text{CH}(\text{NH}_2)\text{COOH}$ (RN-CAS Registry Number 1464-42-2)		10.33 ± 0.07	EI	3443
$\text{C}_4\text{H}_{10}\text{NSe}^+$	$\text{CH}_3\text{SeCH}_2\text{CH}_2\text{CH}(\text{NH}_2)\text{COOH}$ CO_2H (RN-CAS Registry Number 1464-42-2) (MT-Metastable transition(s) observed)		9.83 ± 0.16	EI	3443

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
COSe ⁺ (X ² Π _{3/2}) (RD-Radical)	COSe (RN-CAS Registry Number 1603-84-5)	**	10.36±0.01	PE	3965
COSe ⁺ (X ² Π _{1/2}) (RD-Radical)	COSe (RN-CAS Registry Number 1603-84-5)	**	10.57±0.01	PE	3965
COSe ⁺ (A ² Π) (RD-Radical)	COSe (RN-CAS Registry Number 1603-84-5)	**	14.58±0.01	PE	3965
COSe ⁺ (B ² Σ ⁺) (RD-Radical)	COSe (RN-CAS Registry Number 1603-84-5)	**	15.75±0.01	PE	3965
COSe ⁺ (C ² Σ ⁺) (RD-Radical)	COSe (RN-CAS Registry Number 1603-84-5)	**	17.90±0.01	PE	3965
C ₅ H ₄ OSe ⁺	C ₄ H ₃ SeCHO (2-Selenophenecarboxaldehyde) (RN-CAS Registry Number 25109-26-6)	**	9.47±0.05	EI	3482
C ₆ H ₆ OSe ⁺	C ₄ H ₃ SeCOCH ₃ (Ethanone, 1-selenophene-2-yl-) (RN-CAS Registry Number 15429-03-5)	**	9.30±0.05	EI	3482
C ₅ H ₄ O ₂ Se ⁺	C ₄ H ₃ SeCOOH (2-Selenophenecarboxylic acid) (RN-CAS Registry Number 22968-45-2)	**	9.25±0.1	EI	3804
C ₄ H ₆ NOSe ⁺ (MT-Metastable transition(s) observed)	CH ₃ SeCH ₂ CH ₂ CH(NH ₂)COOH (RN-CAS Registry Number 1464-42-2)	H ₂ O + CH ₃	10.00±0.05	EI	3443
C ₅ H ₉ NOSe ⁺ (MT-Metastable transition(s) observed)	CH ₃ SeCH ₂ CH ₂ CH(NH ₂)COOH (RN-CAS Registry Number 1464-42-2)	H ₂ O	8.73±0.10	EI	3443
C ₄ H ₈ NO ₂ Se ⁺ (MT-Metastable transition(s) observed)	CH ₃ SeCH ₂ CH ₂ CH(NH ₂)COOH (RN-CAS Registry Number 1464-42-2)	CH ₃	9.35±0.10	EI	3443
C ₅ H ₁₁ NO ₂ Se ⁺	CH ₃ SeCH ₂ CH ₂ CH(NH ₂)COOH (RN-CAS Registry Number 1464-42-2)	**	8.26±0.03	EI	3443
C ₆ H ₃ OF ₃ Se ⁺	C ₄ H ₃ SeCOCF ₃ (Ethanone, 2,2,2-trifluoro-1-(selenophene-2-yl)-) (RN-CAS Registry Number 26149-08-6)	**	9.64±0.05	EI	3482
Si ₂ H ₆ Se ⁺ (² B ₁)	(SiH ₃) ₂ Se (RN-CAS Registry Number 14939-45-8)	**	9.18 (V)	PE	3656

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
SeP ⁺	SeP (RN-CAS Registry Number 12509-41-0)	**	8.2	EI	4001
CSSe ⁺ (X ² Π _{3/2})	SCSe (RN-CAS Registry Number 5951-19-9)	**	9.58±0.01	PE	3965
(RD-Radical) CSSe ⁺ (X ² Π _{1/2})	SCSe (RN-CAS Registry Number 5951-19-9)	**	9.77±0.01	PE	3965
(RD-Radical) CSSe ⁺ (A ² Π)	SCSe (RN-CAS Registry Number 5951-19-9)	**	12.13±0.01	PE	3965
(RD-Radical) CSSe ⁺ (B ² Σ ⁺)	SCSe (RN-CAS Registry Number 5951-19-9)	**	14.07±0.01	PE	3965
(RD-Radical) CSSe ⁺ (C ² Σ ⁺)	SCSe (RN-CAS Registry Number 5951-19-9)	**	16.06±0.01	PE	3965
(RD-Radical)					
ScSe ⁺	ScSe (RN-CAS Registry Number 12138-19-1)	**	7.5	EI	3600
(RD-Radical)					
Ge ₂ H ₆ Se ⁺ (² B ₁)	(GeH ₃) ₂ Se (RN-CAS Registry Number 24254-18-0)	**	8.84 (V)	PE	3656
Br ⁺	CH ₂ Br ₂ (RN-CAS Registry Number 74-95-3)	CH ₂ Br	16.0	RPD	3490
(AD-0.192 eV average translational energy of decomposition at threshold) (TR-Other product(s) thermochemically reasonable)					
Br ⁺	CH ₂ Br ₂ (RN-CAS Registry Number 74-95-3)	CH ₂ Br	15.5±0.1	EI	3442
(AD-0.19 eV average translational energy of decomposition at threshold) (TR-Other product(s) thermochemically reasonable)					
Br ⁺ (⁴ P _{1/2} ⁰)	Br ⁺³ (RN-CAS Registry Number 22788-29-0)	**	45.0556	S	3593
Br ⁺⁵	Br ⁺⁴ (RN-CAS Registry Number 22541-82-8)	**	62.35	S	3592
HBr ⁺ (X ² Π _{3/2})	HBr (RN-CAS Registry Number 10035-10-6)	**	11.645±0.005	PE	3839
HBr ⁺ (X ² Π _{1/2})	HBr (RN-CAS Registry Number 10035-10-6)	**	11.979±0.005	PE	3839
HBr ⁺ (A ² Σ ⁺)	HBr (RN-CAS Registry Number 10035-10-6)	**	15.288±0.005	PE	3839
DBr ⁺ (X ² Π _{3/2})	DBr (RN-CAS Registry Number 13536-59-9)	**	11.673±0.005	PE	3839
DBr ⁺ (X ² Π _{1/2})	DBr (RN-CAS Registry Number 13536-59-9)	**	12.002±0.005	PE	3839

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{DBr}^+(\text{A}^2\Sigma^+)$	DBr (RN-CAS Registry Number 13536-59-9)	**	15.284 ± 0.005	PE	3839
C_2HBr^+	CH \equiv CBr (RN-CAS Registry Number 593-61-3) (RS-Average of two Rydberg series limits)	**	10.762 ± 0.004	S	3876
$\text{C}_2\text{H}_3\text{Br}^+(\text{A}'')$	CH $_2$ =CHBr (RN-CAS Registry Number 593-60-2)	**	9.80 ± 0.02	PE	3659
$\text{C}_2\text{H}_3\text{Br}^+$	CH $_2$ =CHBr (RN-CAS Registry Number 593-60-2)	**	9.83	PE	3863
$\text{C}_2\text{H}_3\text{Br}^+(\text{A}')$	CH $_2$ =CHBr (RN-CAS Registry Number 593-60-2)	**	10.90 ± 0.02	PE	3659
$\text{C}_2\text{H}_3\text{Br}^+(\text{A}'')$	CH $_2$ =CHBr (RN-CAS Registry Number 593-60-2)	**	12.28 ± 0.02 (V)	PE	3659
$\text{C}_2\text{H}_3\text{Br}^+(\text{A}')$	CH $_2$ =CHBr (RN-CAS Registry Number 593-60-2)	**	12.94 ± 0.02 (V)	PE	3659
$\text{C}_2\text{H}_3\text{Br}^+(\text{A}')$	CH $_2$ =CHBr (RN-CAS Registry Number 593-60-2)	**	15.02 ± 0.02 (V)	PE	3659
$\text{C}_2\text{H}_3\text{Br}^+(\text{A}')$	CH $_2$ =CHBr (RN-CAS Registry Number 593-60-2)	**	16.21 ± 0.02 (V)	PE	3659
$\text{C}_2\text{H}_3\text{Br}^{+*}$	CH $_2$ =CHBr (RN-CAS Registry Number 593-60-2)	**	19.20 ± 0.02 (V)	PE	3659
$\text{C}_2\text{H}_5\text{Br}^+(\text{E}_{3/2})$	C $_2\text{H}_5\text{Br}$ (RN-CAS Registry Number 74-96-4)	**	10.28 (V)	PE	4076
$\text{C}_2\text{H}_5\text{Br}^+(\text{E}_{1/2})$	C $_2\text{H}_5\text{Br}$ (RN-CAS Registry Number 74-96-4)	**	10.60 (V)	PE	4076
$\text{C}_3\text{H}_3\text{Br}^+$	CH $_2$ =CHCH $_2\text{Br}$ (RN-CAS Registry Number 106-95-6)	**	10.06	PE	3863
$\text{C}_3\text{H}_3\text{Br}^+$	CH $_2$ =CHCH $_2\text{Br}$ (RN-CAS Registry Number 106-95-6)	**	10.18 (V)	PE	4091
$\text{C}_3\text{H}_3\text{Br}^+(\text{A}'')$	CH $_2$ =CBrCH $_3$ (RN-CAS Registry Number 557-93-7)	**	9.58 ± 0.02 (V)	PE	3659
$\text{C}_3\text{H}_3\text{Br}^+(\text{A}')$	CH $_2$ =CBrCH $_3$ (RN-CAS Registry Number 557-93-7)	**	10.51 ± 0.02	PE	3659
$\text{C}_3\text{H}_3\text{Br}^+(\text{A}'')$	CH $_2$ =CBrCH $_3$ (RN-CAS Registry Number 557-93-7)	**	11.62 ± 0.02 (V)	PE	3659
$\text{C}_3\text{H}_3\text{Br}^+(\text{A}')$	CH $_2$ =CBrCH $_3$ (RN-CAS Registry Number 557-93-7)	**	12.40 ± 0.02 (V)	PE	3659
$\text{C}_3\text{H}_3\text{Br}^{+*}$	CH $_2$ =CBrCH $_3$ (RN-CAS Registry Number 557-93-7)	**	13.53 ± 0.01 (V)	PE	3659
$\text{C}_3\text{H}_3\text{Br}^{+*}$	CH $_2$ =CBrCH $_3$ (RN-CAS Registry Number 557-93-7)	**	15.15 ± 0.02 (V)	PE	3659
$\text{C}_3\text{H}_3\text{Br}^{+*}$	CH $_2$ =CBrCH $_3$ (RN-CAS Registry Number 557-93-7)	**	15.84 ± 0.02 (V)	PE	3659
$\text{C}_3\text{H}_7\text{Br}^+(\text{E}_{3/2})$	<i>n</i> -C $_3\text{H}_7\text{Br}$ (RN-CAS Registry Number 106-94-5)	**	10.18	PE	4076
$\text{C}_3\text{H}_7\text{Br}^+(\text{E}_{1/2})$	<i>n</i> -C $_3\text{H}_7\text{Br}$ (RN-CAS Registry Number 106-94-5)	**	10.50	PE	4076

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_3H_7Br^+$	<i>iso</i> - C_3H_7Br (RN-CAS Registry Number 75-26-3)	**	$10.4 \pm <0.1$	EI	3735
$C_4H_7Br^+$	$CH_2=CHCH_2CH_2Br$ (RN-CAS Registry Number 5162-44-7)	**	9.9	EI	3900
$C_4H_9Br^+ (^2E_{3/2})$	<i>n</i> - C_4H_9Br (RN-CAS Registry Number 109-65-9)	**	10.15	PE	4076
$C_4H_9Br^+ (^2E_{1/2})$	<i>n</i> - C_4H_9Br (RN-CAS Registry Number 109-65-9)	**	10.44	PE	4076
$C_5H_9Br^+$	$CH_2=CH(CH_2)_3Br$ (RN-CAS Registry Number 1119-51-3)	**	9.6	EI	3900
$C_5H_9Br^+$	C_5H_9Br (Cyclopentane, bromo-) (RN-CAS Registry Number 137-43-9)	**	9.94 ± 0.02	PE	4003
$C_5H_{11}Br^+ (^2E_{3/2})$	<i>n</i> - $C_5H_{11}Br$ (RN-CAS Registry Number 110-53-2)	**	10.09	PE	3532
$C_5H_{11}Br^+ (^2E_{1/2})$	<i>n</i> - $C_5H_{11}Br$ (RN-CAS Registry Number 110-53-2)	**	10.40	PE	3532
$C_6H_4Br^+$	$C_6H_4(Br)COOH$ (Benzoic acid, 3-bromo-) (RN-CAS Registry Number 585-76-2) (MT-Metastable transition(s) observed)	CO + OH	14.91 ± 0.2	EI	3973
$C_6H_4Br^+$	$C_6H_4(Br)COOH$ (Benzoic acid, 4-bromo-) (RN-CAS Registry Number 586-76-5) (MT-Metastable transition(s) observed)	CO + OH	15.13 ± 0.2	EI	3973
$C_6H_4Br^+$	$C_6H_4BrNO_2$ (Benzene, 1-bromo-3-nitro-) (RN-CAS Registry Number 585-79-5)	NO ₂	12.01 ± 0.1	EI	3447
$C_6H_4Br^+$	$C_6H_4BrNO_2$ (Benzene, 1-bromo-4-nitro-) (RN-CAS Registry Number 586-78-7)	NO ₂	12.19 ± 0.1	EI	3447
$C_6H_5Br^+$	C_6H_5Br (Benzene, bromo-) (RN-CAS Registry Number 108-86-1)	**	9.00 (V)	PE	3873
$C_6H_5Br^+$	$C_6H_4BrOCH_3$ (Benzene, 1-bromo-3-methoxy-) (RN-CAS Registry Number 2398-37-0)	CH ₂ O	11.59 ± 0.1	EI	3446
$C_6H_5Br^+$	$C_6H_4BrOCH_3$ (Benzene, 1-bromo-4-methoxy-) (RN-CAS Registry Number 104-92-7)	CH ₂ O	11.52 ± 0.1	EI	3446
$C_6H_{11}Br^+$	$C_6H_{11}Br$ (Cyclohexane, bromo-) (RN-CAS Registry Number 108-85-0)	**	9.85 ± 0.01	PI	4078

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_{11}Br^+$	$C_6H_{11}Br$ (Cyclohexane, bromo-) (RN-CAS Registry Number 108-85-0)	**	9.90 ± 0.02	PE	4003
$C_6H_{11}Br^+$	$C_6H_{11}Br$ (Cyclohexane, bromo-) (RN-CAS Registry Number 108-85-0)	**	10.00 (V)	PE	4078
$C_7H_7Br^+$	$C_6H_5CH_2Br$ (Benzene, (bromomethyl)-) (RN-CAS Registry Number 100-39-0)	**	9.23 (V)	PE	3992
$C_7H_7Br^+$	$C_6H_4BrCH_3$ (Benzene, 1-bromo-2-methyl-) (RN-CAS Registry Number 95-46-5)	**	8.58 ± 0.1	EI	3777
$C_7H_7Br^+$	$C_6H_4BrCH_3$ (Benzene, 1-bromo-3-methyl-) (RN-CAS Registry Number 591-17-3)	**	8.77	PE	4089
$C_7H_7Br^+$	$C_6H_4BrCH_3$ (Benzene, 1-bromo-3-methyl-) (RN-CAS Registry Number 591-17-3)	**	8.60 ± 0.1	EI	3777
$C_7H_7Br^+$	$C_6H_4BrCH_3$ (Benzene, 1-bromo-4-methyl-) (RN-CAS Registry Number 106-38-7)	**	8.67	PE	4089
$C_7H_7Br^+$	$C_6H_4BrCH_3$ (Benzene, 1-bromo-4-methyl-) (RN-CAS Registry Number 106-38-7)	**	8.70 ± 0.1	EI	3777
$C_7H_9Br^+$	C_7H_9Br (bicyclo[2.2.1]hept-2-ene, 5-bromo-, <i>exo</i> -) (RN-CAS Registry Number 5810-82-2)	**	9.2	EI	3900
$C_7H_9Br^+$	C_7H_9Br (Bicyclo[2.2.1]hept-2-ene, 5-bromo-, <i>endo</i> -) (RN-CAS Registry Number 5810-82-2)	**	9.2	EI	3900
$C_{10}H_{15}Br^+$	$C_{10}H_{15}Br$ (tricyclo[3.3.1.1 ^{3,7}]decane, 1-bromo-) (RN-CAS Registry Number 768-90-1) (ON-Other name: 1-Bromoadamantane)	**	9.2	PE	3907
$C_{10}H_{15}Br^+$	$C_{10}H_{15}Br$ (Tricyclo[3.3.1.1 ^{3,7}]decane, 1-bromo-) (RN-CAS Registry Number 768-90-1) (ON-Other name: 1-Bromoadamantane)	**	9.30 ± 0.06	PE	3886
$C_{10}H_{15}Br^+$	$C_{10}H_{15}Br$ (Tricyclo[3.3.1.1 ^{3,7}]decane, 2-bromo-) (RN-CAS Registry Number 7314-85-4) (ON-Other name: 2-Bromoadamantane)	**	9.31 ± 0.05	PE	3886
$C_{12}H_9Br^+$	$C_6H_5C_6H_4Br$ (1,1'-Biphenyl, 4-bromo-) (RN-CAS Registry Number 92-66-0)	**	8.05 ± 0.02	PE	3702
$C_2H_2Br_2(^2B_1)$	<i>cis</i> -CHBr=CHBr (RN-CAS Registry Number 590-11-4)	**	9.32 ± 0.02	PE	3659

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_2Br_2^+(\text{}^2B_2)$	<i>cis</i> -CHBr=CHBr (RN-CAS Registry Number 590-11-4)	**	10.74±0.02 (V)	PE	3659
$C_2H_2Br_2^+(\text{}^2A_2)$	<i>cis</i> -CHBr=CHBr (RN-CAS Registry Number 590-11-4)	**	11.24±0.02 (V)	PE	3659
$C_2H_2Br_2^+(\text{}^2A_1)$	<i>cis</i> -CHBr=CHBr (RN-CAS Registry Number 590-11-4)	**	11.56±0.02 (V)	PE	3659
$C_2H_2Br_2^+(\text{}^2B_2)$	<i>cis</i> -CHBr=CHBr (RN-CAS Registry Number 590-11-4)	**	12.85±0.02 (V)	PE	3659
$C_2H_2Br_2^+(\text{}^2B_1)$	<i>cis</i> -CHBr=CHBr (RN-CAS Registry Number 590-11-4)	**	13.27±0.02 (V)	PE	3659
$C_2H_2Br_2^+(\text{}^2B_2)$	<i>cis</i> -CHBr=CHBr (RN-CAS Registry Number 590-11-4)	**	14.80±0.02 (V)	PE	3659
$C_2H_2Br_2^+(\text{}^2A_1)$	<i>cis</i> -CHBr=CHBr (RN-CAS Registry Number 590-11-4)	**	16.49±0.02 (V)	PE	3659
$C_2H_2Br_2^+(\text{}^2A_u)$	<i>trans</i> -CHBr=CHBr (RN-CAS Registry Number 590-12-5)	**	9.30±0.02	PE	3659
$C_2H_2Br_2^+$	<i>trans</i> -CHBr=CHBr (RN-CAS Registry Number 590-12-5)	**	9.56 (V)	PE	3648
$C_2H_2Br_2^+(\text{}^2A_g, \text{}^2B_g)$	<i>trans</i> -CHBr=CHBr (RN-CAS Registry Number 590-12-5)	**	11.05±0.02	PE	3659
$C_2H_2Br_2^+(\text{}^2Bu)$	<i>trans</i> -CHBr=CHBr (RN-CAS Registry Number 590-12-5)	**	11.60±0.02 (V)	PE	3659
$C_2H_2Br_2^+(\text{}^2A_g, \text{}^2A_u)$	<i>trans</i> -CHBr=CHBr (RN-CAS Registry Number 590-12-5)	**	13.00±0.02 (V)	PE	3659
$C_2H_2Br_2^+(\text{}^2A_g, \text{}^2B_u)$	<i>trans</i> -CHBr=CHBr (RN-CAS Registry Number 590-12-5)	**	15.90±0.02 (V)	PE	3659
$C_2H_2Br_2^*$	<i>trans</i> -CHBr=CHBr (RN-CAS Registry Number 590-12-5)	**	19.14±0.02 (V)	PE	3659
$C_5H_8Br_2^+$	$C_5H_8Br_2$ (Cyclopentane, 1,2-dibromo-, <i>cis</i> -) (RN-CAS Registry Number 33547-17-0)	**	10.02±0.02	PE	4003
$C_5H_8Br_2^+$	$C_5H_8Br_2$ (Cyclopentane, 1,2-dibromo-, <i>trans</i> -) (RN-CAS Registry Number 10230-26-9)	**	10.08±0.02	PE	4003
$C_6H_4Br_2^+$	$C_6H_4Br_2$ (Benzene, 1,2-dibromo-) (RN-CAS Registry Number 583-53-9)	**	9.02 (V)	PE	3873
$C_6H_4Br_2^+$	$C_6H_4Br_2$ (Benzene, 1,3-dibromo-) (RN-CAS Registry Number 108-36-1)	**	9.10 (V)	PE	3873
$C_6H_4Br_2^+$	$C_6H_4Br_2$ (Benzene, 1,4-dibromo-) (RN-CAS Registry Number 106-37-6)	**	8.91 (V)	PE	3873
$C_6H_{10}Br_2^+$	$C_6H_{10}Br_2$ (Cyclohexane, 1,2-dibromo- <i>cis</i> -) (RN-CAS Registry Number 19246-38-9)	**	9.94±0.02	PE	4003

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{C}_6\text{H}_{10}\text{Br}_2^+$	$\text{C}_6\text{H}_{10}\text{Br}_2$ (Cyclohexane, 1,2-dibromo-, <i>trans</i> -) (RN-CAS Registry Number 7429-37-0)	**	10.02 ± 0.02	PE	4003
$\text{C}_{12}\text{H}_8\text{Br}_2^+$	$(\text{C}_6\text{H}_4\text{Br})_2$ (1,1'-Biphenyl, 2,2'-dibromo-) (RN-CAS Registry Number 13029-09-9)	**	8.40 ± 0.02	PE	3702
$\text{C}_6\text{H}_3\text{Br}_3^+$	$\text{C}_6\text{H}_3\text{Br}_3$ (Benzene, 1,3,5-tribromo-) (RN-CAS Registry Number 626-39-1)	**	8.91 (V)	PE	3873
$\text{C}_6\text{H}_6\text{NBr}^+$	$\text{C}_6\text{H}_4\text{BrNHCOCH}_3$ (Acetamide, <i>N</i> -(2-bromophenyl)-) (RN-CAS Registry Number 614-76-6)	$\text{CH}_2=\text{C}=\text{O}$	11.17 ± 0.03	EI	3483
$\text{C}_6\text{H}_6\text{NBr}^+$	$\text{C}_6\text{H}_4\text{BrNHCOCH}_3$ (Acetamide, <i>N</i> -(4-bromophenyl)-) (RN-CAS Registry Number 103-88-8)	$\text{CH}_2=\text{C}=\text{O}$	10.56 ± 0.03	EI	3483
$\text{C}_{18}\text{H}_{17}\text{N}_2\text{Br}^+$	$\text{C}_6\text{H}_4(\text{Br})\text{C}_3\text{H}_3(\text{CN})\text{C}_6\text{H}_4\text{N}(\text{CH}_3)_2$ (Cyclopropanecarbonitrile, 1-(<i>p</i> -bromophenyl)-2-(<i>p</i> -(dimethylamino)phenyl)-) (RN-CAS Registry Number 32589-49-4)	**	7.10 ± 0.05	EDD	3575
$\text{C}_6\text{H}_5\text{NBr}_2^+$	$\text{C}_6\text{H}_3\text{Br}_2\text{NHCOCH}_3$ (Acetamide, <i>N</i> -(2,4-dibromophenyl)-) (RN-CAS Registry Number 23373-04-8)	$\text{CH}_2=\text{C}=\text{O}$	10.24 ± 0.03	EI	3480
$\text{C}_6\text{H}_5\text{NBr}_2^+$	$\text{C}_6\text{H}_3\text{Br}_2\text{NHCOCH}_3$ (Acetamide, <i>N</i> -(2,6-dibromophenyl)-) (RN-CAS Registry Number 33098-80-5)	$\text{CH}_2=\text{C}=\text{O}$	10.02 ± 0.03	EI	3480
$\text{C}_4\text{H}_{12}\text{BN}_2\text{Br}^+$	$((\text{CH}_3)_2\text{N})_2\text{BBr}$ (RN-CAS Registry Number 6990-27-8)	**	8.13	PE	3584
$\text{C}_4\text{H}_{12}\text{BN}_2\text{Br}^+$	$\text{B}(\text{N}(\text{CH}_3)_2)_2\text{Br}$ (RN-CAS Registry Number 6990-27-8)	**	8.16 (V)	PE	3704
$\text{C}_2\text{H}_6\text{BNBr}_2^+$	$(\text{CH}_3)_2\text{NBBBr}$ (RN-CAS Registry Number 7360-64-7)	**	9.55 (V)	PE	3704
$\text{C}_2\text{H}_6\text{BNBr}_2^+$	$(\text{CH}_3)_2\text{NBBBr}$ (RN-CAS Registry Number 7360-64-7)	**	9.60	PE	3584
COBr_2^+	CBr_2O (RN-CAS Registry Number 593-95-3)	**	11.0 (V)	PE	3726
COBr_2^*	CBr_2O (RN-CAS Registry Number 593-95-3)	**	11.5 (V)	PE	3726
$\text{COBr}_2(^2\text{B}_2)$	CBr_2O (RN-CAS Registry Number 593-95-3)	**	11.6 (V)	PE	3726
COBr_2^+	CBr_2O (RN-CAS Registry Number 593-95-3)	**	12.0 (V)	PE	3726
COBr_2^*	CBr_2O (RN-CAS Registry Number 593-95-3)	**	12.4 (V)	PE	3726
$\text{COBr}_2(^2\text{B}_1)$	CBr_2O (RN-CAS Registry Number 593-95-3)	**	14.8	PE	3726

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
COBr_2^+	CBr_2O (RN-CAS Registry Number 593-95-3)	**	16.2 (V)	PE	3726
$\text{C}_5\text{H}_9\text{OBr}^+$	$\text{C}_5\text{H}_8(\text{Br})\text{OH}$ (Cyclopentanol, 2-bromo-, <i>cis</i> -) (RN-CAS Registry Number 28435-62-3)	**	10.19 ± 0.02	PE	4003
$\text{C}_5\text{H}_9\text{OBr}^+$	$\text{C}_5\text{H}_8(\text{Br})\text{OH}$ (Cyclopentanol, 2-bromo-, <i>trans</i> -) (RN-CAS Registry Number 20377-79-1)	**	10.11 ± 0.02	PE	4003
$\text{C}_6\text{H}_4\text{OBr}^+$	$\text{C}_6\text{H}_4\text{BrOCH}_3$ (Benzene, 1-bromo-3-methoxy-) (RN-CAS Registry Number 2398-37-0)	CH_3	12.29 ± 0.1	EI	3446
$\text{C}_6\text{H}_4\text{OBr}^+$	$\text{C}_6\text{H}_4\text{BrOCH}_3$ (Benzene, 1-bromo-4-methoxy-) (RN-CAS Registry Number 104-92-7)	CH_3	11.89 ± 0.1	EI	3446
$\text{C}_6\text{H}_4\text{OBr}^+$	$\text{C}_6\text{H}_4\text{BrNO}_2$ (Benzene, 1-bromo-3-nitro-) (RN-CAS Registry Number 585-79-5)	NO	10.26 ± 0.1	EI	3447
$\text{C}_6\text{H}_4\text{OBr}^+$	$\text{C}_6\text{H}_4\text{BrNO}_2$ (Benzene, 1-bromo-4-nitro-) (RN-CAS Registry Number 586-78-7)	NO	10.55 ± 0.1	EI	3447
$\text{C}_6\text{H}_5\text{OBr}^+$	$\text{C}_6\text{H}_4(\text{OH})\text{Br}$ (Phenol, 2-bromo-) (RN-CAS Registry Number 95-56-7)	**	9.09 ± 0.1	EI	3553
$\text{C}_6\text{H}_5\text{OBr}^+$	$\text{C}_6\text{H}_4\text{BrOOCCH}_3$ (Phenol, 2-bromo-, acetate) (RN-CAS Registry Number 1829-37-4)	$\text{CH}_2=\text{C}=\text{O}$	9.62 ± 0.03	EI	3483
$\text{C}_6\text{H}_5\text{OBr}^+$	$\text{C}_6\text{H}_4\text{BrOOCCH}_3$ (Phenol, 3-bromo-, acetate) (RN-CAS Registry Number 35065-86-2)	$\text{CH}_2=\text{C}=\text{O}$	10.02 ± 0.2	EI	3484
$\text{C}_6\text{H}_5\text{OBr}^+$	$\text{C}_6\text{H}_4\text{BrOOCCH}_3$ (Phenol, 4-bromo-, acetate) (RN-CAS Registry Number 1927-95-3)	$\text{CH}_2=\text{C}=\text{O}$	9.84 ± 0.03	EI	3483
$\text{C}_6\text{H}_5\text{OBr}^+$	$\text{C}_6\text{H}_4\text{BrOOCCH}_3$ (Phenol, 4-bromo-, acetate) (RN-CAS Registry Number 1927-95-3)	$\text{CH}_2=\text{C}=\text{O}$	10.08 ± 0.2	EI	3484
$\text{C}_7\text{H}_4\text{OBr}^+$	$\text{C}_6\text{H}_4(\text{Br})\text{COOH}$ (Benzoic acid, 3-bromo-) (RN-CAS Registry Number 585-76-2)	OH	12.23 ± 0.2	EI	3973
$\text{C}_7\text{H}_4\text{OBr}^+$	$\text{C}_6\text{H}_4(\text{Br})\text{COOH}$ (Benzoic acid, 4-bromo-) (RN-CAS Registry Number 586-76-5)	OH	12.34 ± 0.2	EI	3973
$\text{C}_7\text{H}_7\text{OBr}^+$	$\text{C}_6\text{H}_4\text{BrOCH}_3$ (Benzene, 1-bromo-3-methoxy-) (RN-CAS Registry Number 2398-37-0)	**	8.69 ± 0.1	EI	3446

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_7H_7OBr^+$	$C_6H_4BrOCH_3$ (Benzene, 1-bromo-4-methoxy-) (RN-CAS Registry Number 104-92-7)	**	8.39 ± 0.1	EI	3446
$C_2H_3O_2Br^+$	$CH_2BrCOOH$ (RN-CAS Registry Number 79-08-3)	**	11.0 (V)	PE	3874
$C_7H_5O_2Br^+$	$C_6H_4(Br)COOH$ (Benzoic acid, 3-bromo-) (RN-CAS Registry Number 585-76-2)	**	9.66 ± 0.2	EI	3973
$C_7H_5O_2Br^+$	$C_6H_4(Br)COOH$ (Benzoic acid, 4-bromo-) (RN-CAS Registry Number 586-76-5)	**	9.72 ± 0.2	EI	3973
$C_7H_{11}O_2Br^+$	$C_5H_8(Br)OCOCH_3$ (Cyclopentanol, 2-bromo-, acetate, <i>cis</i> -) (RN-CAS Registry Number 53093-41-7)	**	10.00 ± 0.02	PE	4003
$C_7H_{11}O_2Br^+$	$C_5H_8(Br)OCOCH_3$ (Cyclopentanol, 2-bromo-, acetate, <i>trans</i> -) (RN-CAS Registry Number 53093-42-8)	**	10.07 ± 0.02	PE	4003
$C_8H_7O_2Br^+$	$C_6H_4BrOOCCH_3$ (Phenol, 2-bromo-, acetate) (RN-CAS Registry Number 1829-37-4)	**	8.66 ± 0.03	EI	3483
$C_8H_7O_2Br^+$	$C_6H_4BrOOCCH_3$ (Phenol, 3-bromo-, acetate) (RN-CAS Registry Number 35065-86-2)	**	8.79 ± 0.2	EI	3484
$C_8H_7O_2Br^+$	$C_6H_4BrOOCCH_3$ (Phenol, 4-bromo-, acetate) (RN-CAS Registry Number 1927-95-3)	**	8.42 ± 0.03	EI	3483
$C_8H_7O_2Br^+$	$C_6H_4BrOOCCH_3$ (Phenol, 4-bromo-, acetate) (RN-CAS Registry Number 1927-95-3)	**	8.61 ± 0.2	EI	3484
$C_6H_4OBr_2^+$	$C_6H_3Br_2OOCCH_3$ (Phenol, 2,4-dibromo-, acetate) (RN-CAS Registry Number 36914-79-1)	$CH_2=C=O$	9.45 ± 0.03	EI	3480
$C_6H_4OBr_2^+$	$C_6H_3Br_2OOCCH_3$ (Phenol, 2,6-dibromo-, acetate) (RN-CAS Registry Number 28165-72-2)	$CH_2=C=O$	9.74 ± 0.03	EI	3480
$C_8H_6O_2Br_2^+$	$C_6H_3Br_2OOCCH_3$ (Phenol, 2,4-dibromo-, acetate) (RN-CAS Registry Number 36914-79-1)	**	8.21 ± 0.03	EI	3480
$C_8H_6O_2Br_2^+$	$C_6H_3Br_2OOCCH_3$ (Phenol, 2,6-dibromo-, acetate) (RN-CAS Registry Number 28165-72-2)	**	8.42 ± 0.03	EI	3480
$C_8H_7NOBr^+$	$C_6H_3Br_2NHCOCH_3$ (Acetamide, <i>N</i> -(2,4-dibromophenyl)-) (RN-CAS Registry Number 23373-04-8)		8.84 ± 0.03	EI	3480

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_7NOBr^+$	$C_6H_3Br_2NHCOCH_3$ (Acetamide, <i>N</i> -(2,6-dibromophenyl)-) (RN-CAS Registry Number 33098-80-5)		8.88 ± 0.03	EI	3480
$C_8H_8NOBr^+$	$C_6H_4BrNHCOCH_3$ (Acetamide, <i>N</i> -(2-bromophenyl)-) (RN-CAS Registry Number 614-76-6)	**	8.17 ± 0.03	EI	3483
$C_8H_8NOBr^+$	$C_6H_4BrNHCOCH_3$ (Acetamide, <i>N</i> -(4-bromophenyl)-) (RN-CAS Registry Number 103-88-8)	**	8.17 ± 0.03	EI	3483
$C_6H_4NO_2Br^+$	$C_6H_4BrNO_2$ (Benzene, 1-bromo-3-nitro-) (RN-CAS Registry Number 585-79-5)	**	9.82 ± 0.1	EI	3447
$C_6H_4NO_2Br^+$	$C_6H_4BrNO_2$ (Benzene, 1-bromo-4-nitro-) (RN-CAS Registry Number 586-78-7)	**	9.76 ± 0.1	EI	3447
$C_8H_7NOBr_2^+$	$C_6H_3Br_2NHCOCH_3$ (Acetamide, <i>N</i> -(2,4-dibromophenyl)-) (RN-CAS Registry Number 23373-04-8)	**	8.08 ± 0.03	EI	3480
$C_8H_7NOBr_2^+$	$C_6H_3Br_2NHCOCH_3$ (Acetamide, <i>N</i> -(2,6-dibromophenyl)-) (RN-CAS Registry Number 33098-80-5)	**	8.32 ± 0.03	EI	3480
$BrF^+(X^2\Pi_{3/2})$	BrF (RN-CAS Registry Number 13863-59-7)	**	11.78 ± 0.01	PE	3680
$BrF^+(X^2\Pi_{1/2})$	BrF (RN-CAS Registry Number 13863-59-7)	**	12.09 ± 0.01	PE	3680
$BrF_3(^2B_2, ^2A_1)$	BrF_3 (RN-CAS Registry Number 7787-71-5)	**	12.15 ± 0.04	PE	3680
$BrF_3(^2A_1)$	BrF_3 (RN-CAS Registry Number 7787-71-5)	**	13.58 ± 0.01	PE	3680
$BrF_3(^2B_1)$	BrF_3 (RN-CAS Registry Number 7787-71-5)	**	14.60 ± 0.04 (V)	PE	3680
$BrF_3(^2A_2)$	BrF_3 (RN-CAS Registry Number 7787-71-5)	**	15.05 ± 0.03 (V)	PE	3680
$BrF_3(^2B_2)$	BrF_3 (RN-CAS Registry Number 7787-71-5)	**	15.61 ± 0.03 (V)	PE	3680
$BrF_3(^2B_1)$	BrF_3 (RN-CAS Registry Number 7787-71-5)	**	16.26 ± 0.03	PE	3680
$BrF_3(^2A_1, ^2B_2)$	BrF_3 (RN-CAS Registry Number 7787-71-5)	**	17.59 ± 0.02 (V)	PE	3680
$BrF_3(^2B_1)$	BrF_3 (RN-CAS Registry Number 7787-71-5)	**	18.76 ± 0.04 (V)	PE	3680
BrF_5^+	BrF_5 (RN-CAS Registry Number 7789-30-2)	**	13.172 ± 0.005	PE	3655
CF_3Br^+	CF_3Br (RN-CAS Registry Number 75-63-8)	**	12.0 (V)	PE	3914

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{CF}_3\text{Br}^+(\text{}^2\text{E})$	CF_3Br (RN-CAS Registry Number 75-63-8)	**	12.12 ± 0.02 (V)	PE	4026
$\text{CF}_3\text{Br}^+(\text{}^2\text{A}_1)$	CF_3Br (RN-CAS Registry Number 75-63-8)	**	14.26 ± 0.02 (V)	PE	4026
$\text{CF}_3\text{Br}^+(\text{}^2\text{A}_2)$	CF_3Br (RN-CAS Registry Number 75-63-8)	**	15.78 ± 0.02 (V)	PE	4026
$\text{CF}_3\text{Br}^+(\text{}^2\text{E})$	CF_3Br (RN-CAS Registry Number 75-63-8)	**	16.51 ± 0.02 (V)	PE	4026
$\text{CF}_3\text{Br}^+(\text{}^2\text{E})$	CF_3Br (RN-CAS Registry Number 75-63-8)	**	17.42 ± 0.02 (V)	PE	4026
$\text{CF}_3\text{Br}^+(\text{}^2\text{A}_1)$	CF_3Br (RN-CAS Registry Number 75-63-8)	**	19.8 (V)	PE	4026
$\text{C}_2\text{F}_3\text{Br}^+$	$\text{C}_2\text{F}_3\text{Br}$ (RN-CAS Registry Number 598-73-2)	**	9.67	PE	3589
$\text{C}_5\text{H}_8\text{FBr}^+$	$\text{C}_5\text{H}_8\text{FBr}$ (Cyclopentane, 1-bromo-2-fluoro-, <i>cis</i> -) (RN-CAS Registry Number 51422-72-1)	**	10.10 ± 0.02	PE	4003
$\text{C}_5\text{H}_8\text{FBr}^+$	$\text{C}_5\text{H}_8\text{FBr}$ (Cyclopentane, 1-bromo-2-fluoro-, <i>trans</i> -) (RN-CAS Registry Number 51422-73-2)	**	10.25 ± 0.02	PE	4003
$\text{C}_6\text{H}_{10}\text{FBr}^+$	$\text{C}_6\text{H}_{10}\text{FBr}$ (Cyclohexane, 1-bromo-2-fluoro-, <i>cis</i> -) (RN-CAS Registry Number 51422-74-3)	**	10.04 ± 0.02	PE	4003
$\text{C}_6\text{H}_{10}\text{FBr}^+$	$\text{C}_6\text{H}_{10}\text{FBr}$ (Cyclohexane, 1-bromo-2-fluoro-, <i>trans</i> -) (Rn 17170-96-6)	**	10.18 ± 0.02	PE	4003
$\text{C}_{12}\text{H}_8\text{FBr}^+$	$\text{C}_6\text{H}_4(\text{Br})\text{C}_6\text{H}_4\text{F}$ (1,1'-Biphenyl, 4-bromo-4'-fluoro-) (RN-CAS Registry Number 398-21-0)	**	8.10 ± 0.02	PE	3702
SiBr^+	SiBr (RN-CAS Registry Number 14791-57-2)	**	7.3	D	3558
$\text{SiH}_3\text{Br}^+(\text{}^2\text{E})$	SiH_3Br (RN-CAS Registry Number 13465-73-1)	**	10.90 (V)	PE	3511
$\text{SiH}_3\text{Br}^+(\text{}^2\text{E}_{3/2})$	SiH_3Br (RN-CAS Registry Number 13465-73-1)	**	10.96 ± 0.02 (V)	PE	3510
SiH_3Br^+	SiH_3Br (RN-CAS Registry Number 13465-73-1)	**	11.03 ± 0.05 (V)	PE	3502
$\text{SiH}_3\text{Br}^+(\text{}^2\text{E}_{1/2})$	SiH_3Br (RN-CAS Registry Number 13465-73-1)	**	11.10 ± 0.02 (V)	PE	3510
$\text{SiH}_3\text{Br}^+(\text{}^2\text{A}_1)$	SiH_3Br (RN-CAS Registry Number 13465-73-1)	**	12.85 ± 0.02 (V)	PE	3510
$\text{SiH}_3\text{Br}^+(\text{}^2\text{A}_1)$	SiH_3Br (RN-CAS Registry Number 13465-73-1)	**	12.96 (V)	PE	3511
$\text{SiH}_3\text{Br}^+(\text{}^2\text{E})$	SiH_3Br (RN-CAS Registry Number 13465-73-1)	**	13.3 ± 0.1 (V)	PE	3510

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{SiH}_3\text{Br}^+(\text{}^2\text{E})$	SiH_3Br (RN-CAS Registry Number 13465-73-1)	**	13.43 (V)	PE	3511
$\text{SiH}_3\text{Br}^+(\text{}^2\text{A}_1)$	SiH_3Br (RN-CAS Registry Number 13465-73-1)	**	18.04 (V)	PE	3511
$\text{SiH}_3\text{Br}^+(\text{}^2\text{A}_1)$	SiH_3Br (RN-CAS Registry Number 13465-73-1)	**	18.1 ± 0.1 (V)	PE	3510
$\text{SiH}_3\text{Br}^+(\text{}^2\text{A}_1)$	SiH_3Br (RN-CAS Registry Number 13465-73-1)	**	19.5 ± 0.1 (V)	PE	3510
$\text{SiH}_2\text{Br}_2^+$	SiH_2Br_2 (RN-CAS Registry Number 13768-94-0)	**	10.92 ± 0.02 (V)	PE	3510
$\text{C}_5\text{H}_9\text{SiBr}^+$	$(\text{CH}_3)_3\text{SiC}\equiv\text{CBr}$ (RN-CAS Registry Number 18243-59-9)	**	9.4 ± 0.1	PE	4002
$\text{SiF}_3\text{Br}^+(\text{}^2\text{E})$	SiF_3Br (RN-CAS Registry Number 14049-39-9)	**	12.46 ± 0.02 (V)	PE	4026
$\text{SiF}_3\text{Br}^+(\text{}^2\text{A}_1)$	SiF_3Br (RN-CAS Registry Number 14049-39-9)	**	14.55 ± 0.02 (V)	PE	4026
$\text{SiF}_3\text{Br}^+(\text{}^2\text{A}_2)$	SiF_3Br (RN-CAS Registry Number 14049-39-9)	**	16.10 ± 0.02 (V)	PE	4026
$\text{SiF}_3\text{Br}^+(\text{}^2\text{E})$	SiF_3Br (RN-CAS Registry Number 14049-39-9)	**	16.63 ± 0.02 (V)	PE	4026
$\text{SiF}_3\text{Br}^+(\text{}^2\text{E})$	SiF_3Br (RN-CAS Registry Number 14049-39-9)	**	17.36 ± 0.02 (V)	PE	4026
$\text{SiF}_3\text{Br}^+(\text{}^2\text{A}_1)$	SiF_3Br (RN-CAS Registry Number 14049-39-9)	**	18.10 ± 0.02 (V)	PE	4026
$\text{SiF}_3\text{Br}^+(\text{}^2\text{E})$	SiF_3Br (RN-CAS Registry Number 14049-39-9)	**	18.80 ± 0.02 (V)	PE	4026
$\text{SiF}_3\text{Br}^+(\text{}^2\text{A}_1)$	SiF_3Br (RN-CAS Registry Number 14049-39-9)	**	20.80 ± 0.02 (V)	PE	4026
PBr^+	PBr_3 (RN-CAS Registry Number 7789-60-8)		14.2 ± 0.2	EDD	3556
PBr_2^+	PBr_3 (RN-CAS Registry Number 7789-60-8)	Br	11.2 ± 0.1	EDD	3556
$\text{PBr}_3(\text{}^2\text{A}_1)$	PBr_3 (RN-CAS Registry Number 7789-60-8)	**	9.96 (V)	PE	4023
$\text{PBr}_3(\text{}^2\text{A}_1)$	PBr_3 (RN-CAS Registry Number 7789-60-8)	**	10.00 ± 0.03 (V)	PE	3669
$\text{PBr}_3(\text{}^2\text{A}_2)$	PBr_3 (RN-CAS Registry Number 7789-60-8)	**	10.61 (V)	PE	4023
$\text{PBr}_3(\text{}^2\text{A}_2)$	PBr_3 (RN-CAS Registry Number 7789-60-8)	**	10.67 ± 0.03 (V)	PE	3669
$\text{PBr}_3(\text{}^2\text{E}_{3/2})$	PBr_3 (RN-CAS Registry Number 7789-60-8)	**	10.83 (V)	PE	4023
$\text{PBr}_3(\text{}^2\text{E})$	PBr_3 (RN-CAS Registry Number 7789-60-8)	**	10.87 ± 0.03 (V)	PE	3669
$\text{PBr}_3(\text{}^2\text{E}_{1/2})$	PBr_3 (RN-CAS Registry Number 7789-60-8)	**	11.16 (V)	PE	4023

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{PBr}_3(^2\text{E})$	PBr_3 (RN-CAS Registry Number 7789-60-8)	**	11.79 (V)	PE	4023
$\text{PBr}_3(^2\text{E})$	PBr_3 (RN-CAS Registry Number 7789-60-8)	**	11.85 ± 0.03 (V)	PE	3669
$\text{PBr}_3(^2\text{A}_1)$	PBr_3 (RN-CAS Registry Number 7789-60-8)	**	13.09 ± 0.03 (V)	PE	3669
$\text{PBr}_3(^2\text{A}_1)$	PBr_3 (RN-CAS Registry Number 7789-60-8)	**	13.13 (V)	PE	4023
$\text{PBr}_3(^2\text{E})$	PBr_3 (RN-CAS Registry Number 7789-60-8)	**	14.09 ± 0.03 (V)	PE	3669
$\text{PBr}_3(^2\text{E})$	PBr_3 (RN-CAS Registry Number 7789-60-8)	**	14.12 (V)	PE	4023
PBr_3^+	PBr_3 (RN-CAS Registry Number 7789-60-8)	**	10.1 ± 0.1	EDD	3556
$\text{POBr}_3(^2\text{E}_{3/2})$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	10.75 ± 0.02	PE	3835
$\text{POBr}_3(^2\text{E}_{3/2})$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	10.99 (V)	PE	4023
$\text{POBr}_3(^2\text{E})$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	11.03 ± 0.03 (V)	PE	3669
$\text{POBr}_3(^2\text{E}_{1/2})$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	11.13 ± 0.02 (V)	PE	3835
$\text{POBr}_3(^2\text{E}_{1/2})$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	11.13 (V)	PE	4023
$\text{POBr}_3(^2\text{A}_2)$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	11.36 (V)	PE	4023
$\text{POBr}_3(^2\text{A}_2)$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	11.38 ± 0.02 (V)	PE	3835
$\text{POBr}_3(^2\text{A}_2)$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	11.38 ± 0.03 (V)	PE	3669
$\text{POBr}_3(^2\text{E}_{3/2})$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	11.73 (V)	PE	4023
$\text{POBr}_3(^2\text{E}_{3/2})$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	11.74 ± 0.02 (V)	PE	3835
$\text{POBr}_3(^2\text{E})$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	11.75 ± 0.03 (V)	PE	3669
$\text{POBr}_3(^2\text{E}_{1/2})$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	11.97 (V)	PE	4023
$\text{POBr}_3(^2\text{E}_{1/2})$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	11.98 ± 0.02 (V)	PE	3835
$\text{POBr}_3(^2\text{A}_1)$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	12.39 (V)	PE	4023
$\text{POBr}_3(^2\text{A}_1)$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	12.41 ± 0.03 (V)	PE	3669
$\text{POBr}_3(^2\text{A}_1)$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	12.43 ± 0.02 (V)	PE	3835
$\text{POBr}_3(^2\text{E})$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	12.60 ± 0.03 (V)	PE	3669
$\text{POBr}_3(^2\text{E})$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	12.61 (V)	PE	4023

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{POBr}_3(^2\text{E}_{3/2}, ^2\text{E}_{1/2})$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	12.66 ± 0.03 (V)	PE	3835
$\text{POBr}_3(^2\text{A}_1)$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	14.37 ± 0.02	PE	3835
$\text{POBr}_3(^2\text{A}_1)$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	14.57 ± 0.03 (V)	PE	3669
$\text{POBr}_3(^2\text{A}_1)$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	14.60 (V)	PE	4023
$\text{POBr}_3(^2\text{E})$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	15.34 ± 0.03 (V)	PE	3669
$\text{POBr}_3(^2\text{E})$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	15.35 (V)	PE	4023
$\text{POBr}_3(^2\text{E}_{3/2}, ^2\text{E}_{1/2})$	POBr_3 (RN-CAS Registry Number 7789-59-5)	**	15.39 ± 0.02 (V)	PE	3835
PF_2Br^+	PF_2Br (RN-CAS Registry Number 15597-40-7)	**	11.08 ± 0.1 (V)	PE	3662
$\text{C}_4\text{H}_3\text{SBr}^+$	$\text{C}_4\text{H}_3\text{SBr}$ (Thiophene, 2-bromo-) (RN-CAS Registry Number 1003-09-4)	**	8.664 ± 0.005	PE	3911
$\text{C}_4\text{H}_3\text{SBr}^+$	$\text{C}_4\text{H}_3\text{SBr}$ (Thiophene, 2-bromo-) (RN-CAS Registry Number 1003-09-4)	**	8.664	PE	3645
$\text{C}_4\text{H}_3\text{SBr}^+$	$\text{C}_4\text{H}_3\text{SBr}$ (Thiophene, 2-bromo-) (RN-CAS Registry Number 1003-09-4)	**	8.93 ± 0.05	EI	3482
$\text{C}_4\text{H}_3\text{SBr}^+$	$\text{C}_4\text{H}_3\text{SBr}$ (Thiophene, 2-bromo-) (RN-CAS Registry Number 1003-09-4)	**	8.80	CTS	3787
$\text{C}_4\text{H}_3\text{SBr}^+$	$\text{C}_4\text{H}_3\text{SBr}$ (Thiophene, 3-bromo-) (RN-CAS Registry Number 872-31-1)	**	8.812 ± 0.005	PE	3911
$\text{C}_4\text{H}_3\text{SBr}^+$	$\text{C}_4\text{H}_3\text{SBr}$ (Thiophene, 3-bromo-) (RN-CAS Registry Number 872-31-1)	**	8.812	PE	3645
$\text{C}_4\text{H}_3\text{SBr}^+$	$\text{C}_4\text{H}_3\text{SBr}$ (Thiophene, 3-bromo-) (RN-CAS Registry Number 872-31-1)	**	9.02 ± 0.05	EI	3482
SOBr_2^+	SOBr_2 (RN-CAS Registry Number 507-16-4)	**	10.54 (V)	PE	3646
SOBr_2^+	SOBr_2 (RN-CAS Registry Number 507-16-4)	**	10.63 (V)	PE	3705
SOBr_2^*	SOBr_2 (RN-CAS Registry Number 507-16-4)	**	10.92 (V)	PE	3705
SOBr_2^*	SOBr_2 (RN-CAS Registry Number 507-16-4)	**	11.24 (V)	PE	3705
SOBr_2^*	SOBr_2 (RN-CAS Registry Number 507-16-4)	**	11.68 (V)	PE	3705
$\text{SOBr}_2(^2\text{A}')$	SOBr_2 (RN-CAS Registry Number 507-16-4)	**	12.13 (V)	PE	3705

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{SOBr}_2(^2\text{A}')$	SOBr_2 (RN-CAS Registry Number 507-16-4)	**	12.37 (V)	PE	3705
$\text{SOBr}_2(^2\text{A}')$	SOBr_2 (RN-CAS Registry Number 507-16-4)	**	14.70 (V)	PE	3705
SOBr_2^+	SOBr_2 (RN-CAS Registry Number 507-16-4)	**	15.81 (V)	PE	3705
$\text{SOBr}_3(^2\text{E}_{3/2}, ^2\text{E}_{1/2})$	SOBr_3 (RN-CAS Registry Number XXXXX-XX-X)	**	9.41 ± 0.02	PE	3835
$\text{SOBr}_3(^2\text{A}_2)$	SOBr_3 (RN-CAS Registry Number XXXXX-XX-X)	**	10.92 ± 0.01 (V)	PE	3835
$\text{SOBr}_3(^2\text{E}_{3/2})$	SOBr_3 (RN-CAS Registry Number XXXXX-XX-X)	**	11.20 ± 0.02 (V)	PE	3835
$\text{SOBr}_3(^2\text{E}_{1/2})$	SOBr_3 (RN-CAS Registry Number XXXXX-XX-X)	**	11.42 ± 0.01 (V)	PE	3835
$\text{SOBr}_3(^2\text{A}_1)$	SOBr_3 (RN-CAS Registry Number XXXXX-XX-X)	**	11.83 ± 0.01 (V)	PE	3835
$\text{SOBr}_3(^2\text{E}_{3/2}, ^2\text{E}_{1/2})$	SOBr_3 (RN-CAS Registry Number XXXXX-XX-X)	**	12.20 ± 0.01 (V)	PE	3835
$\text{SOBr}_3(^2\text{A}_1)$	SOBr_3 (RN-CAS Registry Number XXXXX-XX-X)	**	13.68 ± 0.02	PE	3835
$\text{SOBr}_3(^2\text{E}_{3/2}, ^2\text{E}_{1/2})$	SOBr_3 (RN-CAS Registry Number XXXXX-XX-X)	**	14.68 ± 0.02 (V)	PE	3835
SOBr_3^+	SOBr_3 (RN-CAS Registry Number XXXXX-XX-X)	**	~ 18.2 (V)	PE	3835
SOBr_3^+	SOBr_3 (RN-CAS Registry Number XXXXX-XX-X)	**	~ 18.9 (V)	PE	3835
SOBr_3^+	SOBr_3 (RN-CAS Registry Number XXXXX-XX-X)	**	~ 20.2 (V)	PE	3835
$\text{PSBr}_3(^2\text{E})$	PSBr_3 (RN-CAS Registry Number 3931-89-3)	**	9.82 (V)	PE	4023
$\text{PSBr}_3(^2\text{E})$	PSBr_3 (RN-CAS Registry Number 3931-89-3)	**	9.89 ± 0.03 (V)	PE	3669
$\text{PSBr}_3(^2\text{A}_2)$	PSBr_3 (RN-CAS Registry Number 3931-89-3)	**	10.86 (V)	PE	4023
$\text{PSBr}_3(^2\text{A}_2)$	PSBr_3 (RN-CAS Registry Number 3931-89-3)	**	10.94 ± 0.03 (V)	PE	3669
$\text{PSBr}_3(^2\text{E}_{3/2})$	PSBr_3 (RN-CAS Registry Number 3931-89-3)	**	11.16 (V)	PE	4023
$\text{PSBr}_3(^2\text{E})$	PSBr_3 (RN-CAS Registry Number 3931-89-3)	**	11.21 ± 0.03 (V)	PE	3669
$\text{PSBr}_3(^2\text{E}_{1/2})$	PSBr_3 (RN-CAS Registry Number 3931-89-3)	**	11.38 (V)	PE	4023
$\text{PSBr}_3(^2\text{A}_1)$	PSBr_3 (RN-CAS Registry Number 3931-89-3)	**	11.80 (V)	PE	4023
$\text{PSBr}_3(^2\text{A}_1)$	PSBr_3 (RN-CAS Registry Number 3931-89-3)	**	11.87 ± 0.03 (V)	PE	3669
$\text{PSBr}_3(^2\text{E})$	PSBr_3 (RN-CAS Registry Number 3931-89-3)	**	12.15 (V)	PE	4023
$\text{PSBr}_3(^2\text{E})$	PSBr_3 (RN-CAS Registry Number 3931-89-3)	**	12.23 ± 0.03 (V)	PE	3669

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
PSBr ₃ (² A ₁)	PSBr ₃ (RN-CAS Registry Number 3931-89-3)	**	13.91 (V)	PE	4023
PSBr ₃ (² A ₁)	PSBr ₃ (RN-CAS Registry Number 3931-89-3)	**	13.97±0.03 (V)	PE	3669
PSBr ₃ (² E)	PSBr ₃ (RN-CAS Registry Number 3931-89-3)	**	14.59 (V)	PE	4023
PSBr ₃ (² E)	PSBr ₃ (RN-CAS Registry Number 3931-89-3)	**	14.63±0.03 (V)	PE	3669
C ₅ H ₈ ClBr ⁺	C ₅ H ₈ ClBr (Cyclopentane, 1-bromo-2-chloro-, <i>cis</i> -) (RN-CAS Registry Number 37722-39-7)	**	10.13±0.02	PE	4003
C ₅ H ₈ ClBr ⁺	C ₅ H ₈ ClBr (Cyclopentane, 1-bromo-2-chloro-, <i>trans</i> -) (RN-CAS Registry Number 14376-82-0)	**	10.23±0.02	PE	4003
C ₆ H ₁₀ ClBr ⁺	C ₆ H ₁₀ ClBr (Cyclohexane, 1-bromo-2-chloro-, <i>cis</i> -) (RN-CAS Registry Number 51422-75-4)	**	10.03±0.02	PE	4003
C ₆ H ₁₀ ClBr ⁺	C ₆ H ₁₀ ClBr (Cyclohexane, 1-bromo-2-chloro-, <i>trans</i> -) (RN-CAS Registry Number 13898-96-9)	**	10.13±0.02	PE	4003
PClBr ⁺	PClBr ₂ (RN-CAS Registry Number 13550-32-8) (TR-Other product(s) thermochemically reasonable)	Br	11.3±0.1	EDD	3556
PCl ₂ Br ⁺	PCl ₂ Br (RN-CAS Registry Number 13536-48-6)	**	10.4±0.1	EDD	3556
PClBr ₂ ⁺	PClBr ₂ (RN-CAS Registry Number 13550-32-8)	**	10.2±0.1	EDD	3556
C ₅ O ₅ BrMn ⁺	Mn(CO) ₅ Br (RN-CAS Registry Number 14516-54-2)	**	8.86 (V)	PE	3866
C ₆ H ₃ NO ₄ MnBr ⁺	<i>cis</i> -BrMn(CO) ₄ (CCH ₃) (RN-CAS Registry Number 37474-14-9)	**	8.26 (V)	PE	3866
Cu ₃ Br ₃ ⁺	Cu ₃ Br ₃ (RN-CAS Registry Number 37190-22-0)	**	9.7	EI	3954
Cu ₄ Br ₃ ⁺	Cu ₄ Br ₄ (RN-CAS Registry Number XXXXX-XX-X)		10.4	EI	3954
Cu ₄ Br ₄ ⁺	Cu ₄ Br ₄ (RN-CAS Registry Number XXXXX-XX-X)	**	9.2	EI	3954
ZnBr ₂ (² Π _{3/2g})	ZnBr ₂ (RN-CAS Registry Number XXXXX-XX-X)	**	10.89±0.05 (V)	PE	3833
ZnBr ₂ (² Π _{1/2g})	ZnBr ₂ (RN-CAS Registry Number XXXXX-XX-X)	**	11.22±0.05 (V)	PE	3833

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{ZnBr}_2(^2\Pi_u)$	ZnBr_2 (RN-CAS Registry Number XXXXX-XX-X)	**	11.40 ± 0.05 (V)	PE	3833
$\text{ZnBr}_2(^2\Sigma_u)$	ZnBr_2 (RN-CAS Registry Number XXXXX-XX-X)	**	12.28 ± 0.05 (V)	PE	3833
$\text{ZnBr}_2(^2\Sigma_g)$	ZnBr_2 (RN-CAS Registry Number XXXXX-XX-X)	**	13.55 ± 0.05 (V)	PE	3833
ZnBr_2^*	ZnBr_2 (RN-CAS Registry Number XXXXX-XX-X)	**	18.69 ± 0.05 (V)	PE	3833
$\text{ZnBr}_2(^2\Pi_{3/2g})$	ZnBr_2 (RN-CAS Registry Number 7699-45-8)	**	10.8 (V)	PE	3963
$\text{ZnBr}_2(^2\Pi_{3/2u})$	ZnBr_2 (RN-CAS Registry Number 7699-45-8)	**	11.1 (V)	PE	3963
$\text{ZnBr}_2(^2\Pi_{1/2g})$	ZnBr_2 (RN-CAS Registry Number 7699-45-8)	**	11.2 (V)	PE	3963
$\text{ZnBr}_2(^2\Pi_{1/2u})$	ZnBr_2 (RN-CAS Registry Number 7699-45-8)	**	11.4 (V)	PE	3963
$\text{ZnBr}_2(^2\Sigma_u)$	ZnBr_2 (RN-CAS Registry Number 7699-45-8)	**	12.3 (V)	PE	3963
$\text{ZnBr}_2(^2\Sigma_g)$	ZnBr_2 (RN-CAS Registry Number 7699-45-8)	**	13.0 (V)	PE	3963
$\text{GeH}_3\text{Br}^+(^2E_{3/2})$	GeH_3Br (RN-CAS Registry Number 13569-43-2)	**	10.61 ± 0.02 (V)	PE	3510
GeH_3Br^+	GeH_3Br (RN-CAS Registry Number 13569-43-2)	**	10.72 ± 0.05 (V)	PE	3502
$\text{GeH}_3\text{Br}^+(^2E_{1/2})$	GeH_3Br (RN-CAS Registry Number 13569-43-2)	**	10.83 ± 0.02 (V)	PE	3510
$\text{GeH}_3\text{Br}^+(^2A_1)$	GeH_3Br (RN-CAS Registry Number 13569-43-2)	**	12.51 ± 0.02 (V)	PE	3510
$\text{GeH}_3\text{Br}^+(^2E)$	GeH_3Br (RN-CAS Registry Number 13569-43-2)	**	12.9 ± 0.1 (V)	PE	3510
$\text{GeH}_2\text{Br}_2^+$	GeH_2Br_2 (RN-CAS Registry Number 13769-36-3)	**	10.69 ± 0.02 (V)	PE	3510
$\text{Kr}^+(^2P_{3/2})$	Kr (RN-CAS Registry Number 7439-90-9) (RS-Average of eight Rydberg series limits)	**	14.0010 ± 0.0012	S	3881
$\text{Kr}^+(^2P_{3/2})$	Kr (RN-CAS Registry Number 7439-90-9)	**	13.992 ± 0.002	TPE	3525
$\text{Kr}^+(^2P_{1/2})$	Kr (RN-CAS Registry Number 7439-90-9)	**	14.661 ± 0.002	TPE	3525
$\text{Kr}^+(^2P_{3/2})$	Kr (RN-CAS Registry Number 7439-90-9)	**	13.974 ± 0.004	PEN	3541
$\text{KrF}_2(^2\Pi_u)$	KrF_2 (RN-CAS Registry Number 13773-81-4)	**	13.06–13.16	PE	3642
$\text{KrF}_2(^2\Pi_{3/2u})$	KrF_2 (RN-CAS Registry Number 13773-81-4)	**	13.34 (V)	PE	3501
$\text{KrF}_2(^2\Pi_{1/2u})$	KrF_2 (RN-CAS Registry Number 13773-81-4)	**	13.47 (V)	PE	3501

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{KrF}_2(^2\Sigma_g)$	KrF_2 (RN-CAS Registry Number 13773-81-4)	**	13.75	PE	3642
$\text{KrF}_2(^2\Sigma_g)$	KrF_2 (RN-CAS Registry Number 13773-81-4)	**	13.90 (V)	PE	3501
$\text{KrF}_2(^2\Pi_g)$	KrF_2 (RN-CAS Registry Number 13773-81-4)	**	14.0	PE	3642
$\text{KrF}_2(^2\Pi_g)$	KrF_2 (RN-CAS Registry Number 13773-81-4)	**	14.37 (V)	PE	3501
$\text{KrF}_2(^2\Pi_u)$	KrF_2 (RN-CAS Registry Number 13773-81-4)	**	16.25	PE	3642
$\text{KrF}_2(^2\Pi_u)$	KrF_2 (RN-CAS Registry Number 13773-81-4)	**	16.92 (V)	PE	3501
$\text{KrF}_2(^2\Sigma_u)$	KrF_2 (RN-CAS Registry Number 13773-81-4)	**	17.7 (V)	PE	3501
$\text{KrF}_2(^2\Sigma_u)$	KrF_2 (RN-CAS Registry Number 13773-81-4)	**	17.7 (V)	PE	3642
$\text{KrF}_2(^2\Sigma_g?)$	KrF_2 (RN-CAS Registry Number 13773-81-4)	**	22.0	PE	3642
$\text{KrF}_2(^2\Sigma_g)$	KrF_2 (RN-CAS Registry Number 13773-81-4)	**	23.0 (V)	PE	3501
Rb^+	RbOH (RN-CAS Registry Number 1310-82-3)	OH	~ 10	EI	3461
Rb^+	RbCl (RN-CAS Registry Number 7791-11-9)	Cl	8.695 ± 0.03	PI	3536
Rb^+	RbBr (RN-CAS Registry Number 7789-39-1)	Br	8.12 ± 0.03	PI	3536
Rb^+	RbI (RN-CAS Registry Number 7790-29-6)	I	7.53 ± 0.03	PI	3536
Rb^{+2}	Rb^+ (RN-CAS Registry Number 22537-38-8)	**	27.285 ± 0.003	S	3924
RbCl^+	RbCl (RN-CAS Registry Number 7791-11-9)	**	8.50 ± 0.03	PI	3536
RbBr^+	RbBr (RN-CAS Registry Number 7789-39-1)	**	7.935 ± 0.03	PI	3536
Rb_2Br^+	Rb_2Br_2 (RN-CAS Registry Number 12409-58-4)	Br	8.485 ± 0.05	PI	3536
Sr^+	Sr (RN-CAS Registry Number 7440-24-6)	**	~ 5.7	EI	3486

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Sr^{+2}	Sr (RN-CAS Registry Number 7440-24-6)	**	16	EI	3486
Sr^{+3}	Sr (RN-CAS Registry Number 7440-24-6)	**	~ 60	EI	3486
$\text{Sr}^{+3}(^2\text{P}_{3/2})$	Sr^{+2} (RN-CAS Registry Number 22537-39-9)	**	42.88388 ± 0.00019 S		3926
$\text{Sr}^{+3}(^2\text{P}_{1/2})$	Sr^{+2} (RN-CAS Registry Number 22537-39-9)	**	44.08999 ± 0.00019 D		3926
SrCl^+	SrCl (RN-CAS Registry Number 14989-33-4)	**	5.10 ± 0.06	SI	3526
Y^+	Y (RN-CAS Registry Number 7440-65-5)	**	6.7 ± 0.5	EI	3600
$\text{Y}^{+6}(^4\text{S}_{3/2})$	Y^{+5} (RN-CAS Registry Number 39956-79-1)	**	89.26 ± 0.25	S	3917
$\text{Y}^{+6}(^2\text{D}_{5/2})$	Y^{+5} (RN-CAS Registry Number 39956-79-1) (RS-Average of two Rydberg series limits)	**	92.57 ± 0.20	S	3917
YS^+	YS (RN-CAS Registry Number 12210-79-6)	**	6.0	EI	4001
YSe^+	YSe (RN-CAS Registry Number 12067-44-6)	**	7.9 ± 0.5	EI	3600
$\text{Zr}^{+5}(^2\text{P}_{3/2})$	$\text{Zr}^{+4}(^1\text{S}_0)$ (RN-CAS Registry Number 15543-40-5)	**	78.95 ± 0.01	S	3591
$\text{Zr}^{+5}(^2\text{P}_{1/2})$	$\text{Zr}^{+4}(^1\text{S}_0)$ (RN-CAS Registry Number 15543-40-5)	**	80.89 ± 0.01	S	3591
Zr^{+6}	Zr^{+5} (RN-CAS Registry Number 20679-76-9)	**	95.8 ± 0.6	S	3895
Zr^{+6}	Zr^{+5} (RN-CAS Registry Number 20679-76-9)	**	95.8 ± 0.6	S	3912
ZrCl^+	ZrCl_4 (RN-CAS Registry Number 10026-11-6)		21.9	EI	3783
ZrCl_2^+	ZrCl_4 (RN-CAS Registry Number 10026-11-6)		16.8	EI	3783
ZrCl_3^+	ZrCl_4 (RN-CAS Registry Number 10026-11-6)		12.3	EI	3783
ZrCl_4^+	ZrCl_4 (RN-CAS Registry Number 10026-11-6)	**	10.6	EI	3783
$\text{Nb}^{+6}(^2\text{P}_{3/2})$	$\text{Nb}^{+5}(^1\text{S}_0)$ (RN-CAS Registry Number 22537-41-3)	**	102.73 ± 0.01	S	3591

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{Nb}^{+6}(^2\text{P}_{1/2})$	$\text{Nb}^{+5}(^1\text{S}_0)$ (RN-CAS Registry Number 22537-41-3)	**	105.11 ± 0.01	S	3591
Nb^{+7}	Nb^{+6} (RN-CAS Registry Number 23844-85-1)	**	118.9 ± 0.07	PE	3894
NbF_3^+	$\text{NbF}_4?$ (RN-CAS Registry Number 13842-88-1)	F?	21.0	EI	3783
NbF_4^+	$\text{NbF}_4?$ (RN-CAS Registry Number 13842-88-1)	**	14.0	EI	3783
Nb_2F_9^+	$\text{Nb}_2\text{F}_9?$ (RN-CAS Registry Number XXXXX-XX-X)	**	14.2	EI	3783
$\text{Nb}_3\text{F}_{14}^+$	$\text{Nb}_3\text{F}_{14}?$ (RN-CAS Registry Number XXXXX-XX-X)	**	13.0	EI	3783
NbCl^+	NbCl_5 (RN-CAS Registry Number 10026-12-7)		24.2	EI	3783
NbCl_2^+	NbCl_5 (RN-CAS Registry Number 10026-12-7)		19.5	EI	3783
NbCl_3^+	NbCl_5 (RN-CAS Registry Number 10026-12-7)		14.6	EI	3783
NbCl_4^+	NbCl_5 (RN-CAS Registry Number 10026-12-7)		10.7	EI	3783
Mo^+	$((\text{CH}_3)_2\text{N})_3\text{PMo}(\text{CO})_5$ (RN-CAS Registry Number 14971-43-8)		18.4 ± 0.05	EI	3952
Mo^+	$((\text{CH}_3)_2\text{N})_3\text{P}_2\text{Mo}(\text{CO})_4$ (RN-CAS Registry Number 27342-90-1)		15.3 ± 0.05	EI	3952
Mo^+	MoCl_5 (RN-CAS Registry Number 10241-05-1)		23.1	EI	3783
$\text{Mo}^{+7}(^2\text{P}_{3/2})$	$\text{Mo}^{+6}(^1\text{S}_0)$ (RN-CAS Registry Number 16065-87-5)	**	126.81 ± 0.01	S	3591
$\text{Mo}^{+7}(^2\text{P}_{1/2})$	$\text{Mo}^{+6}(^1\text{S}_0)$ (RN-CAS Registry Number 16065-87-5)	**	129.70 ± 0.01	S	3591
Mo^{+8}	Mo^{+7} (RN-CAS Registry Number 20908-14-9)	**	144.0 ± 1.0	PE	3893
$\text{C}_6\text{O}_6\text{Mo}^+$	$\text{Mo}(\text{CO})_6$ (RN-CAS Registry Number 13939-06-5)	**	8.50 ± 0.02 (V)	PE	3979
$\text{C}_6\text{H}_{18}\text{N}_3\text{PMo}^+$	$((\text{CH}_3)_2\text{N})_3\text{PMo}(\text{CO})_5$ (RN-CAS Registry Number 14971-43-8)	5CO	10.3 ± 0.05	EI	3952

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_6H_{18}N_3PMo^+$	$((CH_3)_2N)_3P)_2Mo(CO)_4$ (RN-CAS Registry Number 27342-90-1)		16.1 ± 0.05	EI	3952
$C_{12}H_{36}N_6P_2Mo^+$	$((CH_3)_2N)_3P)_2Mo(CO)_4$ (RN-CAS Registry Number 27342-90-1)	4CO	14.8 ± 0.05	EI	3952
$C_7H_{18}N_3OPMo^+$	$((CH_3)_2N)_3PMo(CO)_5$ (RN-CAS Registry Number 14971-43-8)	4CO	12.1 ± 0.05	EI	3952
$C_8H_{18}N_3O_2PMo^+$	$((CH_3)_2N)_3PMo(CO)_5$ (RN-CAS Registry Number 14971-43-8)	3CO	9.9 ± 0.05	EI	3952
$C_9H_{18}N_3O_3PMo^+$	$((CH_3)_2N)_3PMo(CO)_5$ (RN-CAS Registry Number 14971-43-8)	2CO	9.6 ± 0.05	EI	3952
$C_{10}H_{18}N_3O_4PMo^+$	$((CH_3)_2N)_3PMo(CO)_5$ (RN-CAS Registry Number 14971-43-8)	CO	7.8 ± 0.05	EI	3952
$C_{11}H_{18}N_3O_5PMo^+$	$((CH_3)_2N)_3PMo(CO)_5$ (RN-CAS Registry Number 14971-43-8)	**	5.7 ± 0.05	EI	3952
$C_{13}H_{36}N_6OP_2Mo^+$	$((CH_3)_2N)_3P)_2Mo(CO)_4$ (RN-CAS Registry Number 27342-90-1)	3CO	14.0 ± 0.05	EI	3952
$C_{14}H_{36}N_6O_2P_2Mo^+$	$((CH_3)_2N)_3P)_2Mo(CO)_4$ (RN-CAS Registry Number 27342-90-1)	2CO	11.2 ± 0.05	EI	3952
$C_{15}H_{36}N_6O_3P_2Mo^+$	$((CH_3)_2N)_3P)_2Mo(CO)_4$ (RN-CAS Registry Number 27342-90-1)	CO	11.1 ± 0.05	EI	3952
$C_{16}H_{36}N_6O_4P_2Mo^+$	$((CH_3)_2N)_3P)_2Mo(CO)_4$ (RN-CAS Registry Number 27342-90-1)	**	6.8 ± 0.05	EI	3952
$MoCl^+$	$MoCl_5$ (RN-CAS Registry Number 10241-05-1)		20.3	EI	3783
$MoCl_2^+$	$MoCl_5$ (RN-CAS Registry Number 10241-05-1)		17.1	EI	3783
$MoCl_3^+$	$MoCl_5$ (RN-CAS Registry Number 10241-05-1)		12.9	EI	3783
$MoCl_4^+$	$MoCl_5$ (RN-CAS Registry Number 10241-05-1)		10.1	EI	3783
$MoCl_5^+$	$MoCl_5$ (RN-CAS Registry Number 10241-05-1)	**	9.2	EI	3783
$MoO_2Cl_2^+$	MoO_2Cl_2 (RN-CAS Registry Number 13637-68-8)	**	$12.2 \pm \sim 0.5$	EI	3604

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
MoOCl_3^+	MoOCl_4 (RN-CAS Registry Number 13814-75-0)		10.9 ± 0.5	EI	3604
MoOCl_4^+	MoOCl_4 (RN-CAS Registry Number 13814-75-0)	**	10.6 ± 1	EI	3604
$\text{MoO}_2\text{Br}_2^+$	MoO_2Br_2 (RN-CAS Registry Number 13595-98-7)	**	$10.9 \pm \sim 0.5$	EI	3604
$\text{MoO}_2\text{ClBr}^+$	MoO_2ClBr (RN-CAS Registry Number XXXXX-XX-X)	**	$11.1 \pm \sim 0.5$	EI	3604
Ru^+	$(\text{C}_5\text{H}_5)_2\text{Ru}$ (Ruthenocene) (RN-CAS Registry Number 1287-13-4) (MT-Metastable transition(s) observed)	$(\text{C}_5\text{H}_5)_2$	16.50 ± 0.25	DC	3628
$\text{C}_3\text{H}_3\text{Ru}^+$	$(\text{C}_5\text{H}_5)_2\text{Ru}$ (Ruthenocene) (RN-CAS Registry Number 1287-13-4)		19.6 ± 0.2	EI	3628
$\text{C}_5\text{H}_5\text{Ru}^+$	$(\text{C}_5\text{H}_5)_2\text{Ru}$ (Ruthenocene) (RN-CAS Registry Number 1287-13-4) (MT-Metastable transition(s) observed)	C_5H_5	14.75 ± 0.25	DC	3628
$\text{C}_5\text{H}_5\text{Ru}^+$	$(\text{C}_5\text{H}_5)_2\text{Ru}$ (Ruthenocene) (RN-CAS Registry Number 1287-13-4) (PC-Appearance potential of the corresponding metastable transition)	C_5H_5	14.2 ± 1	EI	3628
$\text{C}_5\text{H}_5\text{Ru}^+$	$(\text{C}_5\text{H}_5)_2\text{Ru}$ (Ruthenocene) (RN-CAS Registry Number 1287-13-4)	$\text{C}_3\text{H}_3 + \text{C}_2\text{H}_2$	16.5 ± 1	EI	3628
$\text{C}_8\text{H}_8\text{Ru}^+$	$(\text{C}_5\text{H}_5)_2\text{Ru}$ (Ruthenocene) (RN-CAS Registry Number 1287-13-4) (PC-Appearance potential of the corresponding metastable transition)	C_2H_2	14.1 ± 1	EI	3628
$\text{C}_8\text{H}_8\text{Ru}^+$	$(\text{C}_5\text{H}_5)_2\text{Ru}$ (Ruthenocene) (RN-CAS Registry Number 1287-13-4) (MT-Metastable transition(s) observed)	C_2H_2	14.6 ± 0.2	EI	3628
$\text{C}_{10}\text{H}_{10}\text{Ru}^+$	$(\text{C}_5\text{H}_5)_2\text{Ru}$ (Ruthenocene) (RN-CAS Registry Number 1287-13-4)	**	7.45 (V)	PE	3688
$\text{C}_{10}\text{H}_{10}\text{Ru}^+$	$(\text{C}_5\text{H}_5)_2\text{Ru}$ (Ruthenocene) (RN-CAS Registry Number 1287-13-4)	**	7.50 ± 0.25	DC	3628

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{12}H_{14}Ru^+$	(C ₅ H ₄ CH ₃) ₂ Ru (Ruthenocene, 1,1'-dimethyl-) (RN-CAS Registry Number 33292-37-4)	**	7.25 (V)	PE	3688
$RuO_4(^2T_2)$	RuO ₄ (RN-CAS Registry Number 20427-56-9)	**	12.09	PE	3836
RuO_4^+	RuO ₄ (RN-CAS Registry Number 20427-56-9)	**	12.16	PE	3838
$RuO_4(^2T_1)$	RuO ₄ (RN-CAS Registry Number 20427-56-9)	**	12.91	PE	3836
$RuO_4(^2A_1)$	RuO ₄ (RN-CAS Registry Number 20427-56-9)	**	13.78	PE	3836
$RuO_4(^2E)$	RuO ₄ (RN-CAS Registry Number 20427-56-9)	**	13.88	PE	3836
$RuO_4(^2T_2)$	RuO ₄ (RN-CAS Registry Number 20427-56-9)	**	16.03 (V)	PE	3836
$C_{15}H_3O_6F_{18}Ru^+$	(CF ₃ COCHCOCF ₃) ₃ Ru (Ruthenium, tris(1,1,1,5,5,5-hexafluoropentanedionato- <i>O,O'</i>)-, (<i>OC</i> -6-11)-) (RN-CAS Registry Number 16827-63-7)	**	8.85±0.07 (V)	PE	3682
RhC^+	RhC (RN-CAS Registry Number 12127-42-3)	**	8.1±0.6	EI	3978
RhC^+	RhC (RN-CAS Registry Number 12127-42-3)	**	8.6±0.04	EI	3902
RhC_2^+	RhC ₂ (RN-CAS Registry Number 37306-47-1)	**	8.1±0.04	EI	3902
$C_7H_7O_4Rh^+$	(CH ₃ COCHCOCH ₃)Rh(CO) ₂ (Dicarbonyl(2,4-pentanedionato)rhodium) (RN-CAS Registry Number 14874-82-9)	**	8.6±0.1	EI	3497
$C_{12}H_9O_4Rh^+$	(CH ₃ COCHCOC ₆ H ₅)Rh(CO) ₂ (Dicarbonyl(1-phenyl-1,3-butanedionato)rhodium) (RN-CAS Registry Number 24151-55-1)	**	8.4±0.1	EI	3497
$C_{17}H_{11}O_4Rh^+$	(C ₆ H ₅ COCHCOC ₆ H ₅)Rh(CO) ₂ (Dicarbonyl(1,3-diphenyl-1,3-propanedionato)rhodium) (RN-CAS Registry Number 24151-56-2)	**	8.4±0.1	EI	3497
$C_{15}H_{21}O_6Rh^+$	(CH ₃ COCHCOCH ₃) ₃ Rh (Tris(2,4-pentanedionato)rhodium) (RN-CAS Registry Number 14284-92-5)	**	7.34±0.01	EI	3496
$C_{15}H_{21}O_6Rh^+$	(CH ₃ COCHCOCH ₃) ₃ Rh (Tris(2,4-pentanedionato)rhodium) (RN-CAS Registry Number 14284-92-5)	**	7.75±0.05	EI	3497
$C_{15}H_{20}NO_8Rh^+$	((CH ₃ CO) ₂ CH) ₂ Rh(NO ₂ C(OCCH ₃) ₂) (<i>OC</i> -6-22-(3-Nitro-2,4-pentanedionato- <i>O</i> ² , <i>O</i> ⁴)bis(2,4-pentanedionato- <i>O,O'</i>)rhodium) (RN-CAS Registry Number 36530-11-7)	**	7.65±0.02	EI	3496

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{15}H_{19}N_2O_{10}Rh^+$	((CH ₃ CO) ₂ CNO ₂) ₂ Rh(CH(OCCH ₃) ₂) ** (OC-6-21-Bis(3-nitro-2,4-pentanedionato- <i>O</i> ² , <i>O</i> ⁴)(2,4-pentanedionato- <i>O</i> , <i>O'</i>)rhodium) (RN-CAS Registry Number 36530-12-8)		7.97 ± 0.03	EI	3496
$C_{15}H_{18}N_3O_{12}Rh^+$	(CH ₃ COC(NO ₂)COCH ₃) ₃ Rh ** (OC-6-11-Tris(3-nitro-2,4-pentanedionato- <i>O</i> ² , <i>O</i> ⁴)rhodium) (RN-CAS Registry Number 36530-13-9)		8.39 ± 0.04	EI	3496
$C_7H_4O_4F_3Rh^+$	(CH ₃ COCHCOCF ₃)Rh(CO) ₂ ** (Dicarbonyl(1,1,1-trifluoro-2,4-pentanedionato)rhodium) (RN-CAS Registry Number 18517-13-0)		8.85 ± 0.05	EI	3497
$C_7HO_4F_6Rh^+$	(CF ₃ COCHCOCF ₃)Rh(CO) ₂ ** (Dicarbonyl(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato)rhodium) (RN-CAS Registry Number 18517-12-9)		9.2 ± 0.1	EI	3497
$RhP_4F_{12}H^+$	HRh(PF ₃) ₄ ** (RN-CAS Registry Number 16949-48-7)		9.7	PE	4021
Pd^+	Pd ** (RN-CAS Registry Number 7440-05-3)		8.0 ± 0.4	EI	3597
$C_6H_{10}Pd^+$	(C ₃ H ₅) ₂ Pd ** (Palladium, bis(η^3 -2-propenyl)-) (RN-CAS Registry Number 12240-87-8)		7.24 ± 0.03	PE	3711
$C_{12}H_{18}N_2O_2Pd^+$	C ₁₂ H ₁₈ O ₂ N ₂ Pd ** (Palladium, [[4,4'-(1,2-ethanediyldinitrilo)bis[2-pentanonato]](2 ⁻)- <i>N,N',O,O'</i>]- (SP-4-2)-) (RN-CAS Registry Number 38337-62-1)		6.88 (V)	PE	3822
Ag^+	Ag ** (RN-CAS Registry Number 7440-22-4)		7.51 ± 0.07	RPD	3574
Ag^+	Ag ** (RN-CAS Registry Number 7440-22-4)		7.6	EI	3472
Ag^+	Ag ** (RN-CAS Registry Number 7440-22-4)		7.8 ± 0.2	EI	3609
Ag^+	AgCl (RN-CAS Registry Number 7783-90-6)		11.1 ± 0.3	EI	3622
Ag^+	Ag ₃ Cl ₃ (RN-CAS Registry Number 12444-97-2)		14.5	EI	3622
Ag^+	Ag ₃ Br ₂ ? (RN-CAS Registry Number 11078-32-3)		11.2 ± 0.4	EI	3467
Ag^+	Ag ₃ Br ₃ ? (RN-CAS Registry Number 11078-33-4)		11.2 ± 0.4	EI	3467
Ag_2^+	Ag ₂ ** (RN-CAS Registry Number 12187-06-3)		7.35 ± 0.05	RPD	3574
Ag_2^+	Ag ₂ ** (RN-CAS Registry Number 12187-06-3)		6.4 ± 0.7	EI	3440
Ag_2^+	Ag ₂ ** (RN-CAS Registry Number 12187-06-3)		7.4 ± 0.8	EI	3597

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Ag_2^+	Ag_2 (RN-CAS Registry Number 12187-06-3)	**	8.0 ± 1.0	EI	3609
Ag_2^+	Ag_3Cl_3 (RN-CAS Registry Number 12444-97-2)		18.0 ± 0.5	EI	3622
Ag_2^+	$\text{Ag}_3\text{Br}_2?$ (RN-CAS Registry Number 11078-32-3)		12.5 ± 1.0	EI	3467
Ag_2^+	$\text{Ag}_3\text{Br}_3?$ (RN-CAS Registry Number 11078-33-4)		12.5 ± 1.0	EI	3467
Ag_3^+	Ag_3Cl_3 (RN-CAS Registry Number 12444-97-2)		18.4 ± 0.5	EI	3605
NaAg^+	NaAg (RN-CAS Registry Number 38782-42-2)	**	$\leq 9 \pm 2$	EI	3609
AgAl^+	AgAl (RN-CAS Registry Number 12379-67-8)	**	7.8 ± 0.5	EI	3796
AgPO_2^+	AgPO_2 (RN-CAS Registry Number XXXXX-XX-X)	**	9.3	EI	4098
AgCl^+	AgCl (RN-CAS Registry Number 7783-90-6)	**	10.8 ± 0.4	EI	3622
AgCl^+	AgCl (RN-CAS Registry Number 7783-90-6)	**	11.3 ± 0.5	EI	3605
AgCl^+	Ag_3Cl_3 (RN-CAS Registry Number 12444-97-2)		14.2	EI	3622
Ag_2Cl^+	$\text{Ag}_2\text{Cl}_2?$ (RN-CAS Registry Number XXXXX-XX-X)		10.8 ± 0.5	EI	3622
Ag_2Cl^+	Ag_3Cl_3 (RN-CAS Registry Number 12444-97-2)		12.9	EI	3622
Ag_2Cl_2^+	Ag_2Cl_2 (RN-CAS Registry Number XXXXX-XX-X)	**	10.3 ± 0.5	EI	3605
Ag_3Cl^+	Ag_3Cl_3 (RN-CAS Registry Number 12444-97-2)		14.9 ± 0.5	EI	3605
Ag_3Cl_2^+	Ag_3Cl_3 (RN-CAS Registry Number 12444-97-2)		11.1 ± 0.3	EI	3622
Ag_3Cl_2^+	Ag_3Cl_3 (RN-CAS Registry Number 12444-97-2)		11.1 ± 0.5	EI	3605
Ag_3Cl_3^+	Ag_3Cl_3 (RN-CAS Registry Number 12444-97-2)	**	10.0 ± 0.5	EI	3605
Ag_3Cl_3^+	Ag_3Cl_3 (RN-CAS Registry Number 12444-97-2)	**	10.4 ± 0.3	EI	3622
Ag_4Cl_3^+	Ag_4Cl_4 (RN-CAS Registry Number XXXXX-XX-X)		10.9 ± 0.5	EI	3605

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Ag_4Cl_4^+	Ag_4Cl_4 (RN-CAS Registry Number XXXXX-XX-X)	**	9.6 ± 1.0	EI	3605
Ag_5Cl_4^+	$\text{Ag}_5\text{Cl}_5?$ (RN-CAS Registry Number XXXXX-XX-X)		10.0 ± 1.5	EI	3605
AgBr^+	AgBr (RN-CAS Registry Number 7785-23-1)	**	9.5 ± 0.3	EI	3467
Ag_2Br^+	$\text{Ag}_3\text{Br}_2?$ (RN-CAS Registry Number 11078-32-3)		11.4 ± 0.7	EI	3467
Ag_2Br^+	$\text{Ag}_3\text{Br}_3?$ (RN-CAS Registry Number 11078-33-4)		11.4 ± 0.7	EI	3467
Ag_3Br_2^+	Ag_3Br_2 (RN-CAS Registry Number 11078-32-3)	**	10.0 ± 0.2	EI	3467
Ag_3Br_3^+	Ag_3Br_3 (RN-CAS Registry Number 11078-33-4)	**	9.8 ± 0.2	EI	3467
$\text{Cd}^+ (^2\text{S}_{1/2})$	Cd (RN-CAS Registry Number 7440-43-9)	**	8.99	PEN	3537
$\text{Cd}^+ (^2\text{P}_{1/2})$	Cd (RN-CAS Registry Number 7440-43-9)	**	14.5	PEN	3537
$\text{Cd}^+ (^2\text{P}_{3/2})$	Cd (RN-CAS Registry Number 7440-43-9)	**	14.9	PEN	3537
$\text{Cd}^+ (^2\text{D}_{5/2})$	Cd (RN-CAS Registry Number 7440-43-9)	**	17.6	PEN	3537
$\text{Cd}^+ (^2\text{D}_{3/2})$	Cd (RN-CAS Registry Number 7440-43-9)	**	18.4	PEN	3537
$\text{Cd}^+ (^2\text{D}_{3/2})$	Cd (RN-CAS Registry Number 7440-43-9)	**	20.2	PEN	3537
Cd^+	Cd (RN-CAS Registry Number 7440-43-9)	**	9.07 ± 0.07	RPD	3745
$\text{CdCl}_2 (^2\Pi_g)$	CdCl_2 (RN-CAS Registry Number 10108-64-2)	**	11.3 (V)	PE	3963
CdCl_2^+	CdCl_2 (RN-CAS Registry Number 10108-64-2)	**	11.44 ± 0.05 (V)	PE	3833
$\text{CdCl}_2 (^2\Pi_u)$	CdCl_2 (RN-CAS Registry Number 10108-64-2)	**	11.8 (V)	PE	3963
$\text{CdCl}_2 (^2\Pi_u)$	CdCl_2 (RN-CAS Registry Number 10108-64-2)	**	11.93 ± 0.05 (V)	PE	3833
$\text{CdCl}_2 (^2\Sigma_u)$	CdCl_2 (RN-CAS Registry Number 10108-64-2)	**	12.4 (V)	PE	3963
$\text{CdCl}_2 (^2\Sigma_u)$	CdCl_2 (RN-CAS Registry Number 10108-64-2)	**	12.53 ± 0.05 (V)	PE	3833
$\text{CdCl}_2 (^2\Sigma_g)$	CdCl_2 (RN-CAS Registry Number 10108-64-2)	**	13.1 (V)	PE	3963
$\text{CdCl}_2 (^2\Sigma_g)$	CdCl_2 (RN-CAS Registry Number 10108-64-2)	**	13.12 ± 0.05 (V)	PE	3833

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{CdBr}_2(^2\Pi_{3/2g})$	CdBr_2 (RN-CAS Registry Number 7789-42-6)	**	10.3 (V)	PE	3963
$\text{CdBr}_2(^2\Pi_{3/2g})$	CdBr_2 (RN-CAS Registry Number 7789-42-6)	**	10.58 ± 0.05 (V)	PE	3833
$\text{CdBr}_2(^2\Pi_{3/2u})$	CdBr_2 (RN-CAS Registry Number 7789-42-6)	**	10.6 (V)	PE	3963
$\text{CdBr}_2(^2\Pi_{1/2g})$	CdBr_2 (RN-CAS Registry Number 7789-42-6)	**	10.7 (V)	PE	3963
$\text{CdBr}_2(^2\Pi_{1/2u})$	CdBr_2 (RN-CAS Registry Number 7789-42-6)	**	10.8 (V)	PE	3963
$\text{CdBr}_2(^2\Pi_{1/2g})$	CdBr_2 (RN-CAS Registry Number 7789-42-6)	**	10.94 ± 0.05 (V)	PE	3833
$\text{CdBr}_2(^2\Pi_u)$	CdBr_2 (RN-CAS Registry Number 7789-42-6)	**	11.15 ± 0.05 (V)	PE	3833
$\text{CdBr}_2(^2\Sigma_u)$	CdBr_2 (RN-CAS Registry Number 7789-42-6)	**	11.7 (V)	PE	3963
$\text{CdBr}_2(^2\Sigma_u)$	CdBr_2 (RN-CAS Registry Number 7789-42-6)	**	11.85 ± 0.05 (V)	PE	3833
$\text{CdBr}_2(^2\Sigma_g)$	CdBr_2 (RN-CAS Registry Number 7789-42-6)	**	12.4 (V)	PE	3963
$\text{CdBr}_2(^2\Sigma_g)$	CdBr_2 (RN-CAS Registry Number 7789-42-6)	**	12.78 ± 0.05 (V)	PE	3833
In^+	In (RN-CAS Registry Number 7440-74-6)	**	5.85 ± 0.07	RPD	3745
In_2^+	$\text{In}_2\text{O}^?$ (RN-CAS Registry Number 12030-22-7)		12.9 ± 0.5	EI	3491
InO^+	$\text{In}_2\text{O}^?$ (RN-CAS Registry Number 12030-22-7)	$\text{In}^?$	14.8 ± 0.5	EI	3491
In_2O^+	$\text{In}_2\text{O}^?$ (RN-CAS Registry Number 12030-22-7)	**	8.3 ± 0.3	EI	3491
$\text{InCl}^+(X^2\Sigma)$	InCl (RN-CAS Registry Number 13465-10-6)	**	9.51	PE	3640
$\text{InCl}^+(^2\Pi)$	InCl (RN-CAS Registry Number 13465-10-6)	**	10.17	PE	3640
$\text{InCl}^+(^2\Sigma)$	InCl (RN-CAS Registry Number 13465-10-6)	**	12.82	PE	3640
$\text{InBr}^+(^2\Pi)$	InBr (RN-CAS Registry Number 14280-53-6)	**	6.62	PE	3640
$\text{InBr}^+(X^2\Sigma)$	InBr (RN-CAS Registry Number 14280-53-6)	**	9.09	PE	3640
$\text{InBr}^+(^2\Sigma)$	InBr (RN-CAS Registry Number 14280-53-6)	**	12.38	PE	3640
Sn^+	Sn (RN-CAS Registry Number 7440-31-5)	**	7.28 ± 0.07	RPD	3745

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{SnH}_4(^2\text{B}_2)$	SnH_4 (RN-CAS Registry Number 2406-52-2)	**	10.75	PE	3716
$\text{SnH}_4(^2\text{A}_1)$	SnH_4 (RN-CAS Registry Number 2406-52-2)	**	16.68	PE	3716
$\text{C}_3\text{H}_9\text{Sn}^+$	$(\text{CH}_3)_4\text{Sn}$ (RN-CAS Registry Number 594-27-4)	CH_3	9.58 ± 0.19	EI	3548
$\text{C}_3\text{H}_9\text{Sn}^+$	$(\text{CH}_3)_3\text{CSn}(\text{CH}_3)_3$ (RN-CAS Registry Number 3531-47-3)	$(\text{CH}_3)_3\text{C}$	9.32 ± 0.16	EI	3548
$\text{C}_3\text{H}_9\text{Sn}^+$	$(\text{CH}_3)_3\text{SnSn}(\text{CH}_3)_3$ (RN-CAS Registry Number 661-69-8)	$(\text{CH}_3)_3\text{Sn}$	9.51 ± 0.22	EI	3548
$\text{C}_3\text{H}_9\text{Sn}^+$	$(\text{CH}_3)_3\text{SiSn}(\text{CH}_3)_3$ (RN-CAS Registry Number 16393-88-7)	$(\text{CH}_3)_3\text{Si}$	9.80 ± 0.24	EI	3548
$\text{C}_3\text{H}_9\text{Sn}^+$	$\text{C}_5\text{H}_5(\text{CO})_3\text{CrSn}(\text{CH}_3)_3$ (Tricarbonyl(η^5 -2,4-cyclopentadien-1-yl)(trimethylstannyl)chromium) (RN-CAS Registry Number 31854-87-2)	$\text{C}_5\text{H}_5(\text{CO})_3\text{Cr?}$	9.09 ± 0.1	EI	3495
$\text{C}_3\text{H}_9\text{Sn}^+$	$(\text{CH}_3)_3\text{GeSn}(\text{CH}_3)_3$ (RN-CAS Registry Number 16393-89-8)	$(\text{CH}_3)_3\text{Ge}$	9.85 ± 0.22	EI	3548
$\text{C}_3\text{H}_9\text{Sn}^+$	$\text{C}_5\text{H}_5(\text{CO})_3\text{MoSn}(\text{CH}_3)_3$ (Tricarbonyl(η^5 -2,4-cyclopentadien-1-yl)(trimethylstannyl)molybdenum) (RN-CAS Registry Number 12214-92-5)	$\text{C}_5\text{H}_5(\text{CO})_3\text{Mo?}$	9.85 ± 0.1	EI	3495
$\text{C}_3\text{H}_9\text{Sn}^+$	$\text{C}_5\text{H}_5(\text{CO})_3\text{WSn}(\text{CH}_3)_3$ (Tricarbonyl(η^5 -2,4-cyclopentadien-1-yl)(trimethylstannyl)tungsten) (RN-CAS Registry Number 12093-29-7)	$\text{C}_5\text{H}_5(\text{CO})_3\text{W?}$	10.05 ± 0.15	EI	3495
$\text{C}_4\text{H}_{12}\text{Sn}^+$	$(\text{CH}_3)_4\text{Sn}$ (RN-CAS Registry Number 594-27-4)	**	8.85 ± 0.1	PE	3677
$\text{C}_4\text{H}_{12}\text{Sn}^+$	$(\text{CH}_3)_4\text{Sn}$ (RN-CAS Registry Number 594-27-4)	**	8.93 ± 0.04	PE	3880
$\text{C}_4\text{H}_{12}\text{Sn}^+$	$(\text{CH}_3)_4\text{Sn}$ (RN-CAS Registry Number 594-27-4)	**	8.76 ± 0.12	EI	3548
$\text{C}_7\text{H}_{18}\text{Sn}^+$	$(\text{CH}_3)_3\text{CSn}(\text{CH}_3)_3$ (RN-CAS Registry Number 3531-47-3)	**	8.34 ± 0.11	EI	3548
$\text{C}_9\text{H}_{14}\text{Sn}^+$	$\text{C}_6\text{H}_5\text{Sn}(\text{CH}_3)_3$ (Stannane, trimethylphenyl-) (RN-CAS Registry Number 934-56-5)	**	~ 8.75	CTS	3922
$\text{C}_{10}\text{H}_{16}\text{Sn}^+$	$\text{C}_6\text{H}_5\text{CH}_2\text{Sn}(\text{CH}_3)_3$ (Stannane, trimethyl(phenylmethyl)-) (RN-CAS Registry Number 4314-94-7)	**	7.91	CTS	3922
$\text{C}_{12}\text{H}_{16}\text{Sn}^+$	$\text{C}_9\text{H}_7\text{Sn}(\text{CH}_3)_3$ (Stannane, 1 <i>H</i> -inden-1-yltrimethyl-) (RN-CAS Registry Number 23022-40-4)	**	7.29 ± 0.01	EI	3805
$\text{C}_{12}\text{H}_{18}\text{Sn}^+$	$\text{C}_9\text{H}_9\text{Sn}(\text{CH}_3)_3$ (Stannane, (2,3-dihydro-1 <i>H</i> -inden-1-yl)trimethyl-) (RN-CAS Registry Number 41273-55-6)	**	7.29 ± 0.01	EI	3805

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{13}H_{16}Sn^+$	$C_{10}H_7Sn(CH_3)_3$ (Stannane, trimethyl-1-naphthalenyl-) (RN-CAS Registry Number 944-85-4)	**	7.99	CTS	3922
$C_{14}H_{18}Sn^+$	$C_{10}H_7CH_2Sn(CH_3)_3$ (Stannane, trimethyl(1-naphthalenylmethyl)-) (RN-CAS Registry Number 51220-36-1)	**	~7.6	CTS	3922
$C_{14}H_{30}Sn^+$	$CH_2=CHSn(n-C_4H_9)_3$ (RN-CAS Registry Number 7486-35-3)	**	8.6 (V)	PE	3850
$C_{15}H_{32}Sn^+$	$CH_2=CHCH_2Sn(n-C_4H_9)_3$ (RN-CAS Registry Number 24850-33-7)	**	8.4 (V)	PE	3850
$C_{16}H_{36}Sn^+$	$(n-C_4H_9)_4Sn$ (RN-CAS Registry Number 1461-25-2)	**	8.7 (V)	PE	3850
$C_{24}H_{20}Sn^+$	$(C_6H_5)_4Sn$ (Stannane, tetraphenyl-) (RN-CAS-Registry Number 595-90-4)	**	8.34 ± 0.03	PI	4055
$C_6H_{18}Sn_2^+$	$(CH_3)_3SnSn(CH_3)_3$ (RN-CAS Registry Number 661-69-8)	**	8.02 ± 0.15	EI	3548
SnO^+	SnO (RN-CAS Registry Number 21651-19-4)	**	9.5 ± 1	EI	3819
$C_6H_{18}SiSn^+$	$(CH_3)_3SiSn(CH_3)_3$ (RN-CAS Registry Number 16393-88-7)	**	8.18 ± 0.14	EI	3548
$C_{16}H_{44}Si_4Sn^+$	$((CH_3)_3SiCH_2)_4Sn$ (RN-CAS Registry Number 18547-12-1)	**	8.71 ± 0.1 (V)	PE	3830
$C_6H_{18}GeSn^+$	$(CH_3)_3GeSn(CH_3)_3$ (RN-CAS Registry Number 16393-89-8)	**	8.20 ± 0.10	EI	3548
$SnBrCl^+$	$SnBrCl$ (RN-CAS Registry Number 13595-90-9)	**	10.3 ± 0.3	EI	3800
$SnBr_2Cl^+$	$SnBr_2Cl_2?$ (RN-CAS Registry Number 13550-35-1)		12.0	EI	3800
$SnBr_2Cl^+$	$SnBr_3Cl?$ (RN-CAS Registry Number 14779-73-8)		12.0	EI	3800
$SnBr_3Cl^+$	$SnBr_3Cl$ (RN-CAS Registry Number 14779-73-8)	**	11.1 ± 0.3	EI	3800
Sb^+	Sb (RN-CAS Registry Number 7440-36-0)	**	8.68 ± 0.06	EI	3956
Sb_2^+	Sb_2 (RN-CAS Registry Number 32679-33-7)	**	9.3 ± 0.2	S	3567

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Sb_2^+	Sb_2 (RN-CAS Registry Number 32679-33-7)	**	8.4 ± 0.3	RPD	3599
Sb_2^+	Sb_2 (RN-CAS Registry Number 32679-33-7)	**	8.64 ± 0.06	EI	3956
Sb_2^+	Sb_2 (RN-CAS Registry Number 32679-33-7)	**	8.9 ± 0.3	EI	3961
Sb_2^+	Sb_2 (RN-CAS Registry Number 32679-33-7)	**	9.5 ± 0.5	EI	3555
Sb_2^+	Sb_4 (RN-CAS Registry Number 12597-17-0)		11.4 ± 0.4	RPD	3599
Sb_3^+	Sb_3 (RN-CAS Registry Number 37267-70-2)	**	8.5 ± 0.3	RPD	3599
Sb_3^+	Sb_3 (RN-CAS Registry Number 37267-70-2)	**	7.50 ± 0.13	EI	3956
Sb_3^+	Sb_3 (RN-CAS Registry Number 37267-70-2)	**	9.0 ± 0.2	EI	3961
Sb_3^+	Sb_4 (RN-CAS Registry Number 12597-17-0)		10.8 ± 0.5	RPD	3599
Sb_3^+	Sb_4 (RN-CAS Registry Number 12597-17-0)	Sb	10.8 ± 0.3	EI	3961
Sb_4^+	Sb_4 (RN-CAS Registry Number 12597-17-0)	**	7.70 ± 0.06	EI	3956
Sb_4^+	Sb_4 (RN-CAS Registry Number 12597-17-0)	**	8.4 ± 0.3	EI	3961
Sb_4^+	Sb_4 (RN-CAS Registry Number 12597-17-0)	**	9.1 ± 0.3	EI	3555
$\text{SbH}_3(^2\text{A}_1)$	SbH_3 (RN-CAS Registry Number 7803-52-3)	**	9.51	PE	3719
$\text{SbH}_3(^2\text{E})$	SbH_3 (RN-CAS Registry Number 7803-52-3)	**	11.39 ± 0.02	PE	3719
$\text{C}_5\text{H}_5\text{Sb}^+$	$\text{C}_5\text{H}_5\text{Sb}$ (Antimonin) (RN-CAS Registry Number 289-75-8)	**	8.3 (V)	PE	3832
SbF_3^+	SbF_3 (RN-CAS Registry Number 7783-56-4)	**	12.61 ± 0.1	EI	3578
SbP^+	SbP (RN-CAS Registry Number 25889-81-0)	**	9.9 ± 0.3	EI	3596
TeH^+	TeH (RN-CAS Registry Number 13940-36-8)	**	9.09	S	3742
$\text{H}_2\text{Te}^+(^2\text{B}_1)$	H_2Te (RN-CAS Registry Number 7783-09-7)	**	9.14	PE	3719
$\text{H}_2\text{Te}^+(^2\text{A}_1)$	H_2Te (RN-CAS Registry Number 7783-09-7)	**	11.63	PE	3719

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{H}_2\text{Te}^+(\text{}^2\text{B}_2)$	H_2Te (RN-CAS Registry Number 7783-09-7)	**	13.04	PE	3719
$\text{H}_2\text{Te}^+(\text{}^2\text{A}_1)$	H_2Te (RN-CAS Registry Number 7783-09-7)	**	18.6 (V)	PE	3719
$\text{C}_2\text{H}_6\text{Te}^+$	$(\text{CH}_3)_2\text{Te}$ (RN-CAS Registry Number 593-80-6) (RS-Average of three Rydberg series limits)	**	7.926 ± 0.010	S	3970
$\text{C}_2\text{H}_6\text{Te}^+(\text{}^2\text{B}_1)$	$(\text{CH}_3)_2\text{Te}$ (RN-CAS Registry Number 593-80-6)	**	7.89 (V)	PE	3656
$\text{C}_4\text{H}_4\text{Te}^+$	$\text{C}_4\text{H}_4\text{Te}$ (Tellurophene) (RN-CAS Registry Number 288-08-4)	**	8.27	PE	3858
$\text{C}_4\text{H}_4\text{Te}^+$	$\text{C}_4\text{H}_4\text{Te}$ (Tellurophene) (RN-CAS Registry Number 288-08-4)	**	8.40 ± 0.03	PE	3804
$\text{C}_4\text{H}_4\text{Te}^+$	$\text{C}_4\text{H}_4\text{Te}$ (Tellurophene) (RN-CAS Registry Number 288-08-4)	**	8.60 ± 0.1	EI	3804
$\text{C}_5\text{H}_6\text{Te}^+$	$\text{C}_4\text{H}_3\text{TeCH}_3$ (Tellurophene, 2-methyl-) (RN-CAS Registry Number 35246-25-4)	**	8.25 ± 0.1	EI	3804
$\text{C}_5\text{H}_4\text{OTe}^+$	$\text{C}_4\text{H}_3\text{TeCHO}$ (2-Telluorophenecarboxaldehyde) (RN-CAS Registry Number 35273-64-4)	**	8.88 ± 0.1	EI	3804
$\text{C}_6\text{H}_6\text{OTe}^+$	$\text{C}_4\text{H}_3\text{TeCOCH}_3$ (Ethanone, 1-telluorophene-2-yl-) (RN-CAS Registry Number 35273-65-5)	**	8.60 ± 0.1	EI	3804
$\text{C}_5\text{H}_4\text{O}_2\text{Te}^+$	$\text{C}_4\text{H}_3\text{TeCOOH}$ (2-Telluorophenecarboxylic acid) (RN-CAS Registry Number 35246-22-1)	**	8.80 ± 0.1	EI	3804
$\text{C}_6\text{H}_6\text{O}_2\text{Te}^+$	$\text{C}_4\text{H}_3\text{TeCOOCH}_3$ (2-Telluorophenecarboxylic acid methyl ester) (RN-CAS Registry Number 35246-23-2)	**	8.64 ± 0.1	EI	3804
TeP^+	TeP (RN-CAS Registry Number 51890-39-2)	**	7.8 ± 1.0	EI	4001
$\text{C}_5\text{H}_6\text{STe}^+$	$\text{C}_4\text{H}_3\text{TeSCH}_3$ (Tellurophene, 2-(methylthio)-) (RN-CAS Registry Number 51299-95-7)	**	8.15 ± 0.1	EI	3804
$\text{Ge}_2\text{H}_6\text{Te}^+(\text{}^2\text{B}_1)$	$(\text{GeH}_3)_2\text{Te}$ (RN-CAS Registry Number 24312-07-0)	**	8.34 (V)	PE	3656

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
I^+	CH ₂ I ₂ (RN-CAS Registry Number 75-11-6) (AD-0.131 eV average translational energy of decomposition at threshold) (TR-Other product(s) thermochemically reasonable)	CH ₂ I	13.8	RPD	3490
I^+	CH ₂ I ₂ (RN-CAS Registry Number 75-11-6) (AD-0.13 eV average translational energy of decomposition at threshold) (TR-Other product(s) thermochemically reasonable)	CH ₂ I	13.2±0.1	EI	3442
$I_2(^2\Pi_{3/2g})$	I ₂ (RN-CAS Registry Number 7553-56-2) (HB-Threshold value approximately corrected for hot bands)	**	9.311±0.002	PE	3870
$I_2(^2\Pi_{1/2g})$	I ₂ (RN-CAS Registry Number 7553-56-2) (HB-Threshold value approximately corrected for hot bands)	**	9.953±0.002	PE	3870
I_2^+	WO ₂ I ₂ (RN-CAS Registry Number 14447-89-3)		15.0±0.8	EI	3451
I_2^2	I ₂ (RN-CAS Registry Number 7553-56-2)	**	25.5±0.4	EI	4052
$CH_3I^+(^2E_{3/2})$	CH ₃ I (RN-CAS Registry Number 74-88-4) (RS-Average of three Rydberg series limits)	**	9.538	S	3748
$CH_3I^+(^2E_{1/2})$	CH ₃ I (RN-CAS Registry Number 74-88-4) (RS-Average of three Rydberg series limits)	**	10.17	S	3748
$CH_3I^+(^2E_{3/2})$	CH ₃ I (RN-CAS Registry Number 74-88-4)	**	9.52	PE	3532
$CH_3I^+(^2E_{1/2})$	CH ₃ I (RN-CAS Registry Number 74-88-4)	**	10.14	PE	3532
CH_3I^+	CH ₃ I (RN-CAS Registry Number 74-88-4)	**	9.48±0.03	EDD	3626
$C_2HI^+(^2E_{3/2})$	CH≡CI (RN-CAS Registry Number 14545-08-5)	**	9.7397	S	3751
$C_2HI^+(^2E_{1/2})$	CH≡CI (RN-CAS Registry Number 14545-08-5)	**	10.143	S	3751
$C_2H_3I^+$	CH ₂ =CHI (RN-CAS Registry Number 593-66-8)	**	9.33	PE	3863
$C_2H_5I^+(^2E_{3/2})$	C ₂ H ₅ I (RN-CAS Registry Number 75-03-6) (RS-Average of three Rydberg series limits)	**	9.346	S	3748
$C_2H_5I^+(^2E_{1/2})$	C ₂ H ₅ I (RN-CAS Registry Number 75-03-6) (RS-Average of three Rydberg series limits)	**	9.929	S	3748
$C_2H_5I^+(^2E_{3/2})$	C ₂ H ₅ I (RN-CAS Registry Number 75-03-6)	**	9.34 (V)	PE	4076

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_2H_5I^+(^2E_{3/2})$	C_2H_5I (RN-CAS Registry Number 75-03-6)	**	9.35	PE	3532
$C_2H_5I^+$	C_2H_5I (RN-CAS Registry Number 75-03-6)	**	9.45 ± 0.02 (V)	PE	3987
$C_2H_5I^+(^2E_{1/2})$	C_2H_5I (RN-CAS Registry Number 75-03-6)	**	9.93	PE	3532
$C_2H_5I^+(^2E_{1/2})$	C_2H_5I (RN-CAS Registry Number 75-03-6)	**	9.93 (V)	PE	4076
$C_3H_5I^+$	$CH_2=CHCH_2I$ (RN-CAS Registry Number 556-56-9)	**	9.30	PE	4091
$C_3H_5I^+$	$CH_2=CHCH_2I$ (RN-CAS Registry Number 556-56-9)	**	9.30 (V)	PE	3863
$C_3H_7I^+(^2E_{3/2})$	$n-C_3H_7I$ (RN-CAS Registry Number 107-08-4)	**	9.269	S	3748
(RS-Average of three Rydberg series limits)					
$C_3H_7I^+(^2E_{1/2})$	$n-C_3H_7I$ (RN-CAS Registry Number 107-08-4)	**	9.847	S	3748
(RS-Average of three Rydberg series limits)					
$C_3H_7I^+(^2E_{3/2})$	$n-C_3H_7I$ (RN-CAS Registry Number 107-08-4)	**	9.25	PE	3532
$C_3H_7I^+(^2E_{3/2})$	$n-C_3H_7I$ (RN-CAS Registry Number 107-08-4)	**	9.27	PE	4076
$C_3H_7I^+(^2E_{1/2})$	$n-C_3H_7I$ (RN-CAS Registry Number 107-08-4)	**	9.82	PE	4076
$C_3H_7I^+(^2E_{1/2})$	$n-C_3H_7I$ (RN-CAS Registry Number 107-08-4)	**	9.83	PE	3532
$C_3H_7I^+(^2E_{3/2})$	$iso-C_3H_7I$ (RN-CAS Registry Number 75-30-9)	**	9.19	PE	3532
$C_3H_7I^+(^2E_{1/2})$	$iso-C_3H_7I$ (RN-CAS Registry Number 75-30-9)	**	9.75	PE	3532
$C_3H_7I^+$	$iso-C_3H_7I$ (RN-CAS Registry Number 75-30-9)	**	$9.2 \pm < 0.1$	EI	3735
$C_4H_9I^+(^2E_{3/2})$	$n-C_4H_9I$ (RN-CAS Registry Number 542-69-8)	**	9.229	S	3748
(RS-Average of four Rydberg series limits)					
$C_4H_9I^+(^2E_{1/2})$	$n-C_4H_9I$ (RN-CAS Registry Number 542-69-8)	**	9.791	S	3748
(RS-Average of three Rydberg series limits)					
$C_4H_9I^+(^2E_{3/2})$	$n-C_4H_9I$ (RN-CAS Registry Number 542-69-8)	**	9.23	PE	3532
$C_4H_9I^+$	$n-C_4H_9I$ (RN-CAS Registry Number 542-69-8)	**	9.24	PE	4076
$C_4H_9I^+(^2E_{1/2})$	$n-C_4H_9I$ (RN-CAS Registry Number 542-69-8)	**	9.79	PE	4076
$C_4H_9I^+(^2E_{1/2})$	$n-C_4H_9I$ (RN-CAS Registry Number 542-69-8)	**	9.81	PE	3532
$C_4H_9I^+(^2E_{3/2})$	$tert-C_4H_9I$ (RN-CAS Registry Number 558-17-8)	**	9.08	PE	3532

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_4H_9I^+ (^2E_{1/2})$	<i>tert</i> - C_4H_9I (RN-CAS Registry Number 558-17-8)	**	9.64	PE	3532
$C_5H_{11}I^+ (^2E_{3/2})$	n - $C_5H_{11}I$ (RN-CAS Registry Number 628-17-1) (RS-Average of three Rydberg series limits)	**	9.201	S	3748
$C_5H_{11}I^+ (^2E_{1/2})$	n - $C_5H_{11}I$ (RN-CAS Registry Number 628-17-1) (RS-Average of two Rydberg series limits)	**	9.760	S	3748
$C_5H_{11}I^+ (^2E_{3/2})$	n - $C_5H_{11}I$ (RN-CAS Registry Number 628-17-1)	**	9.22	PE	3532
$C_5H_{11}I^+ (^2E_{1/2})$	n - $C_5H_{11}I$ (RN-CAS Registry Number 628-17-1)	**	9.78	PE	3532
$C_6H_{13}I^+ (^2E_{3/2})$	n - $C_6H_{13}I$ (RN-CAS Registry Number 638-45-9) (RS-Average of three Rydberg series limits)	**	9.179	S	3748
$C_6H_{13}I^+ (^2E_{1/2})$	n - $C_6H_{13}I$ (RN-CAS Registry Number 638-45-9) (RS-Average of three Rydberg series limits)	**	9.742	S	3748
$C_7H_7I^+$	$C_6H_5CH_2I$ (Benzene, (iodomethyl)-) (RN-CAS Registry Number 620-05-3)	**	8.91 (V)	PE	3992
$C_7H_7I^+$	$C_6H_4ICH_3$ (Benzene, 1-iodo-2-methyl-) (RN-CAS Registry Number 615-37-2)	**	8.53±0.1	EI	3777
$C_7H_7I^+$	$C_6H_4ICH_3$ (Benzene, 1-iodo-3-methyl-) (RN-CAS Registry Number 625-95-6)	**	8.55±0.1	EI	3777
$C_7H_7I^+$	$C_6H_4ICH_3$ (Benzene, 1-iodo-4-methyl-) (RN-CAS Registry Number 624-31-7)	**	8.60±0.1	EI	3777
$C_{12}H_9I^+$	$C_6H_5C_6H_4I$ (1,1'-Biphenyl, 2-iodo-) (RN-CAS Registry Number 2113-51-1)	**	8.20±0.02	PE	3702
$C_2H_2I_2^+$	<i>trans</i> - $CHI=CHI$ (RN-CAS Registry Number 590-27-2)	**	8.92 (V)	PE	3648
$C_6H_6NI^+$	$C_6H_4INHCOCH_3$ (Acetamide, <i>N</i> -(2-iodophenyl)-) (RN-CAS Registry Number 19591-17-4)	$CH_2=C=O$	10.48±0.03	EI	3483
$C_6H_6NI^+$	$C_6H_4INHCOCH_3$ (Acetamide, <i>N</i> -(4-iodophenyl)-) (RN-CAS Registry Number 622-50-4)	$CH_2=C=O$	9.72±0.03	EI	3483

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{25}H_{25}N_2I^+$	$C_{25}H_{25}N_2I$ (Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1 <i>H</i>)-quinolinylidene)-1-propenyl]-, iodide) (RN-CAS Registry Number 605-91-4) (ON-Other name: Pinacyanol)	**	7.25	PI	3586
$C_{29}H_{35}N_2I^+$	$C_{29}H_{35}N_2I$ (Quinolinium, 1-(3-methylbutyl)-4-[[1-(3-methylbutyl)-4(1 <i>H</i>)-quinolinylidene]methyl]-, iodide) (RN-CAS Registry Number 523-42-2) (ON-Other name: Quinoline Blue)	**	7.35	PI	3586
$C_4H_{12}BN_2I^+$	$((CH_3)_2N)_2BI$ (RN-CAS Registry Number 7318-71-0)	**	8.11 (V)	PE	3704
$C_2H_6BNi_2^+$	$(CH_3)_2NBi_2$ (RN-CAS Registry Number 7318-72-1)	**	8.95 (V)	PE	3704
$C_2H_5OI^+$	CH_2ICH_2OH (RN-CAS Registry Number 624-76-0)	**	9.66±0.07 (V)	PE	3987
$C_3H_7OI^+$	$CH_3OCH_2CH_2I$ (RN-CAS Registry Number 4296-15-5)	**	9.43±0.04 (V)	PE	3987
$C_6H_5OI^+$	$C_6H_4IOOCCH_3$ (Phenol, 2-iodo-, acetate) (RN-CAS Registry Number 32865-61-5)	$CH_2=C=O$	9.72±0.03	EI	3483
$C_6H_5OI^+$	$C_6H_4IOOCCH_3$ (Phenol, 4-iodo-, acetate) (RN-CAS Registry Number 33527-94-5)	$CH_2=C=O$	9.38±0.03	EI	3483
$C_2H_3O_2I^+$	CH_2ICOOH (RN-CAS Registry Number 64-69-7)	**	11.03 (V)	PE	3874
$C_8H_7O_2I^+$	$C_6H_4IOOCCH_3$ (Phenol, 2-iodo-, acetate) (RN-CAS Registry Number 32865-61-5)	**	8.25±0.03	EI	3483
$C_8H_7O_2I^+$	$C_6H_4IOOCCH_3$ (Phenol, 4-iodo-, acetate) (RN-CAS Registry Number 33527-94-5)	**	8.20±0.03	EI	3483
$C_6H_4OI_2^+$	$C_6H_3I_2OOCCH_3$ (Phenol, 2,4-diiodo-, acetate) (RN-CAS Registry Number 36914-80-4)	$CH_2=C=O$	8.94±0.03	EI	3480
$C_6H_4OI_2^+$	$C_6H_3I_2OOCCH_3$ (Phenol, 2,6-diiodo-, acetate) (RN-CAS Registry Number 28165-73-3)	$CH_2=C=O$	9.18±0.03	EI	3480
$C_8H_6O_2I_2^+$	$C_6H_3I_2OOCCH_3$ (Phenol, 2,4-diiodo-, acetate) (RN-CAS Registry Number 36914-80-4)	**	7.90±0.03	EI	3480

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_8H_6O_2I_2^+$	$C_6H_3I_2OOCCH_3$ (Phenol, 2,6-diiodo-, acetate) (RN-CAS Registry Number 28165-73-3)	**	8.07 ± 0.03	EI	3480
$C_8H_8NOI^+$	$C_6H_4INHCOCH_3$ (Acetamide, <i>N</i> -(2-iodophenyl)-) (RN-CAS Registry Number 19591-17-4)	**	7.98 ± 0.03	EI	3483
$C_8H_8NOI^+$	$C_6H_4INHCOCH_3$ (Acetamide, <i>N</i> -(4-iodophenyl)-) (RN-CAS Registry Number 622-50-4)	**	7.87 ± 0.03	EI	3483
IF_5^+	IF_5 (RN-CAS Registry Number 7783-66-6)	**	12.943 ± 0.005	PE	3655
NaI^+	NaI (RN-CAS Registry Number 7681-82-5) (HB-Threshold value approximately corrected for hot bands)	**	7.64 ± 0.02	PI	3536
MgI_2^+	MgI_2 (RN-CAS Registry Number 10377-58-9)	**	9.57 ± 0.03	PI	3536
$SiH_3I^+ (^2E_{3/2})$	SiH_3I (RN-CAS Registry Number 13598-42-0)	**	9.78 ± 0.02 (V)	PE	3510
SiH_3I^+	SiH_3I (RN-CAS Registry Number 13598-42-0)	**	10.05 ± 0.05 (V)	PE	3502
$SiH_3I^+ (^2E_{1/2})$	SiH_3I (RN-CAS Registry Number 13598-42-0)	**	10.33 ± 0.02 (V)	PE	3510
$SiH_3I^+ (^2A_1)$	SiH_3I (RN-CAS Registry Number 13598-42-0)	**	12.04 ± 0.02 (V)	PE	3510
$SiH_3I^+ (^2E)$	SiH_3I (RN-CAS Registry Number 13598-42-0)	**	12.8 ± 0.1 (V)	PE	3510
$SiH_2I_2^+$	SiH_2I_2 (RN-CAS Registry Number 13760-02-6)	**	9.69 ± 0.02 (V)	PE	3510
$C_5H_9SiI^+$	$(CH_3)_3SiC \equiv CI$ (RN-CAS Registry Number 18163-47-8)	**	9.1 ± 0.1	PE	4002
$PI_3 (^2A_1)$	PI_3 (RN-CAS Registry Number 13455-01-1)	**	9.15 (V)	PE	4023
$PI_3 (^2A_2)$	PI_3 (RN-CAS Registry Number 13455-01-1)	**	9.42 (V)	PE	4023
$PI_3 (^2E_{3/2})$	PI_3 (RN-CAS Registry Number 13455-01-1)	**	9.57 (V)	PE	4023
$PI_3 (^2E_{1/2})$	PI_3 (RN-CAS Registry Number 13455-01-1)	**	10.24 (V)	PE	4023
$PI_3 (^2E_{1/2})$	PI_3 (RN-CAS Registry Number 13455-01-1)	**	10.53 (V)	PE	4023
$PI_3 (^2E_{3/2})$	PI_3 (RN-CAS Registry Number 13455-01-1)	**	10.68 (V)	PE	4023
$PI_3 (^2A_1)$	PI_3 (RN-CAS Registry Number 13455-01-1)	**	11.80 (V)	PE	4023

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{PI}_3(^2\text{E})$	PI_3 (RN-CAS Registry Number 13455-01-1)	**	12.70 (V)	PE	4023
PF_2I^+	PF_2I (RN-CAS Registry Number 13819-11-9)	**	10.1 ± 0.1 (V)	PE	3662
$\text{C}_4\text{H}_2\text{SI}_2^+$	$\text{C}_4\text{H}_2\text{S(I)}_2$ (Thiophene, 2,5-diiodo-) (RN-CAS Registry Number 625-88-7)	**	8.32	EI	3787
$\text{C}_4\text{H}_2\text{SI}_2^+$	$\text{C}_4\text{H}_2\text{S(I)}_2$ (Thiophene, 2,5-diiodo-) (RN-CAS Registry Number 625-88-7)	**	8.35	CTS	3787
$\text{ICl}^+(^2\Pi_{3/2})$	ICl (RN-CAS Registry Number 7790-99-0)	**	10.088 ± 0.01	S	4027
$\text{ICl}^+(^2\Pi_{1/2})$	ICl (RN-CAS Registry Number 7790-99-0)	**	10.662 ± 0.01	S	4027
$\text{C}_5\text{O}_5\text{IMn}^+$	$\text{Mn(CO)}_5\text{I}$ (RN-CAS Registry Number 14879-42-6)	**	8.44–8.74 (V)	PE	3866
CuI^+	CuI (RN-CAS Registry Number 7681-65-4)	**	8.7 ± 0.5	EI	3603
CuI^+	Cu_3I_3 (RN-CAS Registry Number XXXXX-XX-X)		14.4 ± 0.5	EI	3603
Cu_2I^+	Cu_3I_3 (RN-CAS Registry Number XXXXX-XX-X)		13.4 ± 0.5	EI	3603
Cu_3I^+	Cu_3I_3 (RN-CAS Registry Number XXXXX-XX-X)		15.2 ± 0.5	EI	3603
CuI_2^+	Cu_3I_3 (RN-CAS Registry Number XXXXX-XX-X)		16.1 ± 0.5	EI	3603
Cu_2I_2^+	Cu_2I_2 (RN-CAS Registry Number XXXXX-XX-X)	**	9.3 ± 0.5	EI	3603
Cu_2I_2^+	Cu_3I_3 (RN-CAS Registry Number XXXXX-XX-X)		14.8 ± 0.5	EI	3603
Cu_3I_2^+	Cu_3I_3 (RN-CAS Registry Number XXXXX-XX-X)		10.8 ± 0.5	EI	3603
Cu_2I_3^+	Cu_3I_3 (RN-CAS Registry Number XXXXX-XX-X)		13.6 ± 0.5	EI	3603
Cu_3I_3^+	Cu_3I_3 (RN-CAS Registry Number XXXXX-XX-X)	**	9.1 ± 0.5	EI	3603
Cu_4I_3^+	Cu_4I_4 (RN-CAS Registry Number XXXXX-XX-X)		9.5 ± 0.5	EI	3603

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Cu_4I_4^+	Cu_4I_4 (RN-CAS Registry Number XXXXX-XX-X)	**	8.7 ± 0.5	EI	3603
$\text{ZnI}_2(^2\Pi_{3/2g})$	ZnI_2 (RN-CAS Registry Number 10139-47-6)	**	9.73 ± 0.05 (V)	PE	3833
$\text{ZnI}_2(^2\Pi_{3/2g})$	ZnI_2 (RN-CAS Registry Number 10139-47-6)	**	9.7 (V)	PE	3963
$\text{ZnI}_2(^2\Pi_{3/2u})$	ZnI_2 (RN-CAS Registry Number 10139-47-6)	**	10.2 (V)	PE	3963
$\text{ZnI}_2(^2\Pi_{1/2g}, ^2\Pi_u)$	ZnI_2 (RN-CAS Registry Number 10139-47-6)	**	10.32 ± 0.05 (V)	PE	3833
$\text{ZnI}_2(^2\Pi_{1/2g})$	ZnI_2 (RN-CAS Registry Number 10139-47-6)	**	10.35 (V)	PE	3963
$\text{ZnI}_2(^2\Pi_{1/2u})$	ZnI_2 (RN-CAS Registry Number 10139-47-6)	**	10.5 (V)	PE	3963
$\text{ZnI}_2(^2\Sigma_u)$	ZnI_2 (RN-CAS Registry Number 10139-47-6)	**	11.4 (V)	PE	3963
$\text{ZnI}_2(^2\Sigma_u)$	ZnI_2 (RN-CAS Registry Number 10139-47-6)	**	11.45 ± 0.05 (V)	PE	3833
$\text{ZnI}_2(^2\Sigma_g)$	ZnI_2 (RN-CAS Registry Number 10139-47-6)	**	12.4 (V)	PE	3963
$\text{ZnI}_2(^2\Sigma_g)$	ZnI_2 (RN-CAS Registry Number 10139-47-6)	**	12.74 ± 0.05 (V)	PE	3833
ZnI_2^*	ZnI_2 (RN-CAS Registry Number 10139-47-6)	**	18.39 ± 0.05 (V)	PE	3833
$\text{GeH}_3\text{I}^+(^2E_{3/2})$	GeH_3I (RN-CAS Registry Number 13573-02-9)	**	9.59 ± 0.02 (V)	PE	3510
GeH_3I^+	GeH_3I (RN-CAS Registry Number 13573-02-9)	**	9.84 ± 0.05 (V)	PE	3502
$\text{GeH}_3\text{I}^+(^2E_{1/2})$	GeH_3I (RN-CAS Registry Number 13573-02-9)	**	10.14 ± 0.02 (V)	PE	3510
$\text{GeH}_3\text{I}^+(^2A_1)$	GeH_3I (RN-CAS Registry Number 13573-02-9)	**	11.71 ± 0.02 (V)	PE	3510
$\text{GeH}_3\text{I}^+(^2E)$	GeH_3I (RN-CAS Registry Number 13573-02-9)	**	12.6 ± 0.1 (V)	PE	3510
GeH_2I_2^+	GeH_2I_2 (RN-CAS Registry Number 14694-31-6)	**	9.56 ± 0.02 (V)	PE	3510
$\text{IBr}^+(^2\Pi_{3/2})$	IBr (RN-CAS Registry Number 7789-33-5) (HB-Threshold value approximately corrected for hot bands)	**	9.790 ± 0.004	PE	3870
$\text{IBr}^+(^2\Pi_{1/2})$	IBr (RN-CAS Registry Number 7789-33-5) (HB-Threshold value approximately corrected for hot bands)	**	10.386 ± 0.004	PE	3870
RbI^+	RbI (RN-CAS Registry Number 7790-29-6) (HB-Threshold value approximately corrected for hot bands)	**	7.308 ± 0.03	PI	3536

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Rb_2I^+	Rb_2I_2 (RN-CAS Registry Number 12532-37-5) (TV-Threshold value approximately corrected to 0°K)	I	7.674	PI	3536
AgI^+	AgI (RN-CAS Registry Number 7783-96-2)	**	~8.4	PI	3536
$\text{CdI}_2(^2\Pi_{3/2g})$	CdI_2 (RN-CAS Registry Number 7790-80-9)	**	9.5 (V)	PE	3963
$\text{CdI}_2(^2\Pi_{3/2g})$	CdI_2 (RN-CAS Registry Number 7790-80-9)	**	9.57 ± 0.05 (V)	PE	3833
$\text{CdI}_2(^2\Pi_{3/2u})$	CdI_2 (RN-CAS Registry Number 7790-80-9)	**	10.0 (V)	PE	3963
$\text{CdI}_2(^2\Pi_{1/2g}, ^2\Pi_u)$	CdI_2 (RN-CAS Registry Number 7790-80-9)	**	10.11 ± 0.05 (V)	PE	3833
$\text{CdI}_2(^2\Pi_{1/2g})$	CdI_2 (RN-CAS Registry Number 7790-80-9)	**	10.2 (V)	PE	3963
$\text{CdI}_2(^2\Pi_{1/2u})$	CdI_2 (RN-CAS Registry Number 7790-80-9)	**	10.4 (V)	PE	3963
$\text{CdI}_2(^2\Sigma_u)$	CdI_2 (RN-CAS Registry Number 7790-80-9)	**	11.15 ± 0.05 (V)	PE	3833
$\text{CdI}_2(^2\Sigma_u)$	CdI_2 (RN-CAS Registry Number 7790-80-9)	**	11.2 (V)	PE	3963
$\text{CdI}_2(^2\Sigma_g)$	CdI_2 (RN-CAS Registry Number 7790-80-9)	**	12.10 ± 0.05 (V)	PE	3833
$\text{CdI}_2(^2\Sigma_g)$	CdI_2 (RN-CAS Registry Number 7790-80-9)	**	12.3 (V)	PE	3963
$\text{InI}^+(X^2\Sigma)$	InI (RN-CAS Registry Number 13966-94-4)	**	8.50	PE	3640
$\text{InI}^+(^2\Pi_{3/2})$	InI (RN-CAS Registry Number 13966-94-4)	**	8.78	PE	3640
$\text{InI}^+(^2\Pi_{1/2})$	InI (RN-CAS Registry Number 13966-94-4)	**	9.46	PE	3640
$\text{InI}^+(^2\Sigma)$	InI (RN-CAS Registry Number 13966-94-4)	**	11.89	PE	3640
$\text{Xe}^+(^2P_{3/2})$	Xe (RN-CAS Registry Number 7440-63-3)	**	12.127 ± 0.002	TPE	3525
$\text{Xe}^+(^2P_{1/2})$	Xe (RN-CAS Registry Number 7440-63-3)	**	13.434 ± 0.002	TPE	3525
$\text{Xe}^+(^2P_{3/2})$	Xe (RN-CAS Registry Number 7440-63-3)	**	12.125 ± 0.004	PEN	3541
Xe^+	Xe (RN-CAS Registry Number 7440-63-3)	**	12.09 ± 0.03	EDD	3626
XeOF_4^+	XeOF_4 (RN-CAS Registry Number 13774-85-1)	**	≥ 12.0	PE	3943
XeOF_4^*	XeOF_4 (RN-CAS Registry Number 13774-85-1)	**	~14.6	PE	3943
XeOF_4^*	XeOF_4 (RN-CAS Registry Number 13774-85-1)	**	<15.3	PE	3943

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
XeOF_4^+	XeOF_4 (RN-CAS Registry Number 13774-85-1)	**	< 16.2	PE	3943
XeOF_4^+	XeOF_4 (RN-CAS Registry Number 13774-85-1)	**	16.90 (V)	PE	3943
XeOF_4^+	XeOF_4 (RN-CAS Registry Number 13774-85-1)	**	18.10	PE	3943
XeOF_4^+	XeOF_4 (RN-CAS Registry Number 13774-85-1)	**	~19.3	PE	3943
XeOF_4^+	XeOF_4 (RN-CAS Registry Number 13774-85-1)	**	< 20.3	PE	3943
Cs^+	CsOH (RN-CAS Registry Number 21351-79-1)	OH	~10	EI	3461
Cs^+	CsNO_3 (RN-CAS Registry Number XXXXX-XX-X)		10.50 ± 0.5	EI	4100
Cs^{+3}	Cs^{+2} (RN-CAS Registry Number 18933-37-4)	**	$37.3 \pm \sim 2$	SEQ	3568
Cs^{+4}	Cs^{+3} (RN-CAS Registry Number 18933-38-5)	**	$50 \pm \sim 2$	SEQ	3568
Cs^{+5}	Cs^{+4} (RN-CAS Registry Number XXXXX-XX-X)	**	$62 \pm \sim 2$	SEQ	3568
Cs^{+6}	Cs^{+5} (RN-CAS Registry Number XXXXX-XX-X)	**	$74 \pm \sim 2$	SEQ	3568
Cs^{+7}	Cs^{+6} (RN-CAS Registry Number XXXXX-XX-X)	**	$86 \pm \sim 2$	SEQ	3568
Cs^{+8}	Cs^{+7} (RN-CAS Registry Number XXXXX-XX-X)	**	$114 \pm \sim 2$	SEQ	3568
Cs^{+9}	Cs^{+8} (RN-CAS Registry Number XXXXX-XX-X)	**	$130 \pm \sim 2$	SEQ	3568
Cs^{+10}	Cs^{+9} (RN-CAS Registry Number XXXXX-XX-X)	**	~250	SEQ	3568
Cs_2^+	Cs_2 (RN-CAS Registry Number 12184-83-7)	**	3.60-3.71	PI	3772
Cs_2NO_3^+	$(\text{CsNO}_3)_2$ (RN-CAS Registry Number XXXXX-XX-X)		14.1 ± 1.0	EI	4100
CsF^+	CsF (RN-CAS Registry Number 13400-13-0)	**	8.80 ± 0.10	PE	3958
CsCl^+	CsCl (RN-CAS Registry Number 7647-17-8)	**	7.84 ± 0.05	PE	3958

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
CsBr ⁺	CsBr (RN-CAS Registry Number 7787-69-1)	**	7.46±0.05	PE	3958
CsI ⁺ (² Π _{3/2})	CsI (RN-CAS Registry Number 7789-17-5)	**	7.10±0.05	PE	3958
CsI ⁺ (² Π _{1/2})	CsI (RN-CAS Registry Number 7789-17-5)	**	8.00±0.10	PE	3958
Ba ⁺	Ba (RN-CAS Registry Number 7440-39-3)	**	~5.2	EI	3486
Ba ⁺	BaO (RN-CAS Registry Number 1304-28-5) (HB-Threshold value approximately corrected for hot bands)	O	10.95±0.18	EI	3821
Ba ⁺²	Ba (RN-CAS Registry Number 7440-39-3)	**	12	EI	3486
Ba ⁺³	Ba (RN-CAS Registry Number 7440-39-3)	**	~53	EI	3486
Ba ⁺³	Ba ⁺² (RN-CAS Registry Number 22541-12-4)	**	36.3±3	SEQ	3568
Ba ⁺⁴	Ba ⁺³ (RN-CAS Registry Number XXXXX-XX-X)	**	55±3	SEQ	3568
Ba ⁺⁵	Ba ⁺⁴ (RN-CAS Registry Number XXXXX-XX-X)	**	67±3	SEQ	3568
Ba ⁺⁶	Ba ⁺⁵ (RN-CAS Registry Number XXXXX-XX-X)	**	80±3	SEQ	3568
Ba ⁺⁷	Ba ⁺⁶ (RN-CAS Registry Number XXXXX-XX-X)	**	94±3	SEQ	3568
Ba ⁺⁸	Ba ⁺⁷ (RN-CAS Registry Number XXXXX-XX-X)	**	105±3	SEQ	3568
Ba ⁺⁹	Ba ⁺⁸ (RN-CAS Registry Number XXXXX-XX-X)	**	141±3	SEQ	3568
Ba ⁺¹⁰	Ba ⁺⁹ (RN-CAS Registry Number XXXXX-XX-X)	**	167±3	SEQ	3568
BaO ⁺	BaO (RN-CAS Registry Number 1304-28-5)	**	6.97±0.12	EI	3821
La ⁺	La (RN-CAS Registry Number 7439-91-0)	**	5.0±0.5	EI	3600
La ⁺	La (RN-CAS Registry Number 7439-91-0)	**	6.9±1.2	EI	3978
La ⁺	LaF ₃ (RN-CAS Registry Number 13709-38-1)		26	EI	3456

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
La^+	LaF_3 (RN-CAS Registry Number 13709-38-1)		26.9	EI	3466
LaC^+	LaC_2 (RN-CAS Registry Number 12071-15-7)	C?	14.9 ± 0.5	EI	3457
LaC_2^+	LaC_2 (RN-CAS Registry Number 12071-15-7)	**	5.4 ± 0.3	EI	3457
LaC_3^+	LaC_3 (RN-CAS Registry Number 12602-63-0)	**	6.8 ± 0.5	EI	3457
LaC_4^+	LaC_4 (RN-CAS Registry Number 12603-31-5)	**	4.7 ± 0.5	EI	3457
LaF^+	LaF_3 (RN-CAS Registry Number 13709-38-1)		16	EI	3456
LaF^+	LaF_3 (RN-CAS Registry Number 13709-38-1)		18.5	EI	3466
LaF_2^+	LaF_3 (RN-CAS Registry Number 13709-38-1)		9	EI	3456
LaF_2^+	LaF_3 (RN-CAS Registry Number 13709-38-1)		11.8	EI	3466
La_2F_5^+	$(\text{LaF}_3)_2$ (RN-CAS Registry Number 12592-31-3)		12.4	EI	3466
LaSe^+	LaSe (RN-CAS Registry Number 12031-31-1)	**	6.0 ± 0.5	EI	3600
LaRh^+	LaRh (RN-CAS Registry Number 12142-68-6)	**	7.7 ± 1.0	EI	3978
Ce^+	Ce (RN-CAS Registry Number 7440-45-1)	**	5.6 ± 0.5	EI	3969
Ce^+	Ce (RN-CAS Registry Number 7440-45-1)	**	5.7 ± 0.3	EI	3597
Ce^+	Ce? (RN-CAS Registry Number 7440-45-1)	**	5.9 ± 0.4	EI	3471
Ce^+	Ce (RN-CAS Registry Number 7440-45-1)	**	5.9 ± 0.4	EI	3468
Ce^+	Ce (RN-CAS Registry Number 7440-45-1)	**	5.9 ± 0.6	EI	3621
Ce^+	Ce (RN-CAS Registry Number 7440-45-1)	**	6.0 ± 0.5	EI	3986
Ce^+	Ce (RN-CAS Registry Number 7440-45-1)	**	6.0 ± 0.5	EI	3473
Ce^+	CeO (RN-CAS-Registry Number 12014-74-3)		~ 13.5	EI	4061
Ce^+	CeF_3 (RN-CAS Registry Number 7758-88-5)		25.2	EI	3607

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Ce ⁺	CeI ₃ (RN-CAS Registry Number 7790-87-6)	3I	17.7±0.5	EI	3820
Ce ⁺²	Ce? (RN-CAS Registry Number 7440-45-1)	**	22.7±0.8	EI	3471
Ce ⁺³	Ce ⁺² (RN-CAS Registry Number 16679-11-1)	**	20.197±0.003	S	3744
Ce ⁺⁴	Ce ⁺³ (RN-CAS Registry Number 18923-26-7)	**	36.758±0.005	S	3744
Ce ₂ ⁺	Ce ₂ (RN-CAS Registry Number 12595-88-9)	**	5.9±0.4	EI	3471
C ₂ Ce ⁺	C ₂ Ce (RN-CAS Registry Number 12012-32-7)	**	5.6±0.4	EI	3597
CeC ₂ ⁺	CeC ₂ (RN-CAS Registry Number 12012-32-7)	**	6.2±0.5	EI	3969
CeN ⁺	CeN (RN-CAS Registry Number 25764-08-3)	**	5.8±0.6	EI	3469
CeO ⁺	CeO (RN-CAS-Registry Number 12014-74-3)	**	5.2±0.2	EI	4061
CeO ⁺	CeO (RN-CAS Registry Number 12014-74-3)	**	5.3±0.5	EI	3986
CeO ⁺	CeO (RN-CAS Registry Number 12014-74-3)	**	6.0±0.5	EI	3473
CeO ⁺	CeO ₂ (RN-CAS-Registry Number 1306-38-3)		~11	EI	4061
CeO ⁺	CeO ₂ ? (RN-CAS Registry Number 1306-38-3)	**	13±1	EI	3986
CeO ₂ ⁺	CeO ₂ (RN-CAS Registry Number 1306-38-3)	**	9.7±0.5	EI	3986
CeO ₂ ⁺	CeO ₂ (RN-CAS-Registry Number 1306-38-3)	**	10.3±0.2	EI	4061
Ce ₂ O ₂ ⁺	(CeO) ₂ (RN-CAS Registry Number 12258-89-8)	**	8±1	EI	3986
CeF ⁺	CeF ₃ (RN-CAS Registry Number 7758-88-5)		17.2	EI	3607
CeF ₂ ⁺	CeF ₃ (RN-CAS Registry Number 7758-88-5)		13.5	EI	3607
CeF ₃ ⁺	CeF ₃ (RN-CAS Registry Number 7758-88-5)	**	11.4	EI	3607

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Ce_2F_5^+	Ce_2F_6 (RN-CAS Registry Number 37346-47-7)		13.1	EI	3607
CSiCe^+	CSiCe (RN-CAS Registry Number 51257-45-5)	**	~9	EI	3969
CeS^+	CeS (RN-CAS Registry Number 12014-82-3)	**	6.0 ± 0.6	EI	3621
CeS_2^+	CeS_2 (RN-CAS Registry Number 12133-58-3)	**	13.5 ± 1	EI	3621
CePd^+	CePd (RN-CAS Registry Number 12292-14-7)	**	6.2 ± 0.5	EI	3597
CeI^+	CeI_3 (RN-CAS Registry Number 7790-87-6)	2I	13.6 ± 0.5	EI	3820
CeI^{+2}	CeI_3 (RN-CAS Registry Number 7790-87-6)		28 ± 1	EI	3820
CeI_2^+	CeI_3 (RN-CAS Registry Number 7790-87-6)	I	9.7 ± 0.5	EI	3820
CeI_3^+	CeI_3 (RN-CAS Registry Number 7790-87-6)	**	9.6 ± 0.5	EI	3820
Pr^+	PrI_3 (RN-CAS Registry Number 13813-23-5)	3I	17.0 ± 0.2	EI	3820
Pr^{+3}	Pr^{+2} (RN-CAS Registry Number 14700-75-5)	**	21.624 ± 0.003	S	3744
Pr^{+4}	Pr^{+3} (RN-CAS Registry Number 22541-14-6)	**	38.981 ± 0.025	S	3744
Pr^{+5}	Pr^{+4} (RN-CAS Registry Number 20334-17-2)	**	57.45 ± 0.05	S	3563
PrI^+	PrI_3 (RN-CAS Registry Number 13813-23-5)	2I	12.9 ± 0.2	EI	3820
PrI_2^+	PrI_3 (RN-CAS Registry Number 13813-23-5)	I	10.0 ± 0.2	EI	3820
PrI_3^+	PrI_3 (RN-CAS Registry Number 13813-23-5)	**	9.2 ± 0.2	EI	3820
Nd^+	Nd (RN-CAS Registry Number 7440-00-8)	**	6.5	EI	4030
Nd^+	NdCl_3 (RN-CAS Registry Number 10024-93-8)	3Cl?	20.9 ± 1.0	EI	3802

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Nd ⁺	NdBr ₃ (RN-CAS Registry Number 13536-80-6)		16.9±0.7	EI	3976
Nd ⁺	NdI ₃ (RN-CAS Registry Number 13813-24-6)	3I	15.9±0.2	EI	3820
Nd ⁺³	Nd ⁺² (RN-CAS Registry Number 16727-26-7)	**	22.14±0.30	S	3744
Nd ⁺⁴	Nd ⁺³ (RN-CAS Registry Number 14913-52-1)	**	40.42±0.30	S	3744
NdCl ⁺	NdCl ₃ (RN-CAS Registry Number 10024-93-8)	2Cl?	17.3±1.0	EI	3802
NdCl ₂ ⁺	NdCl ₃ (RN-CAS Registry Number 10024-93-8)	Cl?	11.9±0.3	EI	3802
NdCl ₃ ⁺	NdCl ₃ (RN-CAS Registry Number 10024-93-8)	**	< 11.4	EI	3802
NdBr ₂ ⁺	NdBr ₃ (RN-CAS Registry Number 13536-80-6)		10.5±0.7	EI	3976
NdI ⁺	NdI ₃ (RN-CAS Registry Number 13813-24-6)	2I	13.6±0.5	EI	3820
NdI ₂ ⁺	NdI ₃ (RN-CAS Registry Number 13813-24-6)	I	9.3±0.5	EI	3820
NdI ₃ ⁺	NdI ₃ (RN-CAS Registry Number 13813-24-6)	**	9.2±0.5	EI	3820
Pm ⁺³	Pm ⁺² (RN-CAS Registry Number 24151-74-4)	**	22.42±0.41	S	3744
Pm ⁺⁴	Pm ⁺³ (RN-CAS Registry Number 22541-16-8)	**	41.09±0.32	S	3744
Sm ⁺	SmI ₂ (RN-CAS Registry Number 32248-43-4)		12.5	EI	3820
Sm ⁺³	Sm ⁺² (RN-CAS Registry Number 16396-66-0)	**	23.45±0.30	S	3744
Sm ⁺⁴	Sm ⁺³ (RN-CAS Registry Number 22541-17-9)	**	41.47±0.43	S	3744
SmI ⁺	SmI ₂ (RN-CAS Registry Number 32248-43-4)		9.2	EI	3820

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
SmI_2^+	SmI_2 (RN-CAS Registry Number 32248-43-4)	**	8.7	EI	3820
Eu^+	Eu (RN-CAS Registry Number 7440-53-1)	**	5.6 ± 0.5	EI	3611
Eu^+	Eu (RN-CAS Registry Number 7440-53-1)	**	5.9 ± 0.2	EI	3459
Eu^+	EuI_2 (RN-CAS Registry Number 22015-35-6)		12.45 ± 0.2	EI	3612
Eu^{+3}	Eu^{+2} (RN-CAS Registry Number 16910-54-6)	**	24.71 ± 0.32	S	3744
Eu^{+4}	Eu^{+3} (RN-CAS Registry Number 22541-18-0)	**	42.65 ± 0.32	S	3744
Eu_2^+	Eu_2 (RN-CAS Registry Number 12596-00-8)	**	6.3 ± 1.0	EI	4012
EuC_2^+	EuC_2 (RN-CAS Registry Number 12127-44-5)	**	6.6 ± 0.7	EI	3611
EuCN^+	EuCN (RN-CAS Registry Number 50647-38-6)	**	5.5 ± 1.5	EI	3798
EuAg^+	EuAg (RN-CAS Registry Number 12249-50-2)	**	6.1 ± 0.5	EI	4012
EuI^+	EuI_2 (RN-CAS Registry Number 22015-35-6)		9.90 ± 0.2	EI	3612
EuI_2^+	EuI_2 (RN-CAS Registry Number 22015-35-6)	**	8.85 ± 0.2	EI	3612
Gd^+	GdCl_3 (RN-CAS Registry Number 10138-52-0)	$3\text{Cl}?$	20.9 ± 1.0	EI	3802
Gd^+	GdI_3 (RN-CAS Registry Number 13572-98-0)	3I	17.0 ± 0.2	EI	3820
Gd^{+3}	Gd^{+2} (RN-CAS Registry Number 18195-96-5)	**	20.38 ± 0.21	S	3744
Gd^{+4}	Gd^{+3} (RN-CAS Registry Number 22541-19-1)	**	44.03 ± 0.35	S	3744
GdCl^+	GdCl_3 (RN-CAS Registry Number 10138-52-0)	$2\text{Cl}?$	16.5 ± 1.0	EI	3802
GdCl_2^+	GdCl_3 (RN-CAS Registry Number 10138-52-0)	$\text{Cl}?$	11.9 ± 0.3	EI	3802

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
NaGdCl_3^+	NaGdCl_3 (RN-CAS Registry Number XXXXX-XX-X)		10.1 ± 0.5	EI	3802
GdI^+	GdI_3 (RN-CAS Registry Number 13572-98-0)	2I	13.5 ± 0.2	EI	3820
GdI_2^+	GdI_3 (RN-CAS Registry Number 13572-98-0)	I	10.1 ± 0.2	EI	3820
GdI_3^+	GdI_3 (RN-CAS Registry Number 13572-98-0)	**	9.2 ± 0.2	EI	3820
Tb^+	TbI_3 (RN-CAS Registry Number 13813-40-6)	3I	17.6 ± 0.2	EI	3820
Tb^{+3}	Tb^{+2} (RN-CAS Registry Number 18195-97-6)	**	21.98 ± 0.21	S	3744
Tb^{+4}	Tb^{+3} (RN-CAS Registry Number 22541-20-4)	**	39.84 ± 0.35	S	3744
TbI^+	TbI_3 (RN-CAS Registry Number 13813-40-6)	2I	13.7 ± 0.2	EI	3820
TbI_2^+	TbI_3 (RN-CAS Registry Number 13813-40-6)	I	10.5 ± 0.2	EI	3820
TbI_3^+	TbI_3 (RN-CAS Registry Number 13813-40-6)	**	9.5 ± 0.2	EI	3820
Dy^+	DyI_3 (RN-CAS Registry Number 15474-63-2)	3I	16.4 ± 0.2	EI	3820
Dy^{+3}	Dy^{+2} (RN-CAS Registry Number 14701-44-1)	**	22.83 ± 0.32	S	3744
Dy^{+4}	Dy^{+3} (RN-CAS Registry Number 22541-21-5)	**	41.56 ± 0.35	S	3744
DyI^+	DyI_3 (RN-CAS Registry Number 15474-63-2)	2I	13.1 ± 0.2	EI	3820
DyI_2^+	DyI_3 (RN-CAS Registry Number 15474-63-2)	I	10.5 ± 0.2	EI	3820
DyI_3^+	DyI_3 (RN-CAS Registry Number 15474-63-2)	**	9.6 ± 0.2	EI	3820
Ho^+	Ho (RN-CAS Registry Number 7440-60-0)	**	5.8 ± 0.2	EI	3440

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Ho ⁺	HoI ₃ (RN-CAS Registry Number 13813-41-7)	3I	16.7±0.2	EI	3820
Ho ⁺³	Ho ⁺² (RN-CAS Registry Number 16468-44-3)	**	22.84±0.10	S	3744
Ho ⁺⁴	Ho ⁺³ (RN-CAS Registry Number 22541-22-6)	**	42.51±0.35	S	3744
Ho ₂ ⁺	Ho ₂ (RN-CAS Registry Number 12596-28-0)	**	6.0±1.0	EI	3440
HoAg ⁺	HoAg (RN-CAS Registry Number 12002-74-3)	**	5.7±0.6	EI	3440
HoI ⁺	HoI ₃ (RN-CAS Registry Number 13813-41-7)	2I	13.2±0.2	EI	3820
HoI ₂ ⁺	HoI ₃ (RN-CAS Registry Number 13813-41-7)	I	10.4±0.2	EI	3820
HoI ₃ ⁺	HoI ₃ (RN-CAS Registry Number 13813-41-7)	**	9.2±0.2	EI	3820
Er ⁺	ErI ₃ (RN-CAS Registry Number 13813-42-8)	3I	16.2±0.2	EI	3820
Er ⁺³	Er ⁺² (RN-CAS Registry Number 18195-92-1)	**	22.74±0.10	S	3744
Er ⁺⁴	Er ⁺³ (RN-CAS Registry Number 18472-30-5)	**	42.66±0.20	S	3744
ErI ⁺	ErI ₃ (RN-CAS Registry Number 13813-42-8)	2I	13.3±0.2	EI	3820
ErI ₂ ⁺	ErI ₃ (RN-CAS Registry Number 13813-42-8)	I	10.2±0.2	EI	3820
ErI ₃ ⁺	ErI ₃ (RN-CAS Registry Number 13813-42-8)	**	9.0±0.2	EI	3820
Tm ⁺	Tm (RN-CAS Registry Number 7440-30-4)	**	5.7	EI	3460
Tm ⁺	TmBr ₃ (RN-CAS Registry Number 14456-51-0)		17.5±0.7	EI	3976
Tm ⁺³	Tm ⁺² (RN-CAS Registry Number 16910-52-4)	**	23.68±0.10	S	3744

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Tm^{+4}	Tm^{+3} (RN-CAS Registry Number 22541-23-7)	**	42.69 ± 0.30	S	3744
TmBr_2^+	TmBr_3 (RN-CAS Registry Number 14456-51-0)		11.1 ± 0.7	EI	3976
TmBr_3^+	TmBr_3 (RN-CAS Registry Number 14456-51-0)	**	9.6 ± 0.7	EI	3976
Yb^+	Yb (RN-CAS Registry Number 7440-64-4)	**	6.3 ± 0.3	EI	4105
Yb^+	YbCl_2 (RN-CAS Registry Number 13874-77-6)		15.05 ± 0.26	EI	3614
Yb^+	$\text{YbBr}_3?$ (RN-CAS Registry Number 13759-89-2)		14.7 ± 0.7	EI	3976
Yb^{+2}	Yb^+ (RN-CAS Registry Number 20205-78-1)	**	12.184 ± 0.006	S	3974
Yb^{+3}	Yb^{+2} (RN-CAS Registry Number 22541-96-4)	**	25.03 ± 0.02	S	3744
Yb^{+4}	Yb^{+3} (RN-CAS Registry Number 18923-27-8)	**	43.74 ± 0.30	S	3744
Yb_2^+	Yb_2 (RN-CAS Registry Number 12771-79-8)	**	4-5	EI	4105
YbCl^+	YbCl_2 (RN-CAS Registry Number 13874-77-6)		10.70 ± 0.21	EI	3614
YbCl_2^+	YbCl_2 (RN-CAS Registry Number 13874-77-6)	**	9.73 ± 0.21	EI	3614
YbBr^+	$\text{YbBr}_2?$ (RN-CAS Registry Number 25502-05-0)		10.0 ± 0.7	EI	3976
YbBr_2^+	$\text{YbBr}_3?$ (RN-CAS Registry Number 13759-89-2)		10.0 ± 0.7	EI	3976
Lu^+	Lu (RN-CAS-Registry Number 7439-94-3)	**	5.425889 ± 0.00001 S		4060
Lu^+	Lu (RN-CAS Registry Number 7439-94-3)	**	5.3 ± 0.3	EI	3618
Lu^{+4}	Lu^{+3} (RN-CAS Registry Number 22541-24-8)	**	45.20 ± 0.025	PE	3899
LuC_2^+	LuC_2 (RN-CAS Registry Number 12175-89-2)	**	7.8 ± 1	EI	3618

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
LuC_4^+	LuC_4 (RN-CAS Registry Number 37215-84-2)	**	11.1 ± 1	EI	3618
Hf^{+4}	Hf^{+3} (RN-CAS Registry Number 36756-51-1)	**	33.319 ± 0.025	S	3744
Ta^{+5}	Ta^{+4} (RN-CAS Registry Number 16044-71-6)	**	48.4 ± 0.1	S	4101
TaF_3^+	$\text{TaF}_4?$ (RN-CAS Registry Number 15192-46-8)	F?	22.0	EI	3783
TaF_4^+	$\text{TaF}_4?$ (RN-CAS Registry Number 15192-46-8)	**	14.6	EI	3783
Ta_2F_9^+	$\text{Ta}_2\text{F}_9?$ (RN-CAS Registry Number XXXXX-XX-X)	**	14.9	EI	3783
$\text{Ta}_3\text{F}_{14}^+$	$\text{Ta}_3\text{F}_{14}?$ (RN-CAS Registry Number XXXXX-XX-X)	**	14.0	EI	3783
TaCl_2^+	TaCl_5 (RN-CAS Registry Number 7721-01-9)		20.3	EI	3783
TaCl_3^+	TaCl_5 (RN-CAS Registry Number 7721-01-9)		15.2	EI	3783
TaCl_4^+	TaCl_5 (RN-CAS Registry Number 7721-01-9)		10.9	EI	3783
$\text{C}_6\text{H}_{18}\text{W}^+$	$(\text{CH}_3)_6\text{W}$ (RN-CAS Registry Number 36133-73-0)	**	9.8	PE	3663
$\text{C}_6\text{O}_6\text{W}^+$	$\text{W}(\text{CO})_6$ (RN-CAS Registry Number 14040-11-0)	**	8.30 ± 0.02 (V)	PE	3979
$\text{C}_{10}\text{H}_5\text{NO}_5\text{W}^+$	$\text{C}_5\text{H}_5\text{NW}(\text{CO})_5$ (OC-6-22)-Pentacarbonyl(pyridine)tungsten (RN-CAS Registry Number 14586-49-3)	**	7.53 ± 0.05	EI	3498
$\text{C}_{11}\text{H}_7\text{NO}_5\text{W}^+$	$\text{C}_5\text{H}_4\text{N}(\text{CH}_3)\text{W}(\text{CO})_5$ (Pentacarbonyl(4-methylpyridine)tungsten) (RN-CAS Registry Number 17000-14-5)	**	7.46 ± 0.05	EI	3498
$\text{C}_{12}\text{H}_9\text{NO}_5\text{W}^+$	$\text{C}_5\text{H}_3\text{N}(\text{CH}_3)_2\text{W}(\text{CO})_5$ (OC-6-22)-Pentacarbonyl(2,6-dimethylpyridine)tungsten (RN-CAS Registry Number 36252-39-8)	**	7.43 ± 0.05	EI	3498
$\text{C}_{11}\text{H}_4\text{N}_2\text{O}_5\text{W}^+$	$\text{C}_5\text{H}_4\text{N}(\text{CN})\text{W}(\text{CO})_5$ (OC-6-22)-Pentacarbonyl(2-pyridinecarbonitrile- N^1)tungsten (RN-CAS Registry Number 36252-42-3)	**	7.65 ± 0.05	EI	3498

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$C_{12}H_{36}N_6P_2W^+$	(((CH ₃) ₂ N) ₃ P) ₂ W(CO) ₄ (RN-CAS Registry Number 19976-86-4)	4CO	10.7±0.05	EI	3952
$C_{14}H_{36}N_6O_2P_2W^+$	(((CH ₃) ₂ N) ₃ P) ₂ W(CO) ₄ (RN-CAS Registry Number 19976-86-4)	2CO	12.2±0.05	EI	3952
$C_{15}H_{36}N_6O_3P_2W^+$	(((CH ₃) ₂ N) ₃ P) ₂ W(CO) ₄ (RN-CAS Registry Number 19976-86-4)	CO	10.3±0.05	EI	3952
$C_{16}H_{36}N_6O_4P_2W^+$	(((CH ₃) ₂ N) ₃ P) ₂ W(CO) ₄ (RN-CAS Registry Number 19976-86-4)	**	5.5±0.05	EI	3952
WCl^+	WCl ₆ (RN-CAS Registry Number 13283-01-7)		22.9	EI	3783
WCl_2^+	WCl ₆ (RN-CAS Registry Number 13283-01-7)		19.4	EI	3783
WCl_3^+	WCl ₆ (RN-CAS Registry Number 13283-01-7)		15.4	EI	3783
WCl_4^+	WCl ₆ (RN-CAS Registry Number 13283-01-7)		11.4	EI	3783
WCl_4^+	WOCl ₄ (RN-CAS Registry Number 13520-78-0)		16.0±1	EI	3604
WCl_5^+	WCl ₆ (RN-CAS Registry Number 13283-01-7)		10.9	EI	3783
WCl_6^+	WCl ₆ (RN-CAS Registry Number 13283-01-7)	**	9.5	EI	3783
$WOCl_3^+$	WOCl ₄ (RN-CAS Registry Number 13520-78-0)		10.0±0.5	EI	3604
$WOCl_4^+$	WOCl ₄ (RN-CAS Registry Number 13520-78-0)	**	10.8±0.5	EI	3604
WS_2Cl^+	WS ₂ Cl ₂ (RN-CAS Registry Number 24664-20-8)		12.6±0.5	EI	3604
$WS_2Cl_2^+$	WS ₂ Cl ₂ (RN-CAS Registry Number 24664-20-8)	**	10.5±0.5	EI	3604
$WSCl_3^+$	WSCl ₄ (RN-CAS Registry Number 25127-53-1)		9.5±0.5	EI	3604
$WSCl_4^+$	WSCl ₄ (RN-CAS Registry Number 25127-53-1)	**	10.4±1	EI	3604

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
WOSCl^+	WOSCl_2 (RN-CAS Registry Number XXXXX-XX-X)		13.8 ± 0.5	EI	3604
WOSCl_2^+	WOSCl_2 (RN-CAS Registry Number XXXXX-XX-X)	**	10.6 ± 0.5	EI	3604
WBr_2^+	WBr_4 (RN-CAS Registry Number 13520-77-9)		21.4 ± 0.5	EI	3450
WBr_3^+	WBr_4 (RN-CAS Registry Number 13520-77-9)		18.1 ± 0.5	EI	3450
WOBr^+	WO_2Br_2 (RN-CAS Registry Number 13520-75-7)		20.0 ± 0.8	EI	3450
WOBr^+	WOBr_4 (RN-CAS Registry Number 13520-77-9)		18.1 ± 0.8	EI	3450
WO_2Br^+	WO_2Br_2 (RN-CAS Registry Number 13520-75-7)		13.0 ± 0.4	EI	3450
WOBr_2^+	WOBr_4 (RN-CAS Registry Number 13520-77-9)		14.4 ± 0.5	EI	3450
WO_2Br_2^+	WO_2Br_2 (RN-CAS Registry Number 13520-75-7)	**	11.4 ± 0.2	EI	3450
WOBr_3^+	WOBr_4 (RN-CAS Registry Number 13520-77-9)		10.3 ± 0.2	EI	3450
WOBr_3^+	WOBr_4 (RN-CAS Registry Number 13520-77-9)		10.5 ± 0.5	EI	3604
WOBr_4^+	WOBr_4 (RN-CAS Registry Number 13520-77-9)	**	10.3 ± 0.3	EI	3450
WOBr_4^+	WOBr_4 (RN-CAS Registry Number 13520-77-9)	**	11.5 ± 0.5	EI	3604
WO_2I^+	WO_2I_2 (RN-CAS Registry Number 14447-89-3)		12.5 ± 0.5	EI	3451
WO_2I_2^+	WO_2I_2 (RN-CAS Registry Number 14447-89-3)	**	10.4 ± 0.4	EI	3451
ReO^+	ReO_3 (RN-CAS Registry Number 1314-28-9) (TR-Other product(s) thermochemically reasonable)		~ 18	EI	4016
ReO_2^+	ReO_3 (RN-CAS Registry Number 1314-28-9) (TR-Other product(s) thermochemically reasonable)		14.4 ± 1.0	EI	4016
ReO_2^+	Re_2O_7 (RN-CAS Registry Number 1314-68-7)		21.9 ± 1.0	EI	4016

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
ReO_3^+	ReO_3 (RN-CAS Registry Number 1314-28-9) (TR-Other product(s) thermochemically reasonable)	**	12.5 ± 0.4	EI	4016
ReO_3^+	Re_2O_7 (RN-CAS Registry Number 1314-68-7)		16.2 ± 0.5	EI	4016
ReO_3^+	ReO_3Cl (RN-CAS Registry Number 7791-09-5)		15.6 ± 0.5	EI	3604
Re_2O_5^+	Re_2O_7 (RN-CAS Registry Number 1314-68-7)		17.5 ± 0.2	EI	4016
Re_2O_6^+	Re_2O_7 (RN-CAS Registry Number 1314-68-7)		16.2 ± 0.5	EI	4016
Re_2O_7^+	Re_2O_7 (RN-CAS Registry Number 1314-68-7)	**	12.7 ± 0.2	EI	4016
$\text{C}_5\text{H}_3\text{O}_5\text{Re}^+$	$\text{HRe}(\text{CO})_5$ (RN-CAS Registry Number 16457-30-0)	**	8.86 ± 0.02 (V)	PE	3827
ReF_6^+	ReF_6 (RN-CAS Registry Number 10049-17-9)	**	7.99	S	3565
$\text{C}_5\text{H}_3\text{O}_5\text{SiRe}^+$	$\text{SiH}_3\text{Re}(\text{CO})_5$ (RN-CAS Registry Number 40628-33-9)	**	8.9 ± 0.1 (V)	PE	3827
ReCl_4^+	ReOCl_4 (RN-CAS Registry Number 13814-76-1)		16.5 ± 0.5	EI	3604
ReO_2Cl^+	ReO_3Cl (RN-CAS Registry Number 7791-09-5)		12.3 ± 0.5	EI	3604
ReOCl_3^+	ReOCl_4 (RN-CAS Registry Number 13814-76-1)		12.3 ± 0.5	EI	3604
ReOCl_4^+	ReOCl_4 (RN-CAS Registry Number 13814-76-1)	**	10.7 ± 0.5	EI	3604
$\text{C}_5\text{H}_3\text{O}_5\text{GeRe}^+$	$\text{GeH}_3\text{Re}(\text{CO})_5$ (RN-CAS Registry Number 30012-26-1)	**	8.9 ± 0.1 (V)	PE	3827
ReO_3I^+	ReO_3I (RN-CAS Registry Number 39327-80-5)	**	10.9 ± 0.5	EI	4013
BaReO_4^+	$\text{Ba}(\text{ReO}_4)_2?$ (RN-CAS Registry Number XXXXX-XX-X)		13.4 ± 0.5	EI	4108
$\text{C}_{12}\text{H}_{14}\text{Os}^+$	$(\text{C}_5\text{H}_4\text{CH}_3)_2\text{Os}$ (Osmocene, 1,1'-dimethyl-) (RN-CAS Registry Number 40672-07-9)	**	6.93 (V)	PE	3688

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
$\text{OsO}_4(^3\text{T}_2)$	OsO_4 (RN-CAS Registry Number 20816-12-0)	**	12.320	PE	3836
OsO_4^+	OsO_4 (RN-CAS Registry Number 20816-12-0)	**	12.39	PE	3838
$\text{OsO}_4(^3\text{T}_1)$	OsO_4 (RN-CAS Registry Number 20816-12-0)	**	13.138	PE	3836
$\text{OsO}_4(^3\text{E})$	OsO_4 (RN-CAS Registry Number 20816-12-0)	**	13.502	PE	3836
$\text{OsO}_4(^3\text{A}_1)$	OsO_4 (RN-CAS Registry Number 20816-12-0)	**	14.543	PE	3836
$\text{OsO}_4(^3\text{T}_2)$	OsO_4 (RN-CAS Registry Number 20816-12-0)	**	16.31 (V)	PE	3836
OsOCl_3^+	OsOCl_4 (RN-CAS Registry Number 14998-32-4)		12.4 ± 0.5	EI	3604
OsOCl_4^+	OsOCl_4 (RN-CAS Registry Number 14998-32-4)	**	11.3 ± 0.5	EI	3604
$\text{C}_7\text{H}_7\text{O}_4\text{Ir}^+$	$(\text{CH}_3\text{COCHCOCH}_3)\text{Ir}(\text{CO})_2$ (Dicarbonyl(2,4-pentanedionato)iridium) (RN-CAS Registry Number 14023-80-4)	**	8.6 ± 0.1	EI	3497
$\text{C}_7\text{HO}_4\text{F}_6\text{Ir}^+$	$(\text{CF}_3\text{COCHCOCF}_3)\text{Ir}(\text{CO})_2$ (Dicarbonyl(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato)iridium) (RN-CAS Registry Number 14049-69-5)	**	8.85 ± 0.05	EI	3497
Au^+	Au (RN-CAS Registry Number 7440-57-5)	**	9.21 ± 0.05	RPD	3745
Au^+	Au (RN-CAS Registry Number 7440-57-5)	**	8.5 ± 0.8	EI	3978
Au^+	Au (RN-CAS Registry Number 7440-57-5)	**	9.0 ± 0.5	EI	3473
Au_2^+	Au_2 (RN-CAS Registry Number XXXXX-XX-X)	**	9.5 ± 0.3	EI	4014
Au_2^+	Au_2 (RN-CAS Registry Number 12187-09-6)	**	9.5 ± 0.3	EI	4005
Au_2^+	Au_2 (RN-CAS Registry Number 12187-09-6)	**	9.7 ± 0.4	EI	3468
AuB^+	AuB (RN-CAS Registry Number 12408-81-0)	**	8.7 ± 0.5	EI	3468
AuB^+	AuBO? (RN-CAS Registry Number 12588-90-8)		14.5 ± 0.5	EI	3473
AuBO^+	AuBO (RN-CAS Registry Number 12588-90-8)	**	9.7 ± 0.2	EI	3473
AuAl^+	AuAl (RN-CAS Registry Number XXXXX-XX-X)	**	7.6 ± 0.3	EI	4014

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
AuAl^+	AuAl (RN-CAS Registry Number 12250-38-3)	**	7.6 ± 0.3	EI	4005
AuAl^+	AuAl (RN-CAS Registry Number 12250-38-3)	**	7.8 ± 0.3	EI	3440
AuAl^+	AuAl (RN-CAS Registry Number 12250-38-3)	**	9.0 ± 1.0	EI	3796
AuAl_2^+	AuAl ₂ (RN-CAS Registry Number 12004-03-4)	**	6.2 ± 1.0	EI	3966
Au_2Al^+	Au ₂ Al (RN-CAS Registry Number 12250-39-4)	**	7.7 ± 1.0	EI	3966
AuGe^+	AuGe (RN-CAS Registry Number 12256-41-6)	**	7.7	EI	3775
AuCe^+	AuCe (RN-CAS Registry Number 12408-82-1)	**	6.0 ± 0.3	EI	3468
AuHo^+	AuHo (RN-CAS Registry Number 12044-80-3)	**	6.2 ± 0.5	EI	3440
$\text{Hg}^+(^2\text{S}_{1/2})$	Hg (RN-CAS Registry Number 7439-97-6)	**	10.4	PE	3672
$\text{Hg}^+(^2\text{D}_{5/2})$	Hg (RN-CAS Registry Number 7439-97-6)	**	14.8	PE	3672
$\text{Hg}^+(^2\text{S}_{1/2})$	Hg (RN-CAS Registry Number 7439-97-6)	**	10.487 ± 0.005	PEN	3541
$\text{Hg}^+(^2\text{D}_{5/2})$	Hg (RN-CAS Registry Number 7439-97-6)	**	14.907 ± 0.015	PEN	3541
$\text{Hg}^+(^2\text{D}_{3/2})$	Hg (RN-CAS Registry Number 7439-97-6)	**	16.787 ± 0.015	PEN	3541
$\text{Hg}^+(^2\text{P}_{3/2})$	Hg (RN-CAS Registry Number 7439-97-6)	**	18.050 ± 0.050	PEN	3541
Hg^+	Hg (RN-CAS Registry Number 7439-97-6)	**	10.47 ± 0.05	RPD	3745
$\text{C}_{12}\text{H}_{10}\text{Hg}$	(C ₆ H ₅) ₂ Hg (Mercury, diphenyl-) (RN-CAS-Registry Number 587-85-9)	**	8.30 ± 0.03	PI	4055
HgCl_2^+	HgCl ₂ (RN-CAS Registry Number 7487-94-7)	**	11.5 (V)	PE	3963
$\text{C}_3\text{H}_5\text{ClHg}^+$	CH ₂ =CHCH ₂ HgCl (RN-CAS Registry Number 14155-77-2)	**	9.35 (V)	PE	3859
Tl^+	TlBO ₂ (RN-CAS Registry Number XXXXX-XX-X)	BO ₂	10.43 ± 0.07	EI	4096

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Tl^{+3}	Tl^{+2} (RN-CAS Registry Number 14877-28-2)	**	29.8523 ± 0.0006	S	4093
Tl_2^+	Tl_2O (RN-CAS Registry Number 1314-12-1)		11.97 ± 0.09	EI	4096
TlO^+	TlBO_2 (RN-CAS Registry Number XXXXX-XX-X)		10.68 ± 0.11	EI	4096
Tl_2O^+	Tl_2O (RN-CAS Registry Number 1314-12-1)	**	8.02 ± 0.10	EI	4096
TlBO^+	TlBO? (RN-CAS Registry Number XXXXX-XX-X)	**	11.8 ± 0.6	EI	4096
TlBO^+	$\text{TlBO}_2?$ (RN-CAS Registry Number XXXXX-XX-X)	**	15.02 ± 0.23	EI	4096
TlBO_2^+	TlBO_2 (RN-CAS Registry Number XXXXX-XX-X)	**	9.92 ± 0.11	EI	4096
Tl_2BO_2^+	$(\text{TlBO}_2)_2$ (RN-CAS Registry Number XXXXX-XX-X)		9.17 ± 0.10	EI	4096
$\text{TlF}^+(^2\Sigma)$	TlF (RN-CAS Registry Number 7789-27-7)	**	10.52	PE	3971
$\text{TlF}^+(^2\Pi)$	TlF (RN-CAS Registry Number 7789-27-7)	**	11.15	PE	3971
$\text{TlF}^+(^2\Sigma)$	TlF (RN-CAS Registry Number 7789-27-7)	**	~ 14.05	PE	3971
Tl_2F^+	$(\text{TlF})_2$ (RN-CAS Registry Number 31970-97-5)		9.97 ± 0.02	PI	3971
Tl_2F_2^+	$(\text{TlF})_2$ (RN-CAS Registry Number 31970-97-5)	**	9.71 ± 0.02	PI	3971
$\text{Tl}_2\text{F}_2(^2\Pi_u)$	$(\text{TlF})_2$ (RN-CAS Registry Number 31970-97-5)	**	9.62	PE	3971
$\text{Tl}_2\text{F}_2(^2\Pi_g, ^2\Pi_u, ^2\Sigma_g)$	$(\text{TlF})_2$ (RN-CAS Registry Number 31970-97-5)	**	13.63	PE	3971
$\text{Tl}_2\text{F}_2(^2\Sigma_u)$	$(\text{TlF})_2$ (RN-CAS Registry Number 31970-97-5)	**	17.07	PE	3971
$\text{Tl}_2\text{F}_2(^2\Sigma_g)$	$(\text{TlF})_2$ (RN-CAS Registry Number 31970-97-5)	**	~ 17.80	PE	3971
$\text{TlCl}^+(^2\Sigma)$	TlCl	**	13.79	PE	3913
$\text{TlCl}^+(X^2\Sigma)$	TlCl (RN-CAS Registry Number 7791-12-0)	**	9.894 (V)	PE	3913
$\text{TlCl}^+(^2\Pi)$	TlCl (RN-CAS Registry Number 7791-12-0)	**	9.925 (V)	PE	3536
$\text{TlCl}^+(^2\Pi)$	TlCl (RN-CAS Registry Number 7791-12-0)	**	10.384 (V)	PE	3913

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
TlAs ⁺	TlAs (RN-CAS Registry Number 12006-09-6)	**	9±1	EI	3947
TlBr ⁺ (² Π)	TlBr (RN-CAS Registry Number 7789-40-4)	**	9.832 (V)	PE	3913
TlBr ⁺ (² Σ)	TlBr (RN-CAS Registry Number 7789-40-4)	**	13.57	PE	3913
TlI ⁺	TlI (RN-CAS Registry Number 7790-30-9) (HB-Threshold value approximately corrected for hot bands)	**	8.47±0.02	PI	3536
TlI ⁺ (² Σ _{1/2} , ² Π _{3/2})	TlI (RN-CAS Registry Number 7790-30-9)	**	8.47±0.02	PE	3913
TlI ⁺	TlI (RN-CAS Registry Number 7790-30-9)	**	8.93 (V)	PE	3676
TlI ⁺ (² Π)	TlI (RN-CAS Registry Number 7790-30-9)	**	9.39	PE	3913
TlI ⁺⁺	TlI (RN-CAS Registry Number 7790-30-9)	**	9.71 (V)	PE	3676
TlI ⁺ (² Σ)	TlI (RN-CAS Registry Number 7790-30-9)	**	13.0	PE	3913
TlI ⁺⁺	TlI (RN-CAS Registry Number 7790-30-9)	**	13.52 (V)	PE	3676
Pb ⁺⁴	Pb ⁺³ (RN-CAS Registry Number 18466-73-4)	**	42.3333±0.0006	S	4093
C ₃ H ₉ Pb ⁺	(CH ₃) ₄ Pb (RN-CAS Registry Number 75-74-1)	CH ₃	8.77±0.16	EI	3548
C ₃ H ₉ Pb ⁺	(CH ₃) ₃ CPb(CH ₃) ₃ (RN-CAS Registry Number 32997-03-8)	(CH ₃) ₃ C	8.67±0.21	EI	3548
C ₃ H ₉ Pb ⁺	(CH ₃) ₃ PbPb(CH ₃) ₃ (RN-CAS Registry Number 6713-83-3)	(CH ₃) ₃ Pb	9.02±0.14	EI	3548
C ₄ H ₁₂ Pb ⁺	(CH ₃) ₄ Pb (RN-CAS Registry Number 75-74-1)	**	8.50±0.04	PE	3880
C ₄ H ₁₂ Pb ⁺	(CH ₃) ₄ Pb (RN-CAS Registry Number 75-74-1)	**	8.83±0.1	PE	3677
C ₄ H ₁₂ Pb ⁺	(CH ₃) ₄ Pb (RN-CAS Registry Number 75-74-1)	**	8.26±0.17	EI	3548
C ₇ H ₁₈ Pb ⁺	(CH ₃) ₃ CPb(CH ₃) ₃ (RN-CAS Registry Number 32997-03-8)	**	7.99±0.13	EI	3548
C ₆ H ₁₈ Pb ₂ ⁺	(CH ₃) ₃ PbPb(CH ₃) ₃ (RN-CAS Registry Number 6713-83-3)	**	7.41±0.10	EI	3548
C ₁₆ H ₄₄ Si ₄ Pb ⁺	((CH ₃) ₃ SiCH ₂) ₄ Pb (RN-CAS Registry Number 18547-13-2)	**	8.14±0.1 (V)	PE	3830

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
PbCl_2^+	PbCl_2 (RN-CAS Registry Number 7758-95-4)	**	10.11 (V)	PE	3650
PbI_2^+	PbI_2 (RN-CAS Registry Number 10101-63-0)	**	8.86 ± 0.03	PI	3536
Bi_3^+	$\text{Bi}_3?$ (RN-CAS Registry Number 12595-63-0)	**	7.6 ± 0.3	EI	3599
Bi_4^+	Bi_4 (RN-CAS Registry Number XXXXX-XX-X)	**	7.7 ± 0.3	EI	3599
BiF_3^+	BiF_3 (RN-CAS Registry Number 7787-62-4)	**	~ 12	EI	3551
BiF_4^+	BiF_5 (RN-CAS Registry Number 7787-62-4)		14.5-15	EI	3551
Bi_2F_9^+	$(\text{BiF}_5)_2?$ (RN-CAS Registry Number XXXXX-XX-X)		14.5-15	EI	3551
GaBi^+	GaBi (RN-CAS Registry Number 12010-43-4)	**	7 ± 1	EI	3608
BiTl^+	BiTl (RN-CAS Registry Number 26257-16-9)	**	7.5 ± 0.4	EI	3949
Ac^+	Ac (RN-CAS Registry Number 7440-34-8)	**	5.17 ± 0.12	D	3875
Th^+	Th (RN-CAS Registry Number 7440-29-1)	**	5.9 ± 0.15	EI	3962
Th^+	Th (RN-CAS Registry Number 7440-29-1)	**	7.83 ± 0.25	SI	4042
Th^+	Th (RN-CAS Registry Number 7440-29-1)	**	6.08 ± 0.12	D	3875
ThO^+	ThO (RN-CAS Registry Number 12035-93-7)	**	6.1 ± 0.15	EI	3962
ThO_2^+	ThO_2 (Rn 1314-20-1)	**	8.7 ± 0.15	EI	3962
ThCl_4^+	ThCl_4 (RN-CAS Registry Number 10026-08-1)	**	12.7 ± 0.3	EI	3795
ThPt^+	ThPt (RN-CAS Registry Number 12038-30-1)	**	8 ± 2	EI	3968
Pa^+	Pa (RN-CAS Registry Number 7440-13-3)	**	5.89 ± 0.12	D	3875

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
U^+	U (RN-CAS Registry Number 7440-61-1)	**	6.22 ± 0.5	S	3566
U^+	U (RN-CAS Registry Number 7440-61-1)	**	6.1 ± 0.3	RPD	3557
U^+	U (RN-CAS Registry Number 7440-61-1)	**	6.8 ± 1.5	EI	3595
U^+	U (RN-CAS Registry Number 7440-61-1)	**	$\sim 6 \pm 0.5$	EI	3448
U^+	U (RN-CAS Registry Number 7440-61-1)	**	6.05 ± 0.07	D	3875
U^{+2}	U^+ (RN-CAS Registry Number 15721-70-7)	**	10.6 ± 1	S	3566
UO^+	UO (RN-CAS Registry Number 12035-97-1)	**	5.7 ± 0.4	RPD	3557
UO^+	UO (RN-CAS Registry Number 12035-97-1)	**	4.3 ± 1.5	EI	3595
UO^+	UO (RN-CAS Registry Number 12035-97-1)	**	$\sim 6 \pm 0.5$	EI	3448
UO_2^+	UO_2 (RN-CAS Registry Number 1344-57-6)	**	5.5 ± 0.4	RPD	3557
UO_2^+	UO_2 (RN-CAS Registry Number 1344-57-6)	**	4.5 ± 1.5	EI	3595
UO_2^+	$UO_2?$ (RN-CAS Registry Number 1344-57-6)	**	$\sim 6 \pm 0.5$	EI	3448
UO_3^+	UO_3 (RN-CAS Registry Number 1344-58-7)	**	11.1 ± 0.4	RPD	3557
UO_3^+	UO_3 (RN-CAS Registry Number 1344-58-7)	**	9.5 ± 1.5	EI	3595
US^+	$US?$ (RN-CAS Registry Number 12039-11-1)	**	$\sim 6 \pm 0.5$	EI	3448
UOS^+	UOS (RN-CAS Registry Number 22201-28-1)	**	$\sim 8 \pm 0.5$	EI	3448
UCl_3^+	$UCl_3?$ (RN-CAS Registry Number 10025-93-1)	**	$\sim 10.0 \pm 0.5$	EI	3795
UCl_4^+	UCl_4 (RN-CAS Registry Number 10026-10-5)	**	11.0 ± 0.3	EI	3795
Np^+	Np (RN-CAS Registry Number 7439-99-8)	**	6.32 ± 0.12	SI	4042
Np^+	Np (RN-CAS Registry Number 7439-99-8)	**	6.20 ± 0.12	D	3875
Pu^+	Pu (RN-CAS Registry Number 7440-07-5)	**	4.99 ± 0.15	SI	4042

Table of Ion Energetics Measurements—Continued

Ion	Reactant	Other products	Ionization or appearance potential (eV)	Method	Ref.
Pu ⁺	Pu (RN-CAS Registry Number 7440-07-5)	**	6.06±0.02	D	3875
Am ⁺	Am (RN-CAS Registry Number 7440-35-9)	**	5.993±0.010	D	3875
Cm ⁺	Cm (RN-CAS Registry Number 7440-51-9)	**	6.09±0.02	D	3875
Bk ⁺	Bk (RN-CAS Registry Number 7440-40-6)	**	6.30±0.09	D	3875
Cf ⁺	Cf (RN-CAS Registry Number 7440-71-3)	**	6.41±0.10	D	3875
Es ⁺	Es (RN-CAS Registry Number 7429-92-7)	**	6.52±0.10	D	3875
Fm ⁺	Fm (RN-CAS Registry Number 7440-72-4)	**	6.64±0.11	D	3875
Md ⁺	Md (RN-CAS Registry Number 7440-11-1)	**	6.74±0.12	D	3875
No ⁺	No (RN-CAS Registry Number 10028-14-5)	**	6.84±0.12	D	3875

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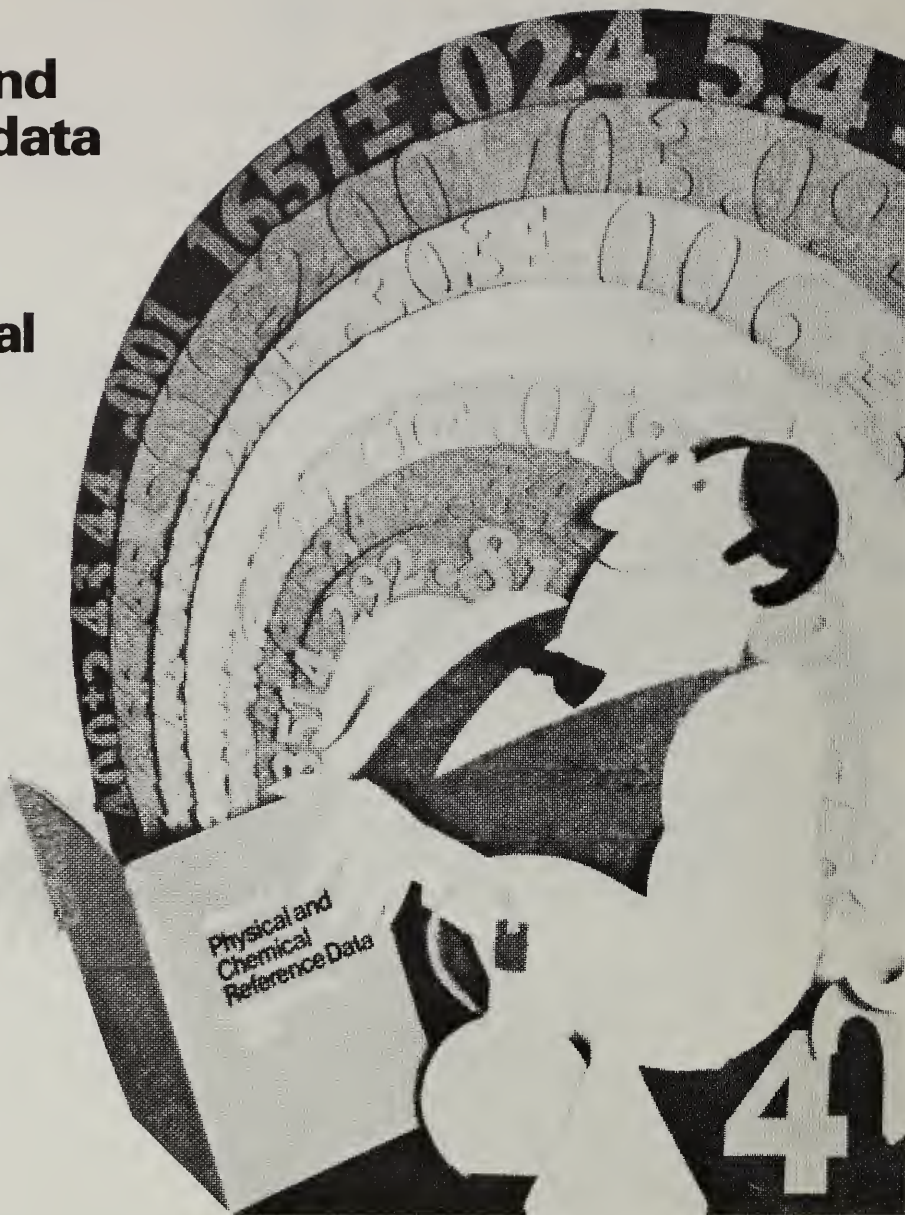
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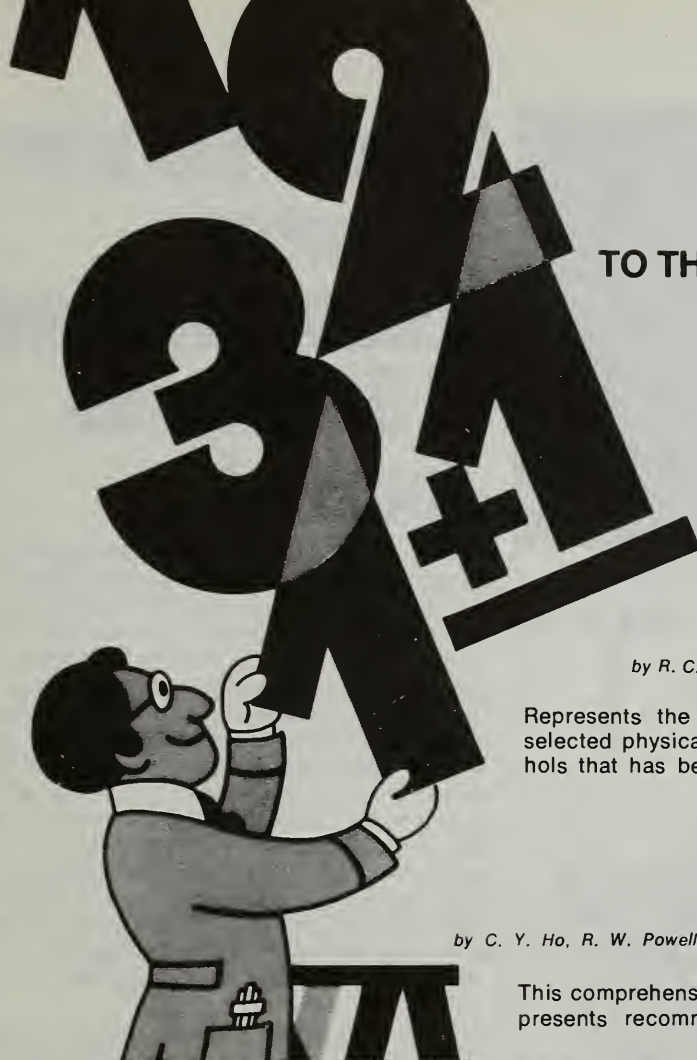
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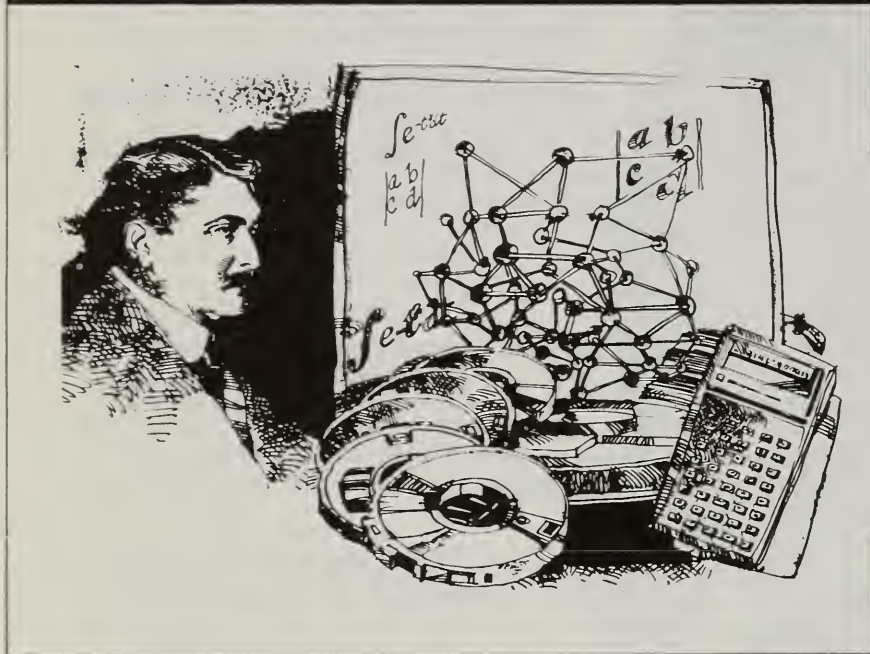
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