ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 80, and 86

[AMS–FRL–6924–1]

RIN 2060–AI55

Control of Emissions of Hazardous Air Pollutants From Mobile Sources

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Today's action addresses emissions of hazardous air pollutants (HAPs) from motor vehicles and their fuels. Hazardous air pollutants refer to a range of compounds that are known or suspected to have serious health or environmental impacts. Motor vehicles are significant contributors to national emissions of several hazardous air pollutants, notably benzene, formaldehyde, 1,3-butadiene, acetaldehyde, and diesel particulate matter and diesel exhaust organic gases.

In today's action, we list 21 compounds emitted from motor vehicles that are known or suspected to cause cancer or other serious health effects. Our Mobile Source Air Toxics (MSAT) list includes various volatile organic compounds (VOCs) and metals, as well as diesel particulate matter and diesel exhaust organic gases (collectively DPM + DEOG). The selection methodology we used to develop this MSAT list, which may be used to add compounds to or remove compounds from the list in the future as new information becomes available, is also described. In today's action we also examine the mobile source contribution to national inventories of these emissions and the impacts of existing and newly promulgated mobile source control programs, including our reformulated gasoline (RFG) program, our national low emission vehicle (NLEV) standards, our Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and our proposed heavy-duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 1990 and 2020, we project these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 67 to 76 percent, and will reduce on-highway diesel PM emissions by 90 percent.

This action also finalizes new gasoline toxic emission baseline requirements which require refiners to maintain current levels of over-compliance with toxic emissions performance standards that apply to federal reformulated gasoline (RFG) and anti-dumping standards that apply to conventional gasoline (CG). Because the new baseline requirements do not require refiners to install new equipment or use technologies beyond what they were using in the baseline period (1998–2000), we project that this program will impose only negligible costs. The new baseline requirements are designed to prevent backsliding and to ensure that existing overcompliance with current standards continues. We are not setting additional vehicle-based air toxics controls at this time because the technology-forcing Tier 2 light-duty vehicle standards and those standards being developed in response to our recent proposal for heavy-duty engine and vehicle standards represent the greatest degree of toxics control achievable at this time considering existing standards, the availability and cost of the technology, and noise, energy, and safety factors, and lead time.

Finally, because of our continuing concern about the potential health impacts of public exposure to air toxics, today's action also describes a Technical Analysis Plan through which we will continue to improve our understanding of the risk posed by air toxics to public health and welfare. It will also allow us to evaluate the need for and appropriateness of additional mobile source air toxics controls for on-highway and nonroad sources, and their fuels. Based on the information developed through this technical analysis plan, we will conduct a future rulemaking, to be completed no later than July 1, 2004.

DATES: This rule is effective May 29, 2001. The incorporation by reference of certain publications listed in this rule is approved by the Director of the Federal Register as of May 29, 2001.

ADDRESSES: *Comments:* All comments and materials relevant to today's action have been placed in Public Docket No. A–2000–12 at the following address: U.S. Environmental Protection Agency (EPA), Air Docket (6102), Room M–1500, 401 M Street, SW, Washington, DC 20460. EPA's Air Docket makes materials related to this rulemaking available for review at the above address (on the ground floor in Waterside Mall) from 8:00 a.m. to 5:30 p.m., Monday through Friday, except on government holidays. You can reach the Air Docket by telephone at (202) 260–7548, and by facsimile (202) 260–4400. We may charge a reasonable fee for copying docket materials, as provided in 40 CFR part 2.

FOR FURTHER INFORMATION CONTACT: Margaret Borushko, U.S. EPA, National Vehicle and Fuels Emission Laboratory, 2000 Traverwood, Ann Arbor, MI 48105; Telephone (734) 214–4334; FAX: (734) 214–4816; E-mail: *borushko.margaret@epa.gov*

SUPPLEMENTARY INFORMATION:

Regulated Entities

This action will affect entities that produce new motor vehicles, alter individual imported motor vehicles to address U.S. regulation, or convert motor vehicles to use alternative fuels. It will also affect entities that produce, distribute, or sell gasoline or diesel motor fuel.

The table below gives some examples of entities that may have to follow the regulations. Because these are only examples, you should carefully examine the regulations in 40 CFR parts 80 and 86. If you have questions, call the person listed in the **FOR FURTHER INFORMATION CONTACT** section above.

Category	NAICS codes (1)	SIC codes (2)	Examples of potentially regulated entities
Industry	336111 336112 336120	3711	Motor Vehicle Manufacturers.
Industry	336112 336120	3711	Engine and Truck Manufacturers.
Industry	336311 336312 422720 454312 811198 541514 541690	3592 3714 5172 5984 7549 8742 8931	Alternative Fuel Vehicle Converters.

Category	NAICS codes (1)	SIC codes (2)	Examples of potentially regulated entities
Industry	811112	7533	Commercial Importers of Vehicles and Vehicle Components.
	811198	7549	
	541514	8742	
Industry	324110	2911	Petroleum Refiners.
Industry	422710	5171	Gasoline or Diesel Marketers and Distributors.
	422720	5172	
Industry	484220	4212	Gasoline or Diesel Carriers.
	484230	4213	

(1) North American Industry Classification System (NAICS).
(2) Standard Industrial Classification (SIC) system code.

Access to Rulemaking Documents through the Internet

Today's action is available electronically on the day of publication from the Office of the Federal Register Internet Web site listed below. Electronic copies of this preamble and regulatory language as well as the Response to Comments, the Technical Support Document (TSD) and other documents associated with today's action will be available from the EPA Office of Transportation and Air Quality Web site listed below shortly after the rule is signed by the Administrator. This service is free of charge, except any cost that you already incur for Internet connectivity.

EPA Federal Register Web Site:
http://www.epa.gov/docs/fedrgstr/epa-air/
(Either select a desired date or use the Search feature.)

Office of Transportation and Air Quality (OTAQ) Air Toxics Web Site:
http://www.epa.gov/otaq/toxics.htm

Please note that due to differences between the software used to develop the document and the software into which the document may be downloaded, changes in format, page length, etc., may occur.

Outline of this Preamble

I. Introduction

A. Background

Air toxics, which are also known as "hazardous air pollutants" or HAPs, are those pollutants known or suspected to cause cancer or other serious health or environmental effects. They include pollutants like benzene, perchloroethylene, methylene chloride, heavy metals like mercury and lead, polychlorinated biphenyls (PCBs), and dioxins. While the harmful effects of air toxics are of particular concern in areas closest to where they are emitted, they can also be transported and affect the health and welfare of populations in other geographic areas. Some can persist for considerable time in the environment and/or bioaccumulate in the food chain.

To address concerns about the potentially serious impacts of hazardous air pollutants on public health and the environment, the Clean Air Act (the Act), as amended in 1990, includes a number of provisions that have led EPA to characterize, prioritize, and control these emissions as appropriate. Since 1990, the Agency has worked to comply with the Act through a combination of regulatory approaches, partnerships, ongoing research and assessments, risk initiatives, and education and outreach. We have put in place many programs to reduce air toxic emissions that have resulted, and will continue to result, in reductions in ambient concentrations of air toxics. On the stationary source side, we have developed 46 stationary source standards for 82 different types of sources and have more under development. These standards are required under Sections 112 and 129 of the Act and provide for future evaluation of the need for additional stationary source regulations based on the remaining risk from air toxics after these standards are in effect. These actions have resulted, or are projected to result in, substantial reductions in HAP emissions.

On the mobile source side, many of the emission control programs put in place pursuant to the 1990 Clean Air Act Amendments reduce air toxics emissions from a wide variety of mobile sources. These include our reformulated gasoline (RFG) program, which has substantially reduced mobile source air toxics, particularly in urban areas which often have high levels of ambient air toxics, our national low emission vehicle (NLEV) program, our Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and standards for nonroad vehicles and equipment, such as locomotives, recreational marine engines, and aircraft. We have also proposed heavy-duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements that would reduce toxics emissions from heavy-duty trucks.[1] Finally, certain other mobile source control programs have been specifically aimed at reducing toxics emissions from mobile sources (e.g., our lead phase-out programs).

While these mobile source standards were put in place primarily to reduce ambient concentrations of criteria pollutants through oxides of nitrogen (NO_X), volatile organic compound (VOC), carbon monoxide (CO) and particulate matter (PM) controls, and thereby to help states and localities come into attainment with the National Ambient Air Quality Standards (NAAQS) for ozone, PM, and CO, they have reduced and will continue to reduce on-highway emissions of air toxics significantly.[2] By 2020, we project these programs will reduce the levels of on-highway emissions of benzene by 73 percent, formaldehyde by 76 percent, 1,3-butadiene by 72 percent, and acetaldehyde by 67 percent from 1990 levels. In addition, by 2020, on-highway diesel PM emission reductions of 94 percent from 1990 levels are projected in a recent NPRM for heavy-duty engines.[3]

Nevertheless, because of the potentially serious effects exposure to air toxics may have on human health, it is reasonable to assess whether it is appropriate to establish additional mobile source controls that are specifically designed to reduce further or minimize increases in national inventories of these pollutants. In today's action, pursuant to Section 202(l)(2) of the Act, the Agency has identified those compounds emitted from mobile sources that should be classified as mobile source air toxics, evaluated whether there are additional controls that can be established at this time, set new toxic emission performance standards, identified existing data gaps in our understanding of the risk posed to the public from mobile source air toxics, and committed to reevaluate the need for additional controls in 2003–2004.

Today's action provides the mobile source component of EPA's National Air Toxics Program: The Integrated Urban Strategy (IUATS), published July 19, 1999 (64 FR 38706). The overarching goal of the IUATS is to reduce cancer and noncancer risks associated with all sources of air toxics in urban areas. In urban areas, toxic air pollutants raise special concerns because sources of emissions and people are concentrated in the same geographic areas, leading to large numbers of people being exposed to the emissions of many HAPs from many sources. The IUATS identified 33 ''urban HAPs'' which pose the greatest threat to human health in the largest number of urban areas. These 33 compounds are a subset of the 188 compounds listed in Section 112(b) of the Clean Air Act and are listed in Table I–1. Thirteen of these compounds are also included on our Mobile Source Air Toxics list (see Section II, below). The IUATS is described in greater detail in Chapter 1 of the Technical Support Document for this rule. Additional information can also be obtained from the EPA's Unified Air Toxics website, *http://www.epa.gov/ttn/uatw*.

TABLE I–1.—LIST OF URBAN HAPS FOR THE INTEGRATED URBAN AIR TOXICS STRATEGY

Acetaldehyde [a]	Coke oven emissions	Mercury compounds [a]
Acrolein [a]	1,2-dibromomethane	Methylene chloride.
Acrylonitrile	1,2-dichloropropane (propylene dichloride).	Nickel compounds. [a]
Arsenic compounds [a]	1,3-dichloropropene	Polychlorinated biphenyls.
Benzene [a]	Ethyl dichloride (1,2-	Polycyclic organic matter. [a]
Beryllium compounds	Ethylene oxide	Quinoline.
1,3-Butadiene [a]	Formaldehyde [a]	2,3,7,8-tetrachlorodibenzo-p-dioxine (and cogeners and TCDF cogeners). [a]
Cadmium compounds	Hexachlorobenzene	1,1,2,2-tetrachloroethane.
Carbon tetrachloride	Hydrazine	Tetrachloroethylene.
Chloroform	Lead compounds [a]	Trichloroethylene.
Chromium compounds [a]	Manganese compounds [a]	Vinyl chloride.

[a] Included on our Mobile Source Air Toxics list.

[1] See final rules: NLEV, 62 FR 31191 (June 6, 1997); Tier 2, 65 FR 6698 (February 10, 2000); land-based diesel nonroad, 63 FR 56968 (October 23, 1998); locomotive, 63 FR 18978 (April 16, 1998); recreational marine, 61 FR 52088 (October 4, 1996); commercial diesel marine, 64 FR 73300 (December 29, 1999); aircraft, 62 FR 25355 (May 8, 1997); RFG, 59 FR 7812 (February 16, 1994). See proposed rule HD2007, 65 FR 35430 (June 2, 2000).

[2] For example, included among the numerous chemicals that make up total VOC emissions—that thus are reduced when VOCs are reduced—are several gaseous toxics (e.g., benzene, formaldehyde, 1,3-butadiene, and acetaldehyde).

[3] 65 FR 35430, June 2, 2000.

Today's rule is our first attempt at addressing mobile source air toxics in a systematic and integrated manner. Additional analysis, however, will be necessary to evaluate the sufficiency of those controls and to determine whether there is a need for additional controls. Today's rule also contains a Technical Analysis Plan (TAP) that identifies key information gaps about the risk posed by mobile source air toxics and the feasibility of additional controls. In order to address these data gaps, the Agency will continue to compile, analyze, and conduct additional research in coordination with other toxics research activities that are ongoing in the Agency, including the National-Scale Air Toxics Assessment (NATA) headed by EPA's Office of Air Quality Planning and Standards (OAQPS) and the Air Toxics Research Strategy (ATRS) headed by EPA's Office of Research and Development (ORD).

The results of NATA will be used to identify areas of the country and pollutants where additional investigation is needed. NATA will begin with an analysis of the risks associated with the 33 ''urban HAPs'' identified in Table I–1. In the future, NATA will evaluate all 188 HAPs currently listed under Section 112(b) of the Act as well as diesel PM. NATA is described in greater detail in Chapter 1 of the Technical Support Document for this rule. Additional information can also be obtained from the NATA website (http://www.epa.gov/ttn/uatw/nata).

The Air Toxics Research Strategy (ATRS) is an Agency 10 year plan to guide and prioritize research in air toxics from various sources, including mobile sources. ATRS is also described in Chapter 1 of the Technical Support Document.

With this background, we now turn to an overview of today's action.

B. Basic Components of Today's Program

Today's action addresses mobile source air toxics emissions. In it, we identify our list of 21 mobile source air toxics (MSATs) and set new gasoline toxic emission performance baseline requirements for RFG and conventional gasoline. We also describe a Technical Analysis Plan to continue analysis and research that will aid us in evaluating and assessing the need for additional mobile source air toxics controls. The information acquired through our technical analysis will form the basis for a future mobile source air toxics rulemaking.

1. Identification of Mobile Source Air Toxics

There are hundreds of different compounds and elements that are known to be emitted from passenger cars, on-highway trucks, and various types of nonroad equipment. Section II of today's action identifies a list of 21 toxic compounds emitted from motor vehicles and describes the methodology we used to generate this list. This methodology may be used to add compounds to, or remove compounds from, the MSAT list in the future as new information becomes available.

2. Assessment of Emission Benefits From Current Standards

Today's action also describes how our current mobile source emission control programs are expected to reduce MSAT emissions. By 2020, we expect existing programs like the reformulated gasoline (RFG) program, national low emission vehicle (NLEV) program, Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements (Tier 2), and our proposed heavy-duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements (HD2007 rule), to significantly reduce on-highway emissions of key air toxics. Section III contains our on-highway toxics emissions inventory analysis and estimates of these expected reductions.

3. Consideration of Additional On-Highway Controls

Although we anticipate substantial reductions in emissions of key toxic pollutants by 2020, the serious potential health effects associated with many of these compounds lead us to evaluate whether additional controls are technologically feasible at this time. For the purpose of our analysis, we divide potential control measures into two broad categories: vehicle-based controls and fuel-based controls. Vehicle-based controls include programs that reduce evaporative and exhaust emissions from vehicles and engines. Fuel-based controls explore how changing fuel formulation can reduce air toxic emissions. In performing our analysis of additional controls in Sections IV and V, we followed the requirements specified in Section 202(l)(2) of the Act: these motor vehicle or motor fuel standards must ''reflect the greatest degree of emission reduction achievable through the application of technology which will be available, taking into consideration the standards established under [Section 202(a)], the availability and costs of the technology, and noise, energy, and safety factors, and lead time.''

Based on our analysis and the comments we received from various stakeholders, we are finalizing gasoline toxic emission performance standards that will help maintain current levels of overcompliance with existing gasoline toxics emission standards. These requirements are refiner-specific, based on each refinery's average 1998–2000 gasoline toxic emission performance levels for RFG and conventional gasoline. Consistent with our proposal, we are not setting additional air toxics emissions standards for motor vehicles in today's action. However, it is important to note that we have proposed stringent new diesel particulate matter standards for heavy-duty vehicles (HDV) that would reduce HDV PM emissions by 90%. We expect to issue a final rule for this category soon. We believe that it is not technologically feasible at this time to set additional motor vehicle controls under Section 202(l)(2) beyond the controls already adopted or proposed by the Agency. This decision is based on consideration of the technical feasibility, cost, and other factors relevant to a proposal of further controls at this time.

4. Nonroad Air Toxics

Section 202(l)(2) of the Act specifies that we set standards to control hazardous air pollutants from motor vehicles and motor vehicle fuels which, by definition, do not include nonroad engines or vehicles or their fuels. However, nonroad engines are also important contributors to national inventories of mobile source air toxics emissions. Therefore, we believe it is also helpful to include a discussion of nonroad sources in today's action. In addition, as noted above, today's action is part of EPA's Integrated Urban Air Toxics Strategy. As part of our effort to establish a comprehensive plan that seeks to reduce urban air toxic emissions, we intend to address both on-highway and motor vehicles and evaluate emissions and potential strategies relating to hazardous air pollutants from nonroad engines and vehicles.

5. Technical Analysis Plan and Commitment for Further Rulemaking

We believe our evaluation to date of the need for, and appropriateness of, additional mobile source toxics control measures provides adequate support for today's action. At this time, EPA is also engaged in other toxics-related activities as part of NATA, the IUATS, ATRS, and other rulemaking activities. This emerging information will help us to further evaluate potential additional mobile source air toxics controls in the future.

Building on these Agency toxics activities, and to increase our understanding of mobile source air toxics, we will implement the Technical Analysis Plan described in Section VII below. This Plan will be coordinated with the other research activities within the Agency in several key areas, including development of emission factors for nonroad sources, analysis of toxics exposures in microenvironments, and examination of additional fuel- and vehicle-based air toxics controls for both motor vehicles and nonroad engines and equipment. Our TAP will be fully coordinated and integrated with activities conducted as part of NATA, the IUATS, and the ATRS. This will allow us to take full advantage of what is collectively learned and provide a solid basis for future action, including a future rulemaking, to be completed no later than July 1, 2004.

C. EPA's Statutory Authority for Today's Action

Today's action is established pursuant to Section 202(l) of the Clean Air Act. That Section consists of two parts. Section 202(l)(1) calls on EPA to study the need for and feasibility of controlling toxic air pollutants associated with motor vehicles and motor vehicle fuels. That study is to focus on those categories of emissions that pose the greatest risk to human health or about which significant uncertainties remain. The Act specifies that, at a minimum, the study focus on emissions of benzene, formaldehyde, and 1,3-butadiene.

We completed the study required under Section 202(l)(1) in April 1993. The report, entitled ''Motor Vehicle-Related Air Toxics Study,'' is available on our website (http://www.epa.gov/otaq/toxics.htm). Specific pollutants or pollutant categories discussed in the 1993 report include benzene, formaldehyde, 1,3-butadiene, acetaldehyde, diesel particulate, gasoline particulate, gasoline vapors, and selected metals. The emissions and exposure aspects for several of the air toxics covered in this report were recently updated in November 1999. The 1999 report, entitled ''Analysis of the Impacts of Control Programs on Motor Vehicle Toxics Emissions and Exposure in Urban Areas and Nationwide,'' is also available on our website, and is described in more detail in Section I.E., below. We sought peer review comments on both the 1993 and 1999 reports. We considered the 1993 comments in developing the 1999 document and will consider the 1999 comments in developing our future activities (e.g., in the development of version 4 of the Hazardous Air Pollutant Exposure Model, HAPEM4, described in Section VII, below).

Section 202(l)(2) instructs us to set standards to control hazardous air pollutants from motor vehicles, motor vehicle fuels, or both. These standards, which may be revised from time to time, are to reflect the greatest degree of emission reduction achievable through the application of technology which will be available, taking into consideration the motor vehicle standards established under Section 202(a) of the Act, the availability and cost of the technology, and noise, energy and safety factors, and lead time. The regulations are to apply, at a minimum, to benzene and formaldehyde emissions, and are to be set under Section 202(a) or 211(c) of the Act. Section 211(c) of the Act authorizes the Agency to control or prohibit the manufacturer, introduction into commerce, offering for sale, or sale, of any fuel or fuel additive if any emission product of such fuel or fuel additive causes or contributes to air pollution which may reasonably be anticipated to endanger public health or welfare.

II. What Are the Mobile Source Air Toxics?

A. Introduction

There are hundreds of different compounds and elements that are known to be emitted from passenger cars, on-highway trucks, and various nonroad equipment. Several of these compounds may have adverse effects on human health and welfare.[4] In recognition of this fact, Congress instructed EPA, in Section 202(l)(2) of the Act, to set standards for hazardous air pollutants from motor vehicles and their fuels. Except for benzene and formaldehyde (specifically mentioned in 202(l)(2)), the Act does not specify the compounds that should be considered in such a control program. Therefore, the first step in developing a mobile source air toxics control program is to identify the compounds that should be treated as hazardous air pollutants for purpose of Section 202(l)(2). Since EPA data suggest that nonroad engines and on-highway vehicles emit the same pollutants, EPA has identified this list as a list of mobile source air toxics (MSATs).[5] We are listing 21 MSATs using the methodology described below.

B. The Methodology Used to Identify Our List of Mobile Source Air Toxics

EPA developed the list of MSATs by first searching for lists of compounds in all available databases and recent studies (i.e., ten years old or less) which speciated emissions from motor vehicles and their fuels. Data for vehicles and engines more than ten years old are considered to be outdated and thus are judged not to be representative of current emissions. The lists did not include emissions from alternative-fueled vehicles, currently in a very small number of vehicles, such as flexible-fueled vehicles. We then compared the speciated lists of compounds in these studies to the list of compounds in EPA's Integrated Risk Information System (IRIS) database. IRIS is a database of compounds that identifies EPA's consensus scientific judgment on the characterization of the potential serious adverse health effects that may result from a lifetime exposure to a substance (discussed in more detail below).

By comparing the lists of compounds provided in the emission speciation databases and studies to the list of compounds in IRIS, we generated a list of 21 compounds. An evaluation of the potential for serious adverse health effects as reflected in IRIS and in the ongoing agency scientific assessments of these compounds indicates that these compounds warrant inclusion as MSATs.

It is important to note that inclusion on the list is not itself a determination by EPA that emissions of the compound in fact present a risk to public health or welfare, or that it is appropriate to adopt controls to limit the emissions of such a compound from motor vehicles or their fuels. The purpose of the list is to provide a screening tool that identifies those compounds emitted from motor vehicles or their fuels for which further evaluation of emissions controls is appropriate. In conducting any such further evaluation, pursuant to sections 202(a) or 211(c) of the Act, EPA would consider whether emissions of the compound cause or contribute to air pollution which may reasonably be anticipated to endanger public health or

[4] Our authority under 202(a) and 211(c) allows us to address air pollution that impacts health or welfare. This initial MSAT list focuses on human health. Additional compounds may be added in the future due to their ecological impacts, material damage, or visibility impairment and it is noteworthy that some of the MSATs on the list have important ecological impacts.

[5] We have chosen to call our list of toxics a mobile sources list to acknowledge that nonroad sources may also contribute emissions of these pollutants. For purposes of Section 202(l)(2), each of the MSATs is considered a ''hazardous air pollutant from motor vehicles and motor vehicle fuels.''

welfare. Such an evaluation would also consider the appropriate level of any controls, based on the criteria established in section 202(l)(2). Inclusion of a compound on the MSAT list does not decide these issues, but instead identifies those compounds for which such an evaluation would appear to be warranted.

With regard to emissions from alternative-fueled vehicles, most of the compounds included in the exhaust are included on our list of MSATs (e.g., formaldehyde, acetaldehyde). It should be noted that, depending on the fuel used, these vehicles may also emit unburned ethanol and methanol.

EPA compared the lists of compounds emitted from motor vehicles with lists or sources of information on toxic substances other than IRIS to determine the reasonableness of the MSAT list. Based on this comparison, we requested comments on the possible addition of propionaldehyde and 2,2,4-trimethylpentane to the MSAT list. We are not adding these compounds to the MSAT list at this time due to the absence of an Agency consensus view as expressed on IRIS regarding the adverse health effects of these compounds. The MSAT list will be re-evaluated in the future as new information is acquired about emissions and/or health effects for any mobile source pollutant. Compounds may be added to or removed from the list in future rulemaking notices.

1. Identifying Pollutants Emitted From Mobile Sources

In identifying a list of MSAT, EPA first searched for lists of compounds from all available databases and recent (i.e., ten years old or less) studies that speciated the emissions from motor vehicles and their fuels. Many toxic air pollutants are hydrocarbons (HCs) by their chemical nature and thus will be identified only if the HCs are chemically separated (speciated). In addition, the compounds that comprise the particulate phase of mobile source emissions must also be chemically speciated. Many test programs that characterize vehicle emissions identify only total hydrocarbons and particulate matter without separating the individual species of hydrocarbons and other elements.

The databases and recent studies reporting emissions from light-duty gasoline vehicles (LDGV), heavy-duty diesel vehicles (HDDV), heavy-duty gasoline vehicles (HDGV), and gasoline-powered nonroad engines are identified in Appendix I located at the end of Chapter 2 of the TSD. Data for other vehicle and engine types (e.g., light-duty diesel engines and nonroad diesel engines) either do not exist or are outdated (more than 10 years old) and thus are judged not to be representative of current emissions. However, it is unlikely that the lack of recent data for these particular vehicle and engine types would lead us to overlook compounds that should be included on our list of MSATs, because the combustion processes for these missing vehicle and engine types are similar to those for the vehicle and engine types for which we do have data.

2. Using IRIS to Identify Pollutants With Potential Serious Adverse Health Effects

The Integrated Risk Information System (IRIS) is an EPA database of scientific information that contains the Agency consensus scientific positions on the potential serious adverse health effects that may result from lifetime (chronic) exposure to substances found in the environment.[6] IRIS currently provides health effects information on over 500 specific chemical compounds.

IRIS contains chemical-specific summaries of qualitative and quantitative health information. IRIS information may include the reference concentration (RfC) for noncancer health effects resulting from chronic inhalation exposure, the reference dose (RfD) for noncancer health effects resulting from chronic oral exposure, and the carcinogen assessment for both oral and inhalation exposure. The RfC or RfD is an estimate (with uncertainty spanning perhaps an order of magnitude or more) of a daily exposure to the human population (including sensitive subgroups) that is likely to be without appreciable risk of deleterious noncancer effects during a lifetime. Because of the public health conservative methodology in deriving the RfC or RfD, it is possible that exposure above the RfC or RfD may not pose an appreciable risk; however the significance of exceedances must be evaluated on a case-by-case basis. Combined with information on specific exposure situations, the summary health hazard information in IRIS may be used in evaluating potential public health risks from environmental contaminants. IRIS also lists compounds for which the Agency has reviewed currently available information and concluded that (1) there are insufficient data to calculate an RfC or RfD for the noncancer hazard potentially posed by the compound(s), and/or (2) there is an absence of sufficient information to identify a cancer hazard.

Before a substance is listed on the IRIS database, it goes through a thorough scientific evaluation. This consensus and review process, managed by EPA's Office of Research and Development (ORD), consists of (1) an annual **Federal Register** announcement of the IRIS agenda and a call for scientific information from the public on the selected chemical substances, (2) a search of the current literature, (3) development of health assessment and draft IRIS summaries, (4) internal EPA peer review, (5) external peer review, (6) Agency consensus review and management approval within EPA, (7) preparation of final IRIS summaries and supporting documents, and (8) entry of summaries and supporting documents into the IRIS database.

C. List of Mobile Source Air Toxics

In our notice of proposed rulemaking we listed 21 MSATs. We received comments on six proposed MSATs as well as other compounds. We are finalizing this list of 21 compounds, but we have changed the listing for diesel exhaust to diesel particulate matter and diesel exhaust organic gases. A discussion of the comments received on the proposed MSAT list is provided below and the MSAT list is provided in Table II–1.

TABLE II–1.—LIST OF MOBILE SOURCE AIR TOXICS (MSATS)

Acetaldehyde	Diesel Particulate Matter + Diesel Exhaust Organic Gases (DPM + DEOG)	MTBE
Acrolein	Ethylbenzene	Naphthalene.
Arsenic Compounds [1]	Formaldehyde	Nickel Compounds. [1]
Benzene	n-Hexane	POM.[3]
1,3-Butadiene	Lead Compounds [1]	Styrene.

[6] *EPA IRIS Database, http://www.epa.gov/iris/intro.htm*

TABLE II–1.—LIST OF MOBILE SOURCE AIR TOXICS (MSATS)—Continued

Acetaldehyde	Diesel Particulate Matter + Diesel Exhaust Organic Gases (DPM + DEOG)	MTBE
Chromium Compounds [1]	Manganese Compounds [1]	Toluene.
Dioxin/Furans [2]	Mercury Compounds [1]	Xylene.

[1] Although the different metal compounds generally differ in their toxicity, the onroad mobile source inventory contains emissions estimates for total metal compounds (i.e., the sum of all forms).

[2] This entry refers to two large groups of chlorinated compounds. In assessing their cancer risks, their quantitative potencies are usually derived from that of the most toxic, 2,3,7,8-tetrachlorodibenzodioxin.

[3] Polycyclic Organic Matter includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100 degrees centigrade. A group of seven polynuclear aromatic hydrocarbons, which have been identified by EPA as probable human carcinogens, (benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, chrysene, 7,12-dimethylbenz(a)anthracene, and indeno(1,2,3-cd)pyrene) are used here as surrogates for the larger group of POM compounds.

By comparing the lists of compounds identified in the motor vehicle emission databases and studies with the toxic compounds listed in IRIS, we identified 21 compounds. Each of these pollutants are known, probable, or possible human carcinogens (Group A, B or C) and/or pollutants for which the Agency has calculated an RfC or RfD.[7] We therefore consider each of these compounds to be MSATs.

In response to public comments we are changing the way we list diesel exhaust as an MSAT. We believe a better approach is to list diesel particulate matter and diesel exhaust organic gases (DPM + DEOG) as the MSAT. This listing approach is more precise about the components of diesel exhaust expected to contribute to the observed cancer and noncancer health effects and provides a framework for developing regulatory control strategies.

Currently available science, while suggesting an important role for the particulate phase component of diesel exhaust, does not attribute the serious cancer and noncancer health effects independently to diesel particulate matter separate from the organic gas phase components. Therefore, this listing approach does not constitute two separate MSAT listings but a single listing meant to capture the collection of emissions potentially responsible for the cancer and noncancer health effects related to diesel exhaust.

While this listing departs slightly from the approach described above, we believe this is reasonable because (1) there are several nontoxic components of diesel exhaust (e.g., water vapor, nitrogen, oxygen) that we are excluding from the listing, (2) this listing includes the components of diesel exhaust that are likely to contribute to either the cancer or the noncancer hazard (with the exception of the gaseous phase criteria pollutants such as NO_X, SO_2 and CO which are subject to National Ambient Air Quality Standards), (3) the more precise listing provides Federal and State government, industry, and public interest groups an ability to focus on the components of diesel exhaust that pose a potential concern for public health, and (4) this focus provides specific targets for emissions reductions should future analysis indicate that additional controls are necessary.

Regarding the listing of metals, we have chosen to list the entire group of metal compounds if any compound of the metal has been detected in motor vehicle exhaust and any compound of the metal is listed in IRIS as potentially causing adverse human health effects. Literature values report only the total amount of the metal compound identified and not the specific form of the metal being emitted in motor vehicle exhaust. For example, chromium (Cr) can be emitted from combustion sources in different forms, the most toxic of which is Cr+6. In the literature, the form of Cr emissions from mobile sources are unidentified. In our list of MSAT, we therefore list chromium compounds generally, and do not attempt to list specific forms of these metals because we lack metal speciation information. When we assess the range of potential health impacts associated with exposure to chromium compounds, we consider the health effects associated with all forms of the compound for which we have health effects information. For chromium, the most toxic form in IRIS is Cr+6; hence the health impacts described for chromium compounds refer to these most serious effects even though it is highly unlikely that all motor vehicle emissions are Cr+6. EPA believes this listing approach is a reasonable, health-protective way to handle the uncertainty surrounding motor vehicle emissions of metals. Moreover, it is consistent with Congress' list of HAP for stationary sources in Section 112(b) of the Act. At the same time we recognize that to accurately assess the actual health risks associated with exposure to metal emissions from mobile sources, identification of the specific forms of the metals emitted would be important.

With regard to emissions from alternative-fueled vehicles, most of the compounds included in the exhaust are included on our list of MSATs (*e.g.,* formaldehyde, acetaldehyde). It should be noted that, depending on the fuel used, these vehicles may also emit unburned ethanol and methanol. Low level ethanol mixtures (10% ethanol and 90% gasoline) are widely used in the United States. Higher level ethanol mixtures (e.g., 85% ethanol) are used as alternative fuel sources in a small number of flexible fuel vehicles. There is a paucity of data on potential inhalation effects of ethanol, and the compound is not listed in IRIS. One commenter responded to our request for comment on the addition of ethanol to the list of MSATs based on the presence of ethanol in alternative fuels and stated that ethanol should not be listed as an MSAT. At this time EPA is not including ethanol in the list of MSATs because we do not have an Agency consensus view as expressed on IRIS regarding the potential adverse health effects associated with exposure to ethanol. The Agency is continuing toxicity testing and risk assessment of potential adverse health effects resulting from exposure to this compound. We will reassess available information regarding potential health effects of exposure to ethanol when we evaluate whether additional controls are appropriate in 2003.

We did not include methanol on our proposed list of MSAT because it was not identified in our analysis of speciated emissions from motor vehicles. Instead, in the NPRM, we requested comment on whether methanol and ethanol, by virtue of their use in alternative fuel vehicles, should be included on the list.

During the comment period, one commenter directed EPA to studies that identify methanol as an emissions

[7] A further discussion of the potential cancer and noncancer risks, and other dose-response information for each MSAT can be found in Chapter 3 of the TSD.

product of motor vehicles burning reformulated gasoline. This commenter suggested that further research needed to be conducted to determine whether methanol should be added to the list of MSAT. Recently submitted comments echoed the need to conduct further research and requested more time to consider the addition of methanol to the MSAT list.

In order to provide a full opportunity for public comment and to respond to these comments in more detail, we will address the addition of methanol to the MSAT list in a separate rulemaking. We believe it is reasonable to defer making a decision on listing methanol until after today's rulemaking, because listing in today's rulemaking would not result in additional controls. The existing motor vehicle VOC controls will reduce emissions of methanol along with other gaseous toxics and fuel controls will need to be considered in subsequent rulemakings. As part of the future notice addressing addition of methanol to our list of MSAT, we will also evaluate possible controls in accordance with section 202(l)(2) as appropriate.

In the notice of proposed rulemaking we compared lists of emitted compounds to four lists of toxic air pollutants to confirm that our MSAT list was reasonable. The four lists of toxic air pollutants we used were: the Clean Air Act (CAA) Section 112(b) list of hazardous air pollutants; California EPA (CalEPA) list of toxic air contaminants (TAC); U.S. Department of Health and Human Service Agency for Toxic Substances and Disease Registry (ATSDR) list of Minimal Risk Levels (MRLs); and International Agency for Research on Cancer (IARC) monographs on cancer. Comparing these four lists against the emissions speciation studies and databases, we identified two additional compounds not included on our list of MSATs—propionaldehyde and 2,2,4-trimethylpentane. Comments we received on these compounds suggested either that (1) further study was needed to determine the potential for adverse health effects or that (2) both compounds should be added to the list of MSATs based on their presence in the CAA section 112(b) HAP list, or due to the presence of these compounds on the emissions lists.

At this time EPA is not including propionaldehyde or 2,2,4-trimethylpentane in the list of MSATs because we do not have an Agency consensus view as expressed on IRIS regarding the potential adverse health effects associated with exposure to these pollutants. EPA assessments of these compounds have been proposed and we will use all currently available information to reassess the possible inclusion of these compounds in the list of MSATs when we evaluate whether additional controls are appropriate in 2003.

III. How Are Motor Vehicle Emission Control Programs Reducing MSAT Emissions?

In the previous section we identified the 21 MSATs. We now turn to an evaluation of how our various mobile source control programs will affect the inventories of these air toxics.

The data and information available on emissions of these 21 MSATs vary considerably. While we have baseline inventory data for all of the MSATs except naphthalene, we do not have inventory projections for all of them. Therefore, we are examining the projected impacts of our current and proposed mobile source control programs by groupings of air toxics. We do have specific projections of future emissions for five gaseous toxics (benzene, formaldehyde, 1,3-butadiene, acetaldehyde, MTBE) and for diesel PM (as the surrogate for DPM + DEOG) and we present these in this section. We do not have emissions projections for the remaining gaseous toxics (acrolein, POM, styrene, toluene, xylene, ethylbenzene, naphthalene, and n-hexane) but, because these compounds are part of VOCs, we believe it is reasonable to utilize VOC emissions inventory projections to estimate the expected impact of our control programs on these other gaseous MSATs. Finally, we also do not have emissions inventory projections for the metals on the MSAT list (arsenic compounds, chromium compounds, mercury compounds, nickel compounds, manganese compounds, and lead compounds) or for dioxins/furans. While metal emissions and dioxin/furans emissions are associated with particles and it is possible that some of these compounds track PM emissions to some extent, we do not have good data on these relationships. Therefore, we are not presenting emission projections for these compounds in this action. We believe this is reasonable because the mobile source contribution to metals inventories is small and comes primarily from engine wear and impurities in engine oil, or from fuel additives.

As we describe in the following discussion, there have been and will continue to be significant reductions in MSAT emissions as a result of our mobile source regulations. By 2020, we project on-highway emission control programs (up to and including our Tier 2 control program and our proposed 2007 heavy-duty engine rule) will reduce benzene emissions by 73 percent, formaldehyde emissions by 76 percent, 1,3-butadiene emissions by 72 percent, and acetaldehyde emissions by 67 percent from 1990 levels. Under these same controls we project on-highway diesel PM emissions will be reduced by 94 percent by 2020, as compared with 1990 levels. Nonroad engines and equipment also contribute substantially to levels of MSAT emissions and have only in recent years been subject to emission standards. Since nonroad engines are not subject to the same stringent controls as on-highway vehicles, the reductions from these sources are more moderate than those for on-highway sources.

The discussion in this section consists of two parts. First, we describe current inventories of MSAT emissions. Next, we describe how our on-highway emission control programs will reduce these inventories. Interested readers should refer to Chapter 4 of our TSD for more detailed information about the methodology we used to compile these inventories and the results of our analysis. We consider the impacts of our nonroad engine control programs on MSAT emissions in Section VI of this preamble.

A. Baseline Inventories

We developed inventory estimates for several gaseous MSATs (acetaldehyde, benzene, 1,3-butadiene, formaldehyde, MTBE) and also for diesel PM as part of the 1999 study, ''Analysis of the Impacts of Control Programs on Motor Vehicle Toxic Emissions and Exposure in Urban Areas and Nationwide,'' (hereafter referred to as the 1999 EPA Motor Vehicle Air Toxics Study, or the 1999 Study).[8] The pollutants examined in the 1999 Study were chosen because we had adequate data to perform a rigorous modeling analysis for those pollutants. The 1999 Study examined the impact of a variety of parameters including fuel properties, emission control technologies, and type of in-use operation on the 1990 and 1996 emissions inventories for these six pollutants. The 1990 baseline represents estimated emissions before any of the programs added by the1990 Clean Air Act Amendments were implemented. The 1996 estimates reflect toxics emissions with some of the new Clean Air Act programs in place, such as Phase 1 of the RFG program. Note that

[8] Analysis of the Impacts of Control Programs on Motor Vehicles Toxics Emissions and Exposure in Urban Areas and Nationwide (Volumes 1 and 2), November 1999. EPA420–R–99–029/030. This report can be accessed at http://www.epa.gov/otaq/toxics.htm.

since completion of the 1999 Study, we have updated our estimates of diesel PM emissions and our estimates of toxics emissions from heavy-engines (as part of improvements made with regard to heavy-duty engine modeling). Our updated baseline toxics inventory estimates are presented in Table III–1. It should also be noted that these estimates are only for on-highway vehicles.

TABLE III–1.—ANNUAL EMISSIONS FROM ON-HIGHWAY VEHICLES FOR SELECTED AIR POLLUTANTS

[Short tons per year] [a]

Compound	1990 Emissions	1996 Emissions [b]
1,3-Butadiene	36,000	24,000
Acetaldehyde	41,000	31,000
Benzene	257,000	171,000
Formaldehyde	139,000	93,000
Diesel PM	235,000 [c]	182,000
MTBE	55,000	67,000

[a] In this notice we report emissions in terms of short tons as opposed to metric tons.

[b] The 1996 estimates are based on updated inventories taking into consideration the proposed 2007 and later model year heavy-duty engine standards.

[c] For 1990, we used diesel PM estimates from EPA's Trends Report.

The 1996 National Toxics Inventory (NTI) prepared in connection with the Agency's NATA activities also contains emission estimates for 1,3-butadiene, acetaldehyde, benzene, formaldehyde and MTBE. The 1996 NTI emission estimates for these compounds differ slightly from those generated in the 1999 EPA Motor Vehicle Air Toxics Study, due to revisions made to the NTI based on updated vehicle miles traveled (VMT) information provided by a number of states, minor changes to the emissions model used (the MOBTOX model), and revised heavy-duty information. Since DPM + DEOG is not included on the list of 112(b) hazardous air pollutants, which is the focus of the 1996 NTI, DPM + DEOG estimates were not compiled in the 1996 NTI.

The 1996 NTI also contains 1996 emissions estimates for several other MSATs, and includes data for nonroad [9] as well as on-highway sources. We present these data in Table III–2. We also indicate the on-highway and nonroad percentages of the national inventories for these MSATs (the total national inventories include emissions from on-highway and nonroad mobile sources, major and area stationary sources, and other sources such as forest fires). Between the 1999 EPA Motor Vehicle Air Toxics Study and the 1996 NTI, we have baseline inventory data for all of the 21 MSATs except naphthalene.[10] (For DPM + DEOG, we do not have inventory data on the DEOG portion. For this analysis, we are using DPM as a surrogate for DPM + DEOG.) While good baseline data exist for many of the MSATs, they do not exist for all. As noted earlier, we plan to conduct additional research in coordination with other toxics research activities that are ongoing in the Agency to improve our characterization of toxics emission from mobile sources.

TABLE III–2.—1996 ON-HIGHWAY AND NONROAD EMISSION INVENTORIES OF SOME MSATS FROM THE 1996 NTI

[Short tons]

Compound	On-Highway		Nonroad		Mobile Sources	
	Tons	Percent of Total National Emmissions	Tons	Percent of Total National Emmissions	Tons	Percent of Total National Emmissions
1,3-Butadiene [a]	23,500	42	9,900	18	33,400	60
Acetaldehyde [a]	28,700	29	40,800	41	69,500	70
Acrolein [a]	5,000	16	7,400	23	12,400	39
Arsenic Compounds [a]	0.25	0.06	2.01	0.51	2.26	0.57
Benzene [a]	168,200	48	98,700	28	266,900	76
Chromium Compounds [a]	14	1.2	35	3	49	4.2
Dioxins/Furans [a, b]	0.0001	0.2	N.A.	N.A.	0.0001	0.2
Ethylbenzene	80,800	47	62,200	37	143,000	84
Formaldehyde [a]	83,000	24	86,400	25	169,400	49
Lead Compounds [a]	19	0.8	546	21.8	565	22.6
Manganese Compounds [a]	5.8	0.2	35.5	1.3	41.3	1.5
Mercury Compounds [a]	0.2	0.1	6.6	4.1	6.8	4.2
MTBE	65,100	47	53,900	39	119,000	86
n-Hexane	63,300	26	43,600	18	106,600	44
Naphthalene	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Nickel Compounds [a]	10.7	0.9	92.8	7.6	103.5	8.5
POM (as sum of 7 PAH) [a]	42.0	4	19.3	2	61.3	6
Styrene	16,300	33	3,500	7	19,800	40
Toluene	549,900	51	252,200	23	802,100	74

[9] The nonroad inventory in the 1996 NTI includes emissions data for aircraft, commercial marine vessel, locomotives, and other nonroad engines. Note that under the Clean Air Act definition, nonroad vehicles do not include aircraft. For convenience, in this action the term "nonroad" will include aircraft except where otherwise noted. It should be noted that the NONROAD model, on which the estimates for nonroad engines other than locomotive, commercial marine vessels, and aircraft are based, is still draft, and the emissions estimates based on this model are subject to change.

[10] Naphthalene emissions are not reported in the 1996 NTI separately from 16–PAH. See Chapter 3 of the TSD for the explanation of the linkage between diesel exhaust and diesel PM.

TABLE III–2.—1996 ON-HIGHWAY AND NONROAD EMISSION INVENTORIES OF SOME MSATS FROM THE 1996 NTI—Continued

[Short tons]

Compound	On-Highway		Nonroad		Mobile Sources	
	Tons	Percent of Total National Emmissions	Tons	Percent of Total National Emmissions	Tons	Percent of Total National Emmissions
Xylene	311,000	43	258,400	36	569,400	79

[a] These compounds are also on the list of urban HAPs for the Integrated Urban Air Toxics Strategy.

[b] Mass given in tons of TEQ (toxic equivalency quotient). The EPA Office of Research and Development (ORD) has recently developed an inventory for dioxin and dioxin-like compounds using different methods than those used in the 1996 NTI. For 1995, the EPA–ORD estimate of on-highway emissions of dioxin compounds is 0.00005 tons TEQ, comprising 1.5 percent of the national inventory in that year. (The TEQ rates the toxicity of each dioxin and furan relative to that of 2,3,7,8–TCDD, which is assigned a TEQ of 1.0.)

The above inventory data reflect certain interesting characteristics of mobile source air toxics emissions. First, mobile sources account for the majority of the national inventory of three of the gaseous MSATs that are included on the urban HAP list. These three are 1,3-butadiene (60 percent), acetaldehyde (70 percent), and benzene (76 percent). Mobile sources account for 39 percent of the national inventory of acrolein, and 49 percent of the national inventory of formaldehyde, two other gaseous urban HAPs. All of these MSATs are formed as part of the combustion process except for benzene, which is also released through evaporative emissions from gasoline.

Second, with regard to the other MSATs that are included on the urban HAP list, the mobile source contribution generally is small (arsenic compounds, chromium compounds, manganese compounds, mercury compounds, nickel compounds, POM, and dioxins/furans). The sole exception is lead compounds. Mobile sources contribute 23 percent to national inventories of lead compound emissions, due primarily to nonroad sources and, more specifically, to the use of a lead-additive package used to boost the octane of aviation gasoline.[11] The mobile source contribution to the other metals on the urban HAP list comes primarily from engine wear, some fuel additives, or impurities in engine oil.

With regard to the gaseous MSATs that are not included on the urban HAP list (ethylbenzene, MTBE, n-hexane, toluene, and xylene), mobile source contributions are high because of the presence of these compounds in gasoline.

In addition, mobile sources account for almost all diesel PM emissions. A limited number of stationary sources, such as large generators, do operate on diesel fuel. Because there are relatively few stationary sources that operate on diesel fuel, we believe that diesel PM from stationary sources is relatively small compared to diesel PM from mobile sources. (However, for this analysis we have not generated an estimate of diesel PM from stationary sources.) As shown in Table III–1, above, we estimate that 1996 on-highway diesel PM emissions are approximately 182,000 tons. We estimate that 1996 nonroad diesel PM emissions are approximately 346,000 tons, as discussed in Section VI of this notice.[12]

B. Impacts of Motor Vehicle Emission Controls on Emission Inventories

1. Description of Emission Control Programs

Many of the programs that we have put in place since the passage of the 1990 Clean Air Act Amendments to achieve attainment of the National Ambient Air Quality Standards (NAAQS) for ozone, PM and CO have also reduced MSAT emissions. For example, measures to control hydrocarbons from motor vehicles are also effective in controlling gaseous toxics. In addition, certain programs address air toxics directly, such as the RFG program and the gasoline lead phase-out. In this section we briefly describe several categories of mobile source emission control measures that have helped reduce inventories of these harmful compounds. These programs include:

• More stringent vehicle standards and test procedures. The 1990 Clean Air Act Amendments set specific emission standards for hydrocarbons and for PM. Air toxics are present in both of these pollutant categories. As vehicle manufacturers develop technologies to comply with the hydrocarbon and particulate standards (*e.g.,* more efficient catalytic converters), we expect air toxics to be reduced as well. Since 1990, we have developed a number of programs to address exhaust and evaporative hydrocarbon emissions and PM emissions. Some of the key programs are the Tier 1 and NLEV standards for light-duty vehicles and trucks; enhanced evaporative emissions standards; the supplemental federal test procedures (SFTP); urban bus standards; and heavy-duty diesel and gasoline standards for the 2004/2005 time frame.

• Recent motor vehicle/fuel control initiatives. Two of our recent initiatives to control emissions from motor vehicles and their fuels are the Tier 2 control program and our proposed 2007 heavy-duty engine rule. Together these two initiatives define a set of comprehensive standards for light-duty and heavy-duty motor vehicles and their fuels. In both of these initiatives, we treat vehicles and fuels as a system. The Tier 2 control program establishes stringent tailpipe and evaporative emission standards for light-duty vehicles and a reduction in sulfur levels in gasoline fuel beginning in 2004. The proposed 2007 heavy-duty engine rule would establish stringent exhaust emission standards for heavy-duty engines and vehicles for the 2007 model year as well as reductions in diesel fuel sulfur levels starting in 2006.

• Limits on gasoline volatility. Volatility is a measure of how easily a liquid evaporates. As described earlier, some toxics such as benzene are present in gasoline and get into the air when gasoline evaporates. We imposed limits on gasoline volatility in the early 1990s to control evaporative emissions of both hydrocarbon and toxic compounds (most air toxics are hydrocarbons, so programs designed to reduce hydrocarbon emissions also reduce air toxics).

• Reformulated gasoline. The 1990 Clean Air Act Amendments required

[11] Aviation gasoline is used by a relatively small number of aircraft, those with piston engines, which are generally used for personal transportation, sightseeing, crop dusting, and similar activities.

[12] It should be noted that the nonroad diesel PM emissions estimate is based on the draft NONROAD model and is subject to change.

reformulated gasoline to be introduced in the nation's most polluted cities beginning in 1995. From 1995 through 1999, these gasolines were required to provide a minimum 16.5 percent reduction in air toxics emissions over typical 1990 gasolines, increasing to a 21.5 percent minimum reduction beginning in the year 2000. The air toxics reductions have been achieved mainly by further reducing gasoline volatility and by reducing the benzene, aromatics, sulfur, and olefin content of the gasoline.

- Phase-out of lead in gasoline. One of the first programs to control toxic emissions from motor vehicles was the removal of lead from gasoline. Beginning in the mid-1970s, unleaded gasoline was phased in to replace leaded gasoline. The phase-out of leaded gasoline was completed January 1, 1996 when lead was banned from motor vehicle gasoline. The removal of lead from gasoline has essentially eliminated on-highway mobile source emissions of this highly toxic substance.
- Ensuring emissions are controlled throughout the vehicle's life. Many of our vehicle standards require certification of new engines and vehicles, but ensuring continued performance of emission controls can be difficult. The Clean Air Act establishes several programs to make sure vehicle emission controls are functioning properly in actual use. These programs include requirements for periodic emission inspections (I/M, or inspection and maintenance programs) and for computerized on-board diagnostic systems that alert drivers and mechanics to malfunctioning emission controls.

We encourage the interested reader to refer to Chapter 1 of our TSD for more detailed information about these programs.

2. Emission Reductions From Control Programs

We expect the mobile source emissions control programs described above to have beneficial impacts on national inventories of MSATs. The remainder of this section summarizes our MSAT inventory projections. First, we present an overview of the methodologies used to project future emissions inventories. Next, we present the results of our inventory projections. We encourage interested readers to refer to Chapter 4 of our TSD for a more detailed discussion of these projections and how we developed them. The inventory projections in this section are for on-highway vehicles only. Projections of nonroad MSAT emissions are included in Section VI of this preamble.

a. Overview of Inventory Sources

We developed inventory projections that reflect our current and proposed control programs, described above, for five gaseous MSATs, for VOC, and for diesel PM for the years 2007 and 2020. The inventory projections for the five gaseous toxics are based on the 1999 EPA Motor Vehicle Air Toxics Study, updated to incorporate a variety of new information on on-highway vehicles.

The 1999 Study estimated on-highway motor vehicle air toxics emissions for ten urban areas (Atlanta, Chicago, Denver, Houston, Minneapolis, New York City, Philadelphia, Phoenix, Spokane, and St. Louis) and 16 geographic regions. These areas were selected to reflect the range of potential fuels, temperatures, and I/M programs observed in the United States. Every county in the country was then "mapped" to one of these modeled areas or regions. Mapping was done based on a combination of geographic proximity, I/M program, and fuel control programs. The estimation methodology used in the 1999 Study was similar to that used in our original 1993 Motor Vehicle Related Air Toxics Study. In our approach, the MOBILE model is used to generate total organic gas (TOG) emissions from on-highway motor vehicles by vehicle class and model year. Toxics fractions, developed as a percentage of the toxic compound of interest contained in TOG emissions, are then applied to the MOBILE-based TOG emission rates (reported in grams per mile) to arrive at toxics emission rates (reported in grams per mile or milligrams per mile). For light-duty vehicles, information developed for the Complex Model was used to develop these relationships. These toxics fractions are developed as a function of vehicle class (*e.g.,* light-duty, heavy-duty), fuel type (*e.g.,* gasoline or diesel), fuel composition, and technology type (*e.g.,* non-catalyst, catalyst).

We do not have detailed emissions data for gaseous MSATs other than the five gaseous MSATs examined in the 1999 Study. However, we expect the trend for other gaseous MSATs, including acrolein, POM, styrene, xylene, toluene, ethylbenzene, naphthalene, and n-hexane, to follow that of VOC, since all of these compounds are VOCs. We recognize that some gaseous MSATs may not decrease at the same rate as VOCs overall. Without having more detailed emission data for each of the MSATs, however, we are unable to project how those rates may differ. Because we do not have emissions data for DEOG, we are using diesel PM as the surrogate for the MSAT listed as DPM and DEOG. Where we have data regarding specific constituents in the diesel exhaust organic gas phase we present that information.

Our VOC and diesel PM emission estimates are derived from several sources. The 1996 and later values are based on updated modeling that factors in the impact of the proposed 2007 heavy duty engine standards. The 1990 VOC emission estimate is based on the 1999 EPA Motor Vehicle Air Toxics Study,[13] and the 1990 diesel PM is from EPA's Trends Report.[14]

We are not reporting inventory trends for the metals on our list of MSATs (arsenic compounds, chromium compounds, mercury compounds, nickel compounds, manganese compounds, and lead compounds) or for dioxins/furans because we do not have good data on these relationships at this time. Metals in mobile source exhaust can come from fuel, fuel additives, engine oil, engine oil additives, or engine wear. Formation of dioxin and furans requires a source of chlorine. Thus, while metal emissions and dioxin/furan emissions are associated with particles and it is possible that some of these compounds track PM emissions to some extent, there are a number of other factors that contribute to emissions, and we do not have good data on these relationships.

We did receive one comment regarding inputs to the emission inventory modeling performed for the NPRM. The National Petrochemical and Refiners Association (NPRA) commented that the vehicle miles traveled (VMT) growth rates for heavy-duty vehicles, which were based on 1998 estimates from the Energy Information Agency (EIA), were too high. In support of their comments, NPRA submitted EIA's 1999 estimates which were lower than those from 1998 used by EPA. For the inventory projections contained in today's action, we have retained the same growth rates used in the NPRM analysis. Based on discussions with EIA, we believe the 2000 growth estimates will be higher than both the 1999 estimates NPRA referenced and the 1998 estimates we used in the NPRM analysis.[15] However,

[13] The analysis methodology is described in a memorandum from Meredith Weatherby, Eastern Research Group, to Rich Cook, EPA, entitled "Estimating of 1990 VOC and TOG Emissions" in EPA Air Docket A–2000–12.

[14] EPA, 2000. National Air Pollution Emission Trends, 1900–1998 (March 2000). Office of Air Quality Planning and Standards, Research Triangle Park, NC. Report No. 454/R–00–002.

[15] "Early Release of the Annual Energy Outlook 2001," available at www.eia.doe.gov/oaif/aeo/earlyrelease/index.html, Energy Information

because the final 2000 numbers are not yet available from EIA, we are retaining the use of the growth rates used in the NPRM as a more reasonable estimate than the 1999 growth estimates.

b. Emission Reductions

Table III–3 presents the annual emission projections for on-highway vehicles for five gaseous toxics, VOC, and diesel PM with our current on-highway control programs and the proposed 2007 and later model year heavy-duty engine standards. The 1996 inventories presented in Table III–3 are slightly higher than the 1996 inventories presented in Table III–2 because the estimates of heavy-duty vehicle VMT have been updated and improved since the VMT estimates for the 1996 NTI were prepared.

TABLE III–3.—ANNUAL EMMISSIONS INVENTORIES FROM ON-HIGHWAY VEHICLES [a]

[Thousand short tons per year]

Compound	1990	1996	2007	2020
1,3 Butadiene	36	24	12	10
Acetaldehyde	41	31	17	13
Benzene	257	171	89	68
Formaldehyde	139	93	43	34
Diesel PM	235	182	85	15
MTBE [b]	55	67	26	18
VOC	7,585	4,933	3,028	2,153

[a] Includes the impact of our current on-highway control programs and the proposed 2007 and later model year heavy-duty engine standards.
[b] These estimates do not include consideration of EPA's examination of options to phase down or otherwise control the use of MTBE under the Toxic Substances Control Act, or legislative authority that EPA has asked Congress to provide the Agency to address MTBE use in gasoline.

Table III–4 summarizes the percent reductions we expect in on-highway emissions of gaseous MSATs, VOC, and diesel PM from 1990 and 1996 levels in 2007 and 2020 as a result of our current on-highway control programs and the proposed 2007 and later model year heavy-duty engine standards.

TABLE III–4.—REDUCTIONS IN ON-HIGHWAY VEHICLE EMISSIONS [a]

Compound	Reduction in 2007		Reduction in 2020	
	From 1990 (Percent)	From 1996 (Percent)	From 1990 (Percent)	From 1996 (Percent)
1,3 Butadiene	67	50	72	57
Acetaldehyde	58	46	67	57
Benzene	65	48	73	60
Formaldehyde	69	54	76	64
Diesel PM	64	53	94	92
MTBE [b]	52	61	67	73
VOC	60	39	72	56

[a] Includes the impact of our current on-highway control programs and the proposed 2007 and later model year heavy-duty engine standards.
[b] These estimates do not include consideration of EPA's examination of options to phase down or otherwise control the use of MTBE under the Toxic Substances Control Act, or legislative authority that EPA has asked Congress to provide the Agency to address MTBE use in gasoline.

The results of this analysis show that on-highway emissions of the five gaseous MSATs examined are expected to decline by 67 to 76 percent by 2020 from 1990 levels with our existing and proposed control programs. For some gaseous MSATs, the reductions are even greater. Likewise, VOC inventories from on-highway vehicles are projected to decrease by 72 percent between 1990 and 2020 and we assume that other gaseous toxics would decrease by approximately 72 percent as well. Finally, diesel PM emissions are projected to decline by 94 percent by 2020 from 1990 levels.

IV. Evaluation of Additional Motor Vehicle-Based Controls

We are not establishing new standards for motor vehicles in this rulemaking to control MSAT emissions. Based on the information available to the Agency at this time, we have determined that our proposed and current control programs for VOC and diesel PM emissions from motor vehicles will achieve the greatest degree of MSAT control that is feasible when cost and other relevant factors are considered. This section summarizes our rationale for this determination, including the relationship between EPA's vehicle-based control programs and the control of MSATs (especially for those programs established after the 1990 Clean Air Act Amendments), the impact of our most recent efforts to control VOCs, and the possibility of additional control. The Technical Support Document contains additional information.

It is important to note that while we are not adopting new vehicle-based controls in this rulemaking, we will continue to consider the need for, and feasibility of, vehicle-based controls in the future and as part of our Technical Analysis Plan. As we have in the past, we will also continue to look for opportunities to control MSAT emissions in conjunction with other pollutants (*e.g.,* NO_X, SO_2, VOC). Most of the vehicle-based comments focused on these types of controls. These

Administration, downloaded from EIA web site on December 12, 2000.

comments are addressed in the Response To Comments document.

A. MSATs and Motor Vehicle-Based Controls

The majority of gaseous MSATs are hydrocarbons that are primarily the result of incomplete combustion of petroleum fuels. Since a small amount of raw fuel passes through the engine unburned, MSATs present in the fuel are also emitted in the exhaust. In either case, the technologies used to reduce exhaust hydrocarbons also reduce the hydrocarbon species listed as MSATs. This is true whether control is achieved through engine or component modifications, add-on devices, or the use of aftertreatment devices such as oxidation or three-way catalysts. We are not aware of vehicle or engine technologies that selectively reduce MSATs without reducing other hydrocarbons to a similar degree.

The other major source of hydrocarbon emissions from motor vehicles is fuel vapors. These emissions occur when components of the liquid fuel (gasoline or diesel) evaporate when on board the vehicle. The emissions are normally separated into refueling emissions and evaporative emissions (hot soak, diurnal, and running losses). The nature and amount of potential MSATs associated with fuel vapors depend primarily on the fuel composition and the temperatures involved. Gasoline is volatile and evaporates at normal ambient temperatures, while diesel fuel is relatively non-volatile. Thus evaporative emissions are only a significant issue for gasoline-fueled vehicles (or vehicles using volatile alternative fuels). Evaporative and refueling emissions are controlled by eliminating sources of potential liquid and vapor leaks within the vehicle fuel system and venting any vapors to an activated carbon canister or similar device. Activated carbon effectively adsorbs most hydrocarbon compounds, including the common evaporative-related MSATs.

Particulate matter emissions from motor vehicles are primarily composed of partially burned carbon and hydrocarbons from the fuel and engine oil, and to a lesser degree, metals and other inorganic compounds from contaminants or additives in the fuel or engine oil, or products of engine wear in the oil. Since our PM exhaust emission standards apply without regard to the source of the PM, manufacturers must account for all of these emissions. Manufacturers have significantly reduced PM emissions associated with unburned fuel and engine oil through combustion system and engine modifications. In some cases, they have also achieved reductions using aftertreatment.

To understand the relationship between the Agency's current emission control program for on-highway vehicles and the control of MSATs, it is important to first understand the structure and scope of our current emission control programs. EPA's emission control program for on-highway vehicles has historically been divided into two broad vehicle/engine categories that we regulate: ''light-duty'' (vehicles 8,500 pounds gross vehicle weight rating (GVWR) or less) and ''heavy-duty'' (vehicles above 8,500 pounds GVWR).[16] Within these light-duty and heavy-duty categories, we further distinguish vehicles and sometimes establish different emission limits based on vehicle size or other factors.

B. Vehicle-Based Standards To Reduce MSATs From Light-Duty Vehicles

Before we began regulating automobile exhaust, vehicles typically emitted more than 9 grams per mile (gpm) HC in exhaust emissions. Our HC emission standards in the 1970s and 1980s cut these levels by more than an order of magnitude, to 0.41 gpm in 1980. In 1991, we finalized Tier 1 controls for light-duty vehicles and light-duty trucks to be phased in from 1994 to 1996 (56 FR 25724). In 1998, we developed an innovative, voluntary nationwide program to make new cars, called National Low Emission Vehicles (NLEV), significantly cleaner than Tier 1 cars (63 FR 926). The NLEV program went into effect in the Northeast states in 1999 and will go into effect in the rest of the country in 2001. Table IV–1 illustrates the declining HC exhaust standards through the NLEV program.[17] Also shown in the table are the number of miles for which the standards apply, which has increased with time. Thus manufacturers need to make their emission control systems more durable and reliable over a longer period of time.

TABLE IV–1.—HYDROCARBON (HC) EXHAUST EMISSION STANDARDS FOR LIGHT-DUTY VEHICLES

[GPM]

Year	1972	1975	1980	1994	2001
Standard	3.4	1.5	0.41	[a] 0.31	[b] 0.09
Applicability (Miles)	50,000	50,000	50,000	100,000	120,000

[a] The 1994 standard is a nonmethane hydrocarbon (NMHC) standard.

[b] The 2001 standard is a nonmethane organic gas (NMOG) standard. This standard will be replaced by the new multi-level Tier 2 NMOG standards, but the average standard level should remain at approximately 0.09 gpm.

In December 1999, the Agency finalized the Tier 2/sulfur rule establishing light-duty requirements that will be phased-in beginning with the 2004 model year. These requirements phase-in a set of tailpipe emission standards that will, for the first time, apply the same standards to passenger cars, light-duty trucks (LDTs), and larger passenger vehicles. To enable the very clean Tier 2 vehicle emission control technology to be introduced and to maintain its effectiveness, nationwide gasoline sulfur requirements were also put into place. The Tier 2 program begins in 2004 for passenger cars and light LDTs (LDTs up to 6,000 pounds GVWR), while an interim program begins in 2004 for heavy LDTs (LDTs over 6,000 pounds GVWR). For heavy LDTs and MDPVs (medium-duty passenger vehicles), the Tier 2 standards will be phased in beginning in 2008, with full compliance in 2009. Thus, when fully implemented, all vehicles designed for passenger use will have to meet the stringent new emission standards.

The Tier 2 program is designed to focus on reducing the ozone and particulate matter air quality impact of these vehicles. Ozone reductions will be achieved through control of nitrogen oxides and non-methane hydrocarbons. As discussed above, it is the control of HC through the NMOG standards that

[16] EPA recently created the new category of ''medium-duty passenger vehicles'' (MDPVs) that includes passenger vehicles 8,500–10,000 pounds GVWR.

[17] Our programs achieve VOC reductions through standards that limit HC, NMHC, or NMOG.

results in the control of the gaseous toxics. The Tier 2 rule also established stringent PM standards. Control of PM emissions will occur through reductions in gasoline sulfur and the use of aftertreatment for diesel vehicles. Because all Tier 2 standards are fuel neutral, the PM standards apply to both gasoline and diesel vehicles.

The Tier 2 standards will reduce new vehicle NO_X levels to an average of 0.07 grams per mile. The NMOG standards vary depending on which of the various ''bins'' (i.e., certification categories) the manufacturers choose to use in complying with the average NO_X standard. However, we expect significant reductions in NMOG emissions from these vehicles as a result of the more stringent NMOG standards in the bins and the need to select bins to meet the NO_X average. When fully phased-in, we expect fleet average NMOG levels at or below the 0.09 g/mi level. This will represent a 99 percent reduction from uncontrolled pre-1970 levels. Since these controls should be at least as effective at reducing MSATs, these standards should also reduce MSATs to a similar extent from uncontrolled levels.

The Tier 2 rule also finalized formaldehyde standards that harmonize federal standards with the California's LEV II program. Section 202(l)(2) of the Clean Air Act instructs the Agency to promulgate regulations that, at a minimum, apply to emissions of benzene and formaldehyde. We believe that the shift to a toxics emissions performance requirement will limit emissions of these two pollutants. In response to comments, we also considered setting more stringent vehicle-based formaldehyde standards in this FRM. However, since we are not aware of any technology that could specifically reduce formaldehyde emissions, we have no confidence that more stringent vehicle or engine formaldehyde standards would be feasible. Nevertheless, we remain confident that the combination of our Toxics Performance Standard, Tier 2 formaldehyde standards and Tier 2 NMOG standards described above will achieve significant reductions in formaldehyde emissions.

In order to meet strict Tier 2 standards on a fleet-wide average, manufacturers will have to use a combination of sophisticated calibration changes and emission system hardware modifications to increase and maintain high control system efficiency. They will be challenged to maintain tight air-fuel control and improved catalyst performance, especially achieving better catalyst thermal management. Minimizing the time necessary for the catalyst to reach its operating temperature will be especially critical, since the vast majority of emissions occur in the minute or less which passes before the catalyst ''lights off.'' Many manufacturers are going to have to depend more on the precious metal palladium for oxidation of NMOG and CO emissions, as well as the reduction of NO_X. Palladium is more tolerant to high temperatures and will enable manufacturers to increase catalyst efficiency in a broad range of in-use conditions. These technologies will be highly effective at reducing MSATs, including benzene and formaldehyde.

Our existing regulations also contain test procedures to measure evaporative hydrocarbon emissions during a simulated parking event (diurnal emissions) and immediately following a drive (hot soak emissions). In 1993, we finalized more stringent evaporative emission test procedures which apply to light-duty and heavy-duty gasoline vehicles. That rule also addressed fuel spitback and spillage during refueling. These procedures were fully phased in by 1999 (58 FR 16002). The Tier 2 rule included even more stringent requirements. The Tier 2 evaporative standards represent, for most vehicles, more than a 50-percent reduction in diurnal plus hot soak standards from those that will be in effect in the years immediately preceding Tier 2 implementation. These standards should achieve similar reductions in gaseous MSATs. In fact, since the activated carbon used to capture evaporative emissions preferentially adsorbs larger organic molecules, these controls may achieve a greater degree of control of MSATs, which are generally larger and heavier than many other gasoline components. Under these requirements, it is likely that manufacturers will also need to upgrade materials and both increase the reliability of fuel/vapor hose connections and fittings and reduce the number used in the system. We have also finalized on-board refueling vapor recovery (ORVR) requirements for light-duty gasoline vehicles (59 FR 16262, April 6, 1994). ORVR is a nationwide program for capturing refueling emissions by collecting vapors from the vehicle gas tank and storing them in the vehicle during refueling. The fuel vapors are then purged into the engine air intake to be burned while the vehicle is being driven.

Taken as a whole, the Tier 2 program presents the manufacturers with significant challenges in the coming years. It will require the use of hardware and emission control techniques and strategies not used in the fleet today. Bringing essentially all passenger vehicles under the same emission control program regardless of their size, weight, and application is a major engineering challenge. While there may be other prototype technologies on the horizon which could potentially reduce cold-start emissions and therefore air toxics, we have concluded that it would not be appropriate to set tighter standards in this FRM based on these prototype technologies. We are not convinced that these technologies would be feasible and cost effective on a fleet-wide basis in the near future. This is discussed in more detail in Chapter 6 of the TSD.

C. Vehicle-Based Standards To Reduce MSATs From Heavy-Duty Engines

Table IV–2 summarizes the hydrocarbon and PM standards for heavy-duty engines. Also shown in the table are estimates of emission rates from uncontrolled engines. In addition, the standards in our recently proposed 2007 heavy-duty rulemaking are also shown in the table.[18]

TABLE IV–2.—HC AND PM EXHAUST EMISSIONS AND STANDARDS FOR HEAVY-DUTY ENGINES

	Gasoline (Otto-Cycle)	Diesel	
	Exhaust HC	Exhaust HC	Exhaust PM
Uncontrolled Emissions	10–13 g/bhp-hr	4 g/bhp-hr	0.7 g/bhp-hr.
Current Standards	1.1 g/bhp-hr [a]	1.3 g/bhp-hr	0.10 g/bhp-hr.
2004/5 Standards	0.25 g/bhp-hr [b]	0.4 g/bhp-hr [c]	0.10 g/bhp-hr.

[18] 65 FR 35429, June 2, 2000.

TABLE IV–2.—HC AND PM EXHAUST EMISSIONS AND STANDARDS FOR HEAVY-DUTY ENGINES—Continued

	Gasoline (Otto-Cycle)	Diesel	
	Exhaust HC	Exhaust HC	Exhaust PM
Proposed 2007 Standards	0.14 g/bhp-hr	0.14 g/bhp-hr	0.01 g/bhp-hr.

[a] Current standard is 1.9 g/bhp-hr for Otto-cycle vehicles over 14,000 GVWR.
[b] Standard was set as a 2005 NMHC+NO_X standard; level shown is estimated equivalent NMHC standard.
[c] Standard is a 2004 NMHC+NO_X standard; level shown is estimated equivalent NMHC standard.

With regard to exhaust emission standards, the proposed 2007 heavy-duty engine standards would reduce hydrocarbon emissions to levels approaching 0.1 g/bhp-hr for both gasoline and diesel. This would result in a significant reduction even when compared to the 2004 standards. Similarly, the new exhaust PM standard for heavy-duty diesel engines is stringent. This standard (0.01 g/bhp-hr) is a 90-percent reduction from current standards which are currently being achieved with significant combustion chamber and engine modifications. Achieving a 0.01 g/bhp-hr standard will require the use of catalyzed PM traps. This technology will also result in HC emission reductions. It is further worth noting that the proposed 2007 standards include provisions for a closed crankcase for turbocharged diesel engines. Crankcase emissions from these engines are a significant source of MSATs (PM and hydrocarbons) that has previously remained uncontrolled.

For chassis-certified gasoline-powered heavy-duty vehicles, EPA proposed that beginning in 2007 they meet exhaust hydrocarbon standards of similar stringency to those discussed above for Tier 2. These include hydrocarbon standards of 0.195 g/mi for vehicles of 8,500–10,000 lbs GVWR and 0.23 g/mi for vehicles of 10,001–14,000 lbs GVWR.

Fuel quality changes will enable gasoline and diesel-powered vehicles/engines to meet the more stringent standards over their full life. As part of the Tier 2 rule, EPA promulgated provisions limiting gasoline sulfur levels to 30 ppm average and 80 ppm cap. This program phases in beginning in 2004, and will enable a new generation of vehicle emission control for heavy-duty gasoline vehicles and also improve the emission performance of the current fleet. Sulfur is a fuel contaminant, and controlling sulfur will also reduce sulfate PM emissions. The 2007 heavy-duty proposal mentioned above also includes provisions that would greatly reduce the sulfur content of current on-highway diesel fuel. Not only would this reduction enable the emission control technology now under development, but it would also reduce sulfate PM emissions .

We have recently extended our onboard diagnostic (OBD) requirements to heavy-duty gasoline engines up to 14,000 pounds GVWR (65 FR 59896, October 6, 2000). These OBD provisions require that vehicle manufacturers install dashboard indicators that alert drivers to the need for emission-related maintenance, and electronic monitors that store codes in the vehicle's computer to assist mechanics in the diagnosis and repair of the malfunction. As some of the commenters noted, requiring that all highway vehicles incorporate these OBD systems will ensure good control of in-use emissions, including MSAT emissions. We are in the process of developing a proposal that would address OBD provisions for all other heavy-duty vehicles.

We have also proposed in the 2007 rulemaking more stringent evaporative standards, which will force even further refinements in fuel/vapor systems. Beginning in 2005, onboard refueling vapor control will be required for all heavy-duty gasoline-powered vehicles (65 FR 59896, October 6, 2000). This would reduce emissions by 95 percent from current uncontrolled levels. In addition, as part of the proposed 2007 rulemaking, EPA proposed to reduce evaporative emission standards by 50 percent over current standards. Both refueling controls and further evaporative controls will reduce evaporative emissions of air toxics from heavy-duty vehicles even further.

The proposed rulemaking for 2007 heavy-duty engine and vehicle standards contains extensive analysis and discussion of the technological feasibility of potential HC and PM emission controls for heavy-duty engines. That draft analysis demonstrated EPA's belief at the time of the proposal that those heavy-duty standards would be the greatest degree of emission reduction achievable through the application of technology that will be available considering costs and other relevant factors. EPA believes that the proposed rule to establish 2007 model year standards for heavy-duty diesel engines satisfies the criteria in section 202(a) as well as 202(l)(2) and therefore defers to the technical decisions made in that rulemaking.

D. Conclusions Regarding Vehicle-Based Standards

We are not establishing new standards for motor vehicles in this rulemaking to control MSAT emissions. We believe our decision in this regard is appropriate given the information currently available. We are also confident that our existing programs (and proposed programs, if finalized) will continue to achieve very significant reductions in MSAT emissions.

The Tier 2 program represents a comprehensive, integrated package of exhaust, evaporative, and fuel quality standards. The Tier 2 program will achieve significant reductions in NMHC, NO_X, and PM emissions from all light-duty vehicles in the program. These reductions will include reductions in MSATs. Emission control in the Tier 2 program will be based on the widespread implementation of advanced catalyst and related control system technology. The standards are very stringent and will require manufacturers to make full use of nearly all available emission control technologies. To illustrate this point, it is worth noting that about 80 percent of all remaining emissions from a well-maintained Tier 2 vehicle will occur in the first 60 seconds of operation, before the catalyst ''lights-off.'' Manufacturers will have to optimize both their cold-start strategies and the efficiency of warmed systems to achieve the Tier 2 levels. Compliance with the Tier 2 standards will require the application of emission technology not widely used in the light-duty fleet today and in some cases the use of technological approaches still under development. Based on the information available to the Agency at this time, we believe that the technologies that will be applied to meet the Tier 2 requirements provide the greatest achievable reductions in emissions of air toxics as well, considering costs and other relevant factors.

The existing emission control program for heavy-duty engines and vehicles has already achieved major reductions in MSAT emissions . New more stringent emission standards for heavy-duty engines will take effect in 2004 and 2005. We have also proposed a further initiative that would require additional control of heavy-duty vehicle/engine emissions (65 FR 35430, June 2, 2000). This would establish new heavy-duty engine and vehicle emission standards beginning with model year 2007. The 2007 rulemaking is being finalized separately in a broader rulemaking that addresses the complicated implementation issues associated with proposed emission standards. In developing a final rule that would establish these standards, the Agency intends to adopt standards that would result in the greatest achievable reductions in emissions of air toxics as well, considering costs and other relevant factors.

We have also made significant progress in the area of in-use operation. To address the malmaintenance issue, we have established OBD requirements for manufacturers (both light-duty and heavy-duty). To address both the malmaintenance and tampering issues, we are working with states to develop and optimize inspection and maintenance (I/M) programs that monitor the emission performance of in-use vehicles. Historically, these programs have relied on tailpipe testing to identify high-emitting vehicles. However, these programs have begun to rely more on the OBD systems to identify the high-emitting vehicles, as well as the cause of the emission problem. We are also investigating ways in which we could encourage the use of new emission controls on older vehicles. As described in the Response to Comments, these are not being finalized in this FRM.

V. Evaluation of Additional Fuel-Based Controls

The previous section evaluated motor vehicle controls in the context of mobile source air toxics (MSATs). The primary purpose of this section is to discuss the fuel program being promulgated today. We discuss the form of the rule, major areas of comment including our response and final decisions on those aspects, and the details of the fuels program. We also discuss why we are not at this time considering other fuel controls as a means of reducing MSATs. The details of our technical analyses of these fuel issues can be found in Chapter 7 of the Technical Support Document (TSD). The Response to Comments Document contains our responses to all of the relevant comments on the fuels aspects of this rulemaking.

A. Form of the Rule

1. What Is the Form of the Rule EPA Is Promulgating Today?

We are finalizing new toxics emissions performance requirements (TPR) for gasoline. This anti-backsliding program will require, beginning with calendar year 2002, that a refinery's or importer's annual average total toxics emissions performance, as predicted by the Complex Model, for its baseline production volume of reformulated gasoline (RFG) not exceed its 1998–2000 baseline RFG total toxics emissions performance. Likewise for conventional gasoline (CG), this rule will require that the exhaust toxics emissions performance of a refinery's or importer's baseline production volume of CG not exceed its 1998–2000 baseline exhaust toxics emissions performance for CG.

The 1998–2000 baseline RFG or CG toxics emissions performance value is the average performance of the gasoline produced at the refinery (or imported) over the three year period 1998 through 2000. Emission values are determined using the Complex Model,[19] and compliance with the program is determined separately for RFG and CG. We have included in our program a number of compliance flexibilities, such as a deficit and credit carryforward, and a compliance margin, to offset unexpected or unusual variances in the gasoline quality of a refinery (or importer). We believe that these provisions will help to ensure that this program does not require new capital investments or changes in refinery operations, and thus will not pose an additional burden on refiners. Were this program to require new investments in the refining sector, we would be concerned that it would impose an economic burden on refiners that would be inconsistent with our finding that an anti-backsliding program at negligible cost is the most stringent program that we can justify in the near term.

The current rule is designed to avoid increases in toxic emissions from gasoline while imposing the least cost on the refining industry. Some have claimed that a refinery-specific performance requirement is inherently unfair because those refineries that have overcomplied to the greatest extent will receive the most stringent new baseline requirement. We recognize generally that setting standards based on current production may appear to penalize those who have voluntarily overcomplied. In fact, there is at least one refinery that has sought and received Agency recognition for its efforts to voluntarily overcomply with existing requirements.

The Agency recognizes as a general matter the importance of providing appropriate incentives for the regulated community to take actions consistent with improving the environment. However, in this case, we believe that setting refinery-specific standards is the most appropriate and equitable approach to ensuring that emissions do not increase above current levels. As we explained in the NPRM, we believe that these refineries that have overcomplied have done so primarily because it was economically advantageous. In most cases, the financial incentive to overcomply is due to proximity to a market for chemical benzene. If the Agency were to establish a single, nationwide standard, commenters could legitimately characterize such an action as penalizing those refineries that are not located near petrochemical markets. Since each refinery is unique in terms of construction and location, any single standard will create varying degrees of challenges. Faced with a situation where a significant number of refineries have overcomplied with existing standards, the Agency has sought to craft a rule that represents the greatest degree of emission reductions achievable considering costs. The regulation that we finalize today achieves these goals.

2. Why Did EPA Change From the Proposed Benzene Fuel Content Form of the Rule to the TPR?

In the Notice of Proposed Rulemaking, we proposed a benzene content requirement in order to capture the significant amount of overcompliance above and beyond the requirements of the federal reformulated gasoline and anti-dumping programs. Average benzene levels in 1998 and 1999 were 0.66 volume percent for RFG and 1.11 volume percent for conventional gasoline. These national average benzene levels are significantly below current requirement of 0.95 volume percent for RFG and average conventional gasoline baselines of 1.3 volume. Benzene emissions account for

[19] The Complex Model is a regulatory tool for estimating emissions for the reformulated gasoline and anti-dumping programs. The Complex Model inputs are eight specified fuel parameters: benzene, oxygen content (by oxygenate type), sulfur, Reid Vapor Pressure, aromatics, olefins and the percents evaporated at 200°F and 300°F (E200 and E300). Complex Model outputs are the estimated emissions (VOC, toxics, NO_X) resulting from the fuel parameters specified. The Complex Model also calculates percent reductions of the input slate of fuel parameters and resulting emissions compared to a base set of fuel parameters and resulting base emissions.

roughly 70% of motor vehicle air toxics (i.e., benzene, formaldehyde, acetaldehyde, 1,3-butadiene and POM).

The Agency asked for comment on two other forms of the rule: benzene emissions performance and toxics emissions performance. The Agency did not propose a toxics performance form because of concerns that capping the total mass of toxics would allow benzene emissions to potentially increase if other air toxics declined. However, subsequent refinery modeling showed that benzene emissions would be unlikely to increase in the future following implementation of RFG Phase II and Tier 2 low sulfur gasoline standards, and the proposed low sulfur diesel standards. We viewed a benzene emissions requirement as tantamount to a benzene content requirement, but more difficult to quantify and enforce because there is not currently such a rule in effect.

We received a significant number of comments on this proposal during the public hearing and in written comments submitted to the Agency. In general, commenters from the petroleum industry stated that there are significant costs associated with the benzene content form of the rule. These same commenters pointed out that there was little environmental benefit to the proposed requirements to justify their costs. Others commented that the Agency's concern about benzene emissions would be better served by a performance requirement since there is expected to be upward pressure on aromatics due to future environmental regulations and capping benzene fuel content will not prevent increases in fuel aromatics. Several commenters found that the rule did not go far enough to protect public health and welfare from the potential risk from mobile source air toxics.

In response to these comments, and based on refinery modeling performed for this rulemaking, the Agency will finalize a toxics performance requirement instead of a benzene content requirement. The Agency's general rationale is twofold: a toxics performance requirement captures a larger amount of the overcompliance with the existing standards while imposing less costs on the refining industry than the proposed benzene content requirement. This action is consistent with comments received from the regulated industry and the Agency's updated refinery modeling.

Evaluation of a Benzene Content Standard

The Agency evaluated the benzene content standard in terms of its expected environmental performance and its potential cost to industry. Section 112(k) of the Clean Air Act identifies five toxic air pollutants related to gasoline—benzene, 1,3-butadiene, acetaldehyde, formaldehyde and POM. Benzene emissions are about 70 percent of the total mass of these toxics, but all of these toxics are known or probable human carcinogens and pose a risk to public health and welfare. Benzene emissions are a function of benzene fuel content, but other components in the fuel also influence benzene emissions, such as total aromatics, sulfur, and Reid Vapor Pressure. Controlling the benzene content of RFG and CG would in effect control only a portion of the benzene emissions, which in turn are only a portion of total toxic emissions. The Agency is concerned ultimately with reducing ambient concentrations and exposure to air toxics.

The costs related to a benzene content standard were calculated using a refinery model. The Agency found that a benzene content standard would impose aggregate annual costs (including amortized capital and all the operating costs) of $74 million for refineries in PADDs I, II, and III. On a per gallon basis, the annual cost of the proposed benzene content standard was predicted to be 0.0702 c/gal. Since gasoline production in PADDs I, II, and III represents about 91% of the national gasoline supply without California refiners, if we extrapolate this cost to the rest of the U.S., the aggregate cost would be approximately $81 million for the nation. California gasoline production is not included in this cost analysis because this regulation does not apply to California gasoline.

It is important to note that there are some advantages related to fuel content standards. Compliance and enforcement are aided by the ability to test the fuel rather than relying on estimates derived from a model. A fuel content standard does not rely on an emissions model that may not fully estimate emissions from the vehicle fleet on the road today or in the future. Thus the decision to shift from a fuel content to an emissions based requirement in this rule should not be viewed by the reader as suggesting that the Agency in a general sense is no longer interested in controls on specific fuel components. It is simply in this particular case that we found an emissions performance requirement to be superior under a combined consideration of broader environmental benefits and lower costs.

Evaluation of a Toxics Performance Requirement

There are several advantages for adopting a toxics performance requirement. It allows for a more comprehensive approach to capping air toxics emissions at current levels. By focusing on the five toxic compounds modeled by the Complex Model instead of only benzene, the mass emissions of air toxics placed under anti-backsliding constraints is substantially increased. Also, by focusing on emissions instead of fuel content, the new rule will establish an appropriate performance requirement while simultaneously providing some additional flexibility to regulated entities. Finally, it offers broader protection to public health because all five toxics included in the toxics performance requirement are known or probable human carcinogens.

Section 202(l)(2) of the Clean Air Act instructs the Agency to promulgate regulations that, at a minimum, apply to emissions of benzene and formaldehyde. The shift to a toxics emissions performance requirement will limit emissions of these two pollutants along with emissions of 1,3-butadiene, POM and acetaldehyde. Thus, while refiners will have the ability to adjust fuel parameters in ways that will increase the emissions of one or more of these pollutants, any such increase must be offset by reductions in the emissions of the other pollutants.

All of the pollutants covered by the toxics performance control are carcinogens. The nationwide inventories and ambient concentrations of all of these five pollutants are heavily influenced by motor vehicle emissions. Without today's anti-backsliding program, the current standards would leave room for toxics emissions from gasoline-fueled motor vehicles to increase by 70,000 tons per year (based on 1996 inventory levels) as described in the Technical Support Document. This would amount to a 14% increase, on average, in RFG areas, and a 18% increase, on average, in CG areas. Capping the overall toxics emissions performance of gasoline to reflect current overcompliance is an appropriate means of addressing the potential adverse public health impacts that could occur if this backsliding from current levels were to occur. While we are not able to quantify the risk to public health that would result if backsliding were to occur, we believe a precautionary approach is appropriate. By adopting anti-backsliding controls, this precautionary approach will protect public health by reducing the potential risks to public health from backsliding.

The Act also instructs the Agency to take costs into consideration. As stated previously, numerous petroleum refineries provided written testimony that a benzene content requirement would impose significant costs on the industry. The Agency conducted refinery modeling for this rule which accounted for the impact on refinery operations and fuel properties of Tier 2 low sulfur gasoline and low sulfur diesel fuel. This modeling analysis, discussed in more detail in the TSD, found that the costs associated with the benzene content requirement were significantly higher than the costs that a toxics performance requirement would impose on the industry.

3. What Are the Benefits of the TPR?

The purpose of today's action is to prevent future increases above the current level of air toxic emissions derived from existing fuel properties. This anti-backsliding measure will ensure that mass emission rates (in milligrams per mile, mg/mi) of air toxics from motor vehicles do not increase while the Agency gathers additional information for a forthcoming rulemaking in 2003–2004.

The Clean Air Act identified five air toxics in the federal reformulated gasoline program: benzene, 1,3-butadiene, formaldehyde, acetaldehyde, and POM. The RFG program established a toxics emissions performance standard for RFG, and an anti-backsliding toxics standard for conventional gasoline based on 1990 baseline toxics levels for each refinery. On average, refineries have overcomplied with the toxics emissions performance standards for both RFG and CG. Table V–1 compares the percent reductions required for RFG Phase I and the national average CG mass toxics emissions with actual national average performance in 1998, which was the most recent year for which complete and accurate data was available. On a national average, greater overcompliance was experienced for RFG than for CG.

TABLE V–1.—OVERCOMPLIANCE WITH TOXICS PERFORMANCE STANDARDS FOR RFG AND CG

	Phase I Standards	1998 Average	Percent difference in emissions (Percent)
RFG, Percent Reduction from statutory baseline, Total Toxics Performance (equivalent mg/mi)	16.5% reduction (45.3 mg/mi)	28.1% reduction (38.4 mg/mi)	15%
CG, Mass Emissions, Exhaust Toxics Performance	47.3 mg/mi [a]	44.7 mg/mi	6%

[a] Volume-weighted average of refinery-specific standards.

The 1998 average values were based on volume-weighted toxics performance values for batch reports for all refineries in the U.S. which produced gasoline in 1998. The data available to us at this time does not allow us to account for the impact of imports on these nationwide average values. The values in Table V–1 differ slightly from those in the NPRM because we excluded noncomplying refineries from the analysis and volume-weighted only actual emissions in units of mg/mi instead of percent change values for each refinery.

Overcompliance with RFG standards resulted in substantial toxics reductions beyond what was required by law. We have estimated reductions in the total toxics inventories due to overcompliance of 70 thousand tons in 1996 and 40 thousand tons in 2007, using the inventories from the 1999 EPA Motor Vehicle Air Toxics Study (see TSD). While we do not believe that refiners are likely to increase their toxics content in the absence of this regulation, it is nonetheless important to ensure that these benefits are maintained in the event of unforeseen circumstances that may otherwise result in backsliding on toxics standards up to existing legal limits. Without this regulation, such backsliding could occur if refineries increase benzene or aromatics to increase octane levels, or if they change their refinery operations in reaction to unforeseen future circumstances.

4. What Are the Costs of the TPR?

In conjunction with this rulemaking, we analyzed refinery modeling results for gasoline production regions in the Atlantic and Gulf Coasts, specifically PADDs [20] I and III. This modeling analysis used the average regional gasoline fuel properties produced in 1999 to quantify the emissions performance of gasoline in these regions in 1999. The refinery modeling also predicted the likely regional fuel properties after refineries modified their operations to comply with the future requirements for Phase II RFG, Tier 2 low sulfur gasoline, and proposed low sulfur diesel fuel (hereafter future fuel regulations). The Agency applied the Complex Model to evaluate the projected emissions performance of the predicted gasoline properties in these regions. The reader should refer to the TSD which accompanies this rule for more detailed discussion of the refinery modeling.

The Agency is currently pursuing a separate rulemaking under the Toxic Substances Control Act (TSCA) to address the use of MTBE, and thus we have deferred consideration of MTBE controls to that rulemaking. Note that the EPA and the United States Department of Agriculture jointly announced, on March, 2000, the Administration's legislative principles for protecting drinking water supplies, preserving clean air benefit and promoting renewable fuels and urged Congress to take action consistent with these principles. These actions were based initially on recommendations of EPA's Blue Ribbon Panel on Oxygenates in Gasoline.

The Agency recognizes that the use of MTBE does have an impact on emissions of toxic air pollutants from motor vehicles. The Blue Ribbon Panel found that present toxic emission performance of RFG can be attributed, to some degree, to the use of oxygenates. Further, the Panel recommended that any future change in the use of MTBE in gasoline should ''ensure that there is no loss of current air quality benefits.'' [21] The anti-backsliding nature of this rulemaking is consistent with the Panel's recommendations. Should the Agency take action in the future to limit the amount of MTBE in fuel, its impact on emissions of air toxics—and the potential for additional costs due to today's action—would be carefully considered. As EPA develops any regulatory actions to address MTBE and water resource issues, the Agency will consider the overall impact on the

[20] Petroleum Administration for Defense Districts.

[21] Achieving Clean Air and Clean Water: The Report of the Blue Ribbon Panel on Oxygenates in Gasoline, EPA420–R–99–21, September, 1999, at 6–7.

refining industry of any such action and, along with today's rule, and other relevant factors.

Because the new baseline requirements do not require refiners to install new equipment or use new technologies beyond what they were using in the baseline period (1998–2000), this program imposes only negligible costs. This conclusion is based on our analyses of likely refiner behavior based on the expected requirements in the time frame applicable for this rulemaking. Unforeseen circumstances could change a refiner's actions needed to comply with this rule, which in turn could lead to additional costs depending on their chosen course of action.

In contrast, the proposed benzene content standard was predicted to impose higher costs while capturing a smaller amount of the existing overcompliance with toxic standards. As stated previously, the Agency found that a benzene content standard would impose aggregate annual costs (including amortized capital and all the operating costs) of $74 million for refineries in PADDs I, II, and III. On a per gallon basis, the annual cost of the proposed benzene content standard was predicted to be 0.0702 c/gal. Since gasoline production in PADDs I, II, and III represents about 91% of the national gasoline supply without California refiners, if we extrapolate this cost to the rest of the U.S., the aggregate cost would be approximately $81 million for the nation. California gasoline production is not included in this cost analysis because this regulation does not apply to California gasoline.

There are limitations to the ability of a refinery model to predict the costs associated with each refinery. This inherent limitation of refinery modeling is of particular concern with the refinery-specific requirement that is adopted today. To help ensure that each refinery affected by this rule is faced with the type of costs estimated by the Agency's refinery modeling, we incorporated several flexibilities into the final rule. We have expanded the baseline period from two to three years, provided a one-year carryforward for credits and deficits, and adopted compliance margins for RFG and CG.

B. Issues and Areas of Comment on Non-implementation Related Aspects of the Program

1. What Is the Relationship Between the RFG and Anti-dumping Requirements and the Toxics Anti-backsliding Requirements?

The reformulated gasoline program established a toxics performance standard for gasoline used in those metropolitan areas with the worst ozone levels. An anti-dumping toxics standard was established for gasoline used in those areas not required to have RFG and which did not opt to use RFG. The anti-dumping toxics standard was intended to prevent refineries from shifting certain less desirable fuel components into the conventional gasoline pool as a result of RFG production. The anti-dumping program was an anti-backsliding program for exhaust toxics and NO_X relative to the baseline year of that program, 1990. Today's anti-backsliding requirements are in addition to the applicable RFG or anti-dumping requirements for gasoline. Today we are establishing refinery-specific toxics performance requirements (TPR) for reformulated and conventional gasoline. A refiner will now have to meet both today's toxics requirements and the applicable toxics performance for RFG or anti-dumping.

In the NPRM, we asked for comment on repealing the anti-dumping program. We received comments from many refiners in support of this recommendation from the National Petrochemical & Refiners Association (NPRA). However, we find that we cannot repeal the anti-dumping program. The anti-dumping program is required by the Clean Air Act and we cannot ensure that today's requirements and the Tier 2 gasoline sulfur requirements will exactly duplicate the anti-dumping program. For example, the gasoline sulfur standards do not guarantee that all conventional gasoline will meet the individual NO_X performance standards because some anti-dumping individual baselines have even lower average sulfur levels than the gasoline sulfur program will require. Additionally, the flexibilities provided in today's rule, such as deficit and credit carryforward, could cause the anti-backsliding toxics emissions performance to exceed the anti-dumping toxics performance requirement in a given year. Nonetheless, we understand the refiners' concerns on this issue, and we will take steps to ensure that the compliance process, including any reporting requirements, is as streamlined as possible.

Because we are promulgating toxics performance requirements that are identical in form to the toxic performance standards already in place, today's rule does not change the ability of States to regulate gasoline characteristics or components. As discussed in the NPRM, we believe a toxics performance requirement may not cause States to be prohibited by section 211(c)(4) of the Act from setting their own fuel benzene standard. Note that any such State fuel benzene standard could only be set for conventional gasoline because the reformulated gasoline regulations impose a federal benzene standard on RFG, thus preempting States from setting a more stringent RFG benzene standard.

EPA recognizes the concerns expressed by the petroleum industry that a patchwork of different state fuel standards, sometimes referred to as ''boutique'' fuels, may increase the likelihood of disruptions in the fuel supply. In most situations, EPA believes that a uniform national program is the best way to protect public health and minimize disruption to the efficiency of the country's fuel distribution network. EPA's general expectation is that States will consider these issues in evaluating whether adoption of a state fuel program would be warranted.

2. How Are Incremental Production Volumes of RFG Affected by This Rule?

In the NPRM, we proposed to apply the RFG requirements determined for this final rule to those volumes of RFG up to the baseline volume of RFG. We did not propose to extend the requirements to incremental RFG production volumes, but asked for comment on the appropriate requirements to apply to a refinery's incremental volume of RFG. Incremental volume of RFG means that amount of RFG produced in a calendar year above the RFG annual average baseline (1998–2000) volume of the refinery. Based on projections of vehicle miles traveled (VMT), RFG demand is expected to increase about 1.5% per year.

We sought comment on two approaches for regulating the incremental RFG volume. The first would be to apply the individual refinery requirement to the incremental volume, in effect subjecting all of a refinery's annual RFG production to its individual baseline under today's program. The other would be to apply a non-individual requirement to the incremental volume. This could be a national control level based on the current national average toxics performance of RFG (or some less stringent level), but would not be less stringent than the applicable standard under the RFG program.

Many refiners did not want the incremental volume of RFG subject to any controls (i.e., the individual refinery baseline or the national average baseline) other than the current applicable RFG standards. Some refiners commented that we should exempt incremental volumes of CG from the final requirements as well. DOE pointed out that future growth in gasoline demand will likely be addressed through increased imports as well as greater use of existing FCC units and reformers, all of which would likely increase the toxic emission characteristics of all gasoline, be it RFG or CG.

This rulemaking contains several unique factual circumstances that bear on this issue. The Agency has a strong interest in creating incentives, and not creating disincentives, for refiners to produce additional barrels of cleaner-burning RFG in the future. Placing new constraints on incremental RFG production may unnecessarily hamper the expanded use of RFG and its associated air quality benefits.

Gasoline production in the United States is expected to increase by about 1.5 percent per year for the next several years. In the few years between promulgation of this rule and the reevaluation in 2003–2004, incremental volumes will only account for a small fraction of total US gasoline production and consumption. Such a small fraction is unlikely to have a material effect on the anti-backsliding goal of this rule.

Moreover, to determine the potential effect of excluding incremental volumes from this regulation, we investigated the historical impact of volume increases on fuel benzene content for RFG and CG. Pool-average benzene levels in CG did not show a statistically significant increase. While pool-average RFG did show a statistically significant increase when production volume increased, the increase was small—on the order of an increase of 0.005 benzene volume percent per 1 percent total volume. Thus the incremental volume exclusion is unlikely to have a material impact on air toxic emissions from gasoline. See the Technical Support Document for details.

While our analysis focused only on fuel benzene content, there is some reason to believe that other changes in fuel properties associated with incremental volumes (e.g., increases in sulfur and olefins) may contribute to some toxics emissions. These incremental volumes could affect both the fuel properties and toxics emissions of both CG and RFG, because incremental volumes are primarily a function of growth in demand for gasoline, which affects both CG and RFG. However, requiring refiners to meet a more stringent toxics standard for these incremental volumes could require additional capital investment and thereby impose a constraint on incremental gasoline production. As a result, we have decided to exclude incremental volumes from our anti-backsliding program for both RFG and CG.

After consideration of these comments on this issue and our analysis of incremental production volumes, we are finalizing a program in which the toxics performance requirements finalized today will not apply to incremental volumes of RFG or CG. Any volumes of gasoline that are above a refinery's baseline volume will thus be subject only to the existing toxics standards under either the RFG or anti-dumping programs. For RFG, incremental volumes will remain subject to the current 21.5 percent standard for total toxics given in 40 CFR § 80.41(f). Incremental volumes of CG will remain subject to the current CG requirements for exhaust toxics emissions. For those refineries or importers that are unable to establish a volume baseline for 1998 to 2000 either because they were not operating during that period, or did not exist as a refining or importing facility, the applicable standard shall be the 1998–2000 national average toxics performance for RFG and CG. We believe this approach ensures that increasing gasoline demand can be addressed without requiring additional toxics reductions that might not be achievable under Section 202(l)(2) in the near-term.

3. Does This Rule Contain Any Small Refiner Provisions?

We did not have a SBREFA panel for this rule because we believe this rule will not have a significant impact on a substantial number of small refiners. At the same time, however, we are sensitive to small refiner concerns about their ability to meet these anti-backsliding requirements. Nevertheless, we believe that no small refiner provisions are needed in this rule for two reasons. First, because this is an anti-backsliding measure, refiners are not expected to have to install new equipment or change their operations to comply with the requirements. Second, we included a number of flexibilities in this program, such as deficit and credit carryforward, and a compliance margin. These flexibilities will help those small refiners that may experience temporary short-term difficulties due to supply or operational problems. We believe these flexibilities are sufficient to preclude significant negative impacts of this rule on both small and large refiners.

4. Is This rule Expected to Constrain the Potential for Expanded Use of Ethanol in Conventional Gasoline?

While refinery modeling to answer this particular question has not been performed, the Agency does not believe that the toxics performance requirement will constrain the potential for expanded use of ethanol in conventional gasoline. If ethanol is used in conventional gasoline at ten percent by volume, gasoline components such as aromatics, benzene and olefins will be diluted by ten percent, thus lowering associated toxic emissions. Ethanol does have the effect of increasing exhaust emissions of acetaldehyde, but acetaldehyde contributes only about 6 percent to the mass of five toxics air pollutants used in the Complex Model to model toxics performance (benzene, 1,3-butadiene, formaldehyde, acetaldehyde, and POM).[22] Thus even a relatively large increase in acetaldehyde emissions should be offset by a ten percent decrease in more than 90 percent of the remainder of toxic emissions.

5. Is Diesel Fuel Control a Part of Today's Regulation?

The fuel controls being set in today's action are only for gasoline. We are not setting air toxics requirements for diesel fuels because, unlike for gasoline, we do not have data that would allow us to correlate individual diesel fuel properties with toxics emissions. We do not have a model to explore the toxics impacts of different diesel fuel formulations and therefore, a diesel fuel reformulation program, similar to the reformulated gasoline program, is not a viable toxics control option. We intend to include research on diesel fuel-related air toxics in our Technical Analysis Plan.

C. What Are the Components of the Anti-backsliding Toxics Performance Program?

1. Start Date

We are finalizing the January 1, 2002, program start date as proposed. Because this is an anti-backsliding program, lead time is not needed to install hardware or make operational changes. Thus, beginning with the 2002 calendar year, a refinery's or importer's annual average

[22] The estimated acetaldehyde contribution of 6.4 percent was based on a Complex Model output from 1998 production of CG.

toxic emissions performance, determined separately for RFG and CG, cannot exceed its baseline toxics emissions performance, determined over the three years 1998–2000. The first report associated with today's rule will be due February 28, 2003, the same date as the reformulated gasoline and anti-dumping reports are due for calendar year 2002.

2. Separate Compliance Determination for RFG and CG

As discussed in the NPRM, our proposal to keep compliance separate for RFG and CG under this program is consistent with the current treatment of these two fuel types in the RFG and anti-dumping programs. Separate compliance determinations for RFG and CG ensure that one pool is not made cleaner at the expense of the other. No supporting arguments for combining the pools were provided in the comments. Thus, we are finalizing this provision as proposed.

3. Baseline Development and Submittal

We proposed a two-year baseline period, 1998–1999, and requested comment on this and other baseline period options. There were many comments on this issue. Many commenters expressed concern about refinery fluctuations during a given time period which could cause a baseline not to reflect typical operations. Many commenters suggested that we should provide flexibility in the baseline setting process. Several individual refiners and one industry commenter suggested lengthening the baseline period to encompass more refinery operational fluctuations, thus establishing a more accurate baseline that is true to normal operations.

In the final rule, we are finalizing a three year baseline period, encompassing the years 1998, 1999 and 2000. This baseline period, which is one year longer than the baseline period we proposed, provides baseline values which are truer to a refinery's ''normal'' operating mode. Though two commenters opposed inclusion of 2000 because it was a transition year (from Phase 1 to Phase 2 RFG requirements) and, according to these commenters, not representative of refinery operations over time, we believe that including 2000, precisely because it is a Phase II RFG year, improves the baseline because it adds data to the baseline determination which is the most recent available. Including 2000 also helps to further offset (by virtue of a 3-year average versus a 2-year average) the effects of unit turnarounds at the refinery. At the same time, we do not expect significant differences, on average, between a baseline established using the 2-year averaging approach and one developed using the 3-year approach. However, we believe that for an individual refinery, the 3-year averaging approach provides that refinery with a more robust baseline. Finally, given that this rule does not require any capital improvements or operational changes by refiners to achieve its goals, and since refiners will have the 2000 data, we believe this data should be included in the baseline determination.

We are requiring that refiners and importers submit to us information which establishes separate TPR baselines for their RFG and CG. For RFG, the applicable TPR baseline is total toxics emissions, calculated as a percent reduction from the statutory baseline. For CG, the applicable TPR baseline is exhaust toxics emissions, in mg/mile. Both baselines are determined using the Complex Model. These forms of the TPR are consistent in form with the existing toxic emission requirements of the reformulated gasoline and anti-dumping programs.

The baseline submittal must contain the batch report number and volume of each batch (or composite) of gasoline produced or imported in 1998, 1999 and 2000. Additionally, the refiner or importer must determine and report the applicable toxics emission performance level of each batch by evaluating the measured fuel parameters of each batch in the appropriate seasonal version of the Phase II Complex Model. Because this data is already required to demonstrate compliance with RFG and anti-dumping requirements, a refiner must simply submit the same information found in its original submittals of its RFG and anti-dumping reports. Submissions of these baselines will be very similar to the streamlined electronic process which has been implemented for Tier 2 gasoline sulfur baseline submissions. The Agency will handle the toxics baselines under today's program in a manner consistent with the submissions and associated guidance for Tier 2 sulfur baseline submissions.

Finally, all of the toxics emissions performance of RFG and CG produced over the 3-year baseline time period must be volume-weighted to determine the baseline toxic emission performance levels for RFG and CG. The average annual volume over the 3-year baseline time period must also be reported. A refinery which exceeded (that is, was out of compliance) with the applicable toxics standard in any of the baseline years must use the applicable RFG or CG standard as its toxics emission performance value for gasoline produced that year in its baseline determination.

Baselines must be submitted no later than June 30, 2001. Though we proposed to notify refiners of their toxics baselines within 120 days of submittal, after further consideration we are modifying this provision slightly from the proposal: we will notify refiners and importers of their baseline approvals by October 31, 2001, or within 4 months of submittal, whichever is later.

4. Baseline Adjustment

In response to the proposed benzene content requirement, one commenter suggested that a refiner that has a low baseline benzene level (because it produced benzene for the petrochemical market during the baseline period) should be able to increase its baseline benzene level to some minimum benzene level which would be set by EPA. Because we have switched to a TPR for this final rule, this regulation does not directly affect on fuel benzene content. Nonetheless, we can address the issue raised by the commenter since it is relevant, in a broad sense, to the baseline setting process.

In general, we do not believe that EPA should allow baselines established under this rule to be adjusted because of refining or marketing decisions of the refiner. It is our belief that, in general (and absent refinery disasters or other similar, critical events), during the baseline period, every refinery was operating to maximize profits, considering its crude slate, operating units, product mix, marketing plan, etc. With regard to refineries that achieved low emissions levels due to benzene extraction, we do not believe there is any basis for expecting the benzene market to change in such a way that warrants setting a minimum toxics performance level. In fact, projections of the benzene market suggest continued growth (see TSD).

In addition, because we are promulgating a TPR, which is a function of all of the fuel parameters evaluated by the Complex Model, and not a single fuel parameter requirement (like a fuel benzene content requirement), it is not clear how we would set such a minimum toxics emission level to account for changes in the petrochemical market. We would have to consider each of the eight Complex Model fuel parameters separately, and this would be complicated by the fact that the fuel parameters' effects on toxics emissions vary considerably.

Nonetheless, we are allowing a refiner to petition EPA for a permanent adjustment of its TPR baseline. Refiners requesting such an adjustment must demonstrate how circumstances during 1998–2000 materially affected the baseline toxics determination. Because we believe that the deficit and credit carryforward, compliance margin, and inclusion of a third baseline year sufficiently consider and minimize the potential compliance burden for those refiners that experience unusual refinery operational issues, we expect that the number of baseline adjustments will be small. Baseline adjustments will likely be limited to those refineries that experienced unexpected operational problems during the baseline period which could not have been avoided through due diligence and planning.

5. Compliance Margin

A compliance margin refers to the cushion refiners typically included in their fuel production to ensure that their fuel will meet compliance requirements over a 12-month period. Without such a cushion, the refiner could fall into noncompliance due to minor operational problems. Compliance margins are most important to a refiner when trying to meet a per-gallon requirement, but can also be useful for meeting averaging requirements, for example, to account for test method variability, or other factors that might affect a refiner's ability to comply.

Though we did not propose to include a compliance margin on the fuel benzene content requirement in our NPRM, additional information gleaned from refinery modeling and comments has led us to include a compliance margin on the TPR being finalized today. Though refinery modeling shows that post-2004 RFG total toxics and CG exhaust toxics emissions in PADDs I and III will, on average, be lower than during the baseline period, the difference is not large enough to ensure that refiners won't have to go beyond what our anti-backsliding requirements strictly call for. Also, at this time, we do not know whether the lower toxics emissions predicted by refinery modeling is true of gasoline in the other PADDs. Thus we believe that a compliance margin is needed to ensure that this rule is achievable in the near term.

We are instituting separate compliance margins for RFG and CG because of the different format in which compliance with the applicable requirement is determined. EPA examined batch data from selected refineries in 1998. The toxic emission properties of each batch of RFG and CG were compared against their respective regulatory limits. A statistical analysis was performed to quantify the difference between the regulatory standard and the actual emissions characteristics of the fuel. This difference is commonly referred to as a "compliance cushion." A more detailed discussion of the methodology used to determine the values of the compliance margins associated with today's rule is located in the TSD.

The compliance margin we determined for RFG toxics performance is 0.7%. Thus, for example, if refinery X has a volume-weighted RFG total toxics performance during 1998–2000 of −29.6% (percent change from the statutory baseline), without a compliance margin −29.6% is its anti-backsliding requirement. With a compliance margin of 0.7%, refinery X's anti-backsliding requirement becomes −28.9%, that is, its requirement becomes slightly less stringent as a result of including the compliance margin. Thus, under this program, refinery X's RFG must have an annual average total toxics emissions reduction from the statutory baseline of at least 28.9%.

EPA determined a compliance margin of 2.5 mg/mile for CG. Thus for refinery Y with a volume-weighted CG exhaust toxics performance during 1998–2000 of 105.0 mg/mile, including the compliance margin increases its CG anti-backsliding toxics requirement to 107.5 mg/mile. Thus, for refinery Y's CG, its annual average exhaust toxics emissions must be no greater than 107.5 mg/mile.

6. Foreign Refiner Provisions

Under the anti-dumping program, foreign refiners are allowed to develop an individual baseline representing the quality and quantity of gasoline they shipped to the U.S. in 1990. Those that develop an individual baseline can designate each batch of gasoline destined for the U.S. as subject to their individual requirement or, by default, as subject to the importer's anti-dumping requirement, which in most cases is the statutory baseline.

A similar provision is included in this rule. Under this rule, a foreign refiner may develop a toxics anti-backsliding baseline for gasoline it sent to the U.S. during the baseline period (1998–2000) if it already has an individual anti-dumping baseline or is simultaneously developing such a baseline. For compliance purposes, it may then designate, on a batch-by-batch basis, whether that gasoline will be subject to its individual anti-backsliding requirement or will be included in the importer's compliance determination. A foreign refiner with both an individual anti-dumping baseline and an individual toxics anti-backsliding baseline must make a single designation for the batch. In other words, if the foreign refiner includes that batch in its own anti-dumping compliance determination, it is also included in its anti-backsliding compliance determination. In this way, foreign refiners are treated in the same manner as domestic refiners, and the potential compliance confusion surrounding different designations on a single batch are avoided.

7. Default Baseline and Applicability

The default toxics anti-backsliding baseline is the set of values used by a regulated party that has insufficient data from which to establish a unique individual anti-backsliding baseline. In the proposal, we discussed that a refiner or importer with less than 12 consecutive months of applicable data during the baseline period would have the default anti-backsliding baseline as its individual baseline under this program. We are finalizing this provision as proposed. Additionally, a refiner or importer which did not produce or import one or more types of gasoline (either RFG or CG) during the baseline period but who produces or imports that type of gasoline after December 31, 2000 will have the applicable default toxics anti-backsliding baseline; it will be subject to the default toxics baseline plus the compliance margin for that type of gasoline.

The default baseline consists of a reformulated gasoline total toxics emissions performance value (measured as a percent reduction from statutory baseline) and a conventional gasoline exhaust toxics emissions performance value (measured in mg/mile). The final default baseline will be the average of all of the reported applicable (i.e., RFG or CG) toxics emissions performance values over the baseline period 1998 through 2000. However, since the 2000 annual compliance reports are not due from refiners and others to EPA until February 2001, we will not be able to determine a default set of baseline values which corresponds to our baseline period (1998–2000) until later in 2001. At that time, we will issue the final default baseline.

At this time, we have calculated draft default baseline values based on 1998–1999 RFG and CG reports; these interim default baseline values are 26.01% (reduction from statutory baseline) for RFG and 92.14 mg/mile for CG, representing compliance under the

Phase II Complex Model. As discussed in the TSD, we do not expect the final default baseline to be significantly different from these values. Until the final default baseline is issued by EPA, the draft default baseline values plus the compliance margins discussed above (26.71% reduction from statutory baseline for RFG and 94.64 mg/mile for CG) are the requirements for those subject to the default baseline under this Subpart. Even though the default baseline represents only two of the three baseline years, we believe it is sufficient, in the absence of the 2000 information, for two reasons. First, the three year baseline period was designated to better capture normal operations at a refinery. In most cases, there are no normal operations to capture for an entity subject to the default baseline. Second, we do not expect a baseline determined using 1998 through 2000 data to be significantly different from a baseline determined using 1998 through 1999 data.

8. Compliance Period and Deficit and Credit Carryforward

In the proposal, we discussed compliance periods of varying length different from the proposed single calendar year compliance period. Refiners who commented on this issue supported either a one-year compliance period with deficit carryforward or a two-year compliance period. As discussed in the NPRM, a one-year compliance period is consistent with the compliance periods of other gasoline programs (and thus represents minimal additional reporting burden for refiners and importers), and it is short enough that temporal variations in toxics emissions are minimized. For these reasons, we are finalizing a one-year compliance period as proposed.

We do realize, however, that even for an anti-backsliding program, unusual situations can happen which can significantly affect refinery operations, and which could cause the refinery to be out of compliance with its requirement. To this end, we proposed and are finalizing a one year deficit carryforward. This will allow a refinery to exceed its anti-backsliding toxics requirement for one year. In the next year, it must make up the deficit as well as be in compliance for that year. Additionally, though not proposed, we are also including a one year credit carryforward. Under this provision, a refinery producing gasoline that is cleaner than required by its toxics anti-backsliding requirement may use the overcompliance to cover any deficit in the following year. Because we are also providing a TPR compliance margin, overcompliance will be creditable for purposes of a credit carryforward only to the extent that it is overcompliance beyond the compliance margin. The overcompliance credits may not be traded to another company, and they expire at the end of the next calendar year.

We have provided refiners with compliance flexibility in several forms—deficit and credit carryforward, a compliance margin, and extended baseline time period. In the NPRM, we discussed the possibility of including another flexibility in the form of a credit trading program. Comments about this option were mixed. Some refiners supported such a program, and offered other suggestions to enhance or clarify the program. At least one refiner did not support such a program, saying it would provide an unfair competitive advantage. Other industry commenters were unsure of the actual implementation and feasibility of the program, given the unequal baselines among refiners. Because of these implementation, feasibility and anti-competitive concerns, and because of the many other compliance flexibilities provided in today's program, we are not including a credit program as part of this rulemaking.

9. Hardship Provisions

We are adopting a provision permitting a refiner to seek a temporary waiver from the toxics anti-backsliding requirements in certain circumstances. Such a waiver will be granted at EPA's discretion. Under this provision, a refiner may seek permission to exceed its toxics anti-backsliding requirements based on the refiner's inability to meet these requirements because of extreme and unusual circumstances outside of the refiner's control that could not have been avoided through the exercise of due diligence. This provision is similar to a provision in EPA's RFG and gasoline sulfur regulations. It is intended to provide refiners limited relief in unanticipated circumstances that cannot be reasonably foreseen at this time or in the near future. The conditions for obtaining such a waiver are similar to those in the RFG regulations. These conditions are necessary and appropriate to ensure that any waivers granted are limited in scope, and that a refiner does not gain an economic benefit from a waiver. Therefore, a refiner seeking a waiver must show that the waiver is in the public interest; that the refiner was not able to avoid the nonconformity; that it will make up, where practicable, the air quality detriment associated with the waiver, that it will pay back any economic benefit from the waiver; and that it will meet its toxics anti-backsliding requirements as expeditiously as possible. The refiner must also show that it will be unable to meet its toxics anti-backsliding requirements even considering the deficit and credit carryforward flexibility provisions included in today's program.

10. California Gasoline

We are not requiring gasoline intended for and actually used [23] in California to be included in a refinery's or importer's compliance determination under today's rule. This action is consistent with other Agency actions on similar fuel issues. California gasoline is exempt from the recently promulgated federal gasoline sulfur requirements, and while subject to the RFG and anti-dumping provisions, California refineries have been exempted from several of the enforcement and compliance mechanisms of those programs.

Most of the gasoline used in California is produced by California refineries which are subject to the California Cleaner Burning Gasoline (CBG) requirements. The current (Phase 2) set of CBG requirements began in 1996 and runs through 2002; beginning in 2003, the California Phase 3 gasoline requirements take effect. In 1998, under the 0.8 vol% Phase 2 benzene standard, California refineries averaged 0.57 vol%. For almost every fuel parameter, including benzene and aromatics, the Phase 3 standards are more stringent than the Phase 2 standards. Given the benzene overcompliance in 1998, and the upcoming more stringent Phase 3 standards, it is likely that toxics emissions under Phase 3 will not be greater than toxics emissions under Phase 2. Thus, we do not expect California refineries, on average, to backslide relative to their 1998–2000 average toxic emission level. Additionally, given the compliance margin we are including in today's rule, it is highly unlikely that any backsliding would exceed the combination of the actual 1998–2000 baseline plus the compliance margin.

Given this exemption for California gasoline, gasoline intended for use in California must be segregated from all other gasoline.

[23] By limiting the exemption to California gasoline "actually used" in California, we generally mean to limit where the gasoline is dispensed. We do not intend to restrict the state in which the gasoline is actually combusted.

11. Territories

Though in the NPRM we did not discuss the applicability of this rule to the American territories of Guam, American Samoa and the Northern Mariana Islands, we have recently exempted gasoline for these areas from several requirements, including compliance with the anti-dumping program. These areas are a significant distance from any gasoline producers, and in the case of the anti-dumping requirements, could only be serviced with complying gasoline at a significant cost. Additionally, the air quality in these areas is pristine, and gasoline consumption is low, such that no human health or environmental detriment is expected from the exemption.

Likewise for today's rule, requiring gasoline destined for these areas to be included in a refinery's or importer's compliance determination would be of little value for several reasons. First, the same conventional gasoline cost and supply issues discussed above would apply. In addition to transportation costs, it is very expensive for a refinery to produce small batches of complying gasoline. Also, most of the refineries that produce gasoline for these areas are foreign refineries which have not chosen to pursue individual baselines in other rules (e.g., the anti-dumping or gasoline sulfur rules), and are not likely to pursue an individual baseline for today's rule. Thus, because of the Agency's precedent for exempting gasoline to these areas from certain fuel regulations, and because of the lack of environmental harm from exempting such gasoline, we are exempting the gasoline sent to these areas from the requirements of this rule.

12. Gasoline Excluded

In addition to California gasoline and gasoline that is used in the U.S. territories, we are also exempting certain other gasoline from the requirements of this rule. We proposed to exempt gasoline used in certain circumstances, including racing gasoline and gasoline used for research, development and testing. These categories are the same categories for which gasoline is exempt from the applicable regulations of other programs, including the RFG and anti-dumping programs and gasoline sulfur. We are finalizing these exempt gasoline categories as proposed.

D. Why Isn't EPA Adopting Other Fuel Controls To Control MSATs?

Section 202(l)(2) requires EPA to adopt regulations that contain standards which reflect the greatest degree of emissions reductions achievable through the application of technology that will be available, taking into consideration existing motor vehicle standards, the availability and costs of the technology, and noise, energy and safety factors. Today's rule adopts an anti-backsliding requirement that EPA believes is appropriate under section 202(l)(2) as a near-term control, that is, a control that can be implemented and take effect within a year or two. We are not adopting long-term controls (i.e., controls that require longer lead time to implement) at this time because we lack the information necessary to assess appropriate long-term controls. We believe it will be important to address the appropriateness of MSAT controls in the context of compliance with other significant environmental regulations (discussed below).

Today's rule addresses toxics emissions from fuels in the near-term. The rule will cap the toxics performance levels of gasoline beginning in 2002. Adopting an anti-backsliding program is a reasonable control on toxics emissions from fuels. The technology to maintain the current toxics performance of gasoline produced at each refinery is already available and continued compliance will not be costly even with implementation of our recently adopted sulfur controls (see discussion in Section V, and in Chapter 7 of the Technical Support Document).

We do not believe, however, that we could reasonably adopt further controls to be implemented in this near-term time frame. First, the lead time is too short to allow for investments and upgrading of refinery equipment in any significant manner. Second, we have recently adopted, or proposed to adopt, two regulations that will achieve very significant emissions reductions by setting tight limits on the sulfur content of fuels used in on-highway vehicles. To comply with these new regulations, industry is already planning and investing in capital improvements and pursuing the necessary permitting to upgrade their refineries. While we lack the information to fully assess the costs and benefits of further controls in the 2002 time frame, we have serious concerns that further toxics controls in the 2002 time frame could interfere with refiners' planning and affect their ability to meet our recently promulgated, or proposed, sulfur standards.

Even though today's rule focuses on near-term options for controlling toxic emissions from fuels, we plan to evaluate in our future rulemaking whether additional controls will be needed or appropriate in the longer term. We are not ready, however, to address these long-term controls in this rulemaking. We need to collect the information outlined in our Technical Analysis Plan (see Section V), so that we can assess the costs and benefits of potential fuel controls. This information will allow us to more accurately consider the impact of our recently promulgated, or proposed, fuel sulfur controls and assess how toxics controls can be incorporated. As part of the Technical Analysis Plan we will also collect information, which is currently lacking, on the availability and feasibility of further controls and the risk posed to public health and welfare by air toxic hot spots.

Based on our conclusion that the anti-backsliding controls are reasonable controls for the near-term, the fact that we lack information suggesting further controls are appropriate in near-term, and the fact that we are not ready to address long-term controls in this rulemaking, we conclude that today's anti-backsliding requirement satisfies the criteria of section 202(l)(2).

Section 202(l)(2) directs EPA to adopt toxics controls and from time to time review and revise those controls. Today's rule adopts near-term controls and puts EPA on a schedule to review, and if appropriate, revise those controls in accordance with the criteria in 202(l)(2). We note that the Agency has not prejudged the outcome of our 2003–2004 rulemaking, and will evaluate the sufficiency of the controls and whether there is a need for additional controls based on the information available at that time. We believe this two-step approach is the most reasonable means to address toxics in the near-term in the face of incomplete information and the significant changes underway at many refineries across the country.

As discussed in the NPRM, a number of other MSATs such as acrolein, styrene, dioxin/furans, xylene, toluene, ethylbenzene, naphthalene, and hexane are not controlled by the RFG or anti-dumping programs. We do not currently have sufficient information on how changes in fuel properties affect emissions of these compounds, and thus we cannot estimate the costs associated with controlling these compounds in fuels.

Motor vehicle emissions of metals are being addressed in other actions. Metals generally arise from contaminants in lube oils. The recent proposed rule on heavy-duty engines and vehicles beginning in model year 2007 also proposes controls on the use of used oil as a diesel fuel additive/extender.

We are not controlling MTBE emissions in this rulemaking. The primary mechanism for controlling MTBE emissions would be to limit the use of MTBE in gasoline. The Agency is currently pursuing a separate rulemaking under the Toxic Substances Control Act (TSCA) to consider phasing down or eliminating the use of MTBE, and thus we have deferred consideration of MTBE controls to that rulemaking. Note that the EPA and the United States Department of Agriculture jointly announced, on March, 2000, the Administration's legislative principles for protecting drinking water supplies, preserving clean air benefit and promoting renewable fuels and urged Congress to take action consistent with these principles.

Finally, as discussed in Section V. B above, there is insufficient data at this time to allow us to quantify how changes in individual diesel fuel properties would affect emissions of compounds such as aldehydes, dioxins/furans, and POM. As a result, we cannot specify how refiners might change their operations or what capital equipment they might need to install in order to reformulate their diesel fuel, and thus we cannot estimate costs associated with this type of control.

VI. Nonroad Sources of MSAT Emissions

In this section, we will look at MSAT emissions from nonroad mobile sources.[24] First, we will briefly review the nonroad MSAT emission inventories that were presented in Section III. Next, we will discuss how the current nonroad emission control programs are expected to reduce these nonroad inventories, as well as briefly touch upon the expected benefits from our new actions targeting the control of emissions from currently unregulated nonroad categories.

We are looking at nonroad MSAT emissions separately from motor vehicle MSAT emissions primarily because our understanding of nonroad MSAT emissions is much more limited. This section ends with a discussion of the current gaps in our data that we will need to fill before we can comprehensively assess the need for, and appropriateness of, programs intended to further reduce nonroad MSAT emissions.

We received two general types of comments in response to our discussion of nonroad sources in the proposal. First, several commenters stated that our emission projections for the nonroad category show that our current programs are effective at reducing toxics from nonroad sources. These commenters argued that we do not need to do anything further to reduce toxics emissions from nonroad mobile sources. A second group of commenters pointed out that the nonroad toxic inventories clearly argue for further controls on nonroad sources, and that we should include such controls in the final rule. We believe that we need to gather additional information on nonroad toxics emissions before we can make an informed decision regarding future actions, and are thus not including additional nonroad controls in today's action. Further, we are not required to set toxic emissions standards for nonroad sources under section 202(l)(2) of the Act.

A. Nonroad MSAT Baseline Inventories

We previously presented the 1996 baseline inventories for several key nonroad MSAT emissions in Table III–2. This nonroad MSAT data was taken from the 1996 National Toxics Inventory (NTI). In general, the data show that nonroad vehicles tend to be significant contributors of those same MSAT emissions for which motor vehicles are also significant contributors, such as benzene, formaldehyde, and acetaldehyde. For some MSAT emissions, the nonroad inventories are comparable to, or even higher than, those for on-highway vehicles. Nonroad vehicles contribute as much as 39 percent of the national inventory of some MSAT emissions, such as acetaldehyde and MTBE, and contribute significantly to the national inventories of several others, including 1,3-butadiene, acrolein, benzene, formaldehyde, lead compounds, n-hexane, toluene and xylene.

Comparing the 1996 estimates of on-highway vehicle VOC and diesel PM emissions in Table III–3 to the nonroad VOC and diesel PM numbers presented later in this section (Tables VI–3 and VI–4), we see that the nonroad VOC inventory in 1996 was almost 75 percent of the on-highway inventory and the nonroad diesel PM inventory for the same year was roughly twice that for on-highway diesel PM.

B. Impacts of Current Nonroad Mobile Source Emission Control Strategies

1. Description of the Emission Control Programs

Section 213 of the Clean Air Act Amendments of 1990 directed us to study the contribution of nonroad engines to air pollution which may reasonably be anticipated to endanger public health or welfare, and to regulate them if warranted. The focus of the 1990 Amendments was on the criteria pollutants and their implications for meeting the national ambient air quality standards (NAAQS). Due to the variety of nonroad engine and equipment types and sizes, combustion processes, uses, and potential for emissions reductions, we placed nonroad engines into several categories. These categories include land-based diesel engines (e.g., farm and construction equipment), small land-based spark-ignition (SI) engines (e.g., lawn and garden equipment, string trimmers), large land-based SI engines (e.g., forklifts, airport ground service equipment), marine engines (including diesel and SI, propulsion and auxiliary, commercial and recreational), locomotives, aircraft, and recreational vehicles (large land-based spark ignition engines used in off-road motorcycles, "all terrain" vehicles and snowmobiles). Brief summaries of our current and anticipated programs for these nonroad categories follow. More detailed descriptions are contained in Chapter Eight of the TSD for this rule.

- *Land-based diesel engines.* Land-based nonroad diesel engines include engines used in agricultural and construction equipment, as well as many other applications (excluding locomotives, mining equipment, and marine engines). Under our Tier 1 standards phased in beginning in 1996, NO_X reductions of over 30 percent were required of new land-based nonroad diesel engines greater than 50 horsepower (hp).[25] Standards applicable to engines under 50 hp took effect for the first time in 1999. We have completed a second set of standards (Tier 2) which will be phased in from 2001 through 2006 and will require further NO_X reductions, as well as reductions in diesel PM emissions. Still more stringent NO_X standards for engines over 50 hp (Tier 3) have been adopted and will be phased in from 2006 through 2008. When fully phased in, these Tier 2 and Tier 3 regulations are projected to result in 50 percent reductions in VOC and 40 percent reductions in diesel PM beyond the Tier 1 regulations.[26] Finally, we intend to consider the control of sulfur in nonroad diesel fuel as part of our Tier 3 technology review. This would allow more effective diesel PM control technologies such as catalysts to be

[24] "Nonroad" is a term that covers a diverse collection of engines, vehicles and equipment, as described in detail later in this section. The terms "off-road" and "off-highway" are sometimes used interchangeably with nonroad. Section 202(l) instructs the Agency to address emissions from motor vehicles, which do not include nonroad vehicles or engines.

[25] 59 FR 31306, June 17, 1994.

[26] 63 FR 56968, October 23, 1998.

applied to nonroad engines and vehicles.

- *Small land-based SI engines.* Small land-based spark-ignition engines at or below 25 hp are used primarily in lawn and garden equipment such as lawn mowers, string trimmers, chain saws, lawn and garden tractors, and other similar equipment. Our Phase 1 emission controls for these engines took effect beginning in 1997 and are projected to result in a roughly 32 percent reduction in VOC emissions.[27] We recently completed Phase 2 regulations for these engines which, when fully phased in, are projected to result in additional reductions in combined HC and NO_X beyond the Phase 1 levels of 60 percent for nonhandheld engines and 70 percent for handheld engines.[28]

- *Large land-based SI engines.* We do not currently have emission standards in place for SI engines above 25 hp used in commercial applications. Such engines are used in a variety of industrial equipment such as forklifts, airport ground service equipment, generators and compressors. We are currently developing an emission control program for these engines.[29]

- *Marine engines.* Due to the wide variety of marine engine types and applications we have split these engines into three general categories for regulatory purposes. The first category consists of gasoline outboard and personal watercraft engines. Our standards for these engines took effect in 1998 and become increasingly stringent over a nine year phase-in period, they are ultimately projected to result in a 75-percent reduction in VOC.[30] The second category consists of commercial diesel marine engines. This includes diesel engines up to 30 liters per cylinder in size used in a variety of commercial marine applications. Our emission standards for these engines take effect in 2004 and are similar to our standards for land-based nonroad diesel engines.[31] These regulations are projected to ultimately result in VOC reductions of 13 percent and diesel PM reductions of 26 percent for engines subject to the standards. The last category consists of both gasoline and diesel recreational sterndrive and inboard engines. We do not currently have emission regulations in place for this category of marine engine, but have begun developing them.[32]

- *Locomotives.* Our regulations for locomotives and locomotive engines consist of three tiers of standards, applicable depending on the date a locomotive is originally manufactured.[33] The first set of standards (Tier 0) applies to locomotives and locomotive engines originally manufactured from 1973 through 2001, any time they are manufactured or remanufactured.[34] The second set of standards (Tier 1) applies to locomotives and locomotive engines manufactured from 2002 through 2004. The third set of standards (Tier 2) applies to locomotives manufactured in 2005 and later. While the Tier 0 and Tier 1 regulations are primarily intended to reduce NO_X emissions, the Tier 2 regulations are projected to result in 50 percent reductions in VOC and diesel PM from unregulated levels, as well as additional NO_X reductions beyond the Tier 0 and Tier 1 regulations.

- *Aircraft.* A variety of emission regulations have been applied to commercial gas turbine aircraft engines, beginning with limits on smoke and fuel venting in 1974. In 1984, limits were placed on the amount of unburned HC that gas turbine engines can emit per landing and takeoff cycle. Most recently (1997), we adopted the existing International Civil Aviation Organization (ICAO) NO_X and CO emission regulations for gas turbine engines. None of these actions has resulted in significant emissions reductions, but rather have largely served to prevent increases in aircraft emissions. We continue to explore ways to reduce emissions from aircraft throughout the nation.

- *Recreational Vehicles.* Large land-based spark ignition engines used in recreational vehicles include snowmobiles, off-road motorcycles and ''all terrain'' vehicles, and are presently unregulated. We are currently developing emission regulations for recreational vehicles.[35]

In addition to the above engine-based emission control programs, fuel controls will also reduce emissions of air toxics from nonroad engines. For example, restrictions on gasoline formulation (the removal of lead, limits on gasoline volatility and reformulated gasoline standards) are projected to reduce nonroad MSAT emissions because most gasoline-fueled nonroad vehicles are fueled with the same gasoline used in on-highway vehicles. An exception to this is lead in aviation gasoline. Aviation gasoline is a high octane fuel used in a relatively small number of aircraft (those with piston engines). Such aircraft are generally used for personal transportation, sightseeing, crop dusting, and similar activities.

As just discussed, most of our fuel controls aimed at gasoline cover both on-highway and nonroad vehicle fuel. The same is not true for diesel fuel. We have regulations in place that will control the sulfur levels in on-highway diesel fuel and have proposed to reduce these levels further. These controls, however, do not apply to nonroad diesel fuel. Prior to the sulfur controls for on-highway diesel fuel, which took effect in October of 1993, there was no distinction between nonroad and on-highway diesel fuel.[36] We are evaluating the need for controlling sulfur in nonroad diesel fuel, in order to allow more effective diesel PM control technologies such as catalysts to be applied to nonroad engines and vehicles.

2. Emission Reductions From Current Programs

The nonroad mobile source control programs just summarized are expected to result in reductions of national inventories of MSAT emissions from nonroad engines. This section summarizes our estimates of nonroad MSAT inventories into the future, based on the nonroad emission control programs we currently have in place. Interested readers are encouraged to refer to our TSD for a more detailed discussion of these projections. The discussion in this section consists of three parts. First, we discuss the inventories of four gaseous MSAT emissions: benzene, formaldehyde, acetaldehyde and 1,3-butadiene. Second, we discuss nonroad VOC emissions inventories as a surrogate for the other nonroad gaseous MSAT emissions. Finally, we discuss the trend in nonroad diesel PM emissions.

We are not reporting inventory trends for the metals on our list of MSATs (arsenic compounds, chromium compounds, mercury compounds, nickel compounds, manganese compounds, and lead compounds) or for dioxin/furans. Metals in mobile source exhaust can come from fuel, fuel additives, engine oil, engine oil additives, or engine wear. Formation of dioxin and furans requires a source of

[27] 60 FR 34582, July 3, 1995.

[28] 64 FR 15208, March 30, 1999 and 65 FR 24267, April 25, 2000.

[29] 65 FR 76797, December 7, 2000.

[30] 61 FR 52088, October 4, 1996.

[31] 64 FR 73300, December 29, 1999.

[32] 65 FR 76797, December 7, 2000.

[33] 63 FR 18978, April 16, 1998.

[34] Locomotives are typically overhauled to ''as new'' condition every four to eight years in a process known as remanufacturing.

[35] 65 FR 76797, December 7, 2000.

[36] 55 FR 34120, August 21, 1990.

chlorine. Thus, while metal emissions and dioxins/furans emissions are associated with particles and it is possible that these compounds track PM emissions to some extent, there are a number of other factors that contribute to emission levels and we do not have good data on these relationships.

a. *Benzene, Acetaldehyde, Formaldehyde, and 1,3-Butadiene.* Table VI–1 shows our estimates of the nonroad emissions of these four gaseous MSATs. These estimates were based on the 1996 inventories contained in the 1996 NTI study.[37] The 1990 estimates were derived by applying a ratio of nationwide 1990 to 1996 VOC inventories from the draft NONROAD model to the 1996 NTI numbers.[38] Toxic fractions represent the fraction of total VOC that a given MSAT makes up. The toxic fractions were derived from speciated emissions data on different engines and come from a variety of studies which are discussed in Chapter 2 of the TSD. By knowing the total VOC inventory and the toxic fraction for a given MSAT, we can estimate the inventory of that specific MSAT indirectly. The 2007 and 2020 MSAT estimates were derived from the draft NONROAD model, with the toxic fractions applied to the nationwide NONROAD VOC results. Toxic fractions were applied separately to the various sources of nonroad emissions (e.g., diesel, gasoline, two-stroke, four-stroke, exhaust, evaporative) in the NONROAD model. We then summed the toxic emissions from the various sources of nonroad emissions.

TABLE VI–1.—ANNUAL EMISSIONS FOR BENZENE, ACETALDEHYDE, FORMALDEHYDE, AND 1,3-BUTADIENE FROM NONROAD SOURCES[a]

[Thousand short tons per year]

Compound	1990 Emissions	1996 Emissions	2007 Emissions	2020 Emissions
Benzene	100.2	98.7	75.4	69
Acetaldehyde	37.7	40.8	26.3	20
Formaldehyde	79.2	86.4	53.8	40.7
1,3-Butadiene	9.4	9.9	8.8	7.8

[a] The draft NONROAD model is a model we are developing to project emissions inventories from nonroad mobile sources. Because this is a draft model and subject to future revisions, the inventories derived from the draft NONROAD model and presented here are subject to change.

Table VI–2 summarizes the percent reductions from 1990 and 1996 levels represented by the inventories in Table VI–1. This table shows that the reductions expected from our existing nonroad control programs are significant, although not as substantial as the reductions of these pollutants for on-highway vehicles presented in Section III.

TABLE VI–2.—PERCENT EMISSION REDUCTIONS FOR BENZENE, ACETALDEHYDE, FORMALDEHYDE, AND 1,3-BUTADIENE FROM NONROAD SOURCES

Compound	Reduction in 2007 (percent)		Reduction in 2020 (percent)	
	From 1990	From 1996	From 1990	From 1996
Benzene	25	24	31	30
Acetaldehyde	30	36	47	51
Formaldehyde	32	38	49	53
1,3-Butadiene	7	11	18	21

b. *VOCs.* With the exception of the four MSATs shown in Table VI–1, we cannot estimate emissions from nonroad mobile sources for the other gaseous MSAT emissions because we do not have toxic fraction information for the other gaseous MSAT emissions. Therefore, to estimate projected inventory impacts from our current nonroad mobile source emission control programs, we use VOC inventories. We believe this is appropriate because the gaseous MSAT emissions are constituents of total VOC emissions. By using VOC emissions as a surrogate, we are assuming that MSAT emissions track VOC reductions. In reality, however, as can be seen from Table VI–2, some gaseous MSAT emissions may not decrease at the same rate as VOCs overall. Without having more detailed emission data for each of the MSAT emissions, however, we are unable to offer any insights on how those rates may differ.

Our VOC emission inventories were developed using the draft NONROAD model. Because the draft NONROAD model does not include locomotives, commercial marine diesel engines, or aircraft, we supplemented the draft NONROAD model inventories with the locomotive and diesel marine inventories developed in support of our regulations for those categories, and with aircraft emission inventories from the National Air Pollutant Emissions Trends, 1900–1996 report. The results of this analysis, presented in Table VI–3, show that VOC inventories are projected to decrease approximately 44 percent between 1996 and 2020 due to existing nonroad mobile source emission control programs. Comparing the results of this analysis with Tables III–3 and III–4, we see that expected nonroad VOC reductions are not as dramatic as those projected for on-highway vehicles, with

[37] It should be noted that these estimates do not include locomotives, aircraft or commercial marine diesel engines. Thus, the 1996 estimates shown here differ slightly from those shown in Table III–2.

[38] The draft NONROAD model is a model we are developing to project emissions inventories from nonroad mobile sources. Because this is a draft model and subject to future revisions, the inventories derived from the draft NONROAD model and presented here are subject to change.

nonroad and on-highway VOC inventories expected to be very similar by 2020. This is not surprising because the technologies available to reduce nonroad emissions are not as sophisticated as those used to control on-highway emissions. This analysis, however, shows that our existing nonroad emission control programs will nonetheless result in significant gaseous MSAT reductions (assuming, as previously discussed, that gaseous MSAT emissions track VOC reductions).

TABLE VI–3.—ANNUAL VOC EMISSIONS FROM NONROAD SOURCES

Year	1996	2007	2020
Million short tons per year	3.6	2.2	2.0
Cumulative Percent Reduction from 1996	* * *	39%	44%

c. *Diesel PM.* We estimated the nonroad PM inventories using the draft NONROAD model. We are using diesel PM as a surrogate for diesel PM and diesel exhaust organic gases (DPM + DEOG). As explained earlier, because the draft NONROAD model does not include locomotives, commercial marine diesel engines, or aircraft we supplemented the draft NONROAD model inventories using other sources of information to cover these emissions. Table VI–4 shows our estimates of nonroad diesel PM emissions inventories. As can be seen, we expect nonroad diesel PM emissions to begin to drop with the implementation of some of our nonroad regulations. However, in the absence of additional controls, we expect that nonroad diesel PM emission inventories will begin to increase due to expected growth in the populations of nonroad vehicles and equipment. Comparing Table VI–4 to Table III–3 we see that, while the nonroad diesel PM inventory is roughly twice that for on-highway vehicles in 1996, nonroad emissions of diesel PM are expected to be about 20 times as great as on-highway diesel PM emissions by 2020 due to the dramatic reductions in on-highway PM from the application of the newest technologies and the use of low sulfur fuels. These estimates assume projected reductions from the proposed standards for heavy-duty vehicles in 2007 and future model years, which are not yet finalized.

As was previously mentioned, we are considering Tier 3 diesel PM standards for land-based nonroad diesel engines. We believe that any specific new requirements for nonroad diesel PM we might propose would need to be carefully considered in the context of a proposal for nonroad diesel fuel standards. This is because of the close interrelationship between fuels and engines—the best emission control solutions may not come through either fuel changes or engine improvements alone, but perhaps through an appropriate balance between the two. Thus, we are working to formulate proposals covering both nonroad diesel fuel and engines.

TABLE VI–4.—DIESEL PM EMISSIONS FROM NONROAD SOURCES

Year	1996	2007	2020
Thousand short tons per year	345.8	282.8	310.8
Cumulative Percent Reduction from 1996	* * *	18%	10%

C. Gaps in Nonroad Mobile Source Data

There are significant gaps in our data on MSAT emissions from nonroad engines. As a result of these data gaps, our understanding of nonroad MSAT inventories is less developed than our understanding of on-highway vehicle MSAT emissions. The largest single data gap is in the area of emission factors. While we have basic emission factors for VOC and PM for most of the nonroad categories, we have very little VOC speciation data for most classes and categories of nonroad vehicles and engines which would allow us to use VOC as a surrogate to estimate emissions of specific MSAT emissions. Given the large variety of nonroad engine sizes, types and uses, as well as the likelihood that this variety are projected to result in some differences in VOC composition, it is important that we obtain or develop speciated VOC data specific to each nonroad category in order to more accurately project nonroad MSAT inventories. These gaps, too, must be filled in order to accurately assess the need for, and the most appropriate direction of, any future MSAT control program targeted specifically at nonroad mobile sources. We intend to use the technical analysis plan, described in Section VII, to fill these data gaps.

VII. Technical Analysis Plan to Address Data Gaps and Commitment for Further Rulemaking

A. Technical Analysis Plan to Address Data Gaps

Because of the potential future health impacts of public exposure to air toxics from mobile sources we will continue our toxics-related research and activities. Therefore, in addition to today's controls, we will continue to evaluate and re-assess the need for, and level of controls for both on-highway and nonroad sources of air toxics. Among the 21 compounds that EPA has identified for inclusion on the list of MSATs, we believe that, considering single chemical inhalation health hazards and exposure to the MSAT emissions from on-highway sources, diesel particulate matter and diesel exhaust organic gases (DPM + DEOG), benzene, 1,3-butadiene, formaldehyde, acetaldehyde, and acrolein are likely to present the highest risks to public health and welfare.[39] The need to focus short-term work on these six MSATs has been highlighted in an Agency screening analysis[40] and the States have indicated these pollutants are major mobile source pollutants of concern. Information that is made available from the work that is now underway in the NATA National-Scale Analysis will also be used to determine priority toxics

[39] EPA may also focus on other MSATs in the next two years, if new information shows that is appropriate.

[40] Memo from Brodowicz, P. to Phil Lorang, Director Assessment and Modeling Division and Chet France, Director Engines Programs and Compliance Division. Screening/Ranking Analysis of the Air Toxic Emissions From Onroad Mobile Sources to Be Addressed Under Section 202(l)(2). August 17, 1999.

from mobile sources.[41] In addition, priorities identified from the NATA National-Scale Analysis will be considered and incorporated as appropriate in the Air Toxics Research Strategy (ATRS) currently being developed by EPA's Office of Research and Development (ORD) in a coordinated effort with the OAR.

In conducting this Technical Analysis Plan, we will address four critical areas where there are data gaps. These areas are:

- Developing better air toxics emission factors for nonroad sources;
- Improving estimation of air toxics exposures in microenvironments;
- Improving consideration of the range of total public exposures to air toxics; and
- Increasing our understanding of the effectiveness and costs of vehicle, fuel, and nonroad controls for air toxics.

The Agency recognizes the need to conduct additional work and to focus on relevant scientific data to address the needs we outline in this Technical Analysis Plan. The issues outlined are complex and while the work conducted as part of the Technical Analysis Plan will begin to address the significant data gaps, resolution of some aspects of these issues will require a long-term effort. This effort will be coordinated across the Agency to maximize available resources.

Developing emission factors for nonroad sources. EPA's Office of Transportation and Air Quality (OTAQ) has initiated emissions testing of a comprehensive suite of hydrocarbons and inorganic compounds from nonroad diesel engines. These emissions will be characterized using steady-state as well as transient test cycles using typical nonroad fuel and low-sulfur nonroad fuel. OTAQ has also initiated an effort to characterize emissions (including speciated hydrocarbons) from in-use nonroad engines. EPA's Office of Research and Development (ORD) also has information available from testing programs which will be useful to characterize emissions of toxic compounds from certain classes of gasoline nonroad engines using various fuels (oxygenated gasoline, reformulated gasoline and conventional gasoline). The Agency will use these data, in addition to other sources of nonroad test data to develop better air toxics emissions factors for nonroad sources.

Improving estimation of exposures in microenvironments. In the past, the Agency has used carbon monoxide (CO) measurements outdoors and indoors as a surrogate for estimating the on-highway mobile source contribution to air toxics levels from outdoor sources in different microenvironments (e.g., inside vehicles, homes, shopping malls, and office buildings). This approach has limitations. Estimates of the on-highway contribution to air toxics levels in different microenvironments are then used in conjunction with activity data to estimate average exposures. A new approach was needed that addressed some of the limitations of the CO surrogate approach and one that could be used to estimate exposures from all outdoor sources. Thus, the Agency developed the Hazardous Air Pollutant Exposure Model—Version 4 (HAPEM4), to estimate microenvironmental exposures in the National-Scale Assessment of NATA. HAPEM4 utilizes peer reviewed, pollutant specific microenvironmental factors to predict exposure levels in microenvironments. The application of these microenvironmental factors in the NATA National-Scale Assessment is currently awaiting peer review by the Agency's Science Advisory Board. After that review, EPA's OAQPS will incorporate applicable comments into HAPEM4 microenvironmental factors that are needed to provide improved exposure estimates.

In addition, EPA will use results of on-going studies at the Mickey Leland National Urban Air Toxics Research Center and in the EPA Office of Radiation and Indoor Air to evaluate indoor and outdoor concentrations of gaseous toxics as well as the penetration of toxics from outdoor sources into indoor spaces. EPA will also utilize data from new studies planned or underway (within and outside the Agency) that are designed to fill gaps in current data sets such as personal exposure in microenvironmental settings (e.g., houses with attached garages, residences and commercial buildings located near heavily-trafficked roadways, bus depots, and delivery terminals).

Another important aspect of considering microenvironmental exposures is the amount of time people spend in each microenvironment. To address this issue, HAPEM4 uses the EPA ORD Consolidated Human Activity Database (CHAD). CHAD contains information describing activities of various subgroups in the U.S. population in different microenvironmental settings. CHAD is a more expansive human activity diary data set than others EPA has used in past exposure assessment, but the Agency recognizes that additional field research may be needed to expand human activity information for under-represented demographic groups, particularly in urban areas. EPA will update CHAD to take advantage of new data that becomes available through peer-reviewed studies. As CHAD is updated in the future, EPA will incorporate new data into HAPEM4 to provide the best reflection of each subgroup's activities and thereby enable subgroup analysis from which EPA would be likely to gain additional insights about the potential exposures for particular subgroups, including children. The Agency will review the data to see where special analysis is warranted to characterize the subgroups facing greater risks.

Improving consideration of the range of public exposures. EPA's analysis to date has primarily examined average levels of exposure (see Chapter 5 of the TSD and our 1999 Study [42]). As part of its National Air Toxics Assessment (NATA) activities, EPA has also conducted a national-scale air toxics analysis to estimate ambient concentrations of 33 air toxics identified in the IUATS, plus diesel PM. The NATA National-Scale Analysis apportioned the contribution of air toxics to ambient concentrations between major, area, nonroad mobile, and on-highway sources. The NATA National Scale Analysis also reported distributions of concentrations across census tracts nationally and at the county level. While providing a significant and informative body of information, these studies do not address exposures to toxics in hot spot areas. As the Agency has stated in the Integrated Urban Air Toxics Strategy, we also want to consider the disproportionate impacts of air toxics in hot spot areas. Hot spots are generally thought of as areas with elevated pollutant levels that could be associated with elevated exposures and potentially serious health risks. At higher pollutant concentrations, the potential for risk increases, making it important to characterize the distribution of exposure in the population. For example, it would be important to know how many people are in the high-end distribution

[41] EPA's Office of Transportation and Air Quality (OTAQ), which is responsible for the MSATs program, will be working in coordination with the Office of Air Quality Planning and Standards (OAPQS), which manages NATA, and the Office of Radiation and Indoor Air, which is examining issues related to a wide range of indoor air pollutants. OTAQ will also rely on health effects, exposure, and risk assessment efforts and guidelines of EPA's Office of Research and Development in conducting its program.

[42] Analysis of the Impacts of Control Programs on Motor Vehicles Toxics Emissions and Exposure in Urban Areas and Nationwide (Volumes 1 and 2), November 1999. EPA420-R–99–029/030. This report can be accessed at http://www.epa.gov/otaq/toxics.htm.

of exposure and whether they have additional susceptibilities (e.g., the elderly, young, or those exposed to other chemicals beyond MSATs) and what factors place them at high risk (e.g., proximity to sources). States and local air pollution control agencies have raised the hot spots issue as a major concern that needs to be addressed in a comprehensive air toxics risk characterization.[43]

To improve our ability to characterize MSAT exposures to highly exposed subpopulations requires better information regarding ambient concentrations of MSATs in hot spot areas and appropriate microenvironmental factor values for high-exposure microenvironments. EPA is developing local-scale emissions and dispersion models for mobile sources to better inform the Agency and the public about potential hot spots. In addition, EPA is conducting spatially refined urban area modeling (including mobile sources).

Field sampling studies funded by the Mickey Leland National Urban Air Toxics Research Center and ambient monitoring being conducted by States and local entities will provide information that will be used to support real-world characterizations of a few typical hot spot areas. These field measurements will also provide information regarding the distributions of microenvironmental concentrations and therefore, exposures. EPA will also work with the State and local air pollution control agencies to ensure that the results of air toxics monitoring data analyses and urban monitoring pilot projects underway omission year are considered in EPA's development of mobile source air toxics exposure and risk analyses.[44]

Increasing our understanding of the effectiveness and costs of vehicle, fuel, and nonroad air toxics controls. The Agency intends to conduct additional analysis on additional controls for motor vehicles, fuels, and nonroad engines that could lower air toxics emissions cost-effectively in a reliable and predictable manner. For DPM + DEOG, benzene, 1,3-butadiene, formaldehyde, acetaldehyde, and acrolein, the Agency will analyze a variety of control options, and re-evaluate previously considered control options, for both on-highway and nonroad sources. This additional analysis of control options will include the feasibility of requiring retrofit of both highway and nonroad heavy-duty diesel engines with emissions controls for air toxics.

In each of these four areas of investigation, EPA will work collaboratively with industry representatives, manufacturers of emissions control technology, State and local agencies, environmental groups, and other stakeholders. In keeping with this approach, the Agency plans to hold at least three technical workshops with all interested stakeholders to consider:

- Improvements EPA should make to existing models and integration of emission, concentration and exposure models to enable the Agency to better assess the risks from air toxics from all sources;
- Ways to address the significance of the hot spot issue;[45] and
- Future vehicle, fuel, and nonroad control technologies for reducing air toxics.

The results of the Technical Analysis Plan, workshops, and other efforts to improve our understanding of air toxics risks will provide the basis for any future rulemaking, as discussed below.

B. Commitment for Further Rulemaking

EPA is including a regulatory provision in section 80.825 that establishes a schedule for a future rulemaking to promulgate any additional vehicle and fuel controls that EPA determines are appropriate under section 202(l)(2). This rulemaking will reassess the standards in place at the time using the information collected through the Technical Analysis Plan described above and other activities related to mobile sources and air toxics. The standards that are being promulgated by EPA in today's final rule will remain in effect unless modified by this or other future rulemaking. EPA commits to issue a proposed rule by July 1, 2003, and to take final action on the proposal by July 1, 2004. The regulation adopted today establishes a rulemaking schedule for exercise of EPA's discretionary authority under section 202(l)(2), which directs EPA to ''from time to time revise'' regulations under that provision.

We are also stating in section 80.825 that the Agency intends to evaluate emissions and potential strategies relating to HAPs from nonroad engines and vehicles. This is consistent with the commitment, expressed in the preamble of the NPRM, to address emissions from nonroad as well as on-highway vehicles. The preamble discussion in the NPRM explained that as part of the rulemaking envisioned under the proposed section 80.825, EPA would reexamine the controls available for reducing toxics emitted from on-highway and nonroad vehicles and equipment, and their fuels (see preamble, 65 FR at 48091). The review would consider whether controls that reduce emissions from nonroad sources were appropriate under the Act. EPA intends to review the regulations of various categories of nonroad engines and equipment, and to consider controls for those pollutants and categories of new nonroad engines that EPA determines are appropriate. Controls on all types of nonroad vehicles and equipment, or pollutants may not be warranted. In deciding what pollutants and categories of engines or equipment to include in any proposal, EPA intends to consider a variety of factors such as cost, risk to public health, available technology, as well as any other appropriate factors.

Several commenters urged EPA not to include a commitment to a future rulemaking in the regulations. These commenters argued that it was premature to commit to a rulemaking before EPA had completed the Technical Analysis Plan and that a future rulemaking could be a waste of resources if EPA determines no further controls are appropriate. Several commenters also questioned EPA's authority to commit future administrations to such a rulemaking. EPA continues to believe the regulatory commitment in section 80.825 is reasonable and entirely within EPA's authority.

Other commenters supported EPA's commitment to future rulemaking, but encouraged EPA to extend that commitment to include a periodic review of mobile source toxics controls. They believe that EPA should review the appropriateness of additional controls every three years. At this time, we do not believe it is necessary to make such a formal commitment. However, the Act allows us to review

[43] STAPPA/ALAPCO and NESCAUM raised this concern at an conference on mobile source air toxics that the Health Effects Institute managed for EPA in February 2000.

[44] EPA will characterize the exposure risks of air toxics in future analysis in the manner prescribed in the Agency's Guidance for Risk Characterization, February 1995.

[45] This workshop will include ways to characterize the geographic variability and exposure/risk impacts of mobile source emissions, considering both the ubiquitous ambient impact as well as potential hot spots. Geographic variability includes the observed elevated urban area ambient concentrations of mobile source air toxics, peak ambient concentrations adjacent to roadways in urban and rural areas, and the elevated, mobile source-dependent emissions impacts (for example, waste transfer station operations and bus, marine, aircraft, and locomotive terminal operations). Exposure variability includes recognition of factors that lead to different levels of human exposure, such as commuting, or living in a residence with an attached garage. While this workshop will focus on methods to understand the range of exposures to mobile source emissions, methods to characterize additional sources of toxics exposure will also be examined.

and from time to time revise air toxics standards for mobile sources. Therefore, in addition to today's controls, we will continue to evaluate and re-assess the need for, and level of controls for both on-highway and nonroad sources of air toxics as described above.

VIII. Public Participation

A wide variety of interested parties participated in the rulemaking process that culminated with this final rule. The formal comment period and a public hearing associated with the NPRM provided additional opportunities for public input. EPA also met with a variety of stakeholders, including environmental and public health organizations, oil company representatives, auto company representatives, and states at various points in the process.

We have prepared a detailed Response to Comments document that describes the comments received on the NPRM and presents our response to each of these comments. The Response to Comments document is available in the docket of this rule and on the Office of Transportation and Air Quality Internet toxics page (*http://www.epa.gov/otaq/toxics.htm*). Comments and our response are also included throughout this preamble for several key issues.

IX. Administrative Requirements

A. Administrative Designation and Regulatory Analysis

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the Agency must determine whether the regulatory action is ''significant'' and therefore subject to review by the Office of Management and Budget (OMB) and the requirements of this Executive Order. The Executive Order defines a ''significant regulatory action'' as any regulatory action that is likely to result in a rule that may:

- Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, Local, or Tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this rule is a ''significant regulatory action'' because it raises novel legal or policy issues. Accordingly, this rule was submitted to OMB for review. Any written comments from OMB on today's action and any responses from EPA to OMB comments are in the public docket for this rulemaking.

B. Regulatory Flexibility Analysis.

EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with this final rule. EPA has also determined that this rule will not have a significant impact on a substantial number of small entities. Small entities include businesses, small not-for-profit enterprises, and small governmental jurisdictions. Of the approximately 146 petroleum refiners that currently produce gasoline in the U.S., about 15 meet the Small Business Administration (SBA) definition of a small business. According to SBA guidelines, a petroleum refining company must have fewer than 1500 employees to qualify as an SBA small business.

After considering the economic impacts of today's final rule on small entities, EPA has concluded that this action will not have a significant economic impact on a substantial number of small entities. As a result of the toxics performance standard being finalized today, all refiners will be required to maintain current levels of overcompliance with RFG and anti-dumping toxic emission performance requirements. Because the standards finalized in this action are not technology-forcing, we believe that all refiners, including small refiners will not be required to adjust their current refining practices in any unique way to meet the toxics performance standard. Chapter 7 of the TSD supports this conclusion and we believe that any future costs that may be incurred by any refiner to comply with this program will be negligible.

Although this final rule will not have a significant economic impact on a substantial number of small entities, EPA nonetheless has tried to reduce the impact of this rule on small entities. We have included a number of flexibilities in this program such as deficit and credit carryforward that are available to all refineries to meet the requirements finalized in today's action. We believe these flexibilities are sufficient to address any unforseen burdens that any refiner, including a small refiner, may face, and therefore, no unique provisions or flexibilities need to be finalized for small refiners.

C. Paperwork Reduction Act

The information collection requirements in this rule have been submitted for approval to the Office of Management and Budget (OMB) under the *Paperwork Reduction Act*, 44 U.S.C. 3501 *et seq*. An Information Collection Request (ICR) document has been prepared by EPA and a copy may be obtained from Sandy Farmer, Collection Strategies Division; U.S. Environmental Protection Agency (2822); 1200 Pennsylvania Ave., NW, Washington, DC 20460 or by calling (202) 260–2740. The information requirements are not enforceable until OMB approves them.

Under this rulemaking, refiners and importers are required to determine and submit to EPA a toxics baseline based on the quality of the gasoline produced or imported between 1998 and 2000, inclusive. The toxics baseline is a one-time submission. Additionally, at the end of each calendar year beginning with 2002, refiners and importers are required to submit certain information to EPA under this rule. The types of information and other requirements associated with these submissions is presented below.

The data that is used in determining the toxics baseline is gasoline batch information which the refiner or importer already has, and has submitted (or will submit in the case of 2000 data) to EPA per the reformulated gasoline and anti-dumping programs' requirements. Thus, there is no requirement under this rule to collect additional information; refiners and importers use the information they already have (gasoline batch quality and volumes) to determine the baseline for this rule, a straightforward and uncomplicated calculation.

In addition to the one-time toxics baseline determination and submission, refiners and importers are required to calculate annually and submit to EPA the following, separately for reformulated and conventional gasoline:

(1) *The annual average toxics value*. This value is the average quality of all of the batches of gasoline produced or imported during the year and is based on the volume and toxics quality of each batch (volume weighted combination of each batch's toxic value).

(2) *The annual volume*. This is the sum of all of the batch volumes of gasoline produced or imported during the year.

(3) T*he incremental volume*. This is the difference between a refiner's or importer's 1998–2000 baseline volume and the annual volume (see above). Only positive incremental volumes (that is, when the annual volume exceeds the

1998–2000 volume) are used in the compliance baseline calculation (see below).

(4) *The compliance baseline*. This annual calculation is the standard for this rule, and is the value to which the annual average toxics value (see above) is compared. Factors in this calculation are the baseline quality and volume (as determined in the one-time baseline submission, plus a compliance margin which has been set by EPA), and the incremental volume (see above).

The annual average toxics value for each type of gasoline (reformulated, conventional) is essentially the same determination refiners and importers must make for the reformulated gasoline and anti-dumping programs. The annual average toxics value determination is made using the toxics values calculated for each reformulated gasoline and conventional gasoline batch in accordance with the reformulated gasoline and anti-dumping program requirements. No new data is required to be collected for this rule. The annual volume is also part of the reporting requirements of those two programs. Only the incremental volume determination and the compliance baseline determination are new requirements due to this rule. These latter two determinations require minimal calculation time. Additionally, all information required to be submitted annually under this anti-backsliding program will be submitted at the same time and on the same forms as the annually required information under the reformulated gasoline and anti-dumping programs.

Refiners and importers are also required to annually submit attest engagements (independent comparison and calculation of reported values and related information submitted by refiners and importers in accordance with the reformulated gasoline and anti-dumping requirements). Attest engagements are also required for this anti-backsliding rule. The information the independent auditor must consider includes the refiner's or importer's baseline toxics value, annual average toxics value, baseline volume, incremental volume and compliance baseline. This addition (on top of the attest engagement requirements for the reformulated gasoline and anti-dumping program attest engagement requirements) is expected to require minimal additional resources.

In summary, we believe that the additional data required by this rulemaking will require minimum effort to prepare and submit, and can be submitted with the same data submission forms pursuant to the recordkeeping and reporting requirements for the RFG and anti-dumping rules. While we believe that the minimal amount of additional data required by this rulemaking does not pose significant additional information collection burden on refiners,[46] we have submitted revisions to the RFG and anti-dumping Information Collection Requests (ICRs).

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR Chapter 15. The OMB control number(s) for the information collection requirements in this rule will be listed in an amendment to 40 CFR part 9 in a subsequent **Federal Register** document after OMB approves the ICR.

D. Intergovernmental Relations

1. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory action on state, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures by state, local, and tribal governments, in the aggregate, or by the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted.

Before we establish any regulatory requirement that may significantly or uniquely affect small governments, including tribal governments, we must develop, under section 203 of the UMRA, a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of our regulatory proposals with significant federal intergovernmental mandates. The plan must also provide for informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that this rule does not contain a federal mandate that may result in expenditures of $100 million or more for State, Local, or Tribal governments, in the aggregate, or for the private sector in any one year. The anti-backsliding standard that is being finalized in today's action, consisting of a ''cannot exceed'' toxics performance standard which is based in average annual production in 1998–2000, will not require refiners to install capital equipment or make substantial changes to their operations in order to comply. The rule imposes no enforceable duties on State, Local, or Tribal governmental entities and nothing in the rule would significantly or uniquely affect small governments. Thus, today's rule is not subject to the requirements of section 202 and 205 of UMRA.

2. Executive Order 13132 (Federalism)

Executive Order 13132, entitled ''Federalism'' (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' is defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.''

The proposed rule has no federalism implications, as specified in Executive Order 13132. The standards finalized in today's action do not change the existing form of the gasoline toxics standard and therefore do not change the states's rights with respect to gasoline air toxics controls. The

[46] Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

proposed standards will impose no direct compliance costs on states. Thus, Executive Order 13132 does not apply to this rule.

EPA consulted with state and local officials in the process of developing the proposed regulation to permit them to have meaningful and timely input into its development. In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and local governments, EPA specifically solicits comment on this proposed rule from State and local officials.

3. Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments ''to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.''

Today's rule does not create any mandates or impose any obligations on State, Local, or Tribal governments, and thus does not significantly or uniquely affect the communities of Indian tribal governments. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

E. National Technology Transfer and Advancement Act

As noted in the proposed rule, section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104–113, section 12(d) (15 U.S.C. 272 note), directs EPA to use voluntary consensus standards (VCS) in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This rule references technical standards adopted by the Agency through previous rulemakings. No new technical standards are established in today's rule. The standards referenced in today's rule involve the measurement of gasoline fuel parameters. The measurement standards for gasoline fuel parameters referenced in today's rule are government-unique standards that were developed by the Agency through previous rulemakings. These standards have served the Agency's emissions control goals well since their implementation and have been well accepted by industry.

F. Executive Order 13045: Children's Health Protection

Executive Order 13045: ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997) applies to any rule that: (1) is determined to be economically significant as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This rule is not subject to the Executive Order because it is not an economically significant regulatory action as defined by Executive Order 12866. In addition, data that provide a direct insight into the question of greater susceptibility in children are lacking. Nevertheless, EPA believes that it is important to develop a better understanding of the effects on public health, including on children's health, of the MSATs identified in today's rule. Accordingly, EPA intends to address children's health issues as part of its Technical Analysis Plan.

G. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of this rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This rule is not a ''major rule'' as defined by 5 U.S.C. 804(2). This rule will be effective on May 29, 2001.

X. Statutory Provisions and Legal Authority

The statutory authority for the fuels controls in today's final rule can be found in sections 202 and 211(c) of the Clean Air Act (CAA), as amended. Additional support for the procedural and enforcement-related aspects of the fuel controls in today's rule, including the recordkeeping requirements, come from sections 114(a) and 301(a) of the CAA.

List of Subjects

40 CFR Part 80

Environmental protection, Fuel additives, Gasoline, Imports, Incorporation by reference, Labeling, Motor vehicle pollution, Penalties, Reporting and recordkeeping requirements.

40 CFR Part 86

Environmental protection, Administrative practice and procedure, Confidential business information, Labeling, Motor vehicle pollution, Penalties, Reporting and recordkeeping requirements.

Dated: December 20, 2000.

Carol M. Browner,

Administrator.

For the reasons set forth in the preamble, parts 80 and 86 of title 40 of the Code of Federal Regulations are amended as follows:

PART 80—REGULATION OF FUELS AND FUEL ADDITIVES

1. The authority citation for part 80 is revised to read as follows:

Authority: 42 U.S.C. 7414, 7521(l), 7545 and 7601(a).

2. Section § 80.2 is amended by revising paragraph (d) to read as follows:

§ 80.2 Definitions.

* * * * *

(d) *Previously certified gasoline*, or PCG, means gasoline or RBOB that previously has been included in a batch for purposes of complying with the standards in Subparts D, E, H, and J of this part, as appropriate.

* * * * *

3. Section § 80.46 is amended by revising paragraphs (e) and (h) to read as follows:

§ 80.46 Measurement of reformulated gasoline fuel parameters.

* * * * *

(e) *Benzene.* (1) Benzene content shall be determined using ASTM standard method D–3606–99, entitled ''Standard Test Method for Determination of Benzene and Toluene in Finished Motor and Aviation Gasoline by Gas Chromatography''; except that

(2) Instrument parameters shall be adjusted to ensure complete resolution of the benzene, ethanol and methanol peaks because ethanol and methanol may cause interference with ASTM standard method D–3606–99 when present.

* * * * *

(h) *Incorporations by reference.* ASTM standard methods D 2622–98 ''Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry,'' D 3246–96 ''Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry,'' D 3606–99 ''Standard Test Method for Determination of Benzene and Toluene in Finished Motor and Aviation Gasoline by Gas Chromatography,'' D 1319–99 ''Standard Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption,'' D 4815–99 ''Standard Test Method for Determination of MTBE, ETBE, TAME, DIPE, tertiary-Amyl Alcohol and C_1 to C_4 Alcohols in Gasoline by Gas Chromatography,'' and D 86–90 ''Standard Test Method for Distillation of Petroleum Products,'' with the exception of the degrees Fahrenheit figures in Table 9 of D 86–90, are incorporated by reference. These incorporations by reference were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Dr., West Conshohocken, PA 19428. Copies may be inspected at the Air Docket Section (LE–131), room M–1500, U.S. Environmental Protection Agency, Docket No. A–97–03, 401 M Street, SW, Washington, DC 20460, or at the Office of the Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC.

4. Section 80.81 is amended by revising paragraph (a) to read as follows:

§ 80.81 Enforcement exemptions for California gasoline.

(a) The requirements of subparts D, E, F and J of this part are modified in accordance with the provisions contained in this section in the case of California gasoline.

* * * * *

5. Subpart J is added to part 80 to read as follows:

Subpart J—Gasoline Toxics

General Information

Subpart J—Gasoline Toxics

General Information

§ 80.800–80.805 [Reserved]

§ 80.810 Who shall register with EPA under the gasoline toxics program?

(a) Refiners and importers who are registered by EPA under § 80.76 are deemed to be registered for purposes of this subpart.

(b) Refiners and importers subject to the standards in § 80.815 who are not registered by EPA under § 80.76 shall provide to EPA the information required by § 80.76 by October 1, 2001, or not later than three months in advance of the first date that such person produces or imports gasoline, whichever is later.

Gasoline Toxics Performance Requirements

§ 80.815 What are the gasoline toxics performance requirements for refiners and importers?

(a)(1) The gasoline toxics performance requirements of this subpart require that the annual average toxics value of a refinery or importer be compared to that refinery's or importer's compliance baseline, where compliance has been achieved if—

(i) For conventional gasoline, the annual average toxics value is less than or equal to the compliance baseline;

(ii) For reformulated gasoline and RBOB, combined, the annual average toxics value is greater than or equal to the compliance baseline.

(A) Refineries that only produce RBOB and importers that only import RBOB shall treat RBOB as reformulated gasoline for the purposes of determining compliance with the requirements of this subpart.

(B) Refineries that produce both RFG and RBOB and importers that import both RFG and RBOB must combine any RFG and RBOB qualities and volumes for the purposes of determining compliance with the requirements of this subpart.

(2) The requirements under this paragraph (a) shall be met by the importer for all imported gasoline, except gasoline imported as Certified Toxics-FRGAS under § 80.1030.

(b) The gasoline toxics requirements of this subpart apply separately for each of the following types of gasoline produced at a refinery or imported:

(1) Reformulated gasoline and RBOB, combined;

(2) Conventional gasoline.

(c) *Compliance baseline.* (1) The compliance baseline of a refinery or importer is determined in accordance with § 80.915 or § 80.855, as applicable.

(2) Refiners who have chosen, under subpart E of this part, to comply with the requirements of subpart E of this part on an aggregate basis, shall comply with the requirements of this subpart on the same aggregate basis.

(d) *Compliance determination.* (1) The gasoline toxics performance requirements of this subpart apply to gasoline produced at a refinery or imported by an importer during each calendar year starting January 1, 2002. The averaging period is January 1 through December 31 of each year.

(2) The annual average toxics value is calculated in accordance with § 80.825.

(e) *Deficit carryforward.* (1) A refinery or importer creates a toxics deficit, separately for reformulated gasoline and conventional gasoline, for a given averaging period, when—

(i) For conventional gasoline, its annual average toxics value is greater than the compliance baseline;

(ii) For reformulated gasoline and RBOB, combined, the annual average toxics value is less than the compliance baseline.

(2) In the calendar year following the year the toxics deficit is created, the refinery or importer shall:

(i) Achieve compliance with the refinery or importer toxics performance requirement specified in paragraph (a) of this section; and

(ii) Generate additional toxics credits sufficient to offset the toxics deficit of the previous year.

(f) *Credit carryforward.* (1) A refinery or importer generates toxics credits, separately for reformulated gasoline and conventional gasoline, for a given averaging period, when—

(i) For conventional gasoline, its annual average toxics value is less than the compliance baseline;

(ii) For reformulated gasoline and RBOB, combined, the annual average toxics value is greater than the compliance baseline.

(2) Toxics credits may be used to offset a toxics deficit in the calendar year following the year the credits are generated, provided the following criteria are met:

(i) Reformulated gasoline toxics credits are only to be used to offset a reformulated gasoline toxics deficit; conventional gasoline credits are only to be used to offset a conventional gasoline toxics deficit.

(ii) A refiner only offsets a toxics deficit at a refinery with toxics credits generated by that refinery.

(iii) Credits generated on an aggregate basis may only be used to offset a deficit calculated on an aggregate basis.

(iv) Credits used to offset a deficit from the previous year may not also be carried forward to the following year. Credits in excess of those used to offset a deficit from the previous year may be used to offset a deficit in the following year.

(v) Only toxics credits generated under this subpart may be used to offset a toxics deficit created under this subpart.

§ 80.820 What gasoline is subject to the toxics performance requirements of this subpart?

For the purpose of this subpart, all reformulated gasoline, conventional gasoline and RBOB, collectively called "gasoline" unless otherwise specified, is subject to the requirements under this subpart, as applicable, with the following exceptions:

(a) Gasoline that is used to fuel aircraft, racing vehicles or racing boats that are used only in sanctioned racing events, provided that:

(1) Product transfer documents associated with such gasoline, and any pump stand from which such gasoline is dispensed, identify the gasoline either as gasoline that is restricted for use in aircraft, or as gasoline that is restricted for use in racing motor vehicles or racing boats that are used only in sanctioned racing events;

(2) The gasoline is completely segregated from all other gasoline throughout production, distribution and sale to the ultimate consumer; and

(3) The gasoline is not made available for use as motor vehicle gasoline, or dispensed for use in motor vehicles, except for motor vehicles used only in sanctioned racing events.

(b) Gasoline that is exported for sale outside the U.S.

(c) Gasoline designated as California gasoline under § 80.845, and used in California.

(d) Gasoline used in American Samoa, Guam and the Commonwealth of the Northern Mariana Islands.

(e) Gasoline exempt per § 80.995.

(f) Gasoline exempt per § 80.1000.

§ 80.825 How is the refinery or importer annual average toxics value determined?

(a) The refinery or importer annual average toxics value is calculated as follows:

$$T_a = \frac{\sum_{i=1}^{n} (V_i \times T_i)}{\sum_{i=1}^{n} V_i}$$

Where:

T_a = The refinery or importer annual average toxics value, as applicable.

V_i = The volume of applicable gasoline produced or imported in batch i.

T_i = The toxics value of batch i.

n = The number of batches of gasoline produced or imported during the averaging period.

i = Individual batch of gasoline produced or imported during the averaging period.

(b) The calculation specified in paragraph (a) of this section shall be made separately for each type of gasoline specified at § 80.815(b).

(c) The toxics value, T_i, of each batch of gasoline is determined using the Phase II Complex Model specified at § 80.45.

(1) The toxics value, T_i, of each batch of reformulated gasoline or RBOB, and the annual average toxics value, T_a, for reformulated gasoline and RBOB, combined, under this subpart are in percent reduction from the statutory baseline described in § 80.45(b) and volumes are in gallons.

(2) The toxics value, T_i, of each batch of conventional gasoline, and the annual average toxics value, T_a, for conventional gasoline under this subpart are in milligrams per mile (mg/mile) and volumes are in gallons.

(d) All refinery or importer annual average toxics value calculations shall be conducted to two decimal places.

(e) A refiner or importer may include oxygenate added downstream from the refinery or import facility when calculating the toxics value, provided the following requirements are met:

(1) For oxygenate added to conventional gasoline, the refiner or importer shall comply with the requirements of § 80.101(d)(4)(ii).

(2) For oxygenate added to RBOB, the refiner or importer shall comply with the requirements of § 80.69(a).

(f) *Gasoline excluded.* Refiners and importers shall exclude from compliance calculations all of the following:

(1) Gasoline that was not produced at the refinery;

(2) In the case of an importer, gasoline that was imported as Certified Toxics-FRGAS under § 80.1030;

(3) Blending stocks transferred to others;

(4) Gasoline that has been included in the compliance calculations for another refinery or importer; and

(5) Gasoline exempted from standards under § 80.820.

§ 80.830 What requirements apply to oxygenate blenders?

Oxygenate blenders who blend oxygenate into gasoline downstream of the refinery that produced the gasoline or the import facility where the gasoline was imported are not subject to the requirements of this subpart applicable to refiners for this gasoline.

§ 80.835 What requirements apply to butane blenders?

Butane blenders who blend butane into gasoline downstream of the refinery that produced the gasoline or the import facility where the gasoline was imported are not subject to the requirements of this subpart applicable to refiners for this gasoline.

§ 80.840 [Reserved]

§ 80.845 What requirements apply to California gasoline?

(a) *Definition.* For purposes of this subpart ''California gasoline'' means any gasoline designated by the refiner or importer as for use in California.

(b) *California gasoline exemption.* California gasoline that complies with all the requirements of this section is exempt from all other provisions of this subpart.

(c) *Requirements for California gasoline.* (1) Each batch of California gasoline shall be designated as such by its refiner or importer.

(2) [Reserved]

(3) Designated California gasoline must ultimately be used in the State of California and not used elsewhere.

(4) In the case of California gasoline produced outside the State of California, the transferors and transferees shall meet the product transfer document requirements under § 80.81(g).

(5) Gasoline that is ultimately used in any part of the United States outside of the State of California shall comply with the standards and requirements of this subpart, regardless of any designation as California gasoline.

§ 80.850 How is the compliance baseline determined?

(a) The compliance baseline to which annual average toxics values are compared according to § 80.815(a) is calculated according to the following equation:

$$T_{CBase} = \frac{T_{Base} \times V_{Base} + T_{Exist} \times V_{inc}}{V_{Base} + V_{inc}}$$

Where:

T_{CBase} = Compliance baseline toxics value.

T_{Base} = Baseline toxics value for the refinery or importer, calculated according to § 80.915(b)(1).

V_{Base} = Baseline volume for the refinery or importer, calculated according to § 80.915(b)(2).

T_{Exist} = Existing toxics standard, per paragraph (b) of this section.

V_{inc} = Volume of gasoline produced during the averaging period in excess of V_{Base}.

(b) The value of existing toxics standard, T_{Exist}, is equal to:

(1) 21.5 percent, for reformulated gasoline and RBOB, combined;

(2) The refinery's or importer's anti-dumping compliance baseline value for exhaust toxics, in mg/mi, per § 80.101(f), for conventional gasoline.

(c) If the refinery or importer produced less gasoline during the compliance period than its baseline volume V_{Base}, the value of V_{inc} will be zero.

§ 80.855 What is the compliance baseline for refineries or importers with insufficient data?

(a) A refinery or importer shall use the methodology specified in this section for determining a compliance baseline if it cannot determine an applicable toxics value for every batch of gasoline produced or imported for 12 or more consecutive months during January 1, 1998 through December 31, 2000.

(b)(1) A refinery or importer that cannot determine an applicable toxics value on every batch of gasoline produced or imported for 12 or more consecutive months during the period January 1, 1998 through December 31, 2000 or a refinery or importer that did not produce or import reformulated gasoline and/or RBOB (combined) or conventional gasoline or both during the period between January 1, 1998 and December 31, 2000, inclusive, shall have the following as its compliance baseline for the purposes of this subpart:

(i) For conventional gasoline, 94.64 mg/mile.

(ii) For reformulated gasoline, 26.71 percent reduction from statutory baseline.

(2) By October 31, 2001, EPA will revise by regulation the default baseline values specified in paragraph (b)(1) of this section to reflect the final 1998–2000 average toxics values.

§ 80.860–80.905 [Reserved]

Baseline Determination

§ 80.910 How does a refiner or importer apply for a toxics baseline?

(a) A refiner or importer shall submit an application to EPA which includes the information required under paragraph (c) of this section no later than June 30, 2001 or 3 months prior to the first introduction of gasoline into commerce from the refinery or by the importer, whichever is later.

(b) The toxics baseline request shall be sent to: U.S. EPA, Attn: Toxics Program (6406J), 401 M Street SW, Washington, DC 20460. For commercial (non-postal) delivery: U.S. EPA, Attn: Toxics Program, 501 3rd Street NW, Washington, DC 20001.

(c) The toxics baseline application shall include the following information:

(1) A listing of the names and addresses of all refineries owned by the company for which the refiner is applying for a toxics baseline, or the name and address of the importer applying for a toxics baseline.

(2) For each refinery and importer—

(i) The baseline toxics value for each type of gasoline, per § 80.815(b), calculated in accordance with § 80.915;

(ii) The baseline toxics volume for each type of gasoline, per § 80.815(b), calculated in accordance with § 80.915;

(iii) For those with insufficient data pursuant to § 80.855, a statement that the refinery's or importer's baseline toxics value is the default compliance baseline specified at § 80.855(b), and that its baseline toxics volume is zero.

(3) A letter signed by the president, chief operating or chief executive officer, of the company, or his/her delegate, stating that the information contained in the toxics baseline determination is true to the best of his/her knowledge.

(4) Name, address, phone number, facsimile number and E-mail address of a company contact person.

(5) The following information for each batch of gasoline produced or imported during the period 1998–2000, separately for each type of gasoline listed at § 80.815(b):

(i) Batch number assigned to the batch under § 80.65(d) or § 80.101(i);

(ii) Volume; and

(iii) Applicable toxics value determined as specified at § 80.915(c).

(d) Foreign refiners shall follow the procedures specified in § 80.1030(b) to establish individual toxics baseline values for a foreign refinery.

(e) By October 31, 2001, or 4 months after the submission date, whichever is later, EPA will notify the submitter of approval of its toxics baseline.

(f) If at any time the baseline submitted in accordance with the requirements of this section is determined to be incorrect, the corrected baseline applies ab initio and the annual average toxics requirements are deemed to be those applicable under the corrected information.

§ 80.915 How are the baseline toxics value and baseline toxics volume determined?

(a)(1) A refinery or importer shall use the methodology specified in this section for determining a baseline toxics value if it can determine an applicable toxics value for every batch of gasoline produced or imported for 12 or more consecutive months during January 1, 1998 through December 31, 2000.

(2) The determination in paragraph (a)(1) of this section is made separately for each type of gasoline listed at § 80.815(b) produced or imported between January 1, 1998 and December 31, 2000, inclusive.

(3) All consecutive and non-consecutive batch toxics measurements between January 1, 1998 and December 31, 2000, inclusive, are to be included in the baseline determination, unless the refinery or importer petitions EPA to exclude such data on the basis of data quality, per § 80.91(d)(6), and receives permission from EPA to exclude such data.

(b)(1) A refinery's or importer's baseline toxics value is calculated using the following equation:

$$T_{Base} = \frac{\sum_{i=1}^{n}(V_i \times T_i)}{\sum_{i=1}^{n} V_i} + M$$

Where:

T_{Base} = Baseline toxics value.

V_i = Volume of gasoline batch i produced or imported between January 1, 1998 and December 31, 2000, inclusive.

T_i = Toxics value of gasoline batch i produced or imported between January 1, 1998 and December 31, 2000, inclusive.

i = Individual batch of gasoline produced or imported between January 1, 1998 and December 31, 2000, inclusive.

n = Total number of batches of gasoline produced or imported between January 1, 1998 and December 31, 2000, inclusive.

M = Compliance margin.

(2) A refinery's or importer's baseline toxics volume is calculated using the following equation:

$$V_{base} = \frac{\sum_{i=1}^{n} V_i}{Y}$$

Where:

V_{base} = Baseline toxics volume.

V_i = Volume of gasoline batch i produced or imported between January 1, 1998 and December 31, 2000, inclusive.

i = Individual batch of gasoline produced or imported between January 1, 1998 and December 31, 2000, inclusive.

n = Total number of batches of gasoline produced or imported between January 1, 1998 and December 31, 2000, inclusive.

Y = Number of years between 1998 and 2000, inclusive, during some or all of which the refinery produced, or the importer imported, gasoline.

(c) The calculation specified in paragraph (b) of this section shall be made separately for each type of gasoline listed at § 80.815(b).

(d) The toxics value, T_i, of each batch of gasoline is determined using the Phase II Complex Model specified at § 80.45.

(1) The toxics value, T_i, of each batch of reformulated gasoline or RBOB, and the baseline toxics value, T_{Base}, for reformulated gasoline and RBOB, combined, under this subpart are in percent reduction from the statutory baseline defined in 40 CFR 80.45(b) and volumes are in gallons.

(2) The toxics value, T_i, of each batch of conventional gasoline, and the baseline toxics value, T_{Base}, for conventional gasoline under this subpart are in milligrams per mile (mg/mile) and volumes are in gallons.

(e) All refinery or importer baseline toxics value calculations shall be conducted to two decimal places.

(f) Any refinery for which oxygenate blended downstream was included in compliance calculations for 1998–2000, pursuant to § 80.65 or § 80.101(d)(4), shall include this oxygenate in the baseline calculations for toxics value under paragraph (a) of this section.

(g) *Baseline adjustment.* (1) A toxics baseline determined differently than described in paragraphs (a) through (e) of this section may be allowed upon petition by the refiner or importer and approval by the Administrator or designee. The petition must be included with the baseline submittal under § 80.910.

(2) A toxics baseline adjustment petition shall, at minimum, be accompanied by:

(i) Unadjusted and adjusted baseline fuel parameters, applicable toxics values, and volumes; and

(ii) A narrative describing how the circumstances during 1998–2000 materially affected the baseline toxics value calculated under paragraph (a) of this section. The narrative shall also describe and show the calculations, and the reasoning supporting the calculations, used to determine the adjusted values.

(h) The compliance margin, M, that will be added to the toxics baseline calculated according to paragraph (a) of this section shall be equal to:

(1) −0.7% for reformulated gasoline or RBOB;

(2) 2.5 mg/mile for conventional gasoline.

§ 80.920–80.980 [Reserved]

Recordkeeping and Reporting Requirements

§ 80.985 What records shall be kept?

(a) The recordkeeping requirements specified under § 80.74 applicable to refiners and importers of reformulated gasoline, RBOB and/or conventional gasoline apply under this subpart, however, duplicate records are not required.

(b) *Additional records that refiners and importers shall keep.* Beginning January 1, 2002, any refiner for each of its refineries, and any importer for the gasoline it imports, shall keep records that include the following information:

(1) The calculations used to determine the applicable compliance baseline under § 80.915.

(2) The calculations used to determine compliance with the applicable toxics requirements per § 80.815.

(3) A copy of all reports submitted to EPA under § 80.990, however, duplicate records are not required.

(c) *Additional records importers shall keep.* Any importer shall keep records that identify and verify the source of each batch of Certified Toxics-FRGAS and Non-Certified Toxics-FRGAS imported and demonstrate compliance with the requirements for importers under § 80.1030(o).

(d) *Length of time records shall be kept.* The records required in this section shall be kept for five years from the date they were created.

(e) *Make records available to EPA.* On request by EPA the records required in paragraphs (a), (b) and (c) of this section shall be provided to the Administrator's authorized representative. For records that are electronically generated or maintained the equipment and software necessary to read the records shall be made available, or upon approval by EPA, electronic records shall be converted to paper documents which shall be provided to the Administrator's authorized representative.

§ 80.990 What are the toxics reporting requirements?

Beginning with the 2002 averaging period, and continuing for each averaging period thereafter, any refiner or importer shall submit to EPA the information required in this section, and such other information as EPA may require.

(a) *Refiner and importer annual reports.* Any refiner, for each of its refineries and/or aggregate(s) of refineries, and any importer for the gasoline it imports, shall:

(1) Include in its reformulated gasoline toxics emissions performance averaging report per § 80.75(e) the compliance baseline and incremental volume, V_{inc}, for its reformulated gasoline and RBOB, combined, per § 80.850.

(2) Include in its conventional gasoline report per § 80.105 the compliance baseline and incremental volume, V_{inc}, for its conventional gasoline per § 80.850.

(3) Exclude Certified Toxics-FRGAS under § 80.1030, if an importer.

(b) *Additional reporting requirements for importers.* Any importer shall report the following information for Toxics-FRGAS imported during the averaging period:

(1) The EPA refiner and refinery registration numbers of each foreign refiner and refinery where the Certified Toxics-FRGAS was produced; and

(2) The total gallons of Certified Toxics-FRGAS and Non-Certified Toxics-FRGAS imported from each foreign refiner and refinery.

Exemptions

§ 80.995 What if a refiner or importer is unable to produce gasoline conforming to the requirements of this subpart?

In appropriate extreme and unusual circumstances (e.g., natural disaster or Act of God) which are clearly outside the control of the refiner or importer and which could not have been avoided by the exercise of prudence, diligence, and due care, EPA may permit a refiner or importer, for a brief period, to not meet the requirements of this subpart, separately for reformulated gasoline (and RBOB, combined) and conventional gasoline, provided the refiner or importer meets all the criteria, requirements and conditions contained in § 80.73 (a) through (e).

§ 80.1000 What are the requirements for obtaining an exemption for gasoline used for research, development or testing purposes?

Gasoline used for research, development or testing purposes is exempt from the requirements of this subpart if it is exempted for these purposes under the reformulated and conventional gasoline programs, as applicable.

Violation Provisions

§ 80.1005 What acts are prohibited under the gasoline toxics program?

No person shall:

(a) *Averaging violation.* Produce or import gasoline subject to this subpart that does not comply with the applicable toxics requirement under § 80.815.

(b) *Causing an averaging use violation.* Cause another person to commit an act in violation of paragraph (a) of this section.

§ 80.1010 [Reserved]

§ 80.1015 Who is liable for violations under the gasoline toxics program?

(a) *Persons liable for violations of prohibited acts*—(1) *Averaging violation.* Any person who violates § 80.1005(a) is liable for the violation.

(2) *Causing an averaging violation.* Any person who causes another party to violate § 80.1005(a), is liable for a violation of § 80.1005(b).

(3) *Parent corporation liability.* Any parent corporation is liable for any violations of this subpart that are committed by any of its wholly-owned subsidiaries.

(b) *Persons liable for failure to meet other provisions of this subpart.* (1) Any person who fails to meet a provision of this subpart not addressed in paragraph (a) of this section is liable for a violation of that provision.

(2) Any person who causes another party to fail to meet a requirement of this subpart not addressed in paragraph (a) of this section, is liable for causing a violation of that provision.

§ 80.1020 [Reserved]

§ 80.1025 What penalties apply under this subpart?

(a) Any person liable for a violation under § 80.1015 is subject to civil penalties as specified in sections 205 and 211(d) of the Clean Air Act for every day of each such violation and the amount of economic benefit or savings resulting from each violation.

(b) Any person liable under § 80.1015(a) for a violation of the applicable toxics requirements or causing another party to violate the requirements during any averaging period, is subject to a separate day of violation for each and every day in the averaging period.

(c) Any person liable under § 80.1015(b) for failure to meet, or causing a failure to meet, a provision of this subpart is liable for a separate day of violation for each and every day such provision remains unfulfilled.

Provisions for Foreign Refiners With Individual Toxics Baselines

§ 80.1030 What are the requirements for gasoline produced at foreign refineries having individual refiner toxics baselines?

(a) *Definitions.* (1) A *foreign refinery* is a refinery that is located outside the United States, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands (collectively referred to in this section as ''the United States'').

(2) A *foreign refiner* is a person who meets the definition of refiner under § 80.2(i) for a foreign refinery.

(3) *Toxics-FRGAS* means gasoline produced at a foreign refinery that has been assigned an individual refinery toxics baseline under § 80.915 and that is imported into the U.S.

(4) *Non-Toxics-FRGAS* means gasoline that is produced at a foreign refinery that has not been assigned an individual refinery toxics baseline, gasoline produced at a foreign refinery with an individual refinery toxics baseline that is not imported into the United States, and gasoline produced at a foreign refinery with an individual toxics baseline during a year when the foreign refiner has opted to not participate in the Toxics-FRGAS program under paragraph (c)(3) of this section.

(5) *Certified Toxics-FRGAS* means Toxics-FRGAS the foreign refiner intends to include in the foreign refinery's toxics compliance calculations under § 80.825, and does include in these compliance calculations when reported to EPA.

(6) *Non-Certified Toxics-FRGAS* means Toxics-FRGAS that is not Certified Toxics-FRGAS.

(b) *Baseline establishment.* Any foreign refiner may submit a petition to the Administrator for an individual refinery toxics baseline pursuant to § 80.915 for all gasoline that was produced at the foreign refinery and imported into the United States between January 1, 1998 and December 31, 2000.

(1) The refiner shall follow the procedures specified in §§ 80.91 through 80.93 to establish an anti-dumping baseline, if it does not already have such a baseline.

(2) In making determinations for foreign refinery baselines, EPA will consider all information supplied by a foreign refiner, and in addition may rely on any and all appropriate assumptions necessary to make such determinations.

(3)(i) Where a foreign refiner submits a petition that is incomplete or inadequate to establish an accurate toxics baseline, and the refiner fails to cure this defect after a request for more information, EPA will not assign an individual refinery toxics baseline.

(ii) If a foreign refiner does not already have an anti-dumping individual baseline per § 80.94, and if pursuant to § 80.94(b)(5) EPA does not assign an individual anti-dumping baseline, EPA will also not assign an individual refinery toxics baseline.

(c) *General requirements for foreign refiners with individual refinery toxics baselines.* A foreign refiner of a refinery that has been assigned an individual toxics baseline according to § 80.915 shall designate all gasoline produced at the foreign refinery that is exported to the United States as either Certified Toxics-FRGAS or as Non-Certified Toxics-FRGAS, except as provided in paragraph (c)(3) of this section.

(1) In the case of Certified Toxics-FRGAS, the foreign refiner shall meet all provisions that apply to refiners under this subpart J.

(2) In the case of Non-Certified Toxics-FRGAS, the foreign refiner shall meet all the following provisions, except the foreign refiner shall use the name Non-Certified Toxics-FRGAS instead of the names ''reformulated gasoline'' or ''RBOB'' wherever they appear in the following provisions:

(i) The designation requirements in this section.

(ii) The recordkeeping requirements under § 80.985.

(iii) The reporting requirements in § 80.990 and this section.

(iv) The product transfer document requirements in this section.

(v) The prohibitions in this section and § 80.1005.

(vi) The independent audit requirements under § 80.1035, paragraph (h) of this section, §§ 80.125 through 80.127, § 80.128(a), (b), (c), (g) through (i), and § 80.130.

(3)(i) Any foreign refiner that has been assigned an individual toxics baseline for a foreign refinery under § 80.915 may elect to classify no gasoline imported into the United States as Toxics-FRGAS, provided the foreign refiner notifies EPA of the election no later than November 1 of the prior calendar year.

(ii) An election under paragraph (c)(3)(i) of this section shall:

(A) Apply to an entire calendar year averaging period, and apply to all gasoline produced during the calendar year at the foreign refinery that is used in the United States; and

(B) Remain in effect for each succeeding calendar year averaging period, unless and until the foreign refiner notifies EPA of a termination of the election. The change in election shall take effect at the beginning of the next calendar year.

(4) In the case of information required under this section which would duplicate information submitted in accordance with § 80.94, the refiner may indicate that such information is also submitted in accordance with the requirements of this section. Duplicate submissions are not required.

(d) *Designation, product transfer documents, and foreign refiner certification.* (1) Any foreign refiner of a foreign refinery that has been assigned an individual toxics baseline shall designate each batch of Toxics-FRGAS as such at the time the gasoline is produced, unless the refiner has elected to classify no gasoline exported to the United States as Toxics-FRGAS under paragraph (c)(3)(i) of this section.

(2) On each occasion when any person transfers custody or title to any Toxics-FRGAS prior to its being imported into the United States, it shall include the following information as part of the product transfer document information in this section:

(i) Identification of the gasoline as Certified Toxics-FRGAS or as Non-Certified Toxics-FRGAS; and

(ii) The name and EPA refinery registration number of the refinery where the Toxics-FRGAS was produced.

(3) On each occasion when Toxics-FRGAS is loaded onto a vessel or other transportation mode for transport to the United States, the foreign refiner shall prepare a written verification for each batch of the Toxics-FRGAS that meets the following requirements:

(i) The verification shall include the report of the independent third party under paragraph (f) of this section, and the following additional information:

(A) The name and EPA registration number of the refinery that produced the Toxics-FRGAS;

(B) The identification of the gasoline as Certified Toxics-FRGAS or Non-Certified Toxics-FRGAS;

(C) The volume of Toxics-FRGAS being transported, in gallons;

(D) In the case of Certified Toxics-FRGAS:

(*1*) The toxics value as determined under paragraph (f) of this section; and

(*2*) A declaration that the Toxics-FRGAS is being included in the compliance calculations under § 80.825 for the refinery that produced the Toxics-FRGAS.

(ii) The verification shall be made part of the product transfer documents for the Toxics-FRGAS.

(e) *Transfers of Toxics-FRGAS to non-United States markets.* The foreign refiner is responsible to ensure that all gasoline classified as Toxics-FRGAS is imported into the United States. A foreign refiner may remove the Toxics-FRGAS classification, and the gasoline need not be imported into the United States, but only if:

(1)(i) The foreign refiner excludes:

(A) The volume of gasoline from the refinery's compliance calculations under § 80.825; and

(B) In the case of Certified Toxics-FRGAS, the volume and toxics value of the gasoline from the compliance calculations under § 80.825.

(ii) The exclusions under paragraph (e)(1)(i) of this section shall be on the basis of the toxics value and volumes determined under paragraph (f) of this section; and

(2) The foreign refiner obtains sufficient evidence in the form of documentation that the gasoline was not imported into the United States.

(f) *Load port independent sampling, testing and refinery identification.* (1) On each occasion Toxics-FRGAS is loaded onto a vessel for transport to the United States a foreign refiner shall have an independent third party:

(i) Inspect the vessel prior to loading and determine the volume of any tank bottoms;

(ii) Determine the volume of Toxics-FRGAS loaded onto the vessel (exclusive of any tank bottoms present before vessel loading);

(iii) Obtain the EPA-assigned registration number of the foreign refinery;

(iv) Determine the name and country of registration of the vessel used to transport the Toxics-FRGAS to the United States; and

(v) Determine the date and time the vessel departs the port serving the foreign refinery.

(2) On each occasion Certified Toxics-FRGAS is loaded onto a vessel for transport to the United States a foreign refiner shall have an independent third party:

(i) Collect a representative sample of the Certified Toxics-FRGAS from each vessel compartment subsequent to loading on the vessel and prior to departure of the vessel from the port serving the foreign refinery;

(ii) Prepare a volume-weighted vessel composite sample from the compartment samples, and determine the value for toxics using the methodology specified in § 80.730 by:

(A) The third party analyzing the sample; or

(B) The third party observing the foreign refiner analyze the sample;

(iii) Review original documents that reflect movement and storage of the Certified Toxics-FRGAS from the refinery to the load port, and from this review determine:

(A) The refinery at which the Toxics-FRGAS was produced; and

(B) That the Toxics-FRGAS remained segregated from:

(*1*) Non-Toxics-FRGAS and Non-Certified Toxics-FRGAS; and

(*2*) Other Certified Toxics-FRGAS produced at a different refinery.

(3) The independent third party shall submit a report:

(i) To the foreign refiner containing the information required under paragraphs (f)(1) and (2) of this section, to accompany the product transfer documents for the vessel; and

(ii) To the Administrator containing the information required under paragraphs (f)(1) and (2) of this section, within thirty days following the date of the independent third party's inspection. This report shall include a description of the method used to determine the identity of the refinery at which the gasoline was produced, assurance that the gasoline remained segregated as specified in paragraph (n)(1) of this section, and a description of the gasoline's movement and storage between production at the source refinery and vessel loading.

(4) The independent third party shall:

(i) Be approved in advance by EPA, based on a demonstration of ability to perform the procedures required in this paragraph (f);

(ii) Be independent under the criteria specified in § 80.65(e)(2)(iii); and

(iii) Sign a commitment that contains the provisions specified in paragraph (i) of this section with regard to activities, facilities and documents relevant to compliance with the requirements of this paragraph (f).

(g) *Comparison of load port and port of entry testing.* (1)(i) Except as described in paragraph (g)(1)(ii) of this section, any foreign refiner and any United States importer of Certified Toxics-FRGAS shall compare the results from the load port testing under paragraph (f) of this section, with the port of entry testing as reported under paragraph (o) of this section, for the volume of gasoline and the toxics value.

(ii) Where a vessel transporting Certified Toxics-FRGAS off loads this gasoline at more than one United States port of entry, and the conditions of paragraph (g)(2)(i) of this section are met at the first United States port of entry, the requirements of paragraph (g)(2) of this section do not apply at subsequent ports of entry if the United States importer obtains a certification from the vessel owner, that meets the requirements of paragraph (s) of this section, that the vessel has not loaded any gasoline or blendstock between the first United States port of entry and the subsequent port of entry.

(2)(i) The requirements of this paragraph (g)(2) apply if:

(A) The temperature-corrected volumes determined at the port of entry and at the load port differ by more than one percent; or

(B) The toxics value determined at the port of entry is higher than the toxics value determined at the load port, and the amount of this difference is greater than the reproducibility amount specified for the port of entry test result by the American Society of Testing and Materials (ASTM).

(ii) The United States importer and the foreign refiner shall treat the gasoline as Non-Certified Toxics-FRGAS, and the foreign refiner shall exclude the gasoline volume and properties from its gasoline toxics compliance calculations under § 80.825.

(h) *Attest requirements.* The following additional procedures shall be carried out by any foreign refiner of Toxics-FRGAS as part of the applicable attest engagement for each foreign refinery under § 80.1035:

(1) The inventory reconciliation analysis under § 80.128(b) and the tender analysis under § 80.128(c) shall include Non-Toxics-FRGAS in addition to the gasoline types listed in § 80.128(b) and (c).

(2) Obtain separate listings of all tenders of Certified Toxics-FRGAS, and of Non-Certified Toxics-FRGAS. Agree the total volume of tenders from the listings to the gasoline inventory reconciliation analysis in § 80.128(b), and to the volumes determined by the third party under paragraph (f)(1) of this section.

(3) For each tender under paragraph (h)(2) of this section where the gasoline is loaded onto a marine vessel, report as a finding the name and country of registration of each vessel, and the volumes of Toxics-FRGAS loaded onto each vessel.

(4) Select a sample from the list of vessels identified in paragraph (h)(3) of this section used to transport Certified Toxics-FRGAS, in accordance with the guidelines in § 80.127, and for each vessel selected perform the following:

(i) Obtain the report of the independent third party, under paragraph (f) of this section, and of the United States importer under paragraph (o) of this section.

(A) Agree the information in these reports with regard to vessel identification, gasoline volumes and test results.

(B) Identify, and report as a finding, each occasion the load port and port of entry parameter and volume results differ by more than the amounts allowed in paragraph (g) of this section, and determine whether the foreign refiner adjusted its refinery calculations as required in paragraph (g) of this section.

(ii) Obtain the documents used by the independent third party to determine transportation and storage of the Certified Toxics-FRGAS from the refinery to the load port, under paragraph (f) of this section. Obtain tank activity records for any storage tank where the Certified Toxics-FRGAS is stored, and pipeline activity records for any pipeline used to transport the Certified Toxics-FRGAS, prior to being loaded onto the vessel. Use these records to determine whether the Certified Toxics-FRGAS was produced at the refinery that is the subject of the attest engagement, and whether the Certified Toxics-FRGAS was mixed with any Non-Certified Toxics-FRGAS, Non-Toxics-FRGAS, or any Certified Toxics-FRGAS produced at a different refinery.

(5) Select a sample from the list of vessels identified in paragraph (h)(3) of this section used to transport Certified and Non-Certified Toxics-FRGAS, in accordance with the guidelines in § 80.127, and for each vessel selected perform the following:

(i) Obtain a commercial document of general circulation that lists vessel arrivals and departures, and that includes the port and date of departure of the vessel, and the port of entry and date of arrival of the vessel.

(ii) Agree the vessel's departure and arrival locations and dates from the independent third party and United States importer reports to the information contained in the commercial document.

(6) Obtain separate listings of all tenders of Non-Toxics-FRGAS, and perform the following:

(i) Agree the total volume of tenders from the listings to the gasoline inventory reconciliation analysis in § 80.128(b).

(ii) Obtain a separate listing of the tenders under this paragraph (h)(6) where the gasoline is loaded onto a marine vessel. Select a sample from this listing in accordance with the guidelines in § 80.127, and obtain a commercial document of general circulation that lists vessel arrivals and departures, and that includes the port and date of departure and the ports and dates where the gasoline was off loaded for the selected vessels. Determine and report as a finding the country where the gasoline was off loaded for each vessel selected.

(7) In order to complete the requirements of this paragraph (h) an auditor shall:

(i) Be independent of the foreign refiner;

(ii) Be licensed as a Certified Public Accountant in the United States and a citizen of the United States, or be approved in advance by EPA based on a demonstration of ability to perform the procedures required in §§ 80.125 through 80.130 and this paragraph (h); and

(iii) Sign a commitment that contains the provisions specified in paragraph (i) of this section with regard to activities and documents relevant to compliance with the requirements of §§ 80.125 through 80.130, § 80.1035 and this paragraph (h).

(i) *Foreign refiner commitments.* Any foreign refiner shall commit to and comply with the provisions contained in this paragraph (i) as a condition to being assigned an individual refinery toxics baseline.

(1) Any United States Environmental Protection Agency inspector or auditor will be given full, complete and immediate access to conduct inspections and audits of the foreign refinery.

(i) Inspections and audits may be either announced in advance by EPA, or unannounced.

(ii) Access will be provided to any location where:

(A) Gasoline is produced;

(B) Documents related to refinery operations are kept;

(C) Gasoline or blendstock samples are tested or stored; and

(D) Toxics-FRGAS is stored or transported between the foreign refinery and the United States, including storage tanks, vessels and pipelines.

(iii) Inspections and audits may be by EPA employees or contractors to EPA.

(iv) Any documents requested that are related to matters covered by inspections and audits will be provided to an EPA inspector or auditor on request.

(v) Inspections and audits by EPA may include review and copying of any documents related to:

(A) Refinery baseline establishment, including the volume and toxics value, and transfers of title or custody, of any gasoline or blendstocks, whether Toxics-FRGAS or Non-toxics-FRGAS, produced at the foreign refinery during the period January 1, 1998 through the date of the refinery baseline petition or through the date of the inspection or audit if a baseline petition has not been approved, and any work papers related to refinery baseline establishment;

(B) The volume and toxics value of Toxics-FRGAS;

(C) The proper classification of gasoline as being Toxics-FRGAS or as not being Toxics-FRGAS, or as Certified Toxics-FRGAS or as Non-Certified Toxics-FRGAS;

(D) Transfers of title or custody to Toxics-FRGAS;

(E) Sampling and testing of Toxics-FRGAS;

(F) Work performed and reports prepared by independent third parties and by independent auditors under the requirements of this section and § 80.1035 including work papers; and

(G) Reports prepared for submission to EPA, and any work papers related to such reports.

(vi) Inspections and audits by EPA may include taking samples of gasoline or blendstock, and interviewing employees.

(vii) Any employee of the foreign refiner will be made available for interview by the EPA inspector or auditor, on request, within a reasonable time period.

(viii) English language translations of any documents will be provided to an EPA inspector or auditor, on request, within 10 working days.

(ix) English language interpreters will be provided to accompany EPA inspectors and auditors, on request.

(2) An agent for service of process located in the District of Columbia will be named, and service on this agent constitutes service on and personal and subject matter jurisdiction in the United States over the foreign refiner or any employee of the foreign refiner for any action by EPA or otherwise by the United States related to the requirements of this subpart J.

(3) A foreign refiner shall be subject to civil liability for violations of this section, sections 114, 202(l), 211, and 301(a) of the Clean Air Act, as amended (42 U.S.C. 7414, 7521(l), 7545 and 7601(a)), and all other applicable laws or regulations and shall be subject to the provisions thereof. The Administrator may assess a penalty against a foreign refiner for any violation of this section by a foreign refiner, in the manner set forth in sections 205(c) of the CAA, 42 U.S.C. 7524(c) or commence a civil action against a foreign refiner to assess and recover a civil penalty in the manner set forth in section 205(b) of the CAA, 42 U.S.C. 7524(b). A FR shall be subject to criminal liability for violations of this section, section 113(c)(2) of the CAA, 42 U.S.C. 7413(c)(2), 18 U.S.C. 1001 and all other applicable provisions and shall be subject to the provisions thereof.

(4) United States substantive and procedural laws shall apply to any civil or criminal enforcement action against the foreign refiner or any employee of the foreign refiner related to the provisions of this section.

(5) Submitting a petition for an individual refinery toxics baseline, producing and exporting gasoline under an individual refinery toxics baseline, and all other actions to comply with the requirements of this subpart J relating to the establishment and use of an individual refinery toxics baseline constitute actions or activities that satisfy the provisions of 28 U.S.C. 1605(a)(2), but solely with respect to actions instituted against the foreign refiner, its agents and employees in any court or other tribunal in the United States for conduct that violates the requirements applicable to the foreign refiner under this subpart J, including conduct that violates Title 18 U.S.C. section 1001 and Clean Air Act section 113(c)(2).

(6) The foreign refiner, or its agents or employees, will not seek to detain or to impose civil or criminal remedies against EPA inspectors or auditors, whether EPA employees or EPA contractors, for actions performed within the scope of EPA employment related to the provisions of this section.

(7) The commitment required by this paragraph (i) shall be signed by the owner or president of the foreign refiner business.

(8) In any case where Toxics-FRGAS produced at a foreign refinery is stored or transported by another company between the refinery and the vessel that transports the Toxics-FRGAS to the United States, the foreign refiner shall obtain from each such other company a commitment that meets the requirements specified in paragraphs (i)(1) through (7) of this section, and these commitments shall be included in the foreign refiner's baseline petition.

(j) *Sovereign immunity.* By submitting a petition for an individual foreign refinery baseline under this section, or by producing and exporting gasoline to the United States under an individual refinery toxics baseline under this section, the foreign refiner, its agents and employees, without exception, become subject to the full operation of the administrative and judicial enforcement powers and provisions of the United States without limitation based on sovereign immunity, with respect to actions instituted against the foreign refiner, its agents and employees in any court or other tribunal in the United States for conduct that violates the requirements applicable to the foreign refiner under this subpart J, including conduct that violates Title 18 U.S.C. section 1001 and Clean Air Act section 113(c)(2).

(k) *Bond posting.* Any foreign refiner shall meet the requirements of this paragraph (k) as a condition to being assigned an individual refinery toxics baseline.

(1) The foreign refiner shall annually post a bond of the amount calculated using the following equation:

$$Bond = G \times \$\,0.01 - Bond_{CG}$$

Where:

Bond = amount of the bond in U. S. dollars.

G = the largest volume of gasoline produced at the foreign refinery and exported to the United States, in gallons, during a single calendar year among the five preceding calendar years.

$Bond_{CG}$ = amount of bond currently posted by the refinery pursuant to § 80.94.

(2) Bonds shall be posted by:

(i) Paying the amount of the bond to the Treasurer of the United States;

(ii) Obtaining a bond in the proper amount from a third party surety agent that is payable to satisfy United States administrative or judicial judgments against the foreign refiner, provided EPA agrees in advance as to the third party and the nature of the surety agreement; or

(iii) An alternative commitment that results in assets of an appropriate liquidity and value being readily available to the United States, provided EPA agrees in advance as to the alternative commitment.

(3) If the bond amount for a foreign refinery increases, the foreign refiner shall increase the bond to cover the shortfall within 90 days of the date the bond amount changes. If the bond amount decreases, the foreign refiner may reduce the amount of the bond beginning 90 days after the date the bond amount changes.

(4) Bonds posted under this paragraph (k) shall:

(i) Be used to satisfy any judicial or administrative judgment, order, assessment or payment under a judicial or administrative settlement agreement that results from an administrative or judicial enforcement action for conduct in violation of this subpart J, including where such conduct violates Title 18 U.S.C. section 1001 and Clean Air Act section 113(c)(2);

(ii) Be provided by a corporate surety that is listed in the United States Department of Treasury Circular 570 ''Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds'; and

(iii) Include a commitment that the bond will remain in effect for at least five (5) years following the end of latest averaging period that the foreign refiner produces gasoline pursuant to the requirements of this subpart J.

(5) On any occasion a foreign refiner bond is used to satisfy any judgment or other obligation, the foreign refiner shall increase the bond to cover the amount used within 90 days of the date the bond is used.

(6) The bond is used for payment of, not in lieu of, any obligation arising under any judgment, order, assessment or settlement agreement. Nothing herein is intended to waive any portion of any obligation except what portion is actually paid by use of funds from the bond.

(l) [Reserved]

(m) *English language reports.* Any report or other document submitted to EPA by a foreign refiner shall be in English language, or shall include an English language translation.

(n) *Prohibitions.* (1) No person may combine Certified Toxics-FRGAS with any Non-Certified Toxics-FRGAS or Non-Toxics-FRGAS, and no person may combine Certified Toxics-FRGAS with any Certified Toxics-FRGAS produced at a different refinery, until the importer has met all the requirements of paragraph (o) of this section, except as provided in paragraph (e) of this section.

(2) No foreign refiner or other person may cause another person to commit an action prohibited in paragraph (n)(1) of this section, or that otherwise violates the requirements of this section.

(o) *United States importer requirements.* Any United States importer shall meet the following requirements:

(1) Each batch of imported gasoline shall be classified by the importer as being Toxics-FRGAS or as Non-Toxics-FRGAS, and each batch classified as Toxics-FRGAS shall be further classified as Certified Toxics-FRGAS or as Non-Certified Toxics-FRGAS.

(2) Gasoline shall be classified as Certified Toxics-FRGAS or as Non-Certified Toxics-FRGAS according to the designation by the foreign refiner if this designation is supported by product transfer documents prepared by the foreign refiner as required in paragraph (d) of this section, unless the gasoline is classified as Non-Certified Toxics-FRGAS under paragraph (g) of this section.

(3) For each gasoline batch classified as Toxics-FRGAS, any United States importer shall perform the following procedures:

(i) In the case of both Certified and Non-Certified Toxics-FRGAS, have an independent third party:

(A) Determine the volume of gasoline in the vessel;

(B) Use the foreign refiner's Toxics-FRGAS certification to determine the name and EPA-assigned registration number of the foreign refinery that produced the Toxics-FRGAS;

(C) Determine the name and country of registration of the vessel used to transport the Toxics-FRGAS to the United States; and

(D) Determine the date and time the vessel arrives at the United States port of entry.

(ii) In the case of Certified Toxics-FRGAS, have an independent third party:

(A) Collect a representative sample from each vessel compartment subsequent to the vessel's arrival at the United States port of entry and prior to off loading any gasoline from the vessel;

(B) Prepare a volume-weighted vessel composite sample from the compartment samples; and

(C) Determine the toxics value using the methodologies specified in § 80.730, by:

(*1*) The third party analyzing the sample; or

(*2*) The third party observing the importer analyze the sample.

(4) Any importer shall submit reports within thirty days following the date any vessel transporting Toxics-FRGAS arrives at the United States port of entry:

(i) To the Administrator containing the information determined under paragraph (o)(3) of this section; and

(ii) To the foreign refiner containing the information determined under paragraph (o)(3)(ii) of this section.

(5) Any United States importer shall meet the requirements specified in § 80.815 for any imported gasoline that is not classified as Certified Toxics-FRGAS under paragraph (o)(2) of this section.

(p) *Truck Imports of Certified Toxics-FRGAS produced at a Refinery* (1) Any refiner whose Certified Toxics-FRGAS is transported into the United States by truck may petition EPA to use alternative procedures to meet the following requirements:

(i) Certification under paragraph (d)(5) of this section;

(ii) Load port and port of entry sampling and testing under paragraphs (f) and (g) of this section;

(iii) Attest under paragraph (h) of this section; and

(iv) Importer testing under paragraph (o)(3) of this section.

(2) These alternative procedures shall ensure Certified Toxics-FRGAS remains segregated from Non-Certified Toxics-FRGAS and from Non-Toxics-FRGAS until it is imported into the United States. The petition will be evaluated based on whether it adequately addresses the following:

(i) Provisions for monitoring pipeline shipments, if applicable, from the refinery, that ensure segregation of Certified Toxics-FRGAS from that refinery from all other gasoline;

(ii) Contracts with any terminals and/or pipelines that receive and/or transport Certified Toxics-FRGAS, that prohibit the commingling of Certified Toxics-FRGAS with any of the following:

(A) Other Certified Toxics-FRGAS from other refineries.

(B) All Non-Certified Toxics-FRGAS.

(C) All Non-Toxics-FRGAS;

(iii) Procedures for obtaining and reviewing truck loading records and United States import documents for Certified Toxics-FRGAS to ensure that such gasoline is only loaded into trucks making deliveries to the United States;

(iv) Attest procedures to be conducted annually by an independent third party that review loading records and import documents based on volume reconciliation, or other criteria, to confirm that all Certified Toxics-FRGAS remains segregated throughout the distribution system and is only loaded into trucks for import into the United States.

(3) The petition required by this section shall be submitted to EPA along with the application for small refiner status and individual refinery toxics baseline and standards under § 80.240 and this section.

(q) *Withdrawal or suspension of a foreign refinery's baseline.* EPA may withdraw or suspend a baseline that has been assigned to a foreign refinery where:

(1) A foreign refiner fails to meet any requirement of this section;

(2) A foreign government fails to allow EPA inspections as provided in paragraph (i)(1) of this section;

(3) A foreign refiner asserts a claim of, or a right to claim, sovereign immunity in an action to enforce the requirements in this subpart J; or

(4) A foreign refiner fails to pay a civil or criminal penalty that is not satisfied using the foreign refiner bond specified in paragraph (k) of this section.

(r) *Early use of a foreign refinery baseline.* (1) A foreign refiner may begin using an individual refinery baseline before EPA has approved the baseline, provided that:

(i) A baseline petition has been submitted as required in paragraph (b) of this section;

(ii) EPA has made a provisional finding that the baseline petition is complete;

(iii) The foreign refiner has made the commitments required in paragraph (i) of this section;

(iv) The persons who will meet the independent third party and independent attest requirements for the foreign refinery have made the commitments required in paragraphs (f)(3)(iii) and (h)(7)(iii) of this section; and

(v) The foreign refiner has met the bond requirements of paragraph (k) of this section.

(2) In any case where a foreign refiner uses an individual refinery baseline before final approval under paragraph (r)(1) of this section, and the foreign refinery baseline values that ultimately are approved by EPA are more stringent than the early baseline values used by the foreign refiner, the foreign refiner shall recalculate its compliance, ab initio, using the baseline values approved by EPA, and the foreign refiner shall be liable for any resulting violation of the gasoline toxics requirements.

(s) *Additional requirements for petitions, reports and certificates.* Any petition for a refinery baseline under § 80.915, any alternative procedures under paragraph (r) of this section, any report or other submission required by paragraph (c), (f)(2), or (i) of this section, and any certification under paragraph (d)(3) of this section shall be:

(1) Submitted in accordance with procedures specified by the Administrator, including use of any forms that may be specified by the Administrator.

(2) Be signed by the president or owner of the foreign refiner company, or by that person's immediate designee, and shall contain the following declaration:

I hereby certify: (1) That I have actual authority to sign on behalf of and to bind [insert name of foreign refiner] with regard to all statements contained herein; (2) that I am aware that the information contained herein is being certified, or submitted to the United States Environmental Protection Agency, under the requirements of 40 CFR Part 80, subpart J, and that the information is material for determining compliance under these regulations; and (3) that I have read and understand the information being certified or submitted, and this information is true, complete and correct to the best of my knowledge and belief after I have taken reasonable and appropriate steps to verify the accuracy thereof.

I affirm that I have read and understand the provisions of 40 CFR Part 80, subpart J, including 40 CFR 80.1030 [insert name of foreign refiner]. Pursuant to Clean Air Act section 113(c) and Title 18, United States Code, section 1001, the penalty for furnishing false, incomplete or misleading information in this certification or submission is a fine of up to $10,000, and/or imprisonment for up to five years.

Attest Engagements

§ 80.1035 What are the attest engagement requirements for gasoline toxics compliance applicable to refiners and importers?

In addition to the requirements for attest engagements that apply to refiners and importers under §§ 80.125 through 80.130, and § 80.1030, the attest engagements for refiners and importers applicable to this subpart J shall include the following procedures and requirements each year, which should be applied separately to reformulated gasoline (and RBOB, combined) and conventional gasoline:

(a) Obtain the EPA toxics baseline approval letter for the refinery to determine the refinery's applicable baseline toxics value and baseline toxics volume under § 80.915.

(b) Obtain a written representation from the company representative stating the toxics value(s) that the company used as its baseline(s) and agree that number to paragraph (a) of this section.

(c) Obtain and read a copy of the refinery's or importer's annual toxics reports per §§ 1A80.75(e) and 80.105 filed with EPA for the year to determine the compliance baseline and incremental volume.

(d) Agree the yearly volume of gasoline reported to EPA in the toxics reports with the inventory reconciliation analysis under § 80.128.

(e) Calculate the annual average toxics value level for each type of gasoline specified at § 80.815(b) and agree the applicable values with the values reported to EPA.

(f) Calculate the difference between the yearly volume of gasoline reported to EPA and the baseline volume, if applicable, to determine the yearly incremental volume and agree that value with the value reported to EPA.

(g) Calculate the compliance baseline per § 80.850, and agree that value with the value reported to EPA.

§ 80.1040 [Reserved]

Additional Rulemaking

§ 80.1045 What additional rulemaking will EPA conduct?

No later than July 1, 2003, the Administrator shall propose any requirements to control hazardous air pollutants from motor vehicles and motor vehicle fuels that the Administrator determines are appropriate pursuant to section 202(l)(2) of the Act. The Administrator will take final action on such proposal no later than July 1, 2004. During this rulemaking, EPA also intends to evaluate emissions and potential strategies relating to hazardous air pollutants from nonroad engines and vehicles.

PART 86—CONTROL OF EMISSIONS FROM NEW AND IN–USE HIGHWAY VEHICLES AND ENGINES

1. The authority citation for part 86 is revised to read as follows:

Authority: 42 U.S.C. 7401–7521(l) and 7521(m)–7671q.

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