§ 79.56 Fuel and fuel additive grouping system.

(a) Manufacturers of fuels and fuel additives are allowed to satisfy the testing requirements in §§79.52, 79.53, and 79.54 and the associated reporting requirements in §79.59 on an individual or group basis, provided that such products meet the criteria in this section for enrollment in the same fuel/additive group. However, each manufacturer of a fuel or fuel additive must individually comply with the notification requirements of §79.59(b). Further, if a manufacturer elects to comply by participation in a group, each manufacturer continues to be individually subject to the information requirements of this subpart.

(1) The use of the grouping provision to comply with Tier 1 and Tier 2 testing requirements is voluntary. No manufacturer is prohibited from testing and submitting its own data for its own product registration, despite its qualification for membership in a particular group.

(2) The only groups permitted are those established in this section.

(b) Each manufacturer who chooses to enroll a fuel or fuel additive in a group of similar fuels and fuel additives as designated in this section may satisfy the registration requirements through a group submission of jointly-sponsored testing and analysis conducted on a product which is representative of all products in that group, provided that the group representative is chosen according to the specifications in this section.

(3) The ethanol base fuel shall meet the specifications listed in table F94-4.

**Table F94-4—Ethanol Base Fuel Properties**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Grade EtOH, vol% min</td>
<td>85</td>
</tr>
<tr>
<td>Gasoline Base Fuel, vol%</td>
<td>15</td>
</tr>
<tr>
<td>Chlorine (as chloride), wt% max</td>
<td>0.0004</td>
</tr>
<tr>
<td>Copper, mg/L, max</td>
<td>0.07</td>
</tr>
<tr>
<td>Water, wt% max</td>
<td>0.5</td>
</tr>
<tr>
<td>Sulfur, wt% max</td>
<td>0.004</td>
</tr>
</tbody>
</table>

(f) Methane Base Fuel. (1) The methane base fuel is a gaseous motor vehicle fuel marketed commercially as compressed natural gas (CNG), whose primary constituent is methane.

(2) The methane base fuel shall contain no elements other than carbon, hydrogen, oxygen, nitrogen, and sulfur. The fuel shall contain an odorant additive for leak detection purposes. The added odorant shall be used at a level such that, at ambient conditions, the fuel must have a distinctive odor potent enough for its presence to be detected down to a concentration in air of not over 1/5 (one-fifth) of the lower limit of flammability. After addition of the odorant, the methane base fuel shall contain no more than 16 ppm sulfur by volume.

(3) The methane base fuel shall meet the specifications listed in table F94-5.

**Table F94-5—Methane Base Fuel Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane, mole%, min</td>
<td>89.0</td>
</tr>
<tr>
<td>Ethane, mole%, max</td>
<td>4.5</td>
</tr>
<tr>
<td>Propane and higher HC, mole%, max</td>
<td>2.3</td>
</tr>
<tr>
<td>C6 and higher HC, mole%, max</td>
<td>0.2</td>
</tr>
<tr>
<td>Oxygen, mole%, max</td>
<td>0.6</td>
</tr>
<tr>
<td>Inert gases:</td>
<td></td>
</tr>
<tr>
<td>Sum of CO2 and N2, mole%, max</td>
<td>4.0</td>
</tr>
</tbody>
</table>

(g) Propane Base Fuel. (1) The propane base fuel is a gaseous motor vehicle fuel, marketed commercially as liquefied petroleum gas (LPG), whose primary constituent is propane.

(2) The propane base fuel may contain no elements other than carbon, hydrogen, oxygen, nitrogen, and sulfur. The fuel shall contain an odorant additive for leak detection purposes. The added odorant shall be used at a level such that at ambient conditions the fuel must have a distinctive odor potent enough for its presence to be detected down to a concentration in air of not over 1/5 (one-fifth) of the lower limit of flammability. After addition of the odorant, the propane base fuel shall contain no more than 120 ppm sulfur by weight.

(3) The propane base fuel shall meet the specifications listed in table F94-6.

**Table F94-6—Propane Base Fuel Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapor pressure at 100°F, psig max</td>
<td>208</td>
</tr>
<tr>
<td>Evaporative temperature, 95°F, °F, max</td>
<td>−37</td>
</tr>
<tr>
<td>Propane, vol%, min</td>
<td>92.5</td>
</tr>
<tr>
<td>Propylene, vol%, max</td>
<td>5.0</td>
</tr>
<tr>
<td>Butane and heavier, vol%, max</td>
<td>2.5</td>
</tr>
<tr>
<td>Residue-evaporation of 100mL, max, mL</td>
<td>0.05</td>
</tr>
<tr>
<td>Sulfur (including odorant additive) ppmw, max</td>
<td>123</td>
</tr>
</tbody>
</table>
(1) The health effects information submitted by a group shall be considered applicable to all fuels and fuel additives in the group. A fuel or fuel additive manufacturer who has chosen to participate in a group may subsequently choose to perform testing of such fuel or fuel additive on an individual basis; however, until such independent registration information has been received and reviewed by EPA, the information initially submitted by the group on behalf of the manufacturer’s fuel or fuel additive shall be considered applicable and valid for that fuel or fuel additive. It could therefore be used to support requirements for further testing under the provisions of Tier 3 or to support regulatory decisions affecting that fuel or fuel additive.

(2) Manufacturers are responsible for determining the appropriate groups for their products according to the criteria in this section and for enrolling their products into those groups under industry-sponsored or other independent brokering arrangements.

(3) Manufacturers who enroll a fuel or fuel additive into a group shall share the applicable costs according to appropriate arrangements established by the group. The organization and administration of group functions and the development of cost-sharing arrangements are the responsibility of the participating manufacturers. If manufacturers are unable to agree on fair and equitable cost sharing arrangements and if such dispute is referred by one or more manufacturers to EPA for resolution, then the provisions in §79.56(c) (1) and (2) shall apply.

(c) In complying with the registration requirements for a given fuel or fuel additive, notwithstanding the enrollment of such fuel or additive in a group, a manufacturer may make use of available information for any product which conforms to the same grouping criteria as the given product. If, for this purpose, a manufacturer wishes to rely upon the information previously submitted by another manufacturer (or group of manufacturers) for registration of a similar product (or group of products), then the previous submitter is entitled to reimbursement by the manufacturer for an appropriate portion of the applicable costs incurred to obtain and report such information. Such entitlement shall remain in effect for a period of fifteen years following the date on which the original information was submitted. Pursuant to §79.59(b)(4)(ii), the manufacturer who relies on previously-submitted registration data shall certify to EPA that the original submitter has been notified and that appropriate reimbursement arrangements have been made.

(1) When private efforts have failed to resolve a dispute about a fair amount or method of cost-sharing or reimbursement for testing costs incurred under this subpart, then any party involved in that dispute may initiate a hearing by filing two signed copies of a request for a hearing with a regional office of the American Arbitration Association and mailing a copy of the request to EPA. A copy must also be sent to each person from whom the filing party seeks reimbursement or who seeks reimbursement from that party. The information and fees to be included in the request for hearing are specified in 40 CFR 791.20(b) and (c).

(2) Additional procedures and requirements governing the hearing process are those specified in 40 CFR 791.22 through 791.50, 791.60, 791.85, and 791.105, excluding 40 CFR 791.39(a)(3) and 791.48(d).

(d) Basis for classification. (1) Rather than segregating fuels and fuel additives into separate groups, the grouping system applies the same grouping criteria and creates a single set of groups applicable both to fuels and fuel additives.

(2) Fuels shall be classified pursuant to §79.56(e) into categories and groups of similar fuels and fuel additives according to the components and characteristics of such fuels in their uncombusted state. The classification of a fuel product must take into account the components of all bulk fuel additives which are listed in the registration application or basic registration data submitted for the fuel product.

(3) Fuel additives shall be classified pursuant to §79.56(e) into categories and groups of similar fuels and fuel additives according to the components and characteristics of the respective
uncombusted additive/base fuel mixture pursuant to §79.51(h)(1).

(4) In determining the category and group to which a fuel or fuel additive belongs, impurities present in trace amounts shall be ignored unless otherwise noted. Impurities are those substances which are present through contamination or which remain in the fuel or additive naturally after processing is completed.


(ii) This incorporation by reference was 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 (ASTM), 1916 Race Street, Philadelphia, PA 19103. Copies may be inspected at U.S. EPA, OAR, 401 M Street SW., Washington, DC 20460 or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(e) Grouping criteria. The grouping system is represented by a matrix of three fuel/additive categories within six specified fuel families (see table F94–7, Grouping System for Fuels and Fuel Additives). Each category may include one or more groups. Within each group, a representative may be designated based on the criteria in this section and joint registration information may be developed and submitted for member fuels and fuel additives.

<table>
<thead>
<tr>
<th>Category</th>
<th>Conventional Fuel Families</th>
<th>Alternative Fuel Families</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gasoline (A)</td>
<td>Methanol (C)</td>
</tr>
<tr>
<td></td>
<td>Diesel (B)</td>
<td>Ethanol (D)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Methane (CNG, LNG) (E)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Propane (LPG) (F)</td>
</tr>
<tr>
<td>Baseline</td>
<td>One group represented by gasoline base fuel</td>
<td>One group represented by diesel base fuel</td>
</tr>
<tr>
<td>Non-base-line</td>
<td>One group for each gasoline-oxygenate blend or each gasoline-methanol/co-solvent blend; one group for each synthetic derived fuel</td>
<td>One group for each oxygen contributing compound or class of compounds; one group for each synthetic crude-derived fuel</td>
</tr>
<tr>
<td>Category</td>
<td>Conventional Fuel Families</td>
<td>Alternative Fuel Families</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td></td>
<td>Gasoline (A)</td>
<td>Methanol (C)</td>
</tr>
<tr>
<td></td>
<td>Diesel (B)</td>
<td>Ethanol (D)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Methane (CNG, LNG) (E)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Propane (LPG) (F)</td>
</tr>
<tr>
<td>Atypical ...</td>
<td>One group for each atypical element/characteristic, or unique combination of atypical elements/characteristics.</td>
<td>One group for each atypical element/characteristic, or unique combination of atypical elements/characteristics.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>One group for each atypical element/characteristic, or unique combination of atypical elements/characteristics.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>One group for each atypical element/characteristic, or unique combination of atypical elements/characteristics.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>One group for each atypical element/characteristic, or unique combination of atypical elements/characteristics.</td>
</tr>
</tbody>
</table>

(1) **Fuel families.** Each of the following six fuel families (Table F94–7, columns A-F) includes fuels of the type referenced in the name of the family as well as bulk and aftermarket additives which are intended for use in those fuels. When applied to fuel additives, the criteria in these descriptions refer to the associated additive/base fuel mixture, pursuant to §79.51(h)(1). One or more base fuel formulations are specified for each fuel family pursuant to §79.55.

(i) The Gasoline Family includes fuels composed of more than 50 percent gasoline by volume and their associated fuel additives. The base fuel for this family is specified in §79.55(b).

(ii) The Diesel Family includes fuels composed of more than 50 percent diesel fuel by volume and their associated fuel additives. The Diesel fuel family includes both Diesel #1 and Diesel #2 formulations. The base fuel for this family is specified in §79.55(c).

(iii) The Methanol Family includes fuels composed of at least 50 percent methanol by volume and their associated fuel additives. The base fuel for this family is specified in §79.55(d).

(iv) The Ethanol Family includes fuels composed of at least 50 percent ethanol by volume and their associated fuel additives. The base fuel is specified in §79.55(e).

(v) The Methane Family includes compressed natural gas (CNG) and liquefied natural gas (LNG) fuels containing at least 50 mole percent methane and their associated fuel additives. The base fuel for the family is a CNG formulation specified in §79.55(f).

(vi) The Propane Family includes propane fuels containing at least 50 percent propane by volume and their associated fuel additives. The base fuel for this family is a liquefied petroleum gas (LPG) as specified in §79.55(g).

(vii) A manufacturer seeking registration for formulation(s) which do not fit the criteria for inclusion in any of the fuel families described in this section shall contact EPA at the address in §79.59(a)(1) for further guidance in classifying and testing such formulation(s).

(2) **Fuel/additive categories.** Fuel/additive categories (Table F94–7, rows 1–3) are subdivisions of fuel families which represent the degree to which fuels and fuel additives in the family resemble the base fuel(s) designated for the family. Three general category types are defined in this section. When applied to fuel additives, the criteria in these descriptions refer to the associated additive/base fuel mixture, pursuant to §79.51(h)(1).

(i) Baseline categories consist of fuels and fuel additives which contain no elements other than those permitted in the base fuel for the respective fuel family and conform to specified limitations on the amounts of certain components or characteristics applicable to that fuel family.

(ii) Non-Baseline Categories consist of fuels and fuel additives which contain no elements other than those permitted in the base fuel for the respective fuel family and conform to specified limitations on the amounts of certain components or characteristics applicable to that fuel family.

(iii) Atypical Categories consist of fuels and fuel additives which contain elements or classes of compounds other
than those permitted in the base fuel for the respective fuel family or which otherwise do not meet the criteria for either baseline or non-baseline formulations in that fuel family. A fuel or fuel additive product having both non-baseline and atypical characteristics pursuant to §79.56(e)(3), shall be considered to be an atypical product.

(3) This section defines the specific categories applicable to each fuel family. When applied to fuel additives, the criteria in these descriptions refer to the associated additive/base fuel mixture, pursuant to §79.51(h)(1).

(i) Gasoline Categories. (A) The Base-line Gasoline category contains gasoline fuels and associated additives which satisfy all of the following criteria:

(1) Contain no elements other than carbon, hydrogen, oxygen, nitrogen, and/or sulfur.

(2) Contain less than 1.5 percent oxygen by weight.

(3) Sulfur concentration is limited to 1000 ppm per the specifications cited in the following paragraph.

(4) Possess the physical and chemical characteristics of unleaded gasoline as specified by ASTM standard D 4814–93a (incorporated by reference, pursuant to paragraph (d)(5) of this section), in at least one Seasonal and Geographical Volatility Class.

(5) Derived only from conventional petroleum, heavy oil deposits, coal, tar sands, and/or oil sands.

(B) The Non-Baseline Gasoline category is comprised of gasoline fuels and associated additives which conform to the specifications in paragraph (e)(3)(i)(A) of this section for the Base-lineGasoline category except that they contain 1.0 percent or more oxygen by weight and/or may be derived from sources other than those listed in paragraph (e)(3)(i)(A)(5) of this section.

(C) The Atypical Gasoline category is comprised of gasoline fuels and associated additives which contain one or more elements other than carbon, hydrogen, oxygen, nitrogen, and sulfur.

(ii) Diesel Categories. (A) The Baseline Diesel category is comprised of diesel fuels and associated additives which conform to the specifications in paragraph (e)(3)(ii)(A) of this section for the Baseline Diesel category except that they contain 1.0 percent or more oxygen by weight and/or may be derived from sources other than those listed in paragraph (e)(3)(ii)(A)(5) of this section.

(B) The Non-Baseline Diesel category is comprised of diesel fuels and associated additives which conform to the specifications in paragraph (e)(3)(ii)(A) of this section for the Baseline Diesel category except that they contain 1.0 percent or more oxygen by weight and/or may be derived from sources other than those listed in paragraph (e)(3)(ii)(A)(5) of this section.

(C) The Atypical Diesel category consists of diesel fuels and associated additives which do not meet the criteria for either the Baseline or the Non-Baseline Diesel category.

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(iv) Ethanol categories. (A) The Base-
line Ethanol category is comprised of
ethanol fuels and associated additives
which contain at least 50 percent eth-
anol by volume, no more than five (5)
percent by volume of substances other
than ethanol and gasoline, and no ele-
ments other than carbon, hydrogen, ox-
ygen, nitrogen, sulfur, chlorine, and
copper. Baseline ethanol formulations
shall contain no more than 0.004 per-
cent by weight of sulfur, 0.0004 percent
by weight of chlorine, and/or 0.07 mg/L
of copper.

(B) The Non-Baseline Ethanol cat-
egory is comprised of fuel blends which
contain at least 50 percent ethanol by
volume, more than five (5) percent by
volume of a substance(s) other than
ethanol and gasoline, and meet the
baseline limitations on elemental com-
position in paragraph (e)(3)(iv)(A) of
this section.

(C) The Atypical Ethanol category
consists of ethanol fuels and associ-
ated additives which do not meet the cri-
teria for either the Baseline or the Non-Baseline Ethanol categories.

(v) Methane categories. (A) The Base-
line Methane category is comprised of
methane fuels and associated additives
(including at least an odorant additive)
which contain no elements other than
carbon, hydrogen, oxygen, nitrogen,
and/or sulfur, and contain no more
than 20 mole percent non-methane hy-
drocarbons. Baseline methane formula-
tions shall not contain more than 16
ppm by volume of sulfur, including any
sulfur which may be contributed by the
odorant additive.

(B) The Non-Baseline Methane cat-
egory consists of methane fuels and as-
sociated additives which conform to
the specifications in paragraph
(e)(3)(v)(A) of this section for the Base-
line Methane category, except that
they exceed the 20 percent by volume
limit for butane and higher hydro-
carbons.

(C) The Atypical Methane category
consists of methane fuels and associ-
ated additives which contain elements
other than carbon, hydrogen, oxygen,
nitrogen, and/or sulfur, or exceed 16 ppm by
weight of sulfur.

(4) Fuel/additive groups. Fuel/addi-
tive groups are subdivisions of the fuel/addi-
tive categories. One or more group(s)
are defined within each category in
each fuel family according to the pres-
cence of differing characteristics in the
fuel or additive/base fuel mixture. For
each group, one formulation (either a
base fuel or a member fuel or additive
product) is chosen to represent all the
member products in the group in any
tests required under this subpart. The
section which follows describes the
fuel/additive groups.

(i) Baseline groups. (A) The Baseline
Gasoline category comprises a single
group. The gasoline base fuel specified
in §79.55(b) shall serve as the represent-
ative of this group.

(B) The Baseline Diesel category
comprises a single group. The diesel
base fuel specified in §79.55(c) shall
serve as the representative of this
group.

(C) The Baseline Methanol category
includes two groups: M100 and M85. The
M100 group consists of methanol-gas-
oline formulations containing at least 96
percent methanol by volume. These
formulations must contain odorants
and bitters (limited in elemental
composition to carbon, hydrogen, oxy-
gen, nitrogen, sulfur, and chlorine) for
prevention of purposeful or inadvertent
consumption. The M100 base fuel specified in §79.55(d) shall serve as the representative for this group. The M85 group consists of methanol-gasoline formulations containing at least 50 percent by volume but less than 96 percent by volume methanol. The M85 base fuel specified in §79.55(d) shall serve as the representative of this group.

(D) The Baseline Ethanol category comprises a single group. The E85 base fuel specified in §79.55(e) shall serve as the representative of this group.

(E) The Baseline Methane category comprises a single group. The CNG base fuel specified in §79.55(f) shall serve as the representative of this group.

(F) The Baseline Propane category comprises a single group. The LPG base fuel specified in §79.55(g) shall serve as the representative of this group.

(ii) Non-baseline groups—(A) Non-Baseline Gasoline. The Non-Baseline gasoline fuels and associated additives shall sort into groups according to the following criteria:

(1) For gasoline fuel and additive products which contain 1.5 percent oxygen by weight or more, a separate non-baseline gasoline group shall be defined by each oxygenate compound or methanol/co-solvent blend listed as a component in the registration application or basic registration data of any such fuel or additive.

(i) Examples of oxygenates occurring in non-baseline gasoline formulations include ethanol, methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), diisopropyl ether (DIPE), dimethyl ether (DME), tertiary amyl ethyl ether (TAME), and any other compound(s) which increase the oxygen content of the gasoline formulation. A separate non-baseline gasoline group is defined for each such oxygenating compound.

(2) An oxygenate compound or methanol/co-solvent combination to be blended with the gasoline base fuel for testing purposes shall be chemical-grade quality, at a minimum, and shall not contain a significant amount of other contaminating oxygenate compounds.

(3) Separate non-baseline gasoline groups shall also be defined for gasoline formulations derived from each particular petroleum source not listed in paragraph (e)(3)(i)(A)(5) of this section.

(i) Such groups may include, but are not limited to, those derived from shale, used oil, waste plastics, and other recycled chemical/petrochemical products.

(4) Pursuant to §79.51(i), non-baseline gasoline products may belong to more than one fuel/additive group.

(B) Non-Baseline Diesel. The Non-Baseline diesel fuels and associated additives shall sort into groups according to the following criteria:

(1) For diesel fuel and additive products which contain 1.0 percent or more oxygen by weight in the form of alcohol(s) and/or ether(s):
(i) A separate non-baseline diesel group shall be defined by each individual alcohol or ether listed as a component in the registration application or basic registration data of any such fuel or additive.

(ii) For each such group, the representative to be used in testing shall be a formulation consisting of the diesel base fuel blended with the relevant alcohol or ether in an amount equivalent to the highest actual or recommended concentration-in-use of the alcohol or ether recorded in the basic registration data of any member fuel or additive product.

(2) A separate non-baseline diesel group is also defined for each of the following classes of oxygenating compounds: mixed nitroso-compounds; mixed nitro-compounds; mixed alkyl nitrates; mixed alkyl nitrites; peroxides; furans; mixed alkyl esters of plant and/or animal origin (biodiesel). For each such group, the representative to be used in testing shall be formulated as follows:

(i) From the class of compounds which defines the group, a particular oxygenate compound shall be chosen from among all such compounds recorded in the registration application or basic registration data of any fuel or additive in the group.

(ii) The selected compound shall be the one recorded in any member product's registration application with the highest actual or recommended maximum concentration-in-use.

(iii) In the event that two or more oxygenate compounds in the relevant class have the highest recorded concentration-in-use, then the oxygenate compound to be used in the group representative shall be chosen at random from the qualifying candidate compounds.

(iv) The compound thus selected shall be the group representative, and shall be used in testing at the following concentration:

(A) For biodiesel groups, the representative shall be 100 percent biodiesel fuel.

(B) Otherwise, the group representative shall be the selected compound mixed into diesel base fuel at the maximum recommended concentration-in-use.

(3) Separate non-baseline diesel groups shall also be defined for diesel formulations derived from each particular petroleum source not listed in paragraph (e)(3)(1)(A)(5) of this section.

(i) Such groups may include, but are not limited to, those derived from shale, used oil, waste plastics, and other recycled chemical/petrochemical products.

(ii) In any such group, the first product to be registered or to apply for EPA registration shall be the representative of that group. If two or more products are registered or apply for first registration simultaneously, then the representative shall be chosen by a random method from among such candidate products.

(4) Pursuant to §79.51(i), non-baseline diesel products may belong to more than one fuel/additive group.

(C) Non-baseline methanol. The Non-Baseline methanol formulations are sorted into groups based on the non-methanol, non-gasoline component(s) of the blended fuel. Each such component occurring separately and each unique combination of such components shall define a separate group.

(1) The representative of each such non-baseline methanol group shall be the group member with the highest percent by volume of non-methanol, non-gasoline component(s).

(2) In case two or more such members have the same and highest concentration of non-methanol, non-gasoline component(s), the representative of the group shall be chosen at random from among such equivalent member products.

(D) Non-Baseline Ethanol. The Non-Baseline ethanol formulations are sorted into groups based on the non-ethanol, non-gasoline component(s) of the blended fuel. Each such component occurring separately and each unique combination of such components shall define a separate group.

(1) The representative of each such non-baseline ethanol group shall be the group member with the highest percent by volume of non-ethanol, non-gasoline component(s).

(2) In case two or more such members have the same and highest concentration of non-ethanol, non-gasoline component(s), the representative of the
group shall be chosen at random from among such equivalent member products.

(E) Non-Baseline Methane. The Non-Baseline methane category consists of one group. The group representative shall be the member fuel or fuel/additive formulation containing the highest concentration-in-use of non-methane hydrocarbons. If two or more member products have the same and the highest concentration-in-use, then the representative shall be chosen at random from such products.

(F) Non-baseline propane. The Non-Baseline propane category consists of one group. The group representative shall be the member fuel or fuel/additive formulation containing the highest concentration-in-use of butane and higher hydrocarbons. If two or more products have the same and the highest concentration-in-use, then the representative shall be chosen at random from such products.

(iii) Atypical groups. (A) As defined for each individual fuel family in §79.56(e)(3), fuels and additives meeting any one of the following criteria are considered atypical.

(1) Gasoline Atypical fuels and additives contain one or more elements in addition to carbon, hydrogen, oxygen, nitrogen, and sulfur.

(2) Diesel Atypical fuels and additives contain one or more element in addition to carbon, hydrogen, oxygen, nitrogen, and sulfur.

(3) Methanol Atypical fuels and additives contain:

(i) one or more element in addition to carbon, hydrogen, oxygen, nitrogen, sulfur, and/or

(ii) sulfur in excess of 0.004 percent by weight, and/or

(iii) chlorine in excess of 0.0001 percent by weight.

(4) Ethanol Atypical fuels and additives contain:

(i) one or more element in addition to carbon, hydrogen, oxygen, nitrogen, sulfur, chlorine, and copper, and/or

(ii) sulfur in excess of 0.004 percent by weight, and/or

(iii) contain chlorine (as chloride) in excess of 0.0004 percent by weight, and/or

(iv) contain copper in excess of 0.07 mg/L.

(5) Methane Atypical fuels and additives contain:

(i) one or more element in addition to carbon, hydrogen, oxygen, nitrogen, and sulfur, and/or

(ii) sulfur in excess of 16 ppm by volume.

(6) Propane Atypical fuels and additives contain:

(i) one or more element in addition to carbon, hydrogen, oxygen, nitrogen, and sulfur, and/or

(ii) sulfur in excess of 123 ppm by weight.

(B) General rules for sorting these atypical fuels and additives into separate groups are as follows:

(1) Pursuant to §79.51(j), a given atypical product may belong to more than one atypical group.

(2) Fuels and additives in different fuel families may not be grouped together, even if they contain the same atypical element(s) or other atypical characteristic(s).

(C) Specific rules for sorting each family’s atypical fuels and additives into separate groups, and for choosing each such group’s representative for testing, are as follows:

(1) A separate group is created for each atypical element (or other atypical characteristic) occurring separately, i.e., in the absence of any other atypical element or characteristic, in one or more fuels and/or additives within a given fuel family.

(i) Consistent with the basic grouping guidelines provided in §79.56(d), a fuel product which is classified as atypical because its basic registration data or application lists a bulk additive containing an atypical characteristic, may be grouped with that additive and/or with other fuels and additives containing the same atypical characteristic.

(ii) Within a group of products containing only one atypical element or
characteristic, the fuel or additive/base fuel mixture with the highest concentration-in-use or recommended concentration-in-use of the atypical element or characteristic shall be the designated representative of that group. In the event that two or more fuels or additive/base fuel mixtures within the group contain the same and highest concentration of the single atypical element or characteristic, then the group representative shall be selected by a random method from among such candidate products.

(2) A separate group is also created for each unique combination of atypical elements (and/or other specified atypical characteristics) occurring together in one or more fuels and/or additives within a given fuel family.

(i) Consistent with the basic grouping guidelines provided in §79.56(d), a fuel which is classified as atypical because its basic registration data lists one bulk additive containing two or more atypical characteristics, may be grouped with that additive and/or with other fuels and/or additives containing the same combination of atypical characteristics. Grouping of fuels containing more than one atypical additive shall be guided by provisions of §79.51(j).

(ii) Within a group of such products containing a unique combination of two or more atypical elements or characteristics, the designated representative shall be the product within the group which contains the highest total concentration of the atypical elements or characteristics.

(iii) In the event that two or more products within a given atypical group contain the same and highest concentration of the same atypical elements or characteristics then, among such candidate products, the designated representative shall be the product which, first, has the highest total concentration of metals, followed in order by highest total concentration of halogens, highest total concentration of other atypical elements (including sulfur concentration, as applicable), highest total concentration of polymers containing atypical elements, and, lastly, highest total concentration of oxygen.

(iv) If two or more products have the same and highest concentration of the variable identified in the preceding paragraph, then, among such products, the one with the greatest concentration of the next highest variable on the list shall be the group representative.

(v) This decision-making process shall continue until a single product is determined to be the representative. If two or more products remain tied at the end of this process, then the representative shall be chosen by a random method from among such remaining products.


§ 79.57 Emission generation.

This section specifies the equipment and procedures that must be used in generating the emissions which are to be subjected to the characterization procedures and/or the biological tests specified in §§79.52(b) and 79.53 of these regulations. When applicable, they may also be required in conjunction with testing under §§79.54 and 79.58(c). Additional requirements concerning emission generation, delivery, dilution, quality control, and safety practices are outlined in §79.61.

(a) Vehicle and engine selection criteria.

(1) All vehicles and engines used to generate emissions for testing a fuel or additive/fuel mixture must be new (i.e., never before titled) and placed into the program with less than 500 miles on the odometer or 12 hours on the engine chronometer. The vehicles and engines shall be unaltered from the specifications of the original equipment manufacturer.

(2) The vehicle/engine type, vehicle/engine class, and vehicle/engine subclass designated to generate emissions for a given fuel or additive shall be the same type, class, and subclass which, over the previous three years, has consumed the most gallons of fuel in the fuel family applicable to the given fuel or additive. No distinction shall be made between light-duty vehicles and light-duty trucks for purposes of this classification.