

G. Uniform Engine Fuels and Automotive Lubricants Regulation

as adopted by
The National Conference on Weights and Measures*

1. Background

In 1984, the National Conference on Weights and Measures (NCWM) adopted a Section 2.20. in the Uniform Regulation for the Method of Sale of Commodities requiring that motor fuels containing alcohol be labeled to disclose to the retail purchaser that the fuel contains alcohol. The delegates deemed this action necessary since motor vehicle manufacturers were qualifying their warranties with respect to some gasoline-alcohol blends, motor fuel users were complaining to weights and measures officials about fuel quality and vehicle performance, and ASTM International (ASTM) had not yet finalized quality standards for oxygenated (which includes alcohol-containing) fuels. While a few officials argued weights and measures officials should not cross the line from quantity assurance programs to programs regulating quality, the delegates were persuaded that the issue needed immediate attention.

A Motor Fuels Task Force was appointed in 1984 to develop mechanisms for achieving uniformity in the evaluation and regulation of motor fuels. The Task Force developed the Uniform Motor Fuel Inspection Law (see the Uniform Engine Fuels and Automotive Lubricants Inspection Law section of this handbook) and the Uniform Engine Fuel and Automotive Lubricants Regulation to accompany the law. The Uniform Law required registration and certification of motor fuel as meeting ASTM standards. The regulation defined the ASTM standards to be applied to motor fuel.

In 1992, the NCWM established the Petroleum Subcommittee under the Laws and Regulations Committee. The subcommittee recommended major revisions to the Regulation that was adopted at the 80th NCWM in 1995. The scope of the regulation was expanded to include all engine fuels, petroleum products, and automotive lubricants; its title was changed accordingly; and the fuel specifications and method of sale sections were revised to address the additional products. Other changes included expansion of the definitions section and addition of sections on retail storage tanks, condemned product, registration of engine fuels designed for special use, and test methods and reproducibility limits.

In 2007, the Petroleum Subcommittee (now referred to as the Fuels and Lubricants Subcommittee) undertook a review of this regulation to update it by eliminating reference to “petroleum products” and to reflect the addition of new engine fuels to the marketplace.

At the 2008 NCWM Interim Meeting, the Laws and Regulations Committee changed the Petroleum Subcommittee’s name to the Fuels and Lubricants Subcommittee (FALS) in recognition of its work with a wide variety of fuels including petroleum and biofuels.

2. Status of Promulgation

The Uniform Regulation for Engine Fuels and Automotive Lubricants was adopted by the NCWM in 1995 and the latest amendments were adopted in 2008. The status of state actions with respect to this Regulation is shown in the table beginning on page 10.

(Amended 2008)

**The National Conference on Weights and Measures (NCWM) is supported by the National Institute of Standards and Technology (NIST) in partial implementation of its statutory responsibility for “cooperation with the states in securing uniformity in weights and measures laws and methods of inspection.”*

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Section 1. Definitions

1.1. ASTM International. (www.astm.org) – The international voluntary consensus standards organization formed for the development of standards on characteristics and performance of materials, products, systems, and services, and the promotion of related knowledge.

1.2. Antiknock Index (AKI). – The arithmetic average of the Research Octane Number (RON) and Motor Octane Number (MON): $AKI = (RON+MON)/2$. This value is called by a variety of names, in addition to antiknock index, including: octane rating, posted octane, (R+M)/2 octane.

1.3. Automatic Transmission Fluid. – A product intended for use in a passenger vehicle, other than a bus, as either lubricant, coolant, or liquid medium in any type of fluid automatic transmission that contains a torque converter. For the purposes of this regulation, fluids intended for use in continuously variable transmissions are not considered “Automatic Transmission Fluid.”

(Added 2004)

1.4. Automotive Fuel Rating. – The automotive fuel rating required under the amended Octane Certification and Posting Rule (or as amended, the Fuel Rating Rule), 16 CFR Part 306. Under this Rule, sellers of liquid automotive fuels, including alternative fuels, must determine, certify, and post an appropriate automotive fuel rating. The automotive fuel rating for gasoline is the antiknock index (octane rating). The automotive fuel rating for alternative liquid fuels consists of the common name of the fuel, along with a disclosure of the amount, expressed as a minimum volume percent of the principal component of the fuel. For alternative liquid automotive fuels, a disclosure of other components, expressed as a minimum volume percent, may be included, if desired.

1.5. Automotive Gasoline, Automotive Gasoline-Oxygenate Blend. – A type of fuel suitable for use in spark ignition automobile engines and also commonly used in marine and non-automotive applications.

1.6. Aviation Gasoline. – A type of gasoline suitable for use as a fuel in an aviation spark-ignition internal combustion engine.

1.7. Aviation Turbine Fuel. – A refined middle distillate suitable for use as a fuel in an aviation gas turbine internal combustion engine.

1.8. Base Gasoline. – All components other than ethanol in a blend of gasoline and ethanol.

1.9. Biodiesel. – A fuel comprised of mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats, designated B100.

1.10. Biodiesel Blend. – A fuel comprised of a blend of biodiesel fuel with petroleum-based diesel fuel, designated BXX. In the abbreviation BXX, (e.g., B20) represents the volume percentage of biodiesel fuel in the blend.

1.11. Cetane Number. – A numerical measure of the ignition performance of a diesel fuel obtained by comparing it to reference fuels in a standardized engine test.

1.12. Compressed Natural Gas (CNG). – Natural gas which has been compressed and dispensed into fuel storage containers and is suitable for use as an engine fuel.

1.13. Denatured Fuel Ethanol. – An ethanol blend component for use in gasoline-ethanol blends and ethanol flex fuel. The ethanol is rendered unfit for beverage use by the addition of denaturants under formulas approved by the Alcohol and Tobacco Tax and Trade Bureau (TTB) (www.ttb.gov), ASTM D4806, “Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark Ignition Engine Fuel” describes the acceptable denaturants for denatured fuel ethanol to be blended into spark ignition engine fuels.

(Amended 2014)

1.14. Diesel Exhaust Fluid (DEF). – A preparation of aqueous urea [(NH₂)₂CO], containing 32.5 % by mass of technically-pure urea in high-purity water with quality characteristics defined by the latest version of ISO 22241, “Diesel engines – NO_x reduction agent AUS 21.”

(Added 2014)

1.15. Diesel Fuel. – A refined middle distillate suitable for use as a fuel in a compression-ignition (diesel) internal combustion engine.

1.16. Distillate. – Any product obtained by condensing the vapors given off by boiling petroleum or its products.

1.17. EPA. – The United States Environmental Protection Agency (www.epa.gov).

1.18. Engine Fuel. – Any liquid or gaseous matter used for the generation of power in an internal combustion engine.

1.19. Engine Fuels Designed for Special Use. – Engine fuels designated by the Director as requiring registration. These fuels normally do not have ASTM or other national consensus standards applying to their quality or usability; common special fuels are racing fuels and those intended for agricultural and other off-road applications.

1.20. Ethanol. – Also known as “ethyl alcohol.” Ethanol is provided in gasoline-ethanol blends by blending denatured fuel ethanol. See Section 1.13. Denatured Fuel Ethanol.

(Amended 2014)

1.21. Ethanol Flex Fuel. – Blends of ethanol and hydrocarbons restricted for use as fuel in ground vehicles equipped with flexible-fuel spark-ignition engines.

(Amended 2014)

1.22. Fuel Cell. – An electrochemical energy conversion device in which fuel and an oxidant react to generate electricity without consumption, physically or chemically, of its electrodes or electrolytes.

(Added 2012)

1.23. Fuel Oil. – Refined oil middle distillates, heavy distillates, or residues of refining, or blends of these, suitable for use as a fuel for heating or power generation, the classification of which shall be defined by ASTM D396.

1.24. Gasoline. – A volatile mixture of liquid hydrocarbons generally containing small amounts of additives suitable for use as a fuel in a spark-ignition internal combustion engine.

1.25. Gasoline-Alcohol Blend. – A fuel consisting primarily of gasoline and a substantial amount (more than 0.35 mass percent of oxygen, or more than 0.15 mass percent of oxygen if methanol is the only oxygenate) of one or more alcohols.

1.26. Gasoline Gallon Equivalent (GGE). – Equivalent to 2.567 kg (5.660 lb) of natural gas.

1.27. Gasoline Liter Equivalent (GLE). – Equivalent to 0.678 kg (1.495 lb) of natural gas.

1.28. Gasoline-Oxygenate Blend. – A fuel consisting primarily of gasoline along with a substantial amount (more than 0.35 mass percent of oxygen, or more than 0.15 mass percent of oxygen if methanol is the only oxygenate) of one or more oxygenates.

1.29. Gear Oil. – An oil used to lubricate gears, axles, or some manual transmissions.
(Added 2004)

1.30. Hydrogen Fuel. – A fuel composed of molecular hydrogen intended for consumption in a surface vehicle or electricity production device with an internal combustion engine or fuel cell.
(Added 2012)

1.31. Internal Combustion Engine. – A device used to generate power by converting chemical energy bound in the fuel via spark-ignition or compression ignition combustion into mechanical work to power a vehicle or other device.
(Added 2012)

1.32. Kerosene. – (or “Kerosine”) A refined middle distillate suitable for use as a fuel for heating or illuminating, the classification of which shall be defined by the latest version of ASTM D3699, “Standard Specification for Kerosine.”

1.33. Lead Substitute. – An EPA-registered gasoline additive suitable, when added in small amounts to fuel, to reduce or prevent exhaust valve recession (or seat wear) in automotive spark-ignition internal combustion engines designed to operate on leaded fuel.

1.34. Lead Substitute Engine Fuel. – For labeling purposes, a gasoline or gasoline-oxygenate blend that contains a “lead substitute”.

1.35. Leaded. – For labeling purposes, any gasoline or gasoline-oxygenate blend which contains more than 0.013 g of lead per liter (0.05 g lead per U.S. gal). NOTE: EPA defines leaded fuel as one which contains more than 0.0013 g of phosphorus per liter (0.005 g per U.S. gal), or any fuel to which lead or phosphorus is intentionally added.

1.36. Liquefied Natural Gas (LNG). – Natural gas that has been liquefied at $-162\text{ }^{\circ}\text{C}$ ($-259\text{ }^{\circ}\text{F}$) and stored in insulated cryogenic tanks for use as an engine fuel.

1.37. Liquefied Petroleum Gas (LPG). – A mixture of normally gaseous hydrocarbons, predominantly propane, or butane, or both, that has been liquefied by compression or cooling, or both to facilitate storage, transport, and handling.

1.38. Low Temperature Operability. – A condition which allows the uninterrupted operation of a diesel engine through the continuous flow of fuel throughout its fuel delivery system at low temperatures. Fuels with adequate low temperature operability characteristics have the ability to avoid wax precipitation and clogging in fuel filters.
(Added 1998) (Amended 1999)

1.39. Lubricant. – Oil (See 1.45. below.).
(Added 2008)

1.40. Lubricity. – A qualitative term describing the ability of a fluid to affect friction between, and wear to, surfaces in relative motion under load.
(Added 2003)

1.41. M85 Fuel Methanol. – A blend of methanol and hydrocarbons of which the methanol portion is nominally 70 to 85 volume percent.

1.42. Motor Octane Number. – A numerical indication of a spark-ignition engine fuel’s resistance to knock obtained by comparison with reference fuels in a standardized ASTM D2700, “Motor Method Engine Test.”

1.43. Motor Oil. – An oil that reduces friction and wear between the moving parts within a reciprocating internal combustion engine and also serves as a coolant. For the purposes of this regulation, “vehicle motor oil” refers to motor oil which is intended for use in light- to heavy-duty vehicles including cars, sport utility vehicles, vans, trucks, buses, and off-road farming and construction equipment. For the purposes of this regulation, “recreational motor oil” refers to motor oil which is intended for use in four-stroke cycle engines used in motorcycles, ATVs, and lawn and garden equipment. For the purposes of this regulation, motor oil also means engine oil.

(Added 2004)

1.44. MTBE. – Methyl tertiary-butyl ether.

(Added 2008)

1.45. Oil. – A motor oil, engine oil, and/or gear oil.

(Added 2004)

1.46. Oxygen Content of Gasoline. – The percentage of oxygen by mass contained in a gasoline.

1.47. Oxygenate. – An oxygen-containing, ashless, organic compound, such as an alcohol or ether, which can be used as a fuel or fuel supplement.

1.48. Reformulated Gasoline (RFG). – A gasoline or gasoline-oxygenate blend certified to meet the specifications and emission reduction requirements established by the Clean Air Act Amendments of 1990, as amended by the Energy Policy Act of 2005, required to be sold for use in automotive vehicles in extreme and severe ozone non-attainment areas and those areas which opt to require reformulated gasoline.

(Amended 2008)

1.49. Research Octane Number. – A numerical indication of a spark-ignition engine fuel’s resistance to knock obtained by comparison with reference fuels in a standardized ASTM D2699, “Research Method Engine Test.”

1.50. SAE (SAE International). – A technical organization for engineers, scientists, technicians, and others who cooperate closely in the engineering, design, manufacture, use, and maintainability of self-propelled vehicles.

1.51. Substantially Similar. – Refers to the EPA’s “Substantially Similar” rule, Section 211 (f) (1) of the Clean Air Act [42 U.S.C. 7545 (f) (1)].

1.52. ThermStability. – The ability of a fuel to resist the thermal stress which is experienced by the fuel when exposed to high temperatures in a fuel delivery system. Such stress can lead to formation of insoluble gums or organic particulates. Insolubles (e.g., gums or organic particulates) can clog fuel filters and contribute to injector deposits.

(Added 1998) (Amended 1999)

1.53. Unleaded. – When used in conjunction with “engine fuel” or “gasoline” means any gasoline or gasoline-oxygenate blend to which no lead or phosphorus compounds have been intentionally added and which contains not more than 0.013 g of lead per liter (0.05 g lead per U.S. gallon) and not more than 0.0013 g of phosphorus per liter (0.005 g phosphorus per U.S. gallon).

1.54. Wholesale Purchaser Consumer. – Any person who is an ultimate consumer of gasoline, fuel methanol, ethanol flex fuel, diesel fuel, biodiesel, biodiesel blends, fuel oil, kerosene, aviation turbine fuels, natural gas, compressed natural gas, or liquefied petroleum gas and who purchases or obtains the product from a supplier and receives delivery of that product into a storage tank.

(Added 1998) (Amended 1999 and 2014)

Section 2. Standard Fuel Specifications

2.1. Gasoline and Gasoline-Oxygenate Blends.

2.1.1. Gasoline and Gasoline-Oxygenate Blends (as defined in this regulation). – Shall meet the latest version of ASTM D4814, “Standard Specification for Automotive Spark-Ignition Engine Fuel” except for the permissible offsets for ethanol blends as provided in Section 2.1.2. Gasoline-Ethanol Blends.

(Added 2009)

2.1.2. Gasoline-Ethanol Blends. – When gasoline is blended with ethanol, the ethanol shall meet the latest version of ASTM D4806, “Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel,” and the blend shall meet the latest version of ASTM D4814, “Standard Specification for Automotive Spark-Ignition Engine Fuel,” with the following permissible exceptions:

- a. The maximum vapor pressure shall not exceed the ASTM D4814 limits by more than:
 - (1) 1.0 psi for blends containing 9 to 10 volume percent ethanol from June 1 through September 15.
 - (2) 1.0 psi for blends containing one or more volume percent ethanol for volatility classes A, B, C, D from September 16 through May 31.
 - (3) 0.5 psi for blends containing one or more volume percent ethanol for volatility Class E from September 16 through May 31.

The vapor pressure exceptions in subsections 2.1.2. Gasoline-Ethanol Blends will remain in effect until May 1, 2016, or until ASTM incorporates changes to the vapor pressure maximums for ethanol blends, whichever occurs earlier.

***NOTE 1:** The temperature values (e.g., 54 °C, 50. °C, 41.5 °C) are presented in the format prescribed in ASTM E29 “Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications.”*

(Added 2009) (Amended 2012)

2.1.3. Minimum Antiknock Index (AKI). – The AKI shall not be less than the AKI posted on the product dispenser or as certified on the invoice, bill of lading, shipping paper, or other documentation;

2.1.4. Minimum Motor Octane Number. – The minimum motor octane number shall not be less than 82 for gasoline with an AKI of 87 or greater;

2.1.5. Minimum Lead Content to Be Termed “Leaded.” – Gasoline and gasoline oxygenate blends sold as “leaded” shall contain a minimum of 0.013 g of lead per liter (0.05 g per U.S. gallon);

2.1.6. Lead Substitute Gasoline. – Gasoline and gasoline-oxygenate blends sold as “lead substitute” gasoline shall contain a lead substitute which provides protection against exhaust valve seat recession equivalent to at least 0.026 g of lead per liter (0.10 g per U.S. gallon).

2.1.6.1. Documentation of Exhaust Valve Seat Protection. – Upon the request of the Director, the lead substitute additive manufacturer shall provide documentation to the Director that demonstrates that the treatment level recommended by the additive manufacturer provides protection against exhaust valve seat recession equivalent to or better than 0.026 g/L (0.1 g/gal) lead. The Director may review the documentation and approve the lead substitute additive before such additive is blended into gasoline. This documentation shall consist of:

- (a) test results as published in the Federal Register by the EPA Administrator as required in Section 211(f)(2) of the Clean Air Act; or
- (b) until such time as the EPA Administrator develops and publishes a test procedure to determine the additive's effectiveness in reducing valve seat wear, test results and description of the test procedures used in comparing the effectiveness of 0.026 g per liter lead and the recommended treatment level of the lead substitute additive shall be provided.

2.1.7. Blending. – Leaded, lead substitute, and unleaded gasoline-oxygenate blends shall be blended according to the EPA “substantially similar” rule or an EPA waiver for unleaded fuel.

(Amended 2009)

2.2. Diesel Fuel. – Shall meet the latest version of ASTM D975, “Standard Specification for Diesel Fuel Oils.”

2.2.1. Premium Diesel Fuel. – All diesel fuels identified on retail dispensers, bills of lading, invoices, shipping papers, or other documentation with terms such as premium, super, supreme, plus, or premier must conform to the following requirements:

- (a) **Cetane Number.** – A minimum cetane number of 47.0 as determined by the latest version ASTM D613, “Standard Test Method for Cetane Number of Diesel Fuel Oil.”
- (b) **Low Temperature Operability.** – A cold flow performance measurement which meets the latest version of ASTM D975, “Standard Specification for Diesel Fuel Oils,” tenth percentile minimum ambient air temperature charts and maps by either ASTM Standard Test Method D2500 (Cloud Point) or the latest version of ASTM Standard D4539, “Low Temperature Flow Test, LTFT.” Low temperature operability is only applicable October 1 to March 31 of each year.
- (c) **Thermal Stability.** – A minimum reflectance measurement of 80 % as determined by the latest version ASTM Standard Test Method D6468 (180 min, 150 °C).
- (d) **Lubricity.** – A maximum wear scar diameter of 520 microns as determined by the latest version ASTM D6079, “Standard Test Method for Evaluating Lubricity of Diesel Fuels by the High-Frequency Reciprocating Rig (HFRR).” If an enforcement jurisdiction's single test of more than 560 microns is determined, a second test shall be conducted. If the average of the two tests is more than 560 microns, the sample does not conform to the requirements of this part.

(Amended 2003)

2.3. Aviation Turbine Fuels. – Shall meet the latest version of ASTM D1655, “Standard Specification for Aviation Turbine Fuels.”

2.4. Aviation Gasoline. – Shall meet the most recent version of one of the following, as appropriate:

- (a) **ASTM D910** – “Standard Specification for Aviation Gasoline;” or
- (b) **ASTM D6227** – “Standard Specification for Grade 82 Unleaded Aviation Gasoline.”

(Amended 2008)

2.5. Fuel Oils. – Shall meet the latest version of ASTM D396, “Standard Specification for Fuel Oils.”

2.6. Kerosene (Kerosine). – Shall meet the latest version of ASTM D3699, “Standard Specification for Kerosine.”

2.7. Denatured Fuel Ethanol. – Intended for blending with gasoline shall meet the latest version of ASTM D4806, “Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel.”

(Amended 2014)

2.8. Liquefied Petroleum (LP) Gases. – Shall meet the latest version ASTM D1835, “Standard Specification for Liquefied Petroleum (LP) Gases.”

NOTE: Also reference Gas Processors Association 2140, Liquefied Petroleum Gas Specification and Test Methods.

2.9. Compressed Natural Gas (CNG). – Shall meet the latest version of SAE J1616, “Recommended Practice for Compressed Natural Gas Vehicle Fuel.”

2.10. Ethanol Flex Fuel. – Ethanol flex fuel is covered by one or two ASTM standards based on the ethanol concentration of blend:

- (a) Ethanol flex fuel containing 51 to 83 volume percent ethanol shall meet the latest version of ASTM D5789, “Standard Specifications for Ethanol Fuel Blends for Flexible Fuel Automotive Spark-Ignition Engines”; and
- (b) Ethanol flex fuel containing 16 to 50 volume percent ethanol shall be blended, stored, and conveyed for consumption in accordance with the latest version of ASTM D7794, “Standard Practice for Blending Mid-Level Ethanol Fuel Blends for Flexible Fuel Vehicles with Automotive Spark-Ignition Engines.”

(Added 1997) (Amended 2014)

2.11. M85 Fuel Methanol. – Shall meet the latest version of ASTM D5797, “Standard Specification for Fuel Methanol M70-M85 for Automotive Spark Ignition Engines.”

(Added 1997)

2.12. Engine (Motor) Oil. – Shall not be sold or distributed for use unless the product conforms to the following specifications:

- (a) performance claims listed on the label shall be evaluated against the latest version of SAE J183, “Engine Oil Performance and Engine Service Classification,” API 1509 “Engine Oil Licensing and Certification System,” European Automobile Manufacturers’ Association (ACEA), “European Oil Sequences,” or other “Vehicle or Engine Manufacturer Standards” as applicable; and
- (b) the product shall meet its labeled viscosity grade specification as specified in the latest version of SAE J300, “Engine Oil Viscosity Classification.

(Added 2004) (Amended 2014)

2.13. Products for Use in Lubricating Manual Transmissions, Gears, or Axles. – Shall not be sold or distributed for use in lubricating manual transmissions, gears, or axles unless the product conforms to the following specifications:

- (a) it is labeled with one or more of the service designations found in the latest version of the SAE Information Report on axle and manual transmission lubricants, SAE J308, and API Publication 1560, and meets all applicable requirements of those designations;
- (b) the product shall meet its labeled viscosity grade classification as specified in the latest version of SAE J306; and

- (c) the product shall be free from water and suspended matter when tested by means of centrifuge, in accordance with the latest version of ASTM D2273, “Standard Test Method for Trace Sediment in Lubricating Oils.”

(Added 2004)

2.14. Products for Use in Lubricating Automatic Transmissions. – Any automatic transmission fluid sold without limitation as to type of transmission for which it is intended shall meet all automotive manufacturers’ recommended requirements for transmissions in general use in the state. Automatic transmission fluids that are intended for use only in certain transmissions, as disclosed on the label of its container, shall meet the latest automotive manufacturers’ recommended requirements for those transmissions. Adherence to automotive manufacturers’ recommended requirements shall be based on tests currently available to the lubricants’ industry and the state regulatory agency. Any material offered for sale or sold as an additive to automatic transmission fluids shall be compatible with the automatic transmission fluid to which it is added, and shall meet all performance claims as stated on the label. Any manufacturer of any such product sold in this state shall provide, upon request by a duly authorized representative of the Director, documentation of any claims made on their product label.

(Added 2004)

2.15. Biodiesel. – B100 biodiesel intended for blending with diesel fuel shall meet the latest version of ASTM D6751, “Standard Specification for Biodiesel Fuel (B100) Blend Stock for Distillate Fuels.”

(Added 2004)

2.16. Biodiesel Blends. – Blends of biodiesel and diesel fuels shall meet the following requirements:

- (a) blends that contain less than or equal to 5 % must meet the latest version of ASTM D975, “Standard Specification for Diesel Fuel Oils”;
- (b) blends greater than 5 % biodiesel and that contain less than or equal to 20 % by volume shall meet the latest version of ASTM D7467, “Standard Specification for Diesel Fuel Oil, Biodiesel Blend (B6 to B20)”;
- (c) use of S15 biodiesel is required when blending into S15 low sulfur motor vehicle diesel fuel when the intention is to certify the fuel as S15 grade; and
- (d) when blends greater than 20 % are offered for sale, the diesel fuel used in the blend shall meet the latest version of ASTM D975, “Standard Specification for Diesel Fuel Oils,” and the biodiesel blend stock shall meet the specifications of Section 2.15. Biodiesel.

(Added 2004) (Amended 2008)

2.17. Hydrogen Fuel. – Shall meet the latest version of SAE J2719, “Hydrogen Fuel Quality for Fuel Cell Vehicles.”

(Added 2012)

2.18. Diesel Exhaust Fluid (DEF). – Shall meet the latest version of the ISO 22241, “Diesel engines – NOx reduction agent AUS 32.”

(Added 2014)

Section 3. Classification and Method of Sale of Petroleum Products

3.1. General Considerations.

3.1.1. Documentation. – When products regulated by this rule are sold, an invoice, bill of lading, shipping paper, or other documentation must accompany each delivery other than a retail sale. This document must identify the quantity, the name of the product, the particular grade of the product, the applicable automotive fuel rating, and oxygenate type and content (if applicable), the name and address of the seller and buyer, and the date

and time of the sale. Documentation must be retained at the retail establishment for a period not less than one year.

(Amended 2008)

3.1.2. Retail Dispenser Labeling. – All retail dispensing devices must identify conspicuously the type of product, the particular grade of the product, and the applicable automotive fuel rating.

3.1.3. Grade Name. – The sale of any product under any grade name that indicates to the purchaser that it is of a certain automotive fuel rating or ASTM grade shall not be permitted unless the automotive fuel rating or grade indicated in the grade name is consistent with the value and meets the requirements of Section 2, Standard Fuel Specifications.

3.2. Automotive Gasoline and Automotive Gasoline-Oxygenate Blends.

3.2.1. Posting of Antiknock Index Required. – All automotive gasoline and automotive gasoline-oxygenate blends shall post the antiknock index in accordance with applicable regulations, 16 CFR Part 306 issued pursuant to the Petroleum Marketing Practices Act, as amended.

3.2.2. When the Term “Leaded” May be Used. – The term “leaded” shall be used only when the fuel meets specification requirements of paragraph 2.1.5. Minimum Lead Content to be Termed “Leaded.”

3.2.3. Use of Lead Substitute Must be Disclosed. – Each dispensing device from which gasoline or gasoline-oxygenate blends containing a lead substitute is dispensed shall display the following legend: “Contains Lead Substitute.” The lettering of this legend shall not be less than 12.7 mm (½ in) in height and the color of the lettering shall be in definite contrast to the background color to which it is applied.

3.2.4. Nozzle Requirements for Leaded Fuel. – Each dispensing device from which gasoline or gasoline-oxygenate blends that contain lead in amounts sufficient to be considered “leaded” gasoline, or lead substitute engine fuel, is sold shall be equipped with a nozzle spout having a terminal end with an outside diameter of not less than 23.63 mm (0.930 in).

3.2.5. Prohibition of Terms. – It is prohibited to use specific terms to describe a grade of gasoline or gasoline-oxygenate blend unless it meets the minimum antiknock index requirement shown in Table 1. Minimum Antiknock Index Requirements.

Table 1. Minimum Antiknock Index Requirements		
Term	Minimum Antiknock Index	
	ASTM D4814 Altitude Reduction Areas IV and V	All Other ASTM D4814 Areas
Premium, Super, Supreme, High Test	90	91
Midgrade, Plus	87	89
Regular Leaded	86	88
Regular, Unleaded (alone)	85	87
Economy	--	86

(Table 1. Amended 1997)

3.2.6. Method of Retail Sale. – Type of Oxygenate must be disclosed. All automotive gasoline or automotive gasoline-oxygenate blends kept, offered, or exposed for sale, or sold at retail containing at least 1.5 mass percent oxygen shall be identified as “with” or “containing” (or similar wording) the predominant oxygenate in the engine fuel. For example, the label may read “contains ethanol” or “with methyl *tertiary*-butyl ether (MTBE).” The oxygenate contributing the largest mass percent oxygen to the blend shall be considered the predominant oxygenate. Where mixtures of only ethers are present, the retailer may post the predominant oxygenate followed by the phrase “or other ethers” or alternatively post the phrase “contains MTBE or other ethers.” In addition, gasoline-methanol blend fuels containing more than 0.15 mass percent oxygen from methanol shall be identified as “with” or “containing” methanol. This information shall be posted on the upper 50 % of the dispenser front panel in a position clear and conspicuous from the driver’s position in a type at least 12.7 mm (½ in) in height, 1.5 mm (1/16 in) stroke (width of type).

(Amended 1996)

3.2.7. Documentation for Dispenser Labeling Purposes. – The retailer shall be provided, at the time of delivery of the fuel, on product transfer documents such as an invoice, bill of lading, shipping paper, or other documentation:

- (a) Information that compiles with 40 CFR § 80.1503 when the fuel contains ethanol.

(Added 2014)

- (b) For fuels that do not contain ethanol, information that complies with 40 CFR § 80.1503 and a declaration of the predominant oxygenate or combination of oxygenates present in concentrations sufficient to yield an oxygen content of at least 1.5 mass percent in the fuel. Where mixtures of only ethers are present, the fuel supplier may identify either the predominant oxygenate in the fuel (i.e., the oxygenate contributing the largest mass percent oxygen) or alternatively, use the phrase “contains MTBE or other ethers.”

(Added 2014)

- (c) Gasoline containing more than 0.15 mass percent oxygen from methanol shall be identified as “with” or “containing” methanol.

(Added 2014)

(Amended 1996 and 2014)

3.2.8. EPA Labeling Requirements also Apply. – Retailers and wholesale purchaser-consumers of gasoline shall comply with the EPA pump labeling requirements for gasoline containing greater than 10 volume percent (v%) up to 15 volume percent (v%) ethanol (E15) under 40 CFR § 80.1501.

(Added 2012)

3.3. Diesel Fuel.

3.3.1. Labeling of Grade Required. – Diesel Fuel shall be identified by grades No. 1-D, No. 2-D, or No. 4-D.

3.3.2. EPA Labeling Requirements Also Apply. – Retailers and wholesale purchaser-consumers of diesel fuel shall comply with EPA pump labeling requirements for sulfur under 40 CFR § 80.570.

3.3.3. Delivery Documentation for Premium Diesel. – Before or at the time of delivery of premium diesel fuel, the retailer or the wholesale purchaser-consumer shall be provided on an invoice, bill of lading, shipping paper, or other documentation a declaration of all performance properties that qualifies the fuel as premium diesel fuel as required in Section 2.2.1. Premium Diesel Fuel.

(Added 1998) (Amended 1999)

3.3.4. Nozzle Requirements for Diesel Fuel. – Each dispensing device from which diesel fuel is sold at retail shall be equipped with a nozzle spout with a diameter that conforms to the latest version of SAE J285, “Dispenser Nozzle Spouts for Liquid Fuels Intended for Use with Spark Ignition and Compression Ignition Engines.” (Enforceable effective July 1, 2013)

(Added 2012)

(Amended 1998, 1999, 2008, and 2012)

3.4. Aviation Turbine Fuels.

3.4.1. Labeling of Grade Required. – Aviation turbine fuels shall be identified by Jet A, Jet A 1, or Jet B.

3.4.2. NFPA Labeling Requirements also Apply. – Each dispenser or airport fuel truck dispensing aviation turbine fuels shall be labeled in accordance with the most recent edition of National Fire Protection Association (NFPA 407), Standard for Aircraft Fuel Servicing.

NOTE: For example, NFPA 407, 2007 edition: Section 4.3.18 Product Identification Signs. Each aircraft fuel servicing vehicle shall have a sign on each side and the rear to indicate the product. The sign shall have letters at least 75 mm (3 in) high of color sharply contrasting with its background for visibility. It shall show the word “FLAMMABLE” and the name of the product carried, such as “JET A,” “JET B,” “GASOLINE,” or “AVGAS.” (NOTE: Refer to the most recent edition NFPA 407.)

3.5. Aviation Gasoline.

3.5.1. Labeling of Grade Required. – Aviation gasoline shall be identified by Grade 80, Grade 91, Grade 100, or Grade 100LL, or Grade 82UL

(Amended 2008)

3.5.2. NFPA Labeling Requirements also Apply. – Each dispenser or airport fuel truck dispensing aviation gasoline shall be labeled in accordance with the most recent edition of National Fire Protection Association (NFPA) 407, Standard for Aircraft Fuel Servicing.

NOTE: For example, NFPA 407, 2007 edition: Section 4.3.18 Product Identification Signs. Each aircraft fuel servicing vehicle shall have a sign on each side and the rear to indicate the product. The sign shall have letters at least 3 in (75 mm) high of color sharply contrasting with its background for visibility. It shall show the word “FLAMMABLE” and the name of the product carried, such as “JET A,” “JET B,” “GASOLINE,” or “AVGAS.” (NOTE: Refer to the most recent edition NFPA 407.)

3.6. Fuel Oils.

3.6.1. Labeling of Grade Required. – Fuel Oil shall be identified by the grades of No. 1 S500, No. 1 S5000, No. 2 S500, No. 2 S5000, No. 4 (Light), No. 4, No. 5 (Light), No. 5 (Heavy), or No. 6.

(Amended 2008)

3.7. Kerosene (Kerosine).

3.7.1. Labeling of Grade Required. – Kerosene shall be identified by the grades No. 1-K or No. 2-K.

3.7.2. Additional Labeling Requirements. – Each retail dispenser of kerosene shall be labeled as 1-K Kerosene or 2-K. In addition, No. 2-K dispensers shall display the following legend:

“Warning - Not Suitable For Use In Unvented Heaters Requiring No. 1-K.”

The lettering of this legend shall not be less than 12.7 mm (½ in) in height by 1.5 mm (1/16 in) stroke; block style letters and the color of lettering shall be in definite contrast to the background color to which it is applied.

3.8. Ethanol Flex Fuel.

3.8.1. How to Identify Ethanol Flex Fuel. – Ethanol flex fuel shall be identified as Ethanol Flex Fuel or EXX Flex Fuel.

3.8.2. Labeling Requirements.

- (a) Ethanol flex fuel with an ethanol concentration no less than 51 and no greater than 83 volume percent shall be labeled “Ethanol Flex Fuel, minimum 51 % ethanol.”
- (b) Ethanol flex fuel with an ethanol concentration less than or equal to 50 volume percent shall be labeled “EXX Flex Fuel, minimum YY % ethanol,” where the XX is the ethanol concentration in volume percent and YY is XX minus five (– 5). The actual ethanol concentration of the fuel shall be XX volume percent plus or minus five (± 5) volume percent.
(Added 2014)
- (c) A label shall be posted which states “For Use in Flexible Fuel Vehicles (FFV) Only.” This information shall be clearly and conspicuously posted on the upper 50 % of the dispenser front panel in a type at least 12.7 mm ($\frac{1}{2}$ in) in height, 1.5 mm ($\frac{1}{16}$ in) stroke (width of type). A label shall be posted which states, “CHECK OWNER’S MANUAL,” and shall not be less than 6 mm ($\frac{1}{4}$ in) in height by 0.8 mm ($\frac{1}{32}$ in) stroke; block style letters and the color shall be in definite contrast to the background color to which it is applied.

(Amended 2007, 2008, and 2014)

3.9. M85 Fuel Methanol.

3.9.1. How to Identify M85 Fuel Methanol. – Fuel methanol shall be identified as M85.

Example: M85

3.9.2. Retail Dispenser Labeling.

- (a) Fuel methanol shall be labeled with its automotive fuel rating in accordance with 16 CFR Part 306.

Example: M85 Methanol

- (b) A label shall be posted which states “For Use in Vehicles Capable of Using M85 Only.” This information shall be clearly and conspicuously posted on the upper 50 % of the dispenser front panel in a type of at least 12.7 mm ($\frac{1}{2}$ in) in height, 1.5 mm ($\frac{1}{16}$ in) stroke (width of type).

(Amended 2008)

3.10. Liquefied Petroleum Gas (LPG).

3.10.1. How LPG is to be Identified. – Liquefied petroleum gases shall be identified by grades Commercial Propane, Commercial Butane, Commercial PB Mixtures or Special-Duty Propane (HD5).

3.10.2. Retail Dispenser Labeling. – Each retail dispenser of LPGs shall be labeled as “Commercial Propane,” “Commercial Butane,” “Commercial PB Mixtures,” or “Special-Duty Propane (HD5).”

3.10.3. Additional Labeling Requirements. – LPG shall be labeled with its automotive fuel rating in accordance with 16 CFR Part 306.

3.10.4. NFPA Labeling Requirements Also Apply. (Refer to the most recent edition of NFPA 58.)

3.11. Compressed Natural Gas (CNG).

3.11.1. How Compressed Natural Gas is to be Identified. – For the purposes of this regulation, compressed natural gas shall be identified by the term “Compressed Natural Gas” or “CNG.”

3.11.2. Retail Sales of Compressed Natural Gas Sold as a Vehicle Fuel.

3.11.2.1. Method of Retail Sale. – All CNG kept, offered, or exposed for sale or sold at retail as a vehicle fuel shall be in terms of the gasoline liter equivalent (GLE) or gasoline gallon equivalent (GGE).

3.11.2.2. Retail Dispenser Labeling.

3.11.2.2.1. Identification of Product. – Each retail dispenser of CNG shall be labeled as “Compressed Natural Gas.”

3.11.2.2.2. Conversion Factor. – All retail CNG dispensers shall be labeled with the conversion factor in terms of kilograms or pounds. The label shall be permanently and conspicuously displayed on the face of the dispenser and shall have either the statement “1 Gasoline Liter Equivalent (GLE) is equal to 0.678 kg of Natural Gas” or “1 Gasoline Gallon Equivalent (GGE) is equal to 5.660 lb of Natural Gas” consistent with the method of sale used.

3.11.2.2.3. Pressure. – CNG is dispensed into vehicle fuel containers with working pressures of 16 574 kPa, 20 684 kPa, or 24 821 kPa. The dispenser shall be labeled 16 574 kPa, 20 684 kPa, or 24 821 kPa corresponding to the pressure of the CNG dispensed by each fueling hose.

3.11.2.2.4. NFPA Labeling. – NFPA Labeling requirements also apply. (Refer to NFPA 52.)

3.11.3. Nozzle Requirements for CNG. – CNG fueling nozzles shall comply with ANSI/AGA/CGA NGV 1.

3.12. Liquefied Natural Gas (LNG).

3.12.1. How Liquefied Natural Gas is to be Identified. – For the purposes of this regulation, liquefied natural gas shall be identified by the term “Liquefied Natural Gas” or “LNG.”

3.12.2. Labeling of Retail Dispensers of Liquefied Natural Gas Sold as a Vehicle Fuel.

3.12.2.1. Identification of Product. – Each retail dispenser of LNG shall be labeled as “Liquefied Natural Gas.”

3.12.2.2. Automotive Fuel Rating. – LNG automotive fuel shall be labeled with its automotive fuel rating in accordance with 16 CFR Part 306.

3.12.2.3. NFPA Labeling. – NFPA Labeling requirements also apply. (Refer to NFPA 57.)

3.13. Oil.

3.13.1. Labeling of Vehicle Engine (Motor) Oil Required.

3.13.1.1. Viscosity. – The label on any vehicle engine (motor) oil container, receptacle, dispenser, or storage tank and the invoice or receipt from service on an engine that includes the installation of bulk vehicle engine (motor) oil dispensed from a receptacle, dispenser, or storage tank shall contain the viscosity grade classification preceded by the letters “SAE” in accordance with the SAE International’s latest version of SAE J300, “Engine Oil Viscosity Classification.”

(Amended 2012 and 2014)

3.13.1.2. Brand. – The label on any vehicle engine (motor) oil container and the invoice or receipt from service on an engine that includes the installation of bulk vehicle engine (motor) oil dispensed from a receptacle, dispenser, or storage tank shall contain the name, brand, trademark, or trade name of the vehicle engine (motor) oil.

(Added 2012 and 2014)

3.13.1.3. Engine Service Category. – The label on any vehicle engine (motor) oil container, receptacle, dispenser or storage tank and the invoice or receipt from service on an engine that includes the installation of bulk vehicle engine (motor) oil dispensed from a receptacle, dispenser, or storage tank shall contain the engine service category, or categories, displayed in letters not less than 3.18 mm ($\frac{1}{8}$ in) in height, as defined by the latest version of SAE J183, “Engine Oil Performance and Engine Service Classification (Other than “Energy Conserving”)” API Publication 1509, “Engine Oil Licensing and Certification System,” or other “Vehicle or Engine Manufacturer Standards” as provided in Section 3.13.1.3.1.

(Amended 2012 and 2014)

3.13.1.3.1. Vehicle or Engine Manufacturer Standard. – The label on any vehicle engine (motor) oil container, receptacle, dispenser, or storage tank and the invoice or receipt from service on an engine that includes the installation of vehicle engine (motor) oil dispensed from a receptacle, dispenser, or storage tank shall identify the specific vehicle or engine manufacturer standard, or standards, met in letters not less than 3.18 mm ($\frac{1}{8}$ in) in height. If the vehicle (motor) oil only meets a vehicle or engine manufacturer standard, the label must clearly identify that the oil is only intended for use where specifically recommended by the vehicle or engine manufacturer.

(Added 2014)

3.13.1.3.2. Inactive or Obsolete Service Categories. – The label on any vehicle engine (motor) oil container, receptacle, dispenser, or storage tank and the invoice or receipt from service on an engine that includes the installation of vehicle engine (motor) oil dispensed from a receptacle, dispenser, or storage tank shall bear a plainly visible cautionary statement in compliance with the latest version of SAE J183, “Engine Oil Performance and Engine Service Classification (Other than “Energy Conserving”)” Appendix A, whenever the vehicle engine (motor) oil in the container or in bulk does not meet an active API service category as defined by the latest version of SAE J183, “Engine Oil Performance and Engine Service Classification (Other than “Energy Conserving”).” If a vehicle engine (motor) oil is identified as only meeting a vehicle or engine manufacturer standard, the labeling requirements in Section 3.13.1.3.1. Vehicle or Engine Manufacturer Standard applies.

(Added 2012) (Amended 2014)

3.13.1.4. Tank Trucks or Rail Cars. – Tank trucks, rail cars, and types of delivery trucks that are used to deliver bulk vehicle engine (motor) oil are not required to display the SAE viscosity grade and service category or categories on such tank trucks, rail cars, and other types of delivery trucks.

(Added 2012) (Amend 2013 and 2014)

3.13.1.5. Documentation. – When the engine (motor) oil is sold in bulk, an invoice, bill of lading, shipping paper, or other documentation must accompany each delivery. This document must identify the quantity of bulk engine (motor) oil delivered as defined in Sections 3.13.1.1. Viscosity; 3.13.1.2. Brand; 3.13.1.3. Engine Service Category; the name and address of the seller and buyer; and the date and time of the sale. For inactive or obsolete service categories, the documentation shall also bear a plainly visible cautionary statement as required in Section 3.13.1.3.2. Inactive or Obsolete Service Categories. Documentation must be retained at the retail establishment for a period of not less than one year.

(Added 2013) (Amended 2014)

(Amended 2012, 2013, and 2014)

3.13.2. Labeling of Recreational Motor Oil.

3.13.2.1. Viscosity. – The label on each container of recreational motor oil shall contain the viscosity grade classification preceded by the letters “SAE” in accordance with the SAE International’s latest version of SAE J300, “Engine Oil Viscosity Classification.”

3.13.2.2. Intended Use. – The label on each container of recreational motor oil shall contain a statement of its intended use in accordance with the latest version of SAE J300, “Engine Oil Viscosity Classification.”

3.13.3. Labeling of Gear Oil.

3.13.3.1. Viscosity. – The label on each container of gear oil shall contain the viscosity grade classification preceded by the letters “SAE” in accordance with the SAE International’s latest version of SAE J306, “Automotive Gear Lubricant Viscosity Classification” or SAE J300, “Engine Oil Viscosity Classification.”

3.13.3.1.1. Exception. – Some automotive equipment manufacturers may not specify an SAE viscosity grade requirement for some applications. Gear oils intended to be used only in such applications are not required to contain an SAE viscosity grade on their labels.

3.13.3.2. Service Category. – The label on each container of gear oil shall contain the service category, or categories, in letters not less than 3.18 mm (¹/₈ in) in height, as defined by the latest version of SAE J308, “Axle and Manual Transmission Lubricants.”

(Added 2004)

3.14. Automatic Transmission Fluid.

3.14.1. Labeling. – The label on a container of automatic transmission fluid shall not contain any information that is false or misleading. In addition, each container of automatic transmission fluid shall be labeled with the following:

- (a) the brand name;
- (b) the name and place of business of the manufacturer, packer, seller, or distributor;
- (c) the words “Automatic Transmission Fluid”;
- (d) the duty type of classification; and
- (e) an accurate statement of the quantity of the contents in terms of liquid measure.

3.14.2. Documentation of Claims Made Upon Product Label. – Any manufacturer or packer of any product subject to this article and sold in this state shall provide, upon request of duly authorized representatives of the Director, documentation of any claim made upon their product label.

(Added 2004)

3.15. Biodiesel and Biodiesel Blends.

3.15.1. Identification of Product. – Biodiesel shall be identified by the term “biodiesel” with the designation “B100.” Biodiesel blends shall be identified by the term “Biodiesel Blend.”

3.15.2. Labeling of Retail Dispensers.

3.15.2.1. Labeling of Grade Required. – Biodiesel shall be identified by the grades S15 or S500. Biodiesel blends shall be identified by the grades No. 1-D, No. 2-D, or No. 4-D.

3.15.2.2. EPA Labeling Requirements also Apply. – Retailers and wholesale purchaser-consumers of biodiesel blends shall comply with EPA pump labeling requirements for sulfur under 40 CFR § 80.570.

3.15.2.3. Automotive Fuel Rating. – Biodiesel and biodiesel blends shall be labeled with its automotive fuel rating in accordance with 16 CFR Part 306.

3.15.2.4. Biodiesel Blends. – When biodiesel blends greater than 20 % by volume are offered by sale, each side of the dispenser where fuel can be delivered shall have a label conspicuously placed that states “Consult Vehicle Manufacturer Fuel Recommendations.”

The lettering of this legend shall not be less than 6 mm ($\frac{1}{4}$ in) in height by 0.8 mm ($\frac{1}{32}$ in) stroke; block style letters and the color shall be in definite contrast to the background color to which it is applied.

3.15.3. Documentation for Dispenser Labeling Purposes. – The retailer shall be provided, at the time of delivery of the fuel, a declaration of the volume percent biodiesel on an invoice, bill of lading, shipping paper, or other document. This documentation is for dispenser labeling purposes only; it is the responsibility of any potential blender to determine the amount of biodiesel in the diesel fuel prior to blending.

3.15.4. Exemption. – Biodiesel blends that contain less than or equal to 5 % biodiesel by volume are exempted from the requirements of Sections 3.15.1. Identification of Product, 3.15.2. Labeling of Retail Dispensers, and 3.15.3. Documentation for Dispenser Labeling Purposes when it is sold as “diesel fuel” as required in Section 3.3. Diesel Fuel.

(Added 2005) (Amended 2008)

3.16. Diesel Exhaust Fluid (DEF).

3.16.1. Labeling of Diesel Exhaust Fluid (DEF). – DEF shall be labeled .

3.16.1.1. Retail Dispenser Labeling. – A label shall be clearly and conspicuously placed on the front panel of the DEF dispenser stating “for operation of selective catalytic reduction (SCR) converters in motor vehicles with diesel engines.”

3.16.1.2. Documentation for Retailers of Bulk Product. – A DEF supplier shall provide, at the time of delivery of the bulk shipment of DEF, identification of the fluid’s origin including the name of the fluid manufacturer, the brand name, trade name, or trademark, and a statement identifying the fluid as DEF conforming to specifications given in the latest version of ISO 22241, “Diesel engines – NOx reduction agent AUS 32.” This information shall be provided by the supplier on an invoice, bill of lading, shipping paper, or other document.

3.16.1.3. Labeling Packaged Product. – Any DEF retail package shall bear a label that includes the name of the fluid manufacturer, the brand name, trade name, or trademark, a statement identifying the fluid as DEF conforming to specifications given in the latest version of ISO 22241, “Diesel engines – NOx reduction agent AUX 32.” And the statement, “It is recommended to store DEF between – 5 °C to 30 °C (23 °F to 86 °F).”

3.16.1.4. Documentation for Bulk Deliveries. – A carrier that transports or accepts for transportation any bulk shipment by tank truck, freight container, cargo tank, railcar, or any other vehicle used to transport or deliver bulk quantities of DEF shall, at the time of delivery of the DEF, provide identification of the fluid’s origin including the name of the fluid manufacturer, the brand name, trade name, or trademark, and a statement identifying the fluid as DEF conforming to specifications given in the latest version of ISO 22241, “Diesel engines – NOx reduction agent AUS 32.” This information shall be provided to the recipient on an invoice, bill of lading, shipping paper, or other document.

Effective date shall be January 1, 2016.

(Added 2014)

Section 4. Retail Storage Tanks and Dispenser Filters

4.1. Water in Gasoline-Alcohol Blends, Biodiesel Blends, Ethanol Flex Fuel, Aviation Gasoline, and Aviation Turbine Fuel. – No water phase greater than 6 mm (¼ in) as determined by an appropriate detection paste or other acceptable means, is allowed to accumulate in any tank utilized in the storage of gasoline-alcohol blend, biodiesel, biodiesel blends, ethanol flex fuel, aviation gasoline, and aviation turbine fuel.

(Amended 2008, 2012, and 2014)

4.2. Water in Gasoline, Diesel, Gasoline-Ether, and Other Fuels. – Water shall not exceed 25 mm (1 in) in depth when measured with water indicating paste or other acceptable means in any tank utilized in the storage of diesel, gasoline, gasoline-ether blends, and kerosene sold at retail except as required in Section 4.1. Water in Gasoline-Alcohol Blends, Biodiesel Blends, Ethanol Flex Fuel, Aviation Gasoline, and Aviation Turbine Fuel.

(Amended 2008, 2012, and 2014)

4.3. Dispenser Filters.

4.3.1. Engine Fuel Dispensers.

- (a) All gasoline, gasoline-alcohol blends, gasoline-ether blends, ethanol flex fuel, and M85 methanol dispensers shall have a 10 micron or smaller nominal pore-sized filter.
- (b) All biodiesel, biodiesel blends, diesel, and kerosene dispensers shall have a 30 micron or smaller nominal pore-sized filter.

(Amended 2014)

4.3.2. Delivery of Aviation Fuel and Gasoline.

- (a) Fuel delivery of aviation turbine fuel into aircraft shall be filtered through a fuel filter/separator conforming to API 1581, "Specification and Qualification Procedures for Aviation Jet Fuel Filter/Separators."
- (b) Fuel delivery of aviation gasoline into aircraft shall be filtered through a fuel filter/separator conforming to API 1581, "Specification and Qualification Procedures for Aviation Jet Fuel Filter/Separators."

(Added 2008) (Amended 2014)

4.4. Product Storage Identification.

4.4.1. Fill Connection Labeling. – The fill connection for any fuel product storage tank or vessel supplying engine-fuel devices shall be permanently, plainly, and visibly marked as to the product contained.

(Amended 2008)

4.4.2. Declaration of Meaning of Color Code. – When the fill connection device is marked by means of a color code, the color code shall be conspicuously displayed at the place of business.

4.5. Volume of Product Information. – Each retail location shall maintain on file a calibration chart or other means of determining the volume of each regulated product in each storage tank and the total capacity of such storage tank(s). This information shall be supplied immediately to the Director.

Section 5. Condemned Product

5.1. Stop-Sale Order at Retail. – A stop-sale order may be issued to retail establishment dealers for fuels failing to meet specifications or when a condition exists that causes product degradation. A release from a stop-sale order will be awarded only after final disposition has been agreed upon by the Director. Confirmation of disposition shall

be submitted in writing on form(s) provided by the Director and contain an explanation for the fuel's failure to meet specifications. Upon discovery of fuels failing to meet specifications, meter readings and physical inventory shall be taken and reported in confirmation for disposition. Specific variations or exemptions may be made for fuels designed for special equipment or services and for which it can be demonstrated that the distribution will be restricted to those uses.

5.2. Stop-Sale Order at Terminal or Bulk Plant Facility. – A stop-sale order may be issued when products maintained at terminals or bulk plant facilities fail to meet specifications or when a condition exists that may cause product degradation. The terminal or bulk storage plant shall immediately notify all customers that received those product(s) and make any arrangements necessary to replace or adjust to specifications those product(s). A release from a stop-sale order will be awarded only after final disposition has been agreed upon by the Director. Confirmation of disposition of products shall be made available in writing to the Director. Specific variations or exemptions may be made for fuels used for blending purposes or designed for special equipment or services and for which it can be demonstrated that the distribution will be restricted to those uses.

Section 6. Product Registration

6.1. Engine Fuels Designed for Special Use. – All engine fuels designed for special use that do not meet ASTM specifications or standards addressed in Section 2. Standard Fuel Specifications shall be registered with the Director on forms prescribed by the Director 30 days prior to when the registrant wishes to engage in sales. The registration form shall include all of the following information:

6.1.1. Identity. – Business name and address(es).

6.1.2. Address. – Mailing address, if different than business address.

6.1.3. Business Type. – Type of ownership of the distributor or retail dealer, such as an individual, partnership, association, trust, corporation, or any other legal entity or combination thereof.

6.1.4. Signature. – An authorized signature, title, and date for each registration.

6.1.5. Product Description. – Product brand name and product description.

6.1.6. Product Specification. – A product specification sheet shall be attached.

6.2. Renewal. – Registration is subject to annual renewal.

6.3. Re-registration. – Re-registration is required 30 days prior to any changes in Section 6.1. Engine Fuels Designed for Special Use.

6.4. Authority to Deny Registration. – The Director may decline to register any product that actually or by implication would deceive or tend to deceive a purchaser as to the identity or the quality of the engine fuel.

6.5. Transferability. – The registration is not transferable.

Section 7. Test Methods and Reproducibility Limits

7.1. ASTM Standard Test Methods. – ASTM Standard Test Methods referenced for use within the applicable Standard Specification shall be used to determine the specification values for enforcement purposes.

7.1.1. Premium Diesel. – The following test methods shall be used to determine compliance with the premium diesel parameters:

(a) **Cetane Number.** – ASTM D613, “Standard Test Method for Cetane Number of Diesel Fuel Oil”;

- (b) **Low Temperature Operability.** – ASTM D4539, “Standard Test Method for Filterability of Diesel Fuels by Low-Temperature Flow Test (LTFT) or ASTM D2500, “Standard Test Method for Cloud Point of Petroleum Products” (according to marketing claim);
- (c) **Thermal Stability.** – ASTM D6468, “Standard Test Method for High Temperature Stability of Middle Distillate Fuels” (180 min, 150 °C); and
- (d) **Lubricity.** – ASTM D6079, “Standard Test Method for Evaluating Lubricity of Diesel Fuels by the High Frequency Reciprocating Rig (HFRR).”

(Amended 2003)

7.2. Reproducibility Limits.

7.2.1. AKI Limits. – When determining the antiknock index (AKI) acceptance or rejection of a gasoline sample, the AKI reproducibility limits as outlined in the latest version of ASTM D4814, “Standard Specification for Automotive Spark-Ignition Engine Fuel, Appendix X1 shall be acknowledged for enforcement purposes.

7.2.2. Reproducibility. – The reproducibility limits of the standard test method used for each test performed shall be acknowledged for enforcement purposes, except as indicated in Section 2.2.1. Premium Diesel Fuel and Section 7.2.1. AKI Limits. No allowance shall be made for the precision of the test methods for aviation gasoline or aviation turbine fuels.

(Amended 2008)

7.2.3. SAE Viscosity Grades for Engine Oils. – All values are critical specifications as defined in the latest version of ASTM D3244, “Standard Practice for Utilization of Test Data to Determine Conformance with Specifications.” The product shall be considered to be in conformance if the Assigned Test Value (ATV) is within the specification.

(Added 2008)

7.2.4. Dispute Resolution. – In the event of a dispute over a reported test value, the guidelines presented in the latest version of ASTM D3244, “Standard Practice for Utilization of Test Data to Determine Conformance with Specifications,” shall be used to determine the acceptance or rejection of the sample.

7.2.5. Additional Enforcement Action. – The Director may initiate enforcement action in the event that, based upon a statistically significant number of samples, the average test result for products sampled from a particular person is greater than the legal maximum or less than the legal minimum limits (specification value), posted values, certified values, or registered values.

(Added 2008)

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