

Agenda of the Laws and Regulations Committee

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Reference
Key Number

200 **Introduction**

The Laws and Regulations Committee (L&R Committee) will address the following items at its Interim Meeting. Table A identifies agenda items by Reference Key Number, title, and page number. The first three digits of the Reference Key Numbers of the items are assigned from the subject series listed below. The fact that an item may appear on the agenda does not mean it will be presented to the NCWM for a vote; The Committee may withdraw some items, present some items for information and further study, issue interpretations, or make specific recommendations for changes to the publications listed below. The recommendations presented in this agenda are statements of proposal and are not necessarily recommendations of the Committee. The appendices to the agenda are listed in Table B.

This agenda contains recommendations to amend National Institute of Standards and Technology (NIST) Handbook 130, 2002 edition, "Uniform Laws and Regulations," and NIST Handbook 133, "Checking the Net Contents of Packaged Goods," Fourth Edition. Revisions proposed by the Committee are shown in **bold face print** by ~~crossing out~~ information to be deleted and underlining information to be added. New items proposed for the handbooks are designated as such and are shown in **bold face print**. "SI" means the International System of Units. "FPLA" means the Fair Packaging and Labeling Act. The section mark, "\$," is used in most references in the text and is followed by the section number and title, (for example, § 1.2. Weight.) When used in this agenda, the term "weight" means "mass."

Subject Series

Handbook 130 – General	210 Series
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Weights and Measures Law (WML)	221 Series
Weighmaster Law (WL)	222 Series
Engine Fuels, Petroleum products, and Automotive Lubricants Inspection Law (EFL)	223 Series
Uniform Regulations	230 Series
Packaging and labeling Regulation (PLR)	231 Series
Method of sale of Commodities Regulation (MSCR)	232 Series
Unit Pricing Regulation (UPR)	233 Series
Voluntary Registration of Servicepersons and Service Agencies	
For Commercial Weighing and Measuring Devices Regulation (VREG)	234 Series
Open Dating Regulation (ODR)	235 Series
National Type Evaluation Regulation (NTER)	236 Series
Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation (EFR)	237 Series
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Details of All Items
(In Order by Reference Key Number)

232 Method of Sale of Commodities Regulation

232-1 Stored Tare Weights

Source: Southern Weights and Measures Association (SWMA)

Background: Stored vehicle tare weights are being used and are often found to be incorrect. Errors found in vehicle tare weight surveys range from weighing 8 900 pounds less than the stored tare to weighing 2 680 pounds more than the stored tare. A load of sand or gravel at a cost of \$5.50 per ton with a tare error of 750 pounds has a monetary value for each weighing error of \$2.06. If this error occurs on four transactions per day for 240 working days, it results in an overcharge of more than \$1,977 per year. Since the practice of using stored tare weights is followed by other types of businesses (e.g., landfills and asphalt plants) where prices may reach \$70 or more per ton, an error of 750 pounds in the tare weight of a truck would equal \$26 per weightment. If this truck were involved in four transactions per day for 240 working days, the overcharge would total more than \$25,000 per year.

Recommendation: The L&R Committee recognizes the need for a regulation to require scale operators to maintain accurate and up-to-date stored tare weights. In 2002 the L&R Committee reviewed the information concerning this issue and voted to move the item forward as Voting, using the language as proposed by the Southern Weights and Measures Association (SWMA). In July 2002, the L&R Committee recommended that NIST Handbook 130, Method of Sale Regulation, Section 3, General, be amended by adding Section 3.5 - Vehicle Tare Weights. This item was not adopted at the 2002 NCWM.

3.5 – Vehicle Tare Weights - Whenever stored vehicle tare weights are employed, the following conditions and requirements shall apply:

3.5.1 - Allowable differences. - The difference between tare weight and stored tare weight must not exceed plus or minus 3 scale divisions.

3.5.2 - All stored vehicle scale tare weights shall be determined to the nearest scale division. When stored tare weights are used, issued weight certificates shall identify that fact by placing words such as "stored tare" next to the tare weight. Abbreviations or symbols may be used, provided the terminology is defined elsewhere on the printed ticket.

3.5.3 - Stored vehicle scale tare weights shall be verified at regular intervals at a frequency to be determined by the jurisdiction with statutory authority for the device, unless preempted by a more stringent guideline/requirement or modification of the vehicle.

3.5.4 - The use of stored tare weights shall be limited to vehicles moving earth, rock, gravel, refuse, coal, or asphalt material.

Comments: The SWMA, WWMA, and the CWMA recommend this item be withdrawn. The SWMA recognized that stored tare weights are in use in all of the States. Each jurisdiction is encouraged to address these situations on a case-by-case basis. At the CWMA there were several comments expressing the concern of allowing a tolerance for a known weight. Jim Vanderwielen, Packers & Stockyards, stated his concern if this would be applied to poultry being weighed on a large capacity (vehicle) scale. Allowing a tolerance of 3d would conflict with their requirements.

The WWMA recommends that this item be withdrawn.

The CWMA L&R Committee recommends this item be withdrawn.

The State of Michigan presented an audit report of 77 vehicles weighed with stored tare weights. The following is a summary of the audit report.

Number of Trucks Weighed	77
Number of Stored Tares Found in Error	77
Percentage of Stored Tares in Error	100 %
AVERAGE ERROR "Stored Tare Weight"	988.3 lbs
Number of Stored Tare Weights Favoring the "Device Owner"	34
Number of Stored Tare Weights Favoring the "Customer"	43
Total Error Weight Favoring the "Device Owner"	46 580 lbs
Total Error Weight Favoring the "Customer"	32 500 lbs
Economic Benefit to the "Device Owner"	14 080 lbs
Estimated Annual Volume (Tons)	4 400
Estimated Annual Sales	\$26,500,000.00
Average "Estimated" Number of Trucks Weighed: Company/Year	71 587

Northeast Weights and Measures Association (NEWMA) opposes the item as written and recommends that if the item is to be considered further, it be amended as follows:

3.5 – Vehicle Tare Weights - Whenever stored vehicle tare weights are employed, the following conditions and requirements shall apply:

3.5.1 - All stored vehicle scale tare weights shall be determined to the nearest scale division. When stored tare weights are used, issued weight certificates shall identify that fact by placing words such as "stored tare" next to the tare weight. Abbreviations or symbols may be used, provided the terminology is defined elsewhere on the printed ticket.

3.5.2 - Stored vehicle scale tare weights shall be verified at regular intervals at a frequency to be determined by the jurisdiction with statutory authority for the device, unless preempted by a more stringent guideline/requirement or modification of the vehicle.

237 Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation

237-1 Petroleum Subcommittee Agenda Items

Source: Petroleum Subcommittee

Background: The Subcommittee submitted several proposed projects for its 1999 to 2000 work plan. At the 2001 Annual Meeting, the Committee developed an agenda for the Subcommittee based on the comments received on the following projects:

Federal Kerosene Dye Information – It was suggested that information on the new Internal Revenue Service kerosene dye policies be prepared and distributed to the States. The Subcommittee proposes to develop and distribute this information.

Publication 21- The Western Weights and Measures Association recommends that the Petroleum Subcommittee revise the sampling procedures and container requirements in NCWM Publication 21--*Petroleum Products Sampling Procedures and Safety Manual* to provide adequate precautions regarding the use of clear glass containers for product specification conformance testing. This recommendation is based on data presented to the NCWM by Chevron Products Company and the State of Tennessee.

Update the Engine Fuels, Petroleum Products, and Lubricants Laboratory Guideline – This guideline is contained in the Interpretations and Guidelines Section of NIST Handbook 130 and was last updated in 1994. Since that time, the

cost of equipment has changed and new test methods have been developed. The Subcommittee proposes to revise and update the guideline.

Automotive Lubricants – The Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation implies that the document covers lubricants. When the regulation was developed, the Subcommittee gave developing engine fuel requirements priority. The Subcommittee has proposed requirements for lubricants.

Comments: Ron Hayes, MO, updated the Committee on the Petroleum Subcommittee items. He stated that Federal Kerosene Dye Information would be addressed in a new section to be added to a future version of ASTM D3699 Standard Specification for Kerosene. The Engine Fuels, Petroleum Products and Lubricants Laboratory Guideline will be completed in the future. It will include additional equipment for testing premium diesel, and the equipment costs will be updated to reflect current pricing. Automotive Lubricants are addressed in item 237-2, Publication 21 is addressed in item 237-3.

237-2 Uniform Engine Fuels, Petroleum Products, and Lubricants Regulation

Source: Western Weights and Measures Association (WWMA)

Background: The Western Weights and Measures Association (WWMA) received numerous comments stating the need to update the Engine Fuels, Petroleum Products, and Lubricants Regulation. This regulation has not been updated since 1994. This recommendation is based on data presented to the WWMA by the Chevron Texaco Corporation.

Recommendation: The changes proposed by WWMA to the Engine Fuels, Petroleum Products, and Lubricants Regulation were published in the 2002 report of the L&R Committee and is given in Appendix A. The L&R Committee recommends that the proposed changes be studied at the regional weights and measures meetings and comments be submitted at the 2003 Interim Meeting.

Comments: At the WWMA meeting, David Heck commented that API supports the latest changes to Uniform Engine Fuels, Petroleum, and Lubricants Regulation. The WWMA recommends that the latest amended version, which includes requirements for lubricants and which is contained in Appendix A, move forward as a voting item.

Mike Belue, Belue Associates, reported that the State of California and Chevron Texaco have worked together to include the latest specifications and definitions to the document. Randy Jennings, Tennessee, reported that California (Dave Lazier and Dennis Johannes) along with the Petroleum Subcommittee members from Chevron Texaco have taken the lead on this issue. The WWMA supports this draft and recommends this item for consideration by the NCWM Laws and Regulations Committee.

237-3 Petroleum Products Sampling Procedures and Safety Manual

Source: Western Weights and Measures Association (WWMA)

Background: The Western Weights and Measures Association (WWMA) recommends the revision of sampling procedures and container requirements in NCWM Publication 21, "Petroleum Products Sampling Procedures and Safety Manual" to provide adequate precautions regarding the use of clear glass containers for product specification conformance testing. This recommendation is based on data presented to the WWMA by the Chevron Texaco Corporation and the State of Tennessee.

Recommendation: Three of the four regional W&M associations recommend similar changes to NCWM Publication 21. The WWMA recommends amending "Petroleum Products Sampling Procedures and Safety Manual", Section IV. B., Types of Sample Containers, as follows:

Sample containers may be clear or brown glass bottles or metal cans. The clear bottle is advantageous because it may be examined visually for cleanliness, and it also allows visual inspection of the sample for free water or solid impurities. The brown glass bottle should be used for samples in which the octane or cetane is a concern because it affords some protection from light, which can alter the characteristics of the sample (ASTM D02 Research Report

DO-1502, 03/23/01). Plastic coated bottles are available which provide protection from shattering. The only suitable metal cans are those with seams soldered on the exterior surface with a flux of rosin in a suitable solvent, which is easily removed with gasoline, or seamless aluminum bottles.

Randy Jennings from the Southern Weights and Measures Association supports the amended proposal. WWMA recommends this item move forward as a voting item.

The CWMA Laws and Regulations Committee recommended that this item move forward as a voting item, as amended below:

Sample containers may be clear or brown glass bottles or metal cans. A clear bottle is advantageous when conducting a visual examination for cleanliness, free water or solid impurities. The samples to be tested for octane or cetane should be protected from light because the light can alter the characteristics of the samples. Plastic coated bottles are available which provide protection from shattering. The only suitable metal cans are those with seams soldered on the exterior surface with a flux of rosin in a suitable solvent, which is easily removed with gasoline, or seamless aluminum bottles.

The SWMA Laws and Regulations Committee recommended the following text be added to Publication 21.

Sample containers may be clear or brown glass bottles or metal cans. A clear bottle is advantageous when conducting a visual examination for cleanliness, free water or solid impurities, while brown glass bottles provide protection from light. The samples to be tested for octane or cetane should be protected from light because the light can alter the characteristics of the samples. (See ASTM Research Report RR: D02-1502 for documented effects.) Plastic-coated bottles are available which provide protection from shattering. The only suitable metal containers are seamless aluminum bottles or metal cans with seams soldered on the exterior surface with a flux of rosin in a suitable solvent, which is easily removed with gasoline.

NEWMA recommends that this item remain Informational to permit jurisdictions time to study the proposed changes.

237-4 Biodiesel Fuel

Source: Central Weights and Measures Association (CWMA)

Recommendation: Amend NIST Handbook 130, Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation, Section 1. Definitions, Section 2. Standard Fuel Specifications, and Section 3. Classification and Method of Sale of Petroleum Products as follows:

Section 1. Definitions

~~1.8. Biodiesel.— means a blend consisting of diesel fuel and a substantial amount of esterified animal fats and/or vegetable oil(s).~~

Replace with new definition:

1.8. Biodiesel – means a fuel comprised of mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats, designated B100. (source Standard ASTM D 675.)

1.8.1 B20 Biodiesel — means a blend of biodiesel and diesel fuel of which the biodiesel portion is nominally 20 volume percent.

Section 2. Standard Fuel Specifications

Add two new sections:

B100 biodiesel shall meet the most recent version of ASTM D 6751, Standard Specification for biodiesel Fuel (B100) Blend Stock for Distillate Fuels

2.13.1 Biodiesel and diesel blends shall meet the following requirements: The base diesel fuel shall meet the requirements of ASTM 975 and the biodiesel blend stock shall meet ASTM D 6751.

2.13.2 Exception - biodiesel may be blended with diesel fuel whose sulfur or aromatic levels are outside Specification D 975 Grades 1-D, 2-D, and low sulfur 1-D and 2-D, provided the finished mixture meets pertinent national and local specifications and requirements for these properties.

Section 3. Classification and Method of Sale of Petroleum Products

Add the following new sections:

3.13. Biodiesel

3.13.1. How to Identify Biodiesel. – Biodiesel shall be identified by the capital letter B followed by the numerical value volume percentage. (Example: B20)

Retail Dispenser Labeling. – Each retail dispenser of biodiesel shall be labeled with the capital letter B followed by the numerical value volume percent biodiesel and ending with the word “biodiesel.” (Example: B20 biodiesel)

Exemption. – Diesel fuel containing two or less percent biodiesel is exempted from requirements 3.13.1 and 3.13.2.

237-5 E diesel

Source: Central Weights and Measures Association (CWMA)

Recommendation: To request that E diesel be added to the agenda of the NCWM Laws and Regulations Committee as a “Developing Item”.

There is currently no consensus specification for E diesel and a specification may need to be developed at a later date. It may become necessary to develop retail labeling guidelines for E diesel.

If development of specification and labeling guidelines do need to be developed, it may become necessary to assign this effort to the Petroleum Subcommittee or a specially selected Task Group.

Background: E diesel is a blend of Standard Number 2 diesel fuel containing up to 15 percent ethanol by volume. The blend also contains 0.2 to 5.0 percent by volume proprietary additives to maintain certain fuel properties and blend stability.

E diesel is already being sold commercially for numerous off-road applications and is being used in several on-road demonstration fleets. Currently E diesel does not have to conform to any specification designating properties.

A group of E diesel stakeholders have formed the E diesel Consortium to address the many technical and regulatory issues with this fuel. The E diesel Consortium made a presentation at the 2002 CWMA Annual Meeting. The CWMA Chairman sent a letter to the NCWM Chairman to alert the Conference leadership of this issue and the potential need for action.

The E diesel Consortium has also approached ASTM about developing an E diesel specification. The Consortium is concerned that without a detailed minimum specification that it could be possible to sell diesel ethanol blends which are of insufficient quality for their intended use.

At the CWMA Interim Meeting in September 2002, E diesel Consortium representative Robert Reynolds provided an update on the activities of the E diesel Consortium and asked that CWMA’s L & R Committee request E diesel be put on the NCWM’s L & R Committee agenda as a “Developing Item.”

237-6 Nozzle Requirements for Diesel Fuel

Source: Central Weights and Measures Association (CWMA)

Recommendation: Amend NIST Handbook 130, Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation, Section 3. Diesel Fuel, as follows:

Diesel Fuel

3.3.X. Nozzle Requirements for Diesel Fuel. -- Each dispensing device from which diesel 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). (Effective date to be determined by the NCWM L&R Committee.)

237-7 Premium Diesel, Single Definition

Source: Southern Weights and Measures Association (SWMA)

Background: The Southern Weights and Measures Association (SWMA) summarized its proposed changes to the Uniform Engine Fuels, Petroleum Products and Automotive Lubricants Regulation. The changes are to delete the energy content and fuel injector cleanliness requirement.

Justification for changes:

A single definition for premium fuel is imperative for this rule to gain acceptance by states as a true premium definition. NCWM passed this definition under the assurance that the Working Group (WG) would continue to monitor and work toward a better solution. The SWMA believes that action must be taken based on ASTM occurrences, recently reviewed survey data, and work group discussions that have included engine manufacturing representatives.

Thermal Stability – Engine manufactures have expressed that a standard of 80 percent should provide an adequate fuel. No recommended change to this value from the premium diesel work group. Data reviewed indicates this value should be achievable in most cases.

Energy Content – Fungible issues continue to exist. Lowering the value and leaving a low energy content as a core requirement would not accomplish our goal. Engine manufacturer representatives have indicated removing the requirement would be satisfactory.

Fuel Injector Cleanliness, along with the cafeteria approach, has been a very controversial component of this definition. The commitment to the NCWM to monitor the progress of the L 10 as an ASTM test method is to report officially to the NCWM that the ASTM effort to pass this method has failed and the ASTM L 10 Surveillance Panel has dissolved. Even without the cost factor, the test can no longer be run. If a laboratory were to offer the test and a failure was cited, it is likely that the cited party would be able to successfully contest the results from a test that has no controls. Unfortunately, the criteria of detergency, which may well provide a benefit to the end user, can no longer be used.

Recommendation: Amend NIST Handbook 130, Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation, Section 2 Standard Fuel Specifications, Subsection 2.2.1. Premium Diesel Fuel, as follows:

Premium Diesel Fuel

~~(a) Energy Content – A minimum energy content of 38.65 MJ/L, gross (138 700 BTU/gallon, gross) as measured by ASTM Standard Test Method D 240.~~

~~(b) (a.) Cetane Number - A minimum cetane number of 47.0 as determined by ASTM Standard Test Method D 613.~~

~~(c) (b.) Low Temperature Operability - A cold flow performance measurement which meets the ASTM D 975 tenth percentile minimum ambient air temperature charts and maps by either ASTM Standard Test Method D 2500~~

(Cloud Point) or ASTM Standard Test Method D 4539 (Low Temperature Flow Test, LTFT). Low temperature operability is only applicable October 1 - March 31 of each year.

(d) ~~(c.)~~ Thermal Stability - A minimum reflectance measurement of 80 percent as determined by ASTM Standard Test Method D 6468 using a green filter in the Oetel America's Test Method No. F21-61 (180 min, 150 °C).

(e) Fuel Injector Cleanliness – A Coordinating Research Council (CRC) rating of 10.0 or less and a flow loss of 6.0 percent or less as determined by the Cummins L-10 Injector Depositing Test.

~~1. When a fuel uses a detergent additive to meet the requirement, upon the request of the Director, the fuel marketer shall provide test data indicating the additive being used has passed the Cummins L-10 Injector Depositing Test requirements when combined with Caterpillar 1-K (CAT 1-K) reference fuel. The Director may also request records or otherwise audit the amount of additive being used to ensure proper treatment of fuels according to the additive manufacturer's recommended treat rates.~~

~~1.1. Upon the request of the Director, the fuel marketer shall provide an official "Certificate of Analysis" of the physical properties of the additive.~~

~~1.2. Upon the request of the Director, the fuel supplier shall provide a sample of detergent additive in an amount sufficient to be tested with CAT 1-K reference fuel in a Cummins L-10 Injector Depositing Test. The regulatory agency requesting the sample shall be responsible for all costs of testing.~~

~~2. When a fuel marketer relies on the inherent cleanliness of the diesel fuel to pass the Cummins L-10 Injector Depositing Test or if the fuel requires a lower detergent additive level than the amount required when the additive is used with the CAT 1-K reference fuel, the fuel marketer shall provide, upon the request of the Director, annual test results from an independent laboratory that confirms the fuel meets the requirements of 2.2.1. (e). The time of fuel sampling and testing shall be at the Director's discretion. The Director may witness the sampling of the fuel and the sealing of the sample container(s) with security seals. The Director may request confirmation from the testing laboratory that the seals were intact upon receipt by the laboratory. The final test results shall be provided to the Director. All costs for sampling, transporting, and testing shall be the responsibility of the fuel supplier. If the annual test complies, any additional testing at the request of the Director shall be paid for by the regulatory agency.~~

~~(Added 1998) (Amended 1999)~~

3.3.3. Labeling Properties of Premium Diesel -- All retail dispensers identified, as premium diesel must display either a label as outlined below:

1. A label that includes all qualifying parameters as specified in 2.2.1. Premium Diesel Fuel affixed to each retail dispenser meeting the following specifications: ~~The label shall include a series of check blocks clearly associated with each parameter. The boxes for the parameters qualifying the fuel must be checked. All other boxes shall remain unchecked. The marketer may check as many blocks as apply, or,~~

2. ~~A label that includes only the parameters selected by a marketer to meet the premium diesel requirements as specified in 2.2.1. Premium Diesel Fuel. In either case, the label must display the following words:~~

~~"Premium Diesel Fuel" in a type at least 12 millimeters (2 inches) in height by 1.4 millimeters (1/16 inch) stroke (width of type.)~~

~~When applicable, as determined by the label option and qualifying parameters chosen by the marketer, the label must also display the following information and letter type size:~~

~~The words "Energy Content," "Cetane Number," "Low Temperature Operability," "Thermal Stability," and "Fuel Injector Cleanliness" in a type at least 6 millimeters (1/4 inch) in height by 0.75 millimeter (1/32 inch) stroke (width of type.)~~

~~A declaration of the minimum Energy Content (minimum 38.65 MJ/L gross [138 700 BTU/gallon]), if energy content is chosen as a qualifying parameter, in type at least 3 millimeters (1/8 inch) in height by 0.4 millimeter (1/64 inch) stroke (width of type.)~~

~~The minimum cetane number guaranteed (at least 47.0) if cetane number is chosen as a qualifying parameter, in a type at least 3 millimeters (1/8 inch) in height by 0.4 millimeter (1/64 inch) stroke (width of type.)~~

~~The date range of low temperature operability enhancement, (e.g., October - March,) along with the qualifying test method (ASTM D 4539 or ASTM D 2500), if low temperature operability is chosen as a qualifying parameter, in a type at least 3 millimeters (1/8 inch) in height by 0.4 millimeter (1/64 inch) stroke (width of type).~~

~~For Example:~~

<p>_____ Premium Diesel Fuel</p> <p>High Energy Content _____ <input type="checkbox"/></p> <p>Cetane Number, 47.0 min _____ <input type="checkbox"/></p> <p>Low Temperature Operability (Oct. Mar., LTFT) _____ <input type="checkbox"/></p> <p>Thermal Stability _____ <input type="checkbox"/></p> <p>Fuel Injector Cleanliness _____ <input type="checkbox"/></p>
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~~or~~

<p>_____ Premium Diesel Fuel</p> <p>Cetane Number, 47.0 min _____</p> <p>Low Temperature Operability (Oct. Mar., LTFT) _____</p> <p>Thermal Stability _____</p>

The label must be conspicuously displayed on the upper-half of the product dispenser front panel in a position that is clear and conspicuous from the driver's position.
(Added 1998) (Amended 1999)

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

~~(a) Energy Content - ASTM D 240~~

~~(b) (a.) Cetane Number - ASTM D 613~~

~~(c) (b.) Low Temperature Operability - ASTM D 4539 or ASTM D 2500 (according to marketing claim)~~

~~(d) (c.) Thermal Stability - Oetel America F21-61 (180 min, 150 EC) ASTM D 6468.~~

~~(e) *Fuel Injector Cleanliness - The most recent edition of the Cummins L-10 Injector Depositing Test as endorsed by the ASTM L-10 Injector Depositing Test Surveillance Panel.~~

~~* Upon ASTM approval of a standard test methods that are is derived from the above referenced methods, the ASTM standard test methods shall be used to determine compliance with the applicable premium diesel parameter.
(Amended 1999)~~

239 Price Verification

239-1 Amend NIST Handbook 130, Examination Procedure for Price Verification, Section 6.2

Source: Western Weights and Measures Association (WWMA)

Background: While the definition of a point-of-sale system includes a requirement for a weighing and measuring device and requires indications to be visible in a direct sale (NIST Handbook 44, G-UR.3.3.), legal council for Sherwin-Williams reasoned that cash registers and computer monitors that do not incorporate a weighing or measuring device are not subject to the requirement that states the indication must be visible to a consumer. Although this interpretation is correct, the WWMA recommends that we should standardize the practice of consumers having access to price information as the transaction is in progress. Consumers would then be able to instantly confirm prices, businesses could correct incorrect prices during the transaction, and the benefit of correct prices and time saved would help everyone involved. Many businesses that use cash registers or computer monitors currently have remote indicators that meet the requirements, and for the ones that do not, technology and equipment is available to provide such indications at an affordable price.

Recommendation: Modify NIST Handbook 130, Examination Procedure for Price Verification, Section 6, Inspection 6.2 Other (a) add: **A cash register or computer monitor used to list and total customer purchases must be positioned so that its indications may be observed from a reasonable customer location and or have a remote indicator display so that its indications may be observed from a reasonable customer location.**

Comments: The SWMA considered this situation to be a timely issue, but there is concern whether or not this is a weights and measures problem. Additionally, there are concerns whether or not Publication 19 is the appropriate place to put this requirement if it is considered a weights and measures problem. The scope of this requirement is very broad and would impact a wide range of retail establishments, which may not come under the jurisdiction of weights and measures authorities since the systems may not be attached to a scale or a meter.

250 NIST Handbook 133

250-1 Amend NIST Handbook 133, 4th Edition, Chapter 2, Section 2.3

Source: Western Weights and Measures Association (WWMA)

Background: NIST Handbook 133, 4th Edition, Chapter 2, Section 2.2 states that a scale/balance having a “scale division no larger than 1/6 of the Maximum Allowable Variation (MAV) for the package size being weighed” is required to test product. The example used to illustrate this concept on page 7 uses a 0.002 lb scale division as the largest unit of measure appropriate for weighing these packages. The existing examples on pages 11, 12 and 16 are not consistent with the requirements of Section 2.2 and should be modified. In addition to the device suitability requirement, the reason for recording package errors in terms of “units of measure/dimensionless units” is to simplify and reduce computation errors. WWMA believes that the examples on pages 11, 12 and 16 are unnecessarily restrictive in that they require the use of the smallest scale division without any consideration to the weight of the package, the size of the errors or the graduations of the scale being used. For example, in a recent series of inspections, shortages as large as 12 pounds were found for 60 lb bags of concrete mix. The scale used to conduct the inspection had a minimum division of 0.002 lb, which would require the package errors to be recorded in a unit of measure of 0.001 lb. The recorded errors (in dimensionless units) for these inspections were as large as 12 000. Use of a larger unit of measure that met the MAV/6 requirement (MAV = 2 % of labeled quantity or 1.2 lb, MAV 6 = 0.2 lb) would not have affected the results of the inspection.

Recommendation: Amend NIST Handbook 133, pages 11 and 12, the second and third “Example” contained in the question “How are the specific steps of the Basic Test Procedure and document the inspection identified?” and amend the “Example” on page 16 contained in the question “How are individual package errors determined for the tare sample packages?” as follows:

Pages 11 and 12

Example: If the net weight declared on a package is 1 lb, the metric equivalent (accurate to six significant digits) is 453.592 g. Do not round down or truncate values in the calculations until the nominal gross weight is determined and recorded. If the package is also labeled 454 g, then the metric declaration is larger than the inch-pound declaration and should be used to verify the net contents of the package. The Basic Test Procedure does not prohibit the use of units of weight instead of dimensionless units when recording package errors, nor does it prohibit the use of net content computer programs to determine product compliance. Record the unit of measure in box 2. ~~The unit of measure is the minimum division of the unit of measurement used to conduct the test. If a scale is used that reads to thousandths of a pound, the unit of measure is 0.001 lb even if the scale division is 0.002 lb or 0.005 lb, should be less than or equal to MAV/6.~~

~~Example: If the scale has a scale division of 0.5 g, the unit of measure is 0.1 g. If a weighed package that has an error of "0.5 g," record the error as "5" using the dimensionless units." If the scale indicates in increments of 0.002 lb, the unit of measure is 0.001 lb. If a weighed package has an error of "0.016," record the error as "16" using "dimensionless units." The MAV for packages labeled 2.50 lb is 0.086 lb (see Table 2-5). The MAV/6 is 0.014 lb. If using a scale that reads in hundredths of a pound, the largest appropriate unit of measure should be 0.01 lb. If the scale division is in thousandths of a pound, the unit of measure may be 0.001, 0.002, or 0.005 lb. When using dimensionless units, multiply package errors by the unit of measure to obtain the package error in weight.~~

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~~Example: If weighing in 0.001 increments, the unit of measure is also 0.001 lb. If the unit of measure is 0.001 lb and if the package error for the first package opened for tare is +0.008 lb, instead of recording 0.008 lb in the plus column, record the error as "8" in the plus column. If the second package error is +0.060 lb, record the package error as "60" in the plus column, and so on. (This section does not prohibit the use of units of weight instead of dimensionless units or computer programs.)~~

Comments: Although there may be some benefits to clarifying the language of Handbook 133 for this information, the SWMA is not convinced that the proposed language is needed or justified to revise the Handbook at this time.

250-2 Amend NIST Handbook 133, 4th Edition, Chapter 2, Section 2.2

Source: Western Weights and Measures Association (WWMA)

Background: The WWMA reports that the test procedures in NIST Handbook 44 are designed for commercial weighing and measuring devices. A scale, when used by an official to inspect/test the net content of packaged goods, is in effect a comparator with mass standards. As currently written in NIST Handbook 133, the scale test requirements and the frequency that they are tested are unnecessarily time-consuming and onerous on the regulatory official. The requirements alone to determine if the scale is functioning correctly. This proposal simplifies the verification procedure and allows the official some flexibility. The requirement to hold the scale to tolerances to one-half scale divisions is difficult to determine under field conditions. The proposal to hold tolerances to whole divisions is reasonable bearing in mind that mass standards will determine any error that could then be corrected during the weighing operation.

Recommendation: Amend the scale test in NIST Handbook 133, 4th Edition, Chapter 2, Section 2.2, Measurement Standards and Test Equipment, as follows:

How often should I verify the accuracy of a scale?

Verify the accuracy of a scale before each initial daily use, each use at a new location, or when there is any indication of abnormal equipment performance (e.g., erratic indications). ~~Recheck the scale accuracy if it is found that the lot does not pass, so there can be confidence that the test equipment is not at fault.~~

Which accuracy requirements apply?

Scales used to check packages must meet the ~~acceptance~~ tolerances specified for their test load and accuracy class specified in Table 1-2 the current edition of NIST Handbook 44, “Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices” (NIST HB 44). ~~The tolerances for Class II and Class III digital scales are presented in Section 2.20, Scales, in NIST HB 44.~~

In testing, which tolerances apply to the scale?

Test Load in Divisions		Tolerance
Class II Scale	Class III Scale	
0 to 5 000	0 to 500	Plus or Minus <u>1</u> 0.5 Division
5 001 to 20 000	501 to 2 000	Plus or Minus <u>1</u> Division
20 001 or more	2 001 to 4 000	Plus or Minus <u>2</u> 1.5 Divisions
Not Applicable	4 001 or more	Plus or Minus <u>3</u> 2.5 Divisions

Do not use a scale if it has an error that exceeds the Table 1-2 specified tolerance in any of the performance tests described in the following section.

Which performance tests should be conducted to ensure the accuracy of a scale?

Use the following procedures and certified mass standards to verify the scale. ~~These following procedures, are based on those required in NIST Handbook 44 and have been modified to reduce the amount of time required for testing scales in field situations.~~

Increasing-Load Test

~~Use certified mass standards to conduct~~ Conduct an “increasing-load test” with all test loads centered on the load-receiving element. Start the test with the device on zero and progress with increasing test loads to a “maximum test load” of at least 10 percent more than the gross weight of the packages to be tested. Use at least three different test loads of approximately equal value to test the device up to the “maximum test load.” with an additional test load approximately equal to the average package tare weight. Verify the accuracy of the device at each test load. ~~Include the package tare weight as one of the test points.~~

Decreasing-Load Test

~~For all types of scales, other than one~~ Except for equal-arm balances or scales with a beam indicator ~~or equal-arm balance,~~ conduct a “decreasing-load test” with all test loads centered on the load-receiving element. Use the same test loads used in the “increasing-load test” of this section, and start at the “maximum test load.” Remove the test loads in the reverse order of the increasing-load test until all test loads are removed. Verify the accuracy of the scale at each test load.

Shift Test

Use a test load equal to one-half of the “maximum test load” used for the “increasing-load test.” ~~For bench scales (see Diagram 1) place. Place the test load as indicated in diagrams 1 or 2 below, in the center of four separate quadrants, equidistant between the center and edge of the load-receiving element and determine the accuracy in each quadrant for equal-arm balances. For example, where the load-receiving element is a rectangular or circular shape, place the test load in the center of the area represented by the shaded boxes in the following diagrams. For each position of the test load, verify the accuracy of the scale.~~

Comments: The tolerances for package checking scales have been in Handbook 133 for approximately 15 years. There appears to be a consensus among SWMA members that the scales used for regulatory inspection should be held to tight tolerances when checking packages. These tolerances have been acceptable for many years. Following the guidelines of Handbook 133 results in a high level of confidence in the inspection results. The SWMA does not want to see the level of

confidence diminished by increasing the tolerances for package inspection scales. Consequently, the SWMA recommends maintaining the existing tolerances for package inspection scales as currently stated in Handbook 133.

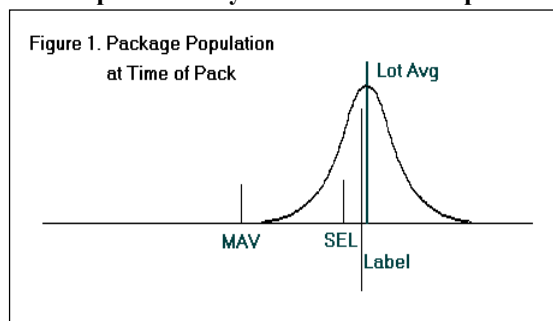
250-3 Amend NIST Handbook 133, 4th Edition, Chapter 1, Section 1.2

Source: Northeastern Weights and Measures Association (NEWMA)

Recommendation: Amend the section “Why allow for moisture loss or gain?” discussion in section 1.2 Package Requirements on page 4 as follows:

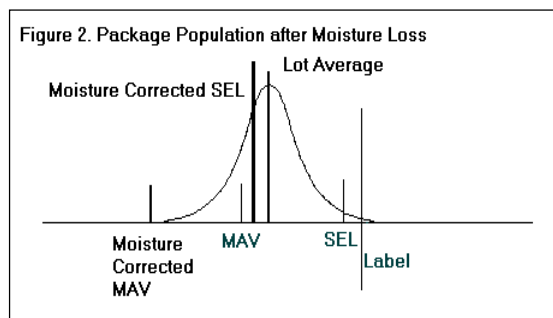
Why allow for moisture loss or gain?

Some packaged products may lose or gain moisture and, therefore, lose or gain weight or volume after packaging. The amount of lost moisture depends upon the nature of the product, the packaging material, the length of time it is in distribution, environmental conditions, and other factors. Moisture loss may occur even when manufacturers follow good distribution practices. Loss of weight “due to exposure” may include solvent evaporation, not just loss of water. Note that allowances for loss or gain of moisture only apply to packages of commodities where the moisture has no value to the consumer (See Jones vs Rath).



For loss or gain of moisture, you apply the moisture allowances to the maximum allowable variations permitted for individual packages and to the average net quantity of contents before determining the conformance of a lot. You may apply the allowance before measuring the package errors or after. When applying the allowance before the measurements you essentially correct each package back to theoretical weight at time of pack, see Figure 1 at right. When applying the allowance after measuring the package errors, you correct the MAV and SEL to recognize the moisture loss as in Figure 2 at right. You can find specific directions for applying the allowances in tests in Section 2.3.

This handbook provides “moisture allowances” for some meat and poultry products, flour, and dry pet food (see “Moisture Allowances” in Chapter 2). These allowances are based on the premise that when the average net weight of a sample is found to be less than the labeled weight, but not by an amount that exceeds the allowable limit, either the lot is declared to be within the moisture



250-4 Amend NIST Handbook 133, 4th Edition, Chapter 2, Section 2.3

Source: Northeastern Weights and Measures Association (NEWMA)

Recommendation: NEWMA proposes deleting the current “Moisture Allowances” discussion in section 2.3 Basic Test Procedure, on pages 17 through 19 and replacing it as follows:

Moisture Allowances

What products have an established moisture allowance?

Flour and dry pet food have a moisture allowance of 3 percent of the labeled net weight. **Note: Dry pet food means all extruded dog and cat foods and baked treat products packaged in kraft paper bags and/or cardboard boxes with a moisture content of 13 percent or less at the time of pack.**

Meat and poultry products from a USDA-inspected plant are permitted no moisture allowance when tested under a Category A sampling plan with Used Dry Tare.

Meat and poultry products from a USDA-inspected plant are permitted the following moisture allowances when tested under a Category A sampling plan with Wet Tare. **Note: When there is free flowing liquid or absorbent packaging materials in contact with the product, all free liquid is part of the wet tare.**

For packages of fresh poultry that bear a USDA seal of inspection, the moisture allowance is 3 percent of the labeled net weight. For net weight determinations only, fresh poultry is defined as poultry above 3 °C (26 °F). This is a product that yields or gives when pushed with the thumb.

For packages of franks or hotdogs that bear an USDA seal of inspection, the moisture allowance is 2.5 percent of the labeled net weight.

For packages of bacon, fresh sausage, and luncheon meats that bear a USDA seal of inspection, there is no moisture allowance if there is no free-flowing liquid or absorbent materials in contact with the product and the package is cleaned of clinging material. Luncheon meats are any cooked sausage product, loaves, jellied products, cured products, and any sliced sandwich style meat. This does not include whole hams, briskets, roasts, turkeys, or chickens requiring further preparation to be made into ready-to-eat sliced product. When there is no free-flowing liquid inside the package and there are no absorbent materials in contact with the product, Wet Tare and Dried Used Tare are equivalent.

These allowances are based on the premise that when the average net weight of a sample is found to be less than the labeled weight, but not by an amount that exceeds the allowable limit, either the lot is declared to be within the moisture allowance, or more information must be collected before deciding lot compliance or noncompliance.

How do you determine the allowance for products without an established moisture allowance?

For any product subject to moisture loss/gain, you may determine the appropriate moisture loss allowance based on a valid, scientific study. You may not use arbitrarily chosen allowances for moisture loss/gain. Many packers have conducted studies that they can provide in support of any claim that the product lost/gained moisture. Any such study should have included a variety of environments that simulate the potential distribution chains that could be encountered. You may use the moisture loss limits found in such study as an allowance in a compliance test.

What is the accepted method to determine the actual moisture loss for a lot?

Where the packer measures and records the moisture content of product in each lot, you may request a copy of that data to be compared to the moisture content of the product offered for sale. You must select a random sample of the product offered for sale and have it tested for moisture content using a scientifically verified test procedure e.g. like those in the Official Methods of Analysis of the Association of Official Analytical Chemists (See Appendix D). The actual moisture loss is calculated as the moisture content (%) at time of pack minus moisture content (%) at time of sale. Use the difference obtained to calculate the actual moisture loss for the lot by multiplying it times the label quantity. Use this as the moisture allowance in the official test. In the case of moisture gain, this value will be a negative number.

Calculations

How do you apply a moisture allowance when conducting a test?

Moisture allowances may be applied either prior to testing or after testing. These two methods are mathematically equivalent means of adjusting both the individual package errors and the sample average. It is common practice to

apply the moisture correction prior to the test for those products with established moisture allowances like flour and dry pet food. In most other cases the correction is made after the test since moisture loss data will probably be obtained as part of the follow-up investigation after the initial test has failed.

To compute the moisture loss allowance prior to testing, you correct the nominal gross weight in box 14 for moisture loss. Find the value of the allowance by multiplying the labeled quantity by the decimal percent value of the allowance. Enter this value in box 13a on the form. The nominal gross weight is found by adding the average tare (box 13) to the label quantity (box 1) and subtracting the moisture allowance (box 13a). Lot compliance is evaluated in the normal way using decision criteria in boxes 16 and 24 on the report form.

Example: Labeled quantity of a bag of flour is 2 lb and average tare is 0.04 lb (box 13)

Moisture Allowance is 3 percent (0.03) of 2 lb = 0.06 lb

Nominal Gross Wt. = 2 lb + 0.04 lb – 0.06 lb = 1.98 lb record this value in box 14.

To compute the moisture loss allowance after testing, you correct only the MAV and SEL for moisture loss. Perform your initial test with no moisture allowance in box 13a. When moisture loss data becomes available, find the value of the allowance by multiplying the labeled quantity by the decimal percent value of the moisture loss or allowance. Lot compliance is evaluated using decision criteria in boxes 16 and 24 on the report form and the moisture corrected MAV and SEL respectively.

Example: Labeled quantity of a package of rice is 2 lb, average tare is 0.04 lb (box 13), MAV (box 3) is 0.07 lb, and SEL (box 23) is 0.023 lb.

Moisture content at time of pack was 13.4 % (packer data)

Moisture content at time of sale is 10.6 % (lab data)

Moisture loss is (13.4 % to 10.6 %) = 2.8 %

Moisture allowance is $0.028 \times 2 \text{ lb} = 0.056 \text{ lb}$

Moisture Corrected MAV is $0.07 \text{ lb} + 0.056 \text{ lb} = 0.126 \text{ lb}$ – Compare each package error measured in the initial test to this moisture corrected MAV using criteria in box 16.

Moisture Corrected SEL is $0.023 \text{ lb} + 0.056 \text{ lb} = 0.079 \text{ lb}$ – Compare the sample average error in the initial test to this moisture corrected SEL using criteria in box 24.

Justifications: The products that have an established moisture allowance should be clearly stated. Currently the Handbook only poses the question “What is the moisture allowance for flour and dry pet food?” it does not state if any other products have a moisture allowance. In addition, the handbook gives no guidance on what to do for products that do not have an established moisture allowance.

The “Calculations” section on page 18 is confusing and does not distinguish between applying a moisture allowance before or after testing. We feel that the current method of comparing the moisture allowance to the difference between the average error and the SEL is confusing. Simply adjusting the SEL with the moisture allowance is easier and more in line with how the MAV is corrected (see graphs on first page).

The current Handbook does not address commodities that are packed in sealed containers or how to treat commodities packed on the premises. NEWMA requests guidance from the L&R Committee on these two items.

260 Other Items

260-1 Enhanced Product – USDA/FSIS Meat and Poultry Products

Source: Central Weights and Measures Association (CWMA)

Comments: Last year the L&R Committee recommended and the NCWM adopted a proposal to form an Enhanced Product Working Group. This Working Group was not established as of the 2002 Interim Meeting. The Western Weights and Measures Association (WWMA) recommended that the Enhanced Product Working Group propose a plan and scope of action for consideration by the NCWM. The WWMA and the Southern Weights and Measures Association (SWMA) encourage the Working Group to invite participants from USDA, industry, and other interested parties.

The Central Weights and Measures Association (CWMA) formed a small committee to develop recommendations for the formation of the working group with the goal of providing those recommendations to the NCWM Chairman and the NCWM Laws and Regulations Committee Chairman in advance of the 2002 NCWM Interim Meeting. Henry Oppermann, Chief, NIST Weights and Measures Division, provided copies of a previous NCWM study group protocol to assist in the development of this item.

The NCWM National Laws and Regulations Committee voted to maintain this item as “Informational” pending the proposed formation of an Enhanced Product Working Group by the NCWM Board of Directors.

Comments: Mike Pinagel, Michigan Department of Agriculture, Weights and Measures, reported to the CWMA that collected data on this subject had been forwarded to Kurt Floren, San Diego County, California, who has been appointed to lead this effort.

The WWMA recommends that this item remain “Informational” to allow the NCWM, Board of Directors time to determine the appropriate direction regarding this item.

Dennis Johannes, California, Chairman

V. Dempsey, Montgomery County, Ohio

E. Price, Texas

J. Gomez, New Mexico

J. Cassidy, Cambridge, Massachusetts

Associate Membership Committee Representation: C. Guay, Proctor & Gamble Company

Petroleum Subcommittee: Randy Jennings, Tennessee, Chairman

Canadian Technical Advisor: B. Lemon

NIST Technical Advisor: T. Coleman

NIST Technical Advisor on the Uniform Regulation for National Type Evaluation: T. Butcher

Laws and Regulations Committee

APPENDIX A
Recommendation for 237-2

Uniform Engine Fuels, Petroleum Products, 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 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 the American Society for Testing and Materials (ASTM) had not yet finalized quality standards for oxygenated (which includes alcohol-containing) fuels. While many argued that 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 Laws section of this Handbook) and the Uniform Motor Fuel Regulation to accompany the Law.

The recommended 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.

2. Status of Promulgation

The Uniform Regulation for Engine Fuels, Petroleum Products, and Automotive Lubricants was adopted by the Conference in 1995. The status of State actions with respect to this Regulation is shown in the table beginning on page 8.

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Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation

1. Definitions

~~1.1.~~ **ASTM.** -- ~~The American Society for Testing and Materials~~ ASTM International means 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). -- means 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.** -- means a product intended for use in a passenger vehicle, other than a bus, as either a lubricant, coolant, or liquid medium in any type of fluid automatic transmission, or any other type of unit through which or by which, force, energy, or power is transferred from a motor vehicle engine by hydraulic means to the driving assembly.

~~1.3.~~ **1.4. Automotive Fuel Rating.** -- means 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 percentage by volume, of the principal component of the fuel. For alternative liquid automotive fuels, a disclosure of other components, expressed as a minimum percentage by volume, may be included, if desired.

~~1.4.~~ **1.5. Automotive Gasoline, Automotive Gasoline-Oxygenate Blend.** -- means a type of fuel suitable for use in spark-ignition automobile engines and also commonly used in marine and non-automotive applications.

~~1.5.~~ **1.6. Aviation Gasoline.** -- means a type of gasoline suitable for use as a fuel in an aviation spark-ignition internal combustion engine.

~~1.6.~~ **1.7. Aviation Turbine Fuel.** -- means a refined middle distillate suitable for use as a fuel in an aviation gas turbine internal combustion engine.

~~1.7.~~ **1.8. Base Gasoline.** -- means all components other than ethanol in a blend of gasoline and ethanol.

~~1.8.~~ **1.9. Biodiesel.** -- means a blend consisting of diesel fuel and a substantial amount of esterified animal fats and/or vegetable oil(s).

~~1.9.~~ **1.10. Cetane Index.** -- means an approximation of the cetane number of distillate diesel fuel, which does not contain a cetane improver additive, calculated from the density and distillation measurements.

~~1.10.~~ **1.11. Cetane Number.** -- means a numerical measure of the ignition performance of a diesel fuel obtained by comparing it to reference fuels in a standardized engine test.

~~1.11.~~ **1.12. Compressed Natural Gas (CNG).** -- means natural gas which has been compressed and dispensed into fuel storage containers and is suitable for use as an engine fuel.

~~1.12.~~ **1.13. Denatured Fuel Ethanol.** -- means "ethanol" as defined in ' 1.19. below.

~~1.13.~~ **1.14. Diesel Fuel.** -- means a refined middle distillate suitable for use as a fuel in a compression-ignition (diesel) internal combustion engine.

~~1.14.~~ **1.15. Distillate.** -- means any product obtained by condensing the vapors given off by boiling petroleum or its products.

~~1.15.~~ **1.16. EPA.** -- means the United States Environmental Protection Agency.

~~1.16.~~ **1.17. E85 Fuel Ethanol.** -- means a blend of ethanol and hydrocarbons of which the ethanol portion is nominally 85 to 75 volume percent denatured fuel ethanol.

~~1.17.~~ **1.18. Energy Content.** -- means the gross energy content or the heating value of diesel fuel as defined by its heat of combustion - the heat released when a known quantity of fuel is burned completely under specific conditions as determined by ASTM Standard Test Method D 240.
(Added 1998)(Amended 1999)

~~1.18.~~ **1.19. Engine Fuel.** -- means any liquid or gaseous matter used for the generation of power in an internal combustion engine.

~~1.19.~~ **1.20. Engine Fuels Designed for Special Use.** -- means engine fuels designated by the Director requiring registration. These fuels normally do not have ASTM or other national consensus standards applying to their quality or useability; common special fuels are racing fuels and those intended for agricultural and other off-road applications.

~~1.20.~~ **1.21. Ethanol.** -- also known as "Denatured Fuel Ethanol," means nominally anhydrous ethyl alcohol meeting ASTM D 4806 standards. It is intended to be blended with gasoline for use as a fuel in a spark-ignition internal combustion engine. The denatured fuel ethanol is first made unfit for drinking by the addition of Bureau of Alcohol, Tobacco, and Firearms (BATF) approved substances before blending with gasoline.

~~1.21.~~ **1.22. Fuel Injector Cleanliness.** -- means a characteristic of the fuel which allows engine operation without fuel contribution to excessive injector deposits.
(Added 1998)(Amended 1999)

~~1.22.~~ **1.23. Fuel Oil.** -- means a 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 D 396.

~~1.23.~~ **1.24. Gasoline.** -- means 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.

~~1.24.~~ **1.25. Gasoline-Alcohol Blend.** -- means 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.

~~1.25.~~ **1.26. Gasoline Gallon Equivalent (GGE).** --
Gasoline gallon equivalent (GGE) means 2.567 kilograms (5.660 lb) of natural gas.

~~1.26.~~ **1.27. Gasoline Liter Equivalent (GLE).** -- Gasoline liter equivalent (GLE) means 0.678 kilogram (1.495 lb) of natural gas.

~~1.27.~~ **1.28. Gasoline-Oxygenate Blend.** -- means 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.~~ **1.29. Gear Oil.** -- means an oil used to lubricate gears, axles or some manual transmissions.

~~1.28.~~ **1.30. Kerosene.** -- (or "Kerosine") means a refined middle distillate suitable for use as a fuel for heating or illuminating, the classification of which shall be defined by ASTM D 3699.

~~1.29.~~ **1.31. Lead Substitute.** -- means 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.

~~1.30.~~ **1.32. Lead Substitute Engine Fuel.** -- means, for labeling purposes, a gasoline or gasoline-oxygenate blend that contains a "lead substitute."

~~1.31.~~ **1.33. Leaded.** -- means, for labeling purposes, any gasoline or gasoline-oxygenate blend which contains more than 0.013 gram 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 gram of phosphorus per liter (0.005 g per U.S. gal), or any fuel to which lead or phosphorus is intentionally added.

~~1.32.~~ **1.34. Liquefied Natural Gas (LNG).** -- means natural gas that has been liquefied at -126.1 °C (-259 °F) and stored in insulated cryogenic tanks for use as an engine fuel.

~~1.33.~~ **1.35. Liquefied Petroleum Gas (LPG).** -- means 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.

~~1.34.~~ **1.36. Low Sulfur.** -- means low sulfur diesel fuel that meets ASTM D 975 (e.g., Grade Low Sulfur No. 1-D or Grade Low Sulfur No. 2-D) standards. Diesel fuel containing higher amounts of sulfur for off-road use is defined by EPA regulations.

~~1.35.~~ **1.37. Low Temperature Operability.** -- means 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)

~~1.36.~~ **1.38. M100 Fuel Methanol.** -- means nominally anhydrous methyl alcohol, generally containing small amounts of additives, suitable for use as a fuel in a compression-ignition internal combustion engine.

~~1.37.~~ **1.39. M85 Fuel Methanol.** -- means a blend of methanol and hydrocarbons of which the methanol portion is nominally 70 to 85 volume percent.

~~1.38.~~ **1.40. Motor Octane Number.** -- means a numerical indication of a spark-ignition engine fuel's resistance to knock obtained by comparison with reference fuels in a standardized ASTM D 2700 Motor Method engine test.

1.41. Motor Oil . – is 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 a motor oil which is intended for use in light-to-heavy duty vehicles comprising 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 a 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.

1.42. Oil. -- means motor oil, engine oil, and/or gear oil.

~~1.39.~~ **1.43. Oxygen Content of Gasoline.** -- means the percentage of oxygen by mass contained in a gasoline.

~~1.40.~~ **1.44. Oxygenate.** -- means an oxygen-containing, ashless, organic compound, such as an alcohol or ether, which can be used as a fuel or fuel supplement.

~~1.41.~~ **1.45. Reformulated Gasoline.** -- means a volatile mixture of liquid hydrocarbons and oxygenates meeting the reformulated gasoline requirements of the Clean Air Act Amendments of 1990 and suitable for use as a fuel in a spark-ignition internal combustion engine.

~~1.42.~~ **1.46. Research Octane Number.** -- means a numerical indication of a spark-ignition engine fuel's resistance to knock obtained by comparison with reference fuels in a standardized ASTM D 2699 Research Method Engine Test.

1.43. 1.47. SAE. -- means the Society of Automotive Engineers International, a technical organization for engineers, scientists, technicians, and others in positions that cooperate closely in the engineering, design, manufacture, use, and maintainability of self-propelled vehicles.

1.44. 1.48. Substantially Similar. -- means the EPA's "Substantially Similar" rule, Section 211 (f) (1) of the Clean Air Act [42 U.S.C. 7545 (f) (1)].

1.45. 1.49. Thermal Stability. --means 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)

1.46. 1.50. Total Alcohol. -- means the aggregate total in volume percent of all alcohol contained in any fuel defined in this Chapter.

1.47. 1.51. Total Oxygenate. -- means the aggregate total in volume percent of all oxygenates contained in any fuel defined in this Chapter.

1.48. 1.52. Unleaded. -- 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 gram of lead per liter (0.05 g lead per U.S. gal) and not more than 0.0013 gram of phosphorus per liter (0.005 g phosphorus per U.S. gal).

1.49. 1.53. Wholesale Purchaser Consumer. -means any person who is an ultimate gasoline consumer of fuel methanol, fuel ethanol, diesel fuel, biodiesel, 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)

2. Standard Fuel Specifications

2.1. Gasoline and Gasoline-Oxygenate Blends (as defined in this regulation) shall meet the following requirements:

2.1.1. The most recent version of ASTM D 4814, "Standard Specification for Automotive Spark-Ignition Engine Fuel," except that volatility standards for unleaded gasoline blended with ethanol shall not be more restrictive than those adopted under the rules, regulations, and Clean Air Act waivers of the U.S. Environmental Protection Agency (which includes rules promulgated by the State). Gasoline blended with ethanol shall be blended under any of the following three options:

2.1.1.1. The base gasoline used in such blends shall meet the requirements of ASTM D 4814, or

2.1.1.2. The blend shall meet the requirements of ASTM D 4814, or

2.1.1.3. The base gasoline used in such blends shall meet all the requirements of ASTM D 4814 except distillation, and the blend shall meet the distillation requirements of the ASTM specification.

2.1.2. Blends of gasoline and ethanol shall not exceed the ASTM D 4814 vapor pressure standard by more than 1.0 psi.

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 gram of lead per liter (0.05 g per U.S. gal);

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 gram of lead per liter (0.10 g per U.S. gal).

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 gram per liter (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:

2.1.6.1.1. 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

2.1.6.1.2. 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 gram 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.

2.2. Diesel Fuel shall meet the most recent version of ASTM D 975, "Standard Specification for Diesel Fuel Oils."

2.2.1. Premium Diesel Fuel - Effective January 1, 2000, all products identified on retail dispensers, bills of lading, invoices, shipping papers, or other documentation such as premium, super, supreme, plus, or premier must conform to at least two of the following requirements:

(a) Energy Content - A minimum energy content of 38.65 MJ/L, gross (138,700 BTU/gallon, gross) as measured by ASTM Standard Test Method D 240.

(b) Cetane Number - A minimum cetane number of 47.0 as determined by ASTM Standard Test Method D 613.

(c) Low Temperature Operability - A cold flow performance measurement which meets the ASTM D 975 tenth percentile minimum ambient air temperature charts and maps by either ASTM Standard Test Method D 2500 (Cloud Point) or ASTM Standard Test Method D 4539 (Low Temperature Flow Test, LTFT). Low temperature operability is only applicable October 1 - March 31 of each year.

(d) Thermal Stability - A minimum reflectance measurement of 80 percent using a green filter in the Octel America's Test Method No. F21-61 (180 minutes, 150 °C).

(e) Fuel Injector Cleanliness - A Coordinating Research Council (CRC) rating of 10.0 or less and a flow loss of 6.0 percent or less as determined by the Cummins L-10 Injector Depositing Test.

1. When a fuel uses a detergent additive to meet the requirement, upon the request of the Director, the fuel marketer shall provide test data indicating the additive being used has passed the Cummins L-10 Injector Depositing Test requirements when combined with Caterpillar 1-K (CAT 1-K) reference fuel. The Director may also request records or otherwise audit the amount of additive being used to ensure proper treatment of fuels according to the additive manufacturer's recommended treat rates.

1.1. Upon the request of the Director, the fuel marketer shall provide an official "Certificate of Analysis" of the physical properties of the additive.

1.2. Upon the request of the Director, the fuel supplier shall provide a sample of detergent additive in an amount sufficient to be tested with CAT 1-K reference fuel in a Cummins L-10 Injector Depositing Test. The regulatory agency requesting the sample shall be responsible for all costs of testing.

2. When a fuel marketer relies on the inherent cleanliness of the diesel fuel to pass the Cummins L-10 Injector Depositing Test or if the fuel requires a lower detergent additive level than the amount required when the additive is used with the CAT 1-K reference fuel, the fuel marketer shall provide, upon the request of the Director, annual test results from an independent laboratory that confirms the fuel meets the requirements of 2.2.1. (e). The time of fuel sampling and testing shall be at the Directors discretion. The Director may witness the sampling of the fuel and the sealing of the sample container(s) with security seals. The Director may request confirmation from the testing laboratory that the seals were intact upon receipt by the laboratory. The final test results shall be provided to the Director. All costs for sampling, transporting, and testing shall be the responsibility of the fuel supplier. If the annual test complies, any additional testing at the request of the Director shall be paid for by the regulatory agency.
(Added 1998) (Amended 1999)

2.3. Aviation Turbine Fuels shall meet the most recent version of ASTM D 1655, "Standard Specification for Aviation Turbine Fuels."

2.4. Aviation Gasoline shall meet the most recent version of ASTM D 910, "Standard Specification for Aviation Gasoline."

2.5. Fuel Oils shall meet the most recent version of ASTM D 396, "Standard Specification for Fuel Oils."

2.6. Kerosene (Kerosine) shall meet the most recent version of ASTM D 3699, "Standard Specification for Kerosine."

2.7. Ethanol intended for blending with gasoline shall meet the most recent version of ASTM D 4806, "Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel."

2.8. Liquefied Petroleum (LP) Gases shall meet ASTM D 1835, "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 most recent version of SAE J 1616, "Recommended Practice for Compressed Natural Gas Vehicle Fuel."

2.10. E85 Fuel Ethanol shall meet the most recent version of ASTM D 5798, "Standard Specification for Fuel Ethanol (Ed75-Ed85) for Automotive Spark-Ignition Engines."
(Added 1997)

2.11. M85 Fuel Methanol shall meet the most recent version of ASTM D 5797, "Standard Specification for Fuel Methanol M70-M85 for Automotive Spark Ignition Engines."
(Added 1997)

2.12. Vehicle 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 SAE J183, API 1509 Engine Oil Licensing and Certification System or other industry standards as applicable.

(b) It shall meet its labeled viscosity grade classification as specified in the latest published version of SAE J300.

(c) Any engine oil that is represented as "energy conserving" shall meet the requirements established by the latest revision of SAE J1423.

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 revision 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 published version of SAE J306.

(c) It shall be free from water and suspended matter when tested by means of centrifuge, in accordance with the standard test ASTM D-2273.

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.

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 the resulting mixture shall not fall below the minimum specifications for automatic transmission fluids, as established by the director.

Section 3. Classification and Method of Sale of Petroleum Products

3.1. General Considerations

3.1.1. Documentation. -- When gasoline; gasoline-oxygenate blends; reformulated gasoline; M85 and M100 fuel methanol; E85 and E100 fuel ethanol; liquefied petroleum (LP) gases; compressed natural gas; liquefied natural gas; biodiesel; diesel fuel; kerosene; aviation gasoline; aviation turbine fuels; or, fuel oils 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 1 year.

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 only be used when the fuel meets specification requirements of paragraph 2.1.5.

3.2.3. Use of Lead Substitute Must Be Disclosed. -- Each dispensing device from which gasoline or gasoline oxygenate blend 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 millimeters (1/2 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 contains 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 millimeters (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.

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 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 percent of the dispenser front panel in a position clear and conspicuous from the driver's position in a type at least 12.7 mm (2 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 an invoice, bill of lading, shipping paper, or other documentation, 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." In addition, any gasoline containing more than 0.15 mass percent oxygen from methanol shall be identified as "with" or "containing" methanol. This documentation is only for dispenser labeling purposes; it is the responsibility of any potential blender to determine the total oxygen content of the engine fuel before blending. (Amended 1996)

3.3. Diesel Fuel

3.3.1. Labeling of Grade Required. -- Diesel Fuel shall be identified by grades No. 1-D, No. 1-D (low sulfur), No. 2-D, No. 2-D (low sulfur), or No. 4-D. Each retail dispenser of diesel fuel shall be labeled according to the grade being dispensed except the words "low sulfur" are not required.

3.3.2. Location of Label. -- These labels shall be located on the upper 50 percent of the dispenser front panel in a position clear and conspicuous from the drivers position, in a type at least 12 millimeter (1/2 in) in height, 1.5 millimeter (1/16 in) stroke (width of type).

3.3.3. Labeling Properties of Premium Diesel -- All retail dispensers identified, as premium diesel must display either:

1. A label that includes all qualifying parameters as specified in 2.2.1. Premium Diesel Fuel affixed to each retail dispenser. The label shall include a series of check blocks clearly associated with each parameter. The boxes for the parameters qualifying the fuel must be checked. All other boxes shall remain unchecked. The marketer may check as many blocks as apply, or,

2. A label that includes only the parameters selected by a marketer to meet the premium diesel requirements as specified in 2.2.1. Premium Diesel Fuel. In either case, the label must display the following words:

C "Premium Diesel Fuel" in a type at least 12 millimeters (2 inch) in height by 1.4 millimeters (1/16 inch) stroke (width of type.)

When applicable, as determined by the label option and qualifying parameters chosen by the marketer, the label must also display the following information and letter type size:

- C The words "Energy Content," "Cetane Number," "Low Temperature Operability," "Thermal Stability," and "Fuel Injector Cleanliness" in a type at least 6 millimeters (1/4 inch) in height by 0.75 millimeter (1/32 inch) stroke (width of type.)
- C A declaration of the minimum Energy Content (minimum 38.65 MJ/ L gross [138,700 BTU/gallon]), if energy content is chosen as a qualifying parameter, in type at least 3 millimeters (1/8 inch) in height by 0.4 millimeter (1/64 inch) stroke (width of type.)
- C The minimum cetane number guaranteed (at least 47.0) if cetane number is chosen as a qualifying parameter, in a type at least 3 millimeters (1/8 inch) in height by 0.4 millimeter (1/64 inch) stroke (width of type.)

Table 1. Minimum Antiknock Index Requirements		
Term	Minimum Antiknock Index	
	ASTM D 4814 Altitude Reduction Areas IV and V	All Other ASTM D 4814 Areas
Premium, Super, Supreme, High Test	90	91
Midgrade, Plus	87	89
Regular Leaded	86	88
Regular, Unleaded (alone)	85	87
Economy	--	86

(Table Amended 1997)

- C The date range of low temperature operability enhancement, (e.g., October- March,) along with the qualifying test method (ASTM D 4539 or ASTM D 2500), if low temperature operability is chosen as a qualifying parameter, in a type at least 3 millimeters (1/8 inch) in height by 0.4 millimeter (1/64 inch) stroke (width of type).

For Example:

Premium Diesel Fuel	
High Energy Content	<input type="checkbox"/>
Cetane Number, 47.0 min	<input type="checkbox"/>
Low Temperature Operability (Oct.-Mar.,LTFT)	<input type="checkbox"/>
Thermal Stability	<input type="checkbox"/>
Fuel Injector Cleanliness	<input type="checkbox"/>

or

Premium Diesel Fuel	
Cetane Number, 47.0 min	<input type="checkbox"/>
Low Temperature Operability (Oct.-Mar., LTFT)	<input type="checkbox"/>
Thermal Stability	<input type="checkbox"/>

C The label must be conspicuously displayed on the upper-half of the product dispenser front panel in a position that is clear and conspicuous from the drivers position.

(Added 1998) (Amended 1999)

3.3.4. Delivery Documentation -- 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 2.2.1.

(Added 1998) (Amended 1999)

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." NFPA 407, 1990 Edition: Section 2-3.18 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 inches (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.)

3.5. Aviation Gasoline

3.5.1. Labeling of Grade Required. -- Aviation gasoline shall be identified by Grade 80, Grade 100, or Grade 100LL.

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."

NFPA 407, 1990 Edition: Section 2-3.18 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 inches (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.)

3.6. Fuel Oils

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

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:

3.7.2.1. "Warning - Not Suitable For Use In Unvented Heaters Requiring No. 1-K."

3.7.2.2. The lettering of this legend shall not be less than 12 millimeters (1/16 in) in height by 1.5 millimeters (1/16 in) strokes; block style letters and the color of lettering shall be in definite contrast to the background color to which it is applied.

3.8. Fuel Ethanol

3.8.1. How to Identify Fuel Ethanol. -- Fuel ethanol shall be identified by the capital letter E followed by the numerical value volume percentage. (Example: E85)

3.8.2. Retail Dispenser Labeling. -- Each retail dispenser of fuel ethanol shall be labeled with the capital letter E followed by the numerical value volume percent denatured ethanol and ending with the word "ethanol." (Example: E85 Ethanol)

3.8.3. Additional Labeling Requirements. -- Fuel ethanol shall be labeled with its automotive fuel rating in accordance with 16 CFR Part 306.

3.9. Fuel Methanol

3.9.1. How Fuel Methanol is to Be Identified. -- Fuel methanol shall be identified by the capital letter M followed by the numerical value volume percentage of methanol. (Example: M85)

3.9.2. Retail Dispenser Labeling. -- Each retail dispenser of fuel methanol shall be labeled by the capital letter M followed by the numerical value volume percent and ending with the word "methanol." (Example: M85 Methanol)

3.9.3. Additional Labeling Requirements. -- Fuel methanol shall be labeled with its automotive fuel rating in accordance with 16 CFR Part 306.

3.10. Liquefied Petroleum (LP) Gas

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 liquefied Petroleum gases shall be labeled as "Commercial Propane," "Commercial Butane," "Commercial PB Mixtures," or "Special-Duty Propane (HD5)."

3.10.3. Additional Labeling Requirements. -- Liquefied Petroleum Gas 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

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 compressed natural gas kept, offered, or exposed for sale and 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 compressed natural gas shall be labeled as "Compressed Natural Gas."

3.11.2.2.2. Conversion Factor. -- All retail compressed natural gas 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

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 liquefied natural gas 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 -- Each label for recreational motor oil and vehicle 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, and its intended use.

Each label for 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.

The label on each container of vehicle motor oil shall contain the engine service categories met in letters not less than one-eighth inch (3.18 mm) in height, as defined by the latest version of SAE J183 or API Publication 1509, Engine Oil Licensing and Certification System.

The label of each container of gear oil shall contain the service categories met in letters not less than one-eighth inch (3.18 mm) in height, as defined by the latest version of SAE J308.

Each container of vehicle motor oil with a volume of one gallon or less that does not meet an active service category, as defined by the latest version of SAE J183, shall bear a plainly visible cautionary statement in compliance with SAE J183, Appendix A, for obsolete API oil categories.

3.14. Automatic Transmission Fluid -- Automatic transmission fluid shall be deemed to be mislabeled if any of the following occurs:

(a) The container does not bear a label on which is printed the brand name, the name and place of business of the manufacturer, packer, seller, or distributor, the words "Automatic Transmission Fluid", and the duty type classification.

(b) The container does not bear a label on which is printed an accurate statement of the quantity of the contents in terms of liquid measure.

(c) The labeling on the container is false or misleading.

3.14.1 DOCUMENTATION OF CLAIMS MADE UPON PRODUCTS' LABEL -- Any manufacturer or packager of any product subject to this article and sold in this State shall provide, upon request to duly authorized representatives of the director, documentation of any claim made upon their products' label.

Section 4. Retail Storage Tanks

4.1. Water in Gasoline-Alcohol Blends, Aviation Gas, and Aviation Turbine Fuel. -- No water phase greater than 6 millimeters (1/4 in) as determined by an appropriate detection paste, is allowed to accumulate in any tank utilized in the storage of gasoline-alcohol blend, aviation gasoline, and aviation turbine fuel.

4.2. Water in Gasoline, Diesel, Gasoline-Ether, and Other Fuels. -- Water shall not exceed 50 millimeters (2 in) in depth when measured with water indicating paste in any tank utilized in the storage of biodiesel, diesel, gasoline, gasoline-ether blends, and kerosene sold at retail except as required in section 4.1.

4.3. Product Storage Identification

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

4.3.2. 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.

4.4. 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 fuels' 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 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. Business name and address(es).

6.1.2. Mailing address if different than business address.

6.1.3. 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. An authorized signature, title, and date for each registration.

6.1.5. Product brand name and product description.

6.1.6. A product specification sheet shall be attached.

6.2. Registration is subject to annual renewal.

6.3. Re-registration is required 30 days prior to any changes in Section 6.1.

6.4. The director may decline to register any product which 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. The registration is not transferable.

Section 7. Test Methods and Reproducibility Limits

7.1. 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 applicable premium diesel parameters:

(a) Energy Content - ASTM D 240

(b) Cetane Number - ASTM D 613

(c) Low Temperature Operability - ASTM D 4539 or ASTM D 2500 (according to marketing claim)

(d) Thermal Stability - ~~Oetel America F21-61 (180 minutes, 150 EC)~~ ASTM D 6468.

(e) *Fuel Injector Cleanliness - The most recent edition of the Cummins L-10 Injector Depositing Test as endorsed by the ASTM L-10 Injector Depositing Test Surveillance Panel.

*Upon ASTM approval of a standard test methods that are is derived from the above referenced methods, the ASTM standard test methods shall be used to determine compliance with the applicable premium diesel parameter.
(Amended 1999)

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 ASTM D 4814 Appendix X1 shall be acknowledged for enforcement purposes.

7.2.2. **Reproducibility.** --The reproducibility limits of the ASTM standard test method used for each test performed shall be acknowledged for enforcement purposes, except as indicated in 7.2.1.

7.2.3. **Dispute Resolution.** -- In the event of a dispute over a reported test value, the guidelines

presented in the most recent version of ASTM D 3244, "Standard Practice for Utilization of Test Data to Determine Conformance with Specifications," shall be used to determine the acceptance or rejection of the sample.