

**DEPARTMENT OF FOOD AND AGRICULTURE  
DIVISION OF MEASUREMENT STANDARDS**

The Department has illustrated changes to the original text in the following manner:

Proposed additions are underlined  
Proposed deletions are ~~strikethrough~~

Title 4, Division 9, Chapter 6, Article 10

**Article 10. Specifications for Natural Gas Used in Internal Combustion Engines**

**4193. Specifications – Natural Gas Used in Internal Combustion Engines.** Natural Gas used in internal combustion engines shall meet the following requirements:

<u>Specification</u>	<u>Units</u>	<u>Value</u>
<u>Methane Number (minimum)</u>	<u>dimensionless</u>	<u>TBD</u>
<u>Wobbe Index Higher heating value</u>	<u>MJ/m3</u>	<u>46 to 53</u>
<u>Relative Density</u>	<u>dimensionless</u>	<u>Report</u>
<u>Lower Heating Value</u>	<u>MJ</u>	<u>Report</u>
<u>Hydrocarbon Dew Point</u>	<u>°C</u>	<u>-2</u>
<u>Methane</u>	<u>% by volume, min</u>	<u>TBD</u>
<u>Hydrogen</u>	<u>% by volume, max</u>	<u>TBD</u>
<u>Oxygen</u>	<u>% by volume, max</u>	<u>1</u>
<u>Ammonia</u>	<u>ppmv, max</u>	<u>0.1</u>
<u>Water</u>	<u>ppmv, max</u>	<u>100</u>
<u>Total Sulfur (includes odorant)</u>	<u>ppmv, max</u>	<u>15</u>
<u>Hydrogen Sulfide and Carbonyl Sulfide as sulfur</u>	<u>ppmv, max</u>	<u>5</u>
<u>Halogen compounds</u>	<u>ppmv, max</u>	<u>0.1</u>
<u>Particulate size</u>	<u>µm, max</u>	<u>10</u>
<u>Particulate Concentration</u>	<u>mg/kg, max</u>	<u>10</u>

This specification is an interim standard for Natural Gas used in internal combustion engines. Once an American National Standards Institute (ANSI) accredited standards writing organization has established a Natural Gas fuel standard, the Department of Food and Agriculture is required by law to formally adopt that standard by reference.

Test procedures have not yet been finalized to measure the properties specified in this interim standard. The Department of Food and Agriculture will formally adopt sampling and test procedures by regulation as they are developed. The Department of Food and Agriculture will begin enforcement of this section once sample and test procedures have been adopted by regulation.

NOTE: Authority cited: Sections 12027, 13440 and 13450, Business and Professions Code. Reference: Sections 13401(c), 13401(h), 13401(i), 13401(m), 13401(n), 13413(a) 13595(a), Business and Professions Code.

**Title 4, Division 9, Chapter 7**  
**Advertising of Gasoline and Other Motor Vehicle Fuels**

**4206. Labeling and Price Sign Advertising Requirements for Compressed Natural Gas and Liquefied Natural Gas.**

- (a) All dispensers, advertising signs and storage tank labels shall comply with the requirements of Sections 13470, 13480 and 13532 of the Business and Professions Code.
- (b) All dispensers of Compressed Natural Gas fuel shall be labeled in a conspicuous place "Gasoline gallon equivalent."
- (c) All dispensers of Liquefied Natural Gas fuel shall be labeled in a conspicuous place "Diesel gallon equivalent."

NOTE: Authority cited: Sections 12027, 13470, 13480, 13484, and 13532 Business and Professions Code. Reference: Sections 13401(c), 13401(m), 13401(n), 13404, 13440, 13441, 13450, and 13451. Business and Professions Code.

**Title 4, Division 9, Chapter 1. Tolerances and Specifications  
for Commercial Weighing and Measuring Devices,  
Article 1. National Uniformity, Exceptions and Additions  
Section 4001. Exceptions.**

**3.37 Mass Flow Meters.**

**S.1.2. Compressed Natural Gas Dispensers.** – Except for fleet sales and other price contract sales, a compressed natural gas dispenser used to refuel vehicles shall be of the computing type and shall indicate the quantity, the unit price, and the total price of each delivery. The dispenser shall display the mass measured for each transaction either continuously on an external or internal display accessible during the inspection and test of the dispenser, or display the quantity in mass units by using controls on the device.

**S.1.3. Units.**

**S.1.3.1.1. Compressed Natural Gas Used as an Engine Fuel.** – When compressed natural gas is dispensed as an engine fuel, the delivered quantity shall be indicated in “gasoline liter equivalent (GLE) units” or “gasoline gallon equivalent (GGE) units”. (Also see Appendix D definitions.)

**UR.3.8. Return of Product to Storage, Retail Compressed Natural Gas Dispensers.**

– Provisions at the site shall be made for returning product to storage or disposing of the product in a safe and timely manner during or following testing operations. Such provisions may include return lines, or cylinders adequate in size and number to permit this procedure.

**S.5.2. Marking of Gasoline Volume Equivalent Conversion Factors for Compressed Natural Gas.** – A device dispensing compressed natural gas 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” permanently and conspicuously marked on the face of the dispenser according to the method of sale used.

**Appendix D. Definitions for:**

**gasoline gallon equivalent (GGE).** – Gasoline gallon equivalent (GGE) means 5.660 pounds of natural gas.[3.37]

**gasoline liter equivalent (GLE).** – Gasoline liter equivalent (GLE) means 0.678 kilograms of natural gas.[3.37]

NOTE: Authority cited: Sections 12027 and 12107, Business and Professions Code.  
Reference: Section 12107, Business and Professions Code.

**Title 4, Division 9, Chapter 1. Tolerances and Specifications  
for Commercial Weighing and Measuring Devices,  
Article 1. National Uniformity, Exceptions and Additions  
Section 4002. Additions.**

**4002.10 Mass Flow Meters (3.37)**

**S.1.2. Compressed Natural Gas and Liquefied Natural Gas Dispensers.** – Except for fleet sales and other price contract sales, a compressed or liquefied natural gas dispenser used to refuel vehicles shall be of the computing type and shall indicate the quantity, the unit price, and the total price of each delivery. The dispenser shall display the mass measured for each transaction either continuously on an external or internal display accessible during the inspection and test of the dispenser, or display the quantity in mass units by using controls on the device.

**S.1.3. Units.**

**S.1.3.1.1. Compressed Natural Gas Used as an Engine Fuel.** – When compressed natural gas is dispensed as an engine fuel, the delivered quantity shall be indicated in “gasoline gallon equivalent (GGE) units” (Also see Appendix D definitions.)

**S.1.3.1.2. Liquefied Natural Gas Used as an Engine Fuel.** – When liquefied natural gas is dispensed as an engine fuel, the delivered quantity shall be indicated in diesel gallon equivalent units (DGE). (Also see Appendix D definitions.)

**S.5.2. Marking of Gasoline Volume Equivalent Conversion Factors for Compressed Natural Gas.** – A device dispensing compressed natural gas shall have the statement “1 Gasoline Gallon Equivalent (GGE) is Equal to 5.66 lb of Compressed Natural Gas” permanently and conspicuously marked on the face of the dispenser.

**S.5.3. Marking of Equivalent Conversion Factors for Liquefied Natural Gas.** – A device dispensing liquefied natural gas shall have the statement “1 Diesel Gallon Equivalent (DGE) means 6.06 lb of Liquefied Natural Gas” permanently and conspicuously marked on the face of the dispenser.

**UR.3.8. Return of Product to Storage, Retail Compressed and Liquefied Natural Gas Dispensers.** – Provisions at the site shall be made for returning product to storage or disposing of the product in a safe and timely manner during or following testing operations. Such provisions may include return lines, or cylinders adequate in size and number to permit this procedure.

**Appendix D. Definitions for:**

**gasoline gallon equivalent (GGE).** – Gasoline gallon equivalent (GGE) means 5.66 pounds of natural gas.[3.37]

**diesel gallon equivalent (DGE).** – Diesel gallon equivalent (DGE) means 6.06 pounds of natural gas. [3.37]

NOTE: Authority cited: Sections 12027 and 12107, Business and Professions Code.  
Reference: Section 12107, Business and Professions Code.