

DEPARTMENT OF FOOD AND AGRICULTURE

A.G. KAWAMURA, Secretary

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March 3, 2008

**NOTICE OF AVAILABILITY OF SECOND
MODIFIED TEXT**

On February 1, 2008, the Department of Food and Agriculture provided notice of an additional 15-day comment period (February 4-19, 2008) during which the Department would accept comments on changes made to proposed regulation Title 4, Division 9, Chapter 6, Article 8 which was the subject of a regulatory hearing on December 17, 2007. As a result of recommendations received during this 15-day comment period, the Department feels that further changes should be made available for an additional 15-day period. The Department believes that the changes to the text are sufficiently related to the originally proposed text and that the public was adequately placed on notice that changes could result from the originally proposed regulatory action.

If you have any comments regarding the proposed changes, the Department will accept written, faxed, or e-mailed comments between March 3-18, 2008. All comments must be submitted to the Department no later than 5:00 p.m. on March 18, 2008.

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All comments received by March 18, 2008, which pertain to the indicated changes will be reviewed and responded to by the Department's staff as part of the compilation of the rulemaking file.

Please note: Any comments are to be restricted to the recent modifications as shown in the attached language. The Department of Food and Agriculture is not required to respond to this notice on other aspects of the proposed regulation. Any comments previously submitted during the 45-day notice period or the first 15-day notice of modified text, remain in the rulemaking file.

March 3, 2008

Date

A handwritten signature in blue ink, appearing to read 'Edmund E. Williams'.

Edmund E. Williams, Acting Director
Division of Measurement Standards

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

SECOND MODIFIED TEXT – HYDROGEN FUEL STANDARDS

The second modified text is shown as:

New Text = Bold in a white box
Deleted Text = Displayed in a gray box

The first modified text is shown as:

New Text = Double underline
Deleted Text = Strikeout

Single underline is text already noticed for a 45-day public comment period. The public comment period closed on December 17, 2007.

All written comments must address the second modified text only.

**Article 8. Specifications for Hydrogen Used in
Internal Combustion Engines and Fuel Cells**

4180. Definitions Used in This Article

(a) “Fuel Cell” means an electrochemical device used to convert hydrogen and oxygen into electrical energy to power a motor vehicle.

(b) “Internal Combustion Engine” means a device used to ignite hydrogen in a confined space to create mechanical energy to power a motor vehicle.

(c) “Hydrogen Fuel” means a fuel composed of the chemical hydrogen intended for consumption in an internal combustion engine or fuel cell.

NOTE: Authority cited: Sections 12027 and 13446, Business and Professions Code.
Reference: Sections 13401(c), 13401(h), 13401(i), 13401(m), 13401(r), 13413(a)
13595(a), Business and Professions Code.

4181. Specifications – Hydrogen Fuel Used in Fuel Cells and Internal Combustion Engines. Hydrogen fuel used in fuel cells and internal combustion engines shall meet the following requirements:

<u>Specification</u>	<u>Value</u>
<u>Hydrogen Fuel Index (minimum, %) (1)</u>	<u>99.97</u>
<u>Total Gases (maximum, ppm v/v) (2)</u>	<u>300</u>
<u>Water (maximum, ppm v/v)</u>	<u>5</u>
<u>Total Hydrocarbons (maximum, ppm v/v) (3)</u>	<u>2</u>
<u>Oxygen (maximum, ppm v/v)</u>	<u>5</u>
<u>Helium (maximum, ppm v/v)</u>	<u>300</u>
<u>Nitrogen and Argon (maximum, ppm v/v)</u>	<u>100</u>
<u>Carbon dioxide (maximum, ppm v/v)</u>	<u>2</u>
<u>Carbon monoxide (maximum, ppm v/v)</u>	<u>0.2</u>
<u>Total Sulfur Compounds (maximum, ppm v/v)</u>	<u>0.004</u>
<u>Formaldehyde (maximum, ppm v/v)</u>	<u>0.01</u>
<u>Formic acid (maximum, ppm v/v)</u>	<u>0.2</u>
<u>Ammonia (maximum, ppm v/v)</u>	<u>0.1</u>
<u>Total Halogenated Compounds (maximum, ppm v/v)</u>	<u>0.05</u>
<u>Particulates Size (maximum, μm)</u>	<u>10</u>
<u>Particulate Concentration (maximum, μg/L @ NTP)(4)</u>	<u>1</u>
<ol style="list-style-type: none"> 1. <u>The hydrogen fuel index is the value obtained with the value of total gases (%) subtracted from 100%</u> 2. <u>Total Gases = Sum of all impurities listed on the table except particulates</u> 3. <u>Total Hydrocarbons may exceed 2 ppm v/v only due to the presence of methane, provided that the total gases do not exceed 300 ppm v/v.</u> 4. <u>μg/L @ NTP = micrograms per liter of hydrogen fuel at 0°C and 1 atmosphere pressure.</u> 	

This specification is an interim standard for hydrogen fuel. Once an American National Standards Institute (ANSI) accredited standards writing organization has adopted a hydrogen fuel standard, the Department of Food and Agriculture (Department) 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 will formally adopt sampling and test procedures by regulation as they are approved by an ANSI accredited standards writing organization. In the absence of these, the Department may formally adopt interim sampling and test procedures by regulation.

~~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 interim sampling and test procedures by regulation as they are developed by the Department or by an ANSI accredited standards writing organization. The Department of Food and Agriculture will begin enforcement of this section once sampling and test procedures have been adopted by regulation.~~

NOTE: Authority cited: Sections 12027 and 13446, Business and Professions Code.
Reference: Sections 13401(c), 13401(h), 13401(i), 13401(m), 13401(r), 13413(a)
13595(a), Business and Professions Code.