



CALIFORNIA DEPARTMENT OF  
FOOD & AGRICULTURE

*Extracts from the*  
**CALIFORNIA CODE OF REGULATIONS**  
**TITLE 4, DIVISION 9**

**WEIGHTS AND MEASURES FIELD REFERENCE MANUAL (2023)**

**Chapter 6**

**Automotive Products Specifications**

**Sections 4100. through 4191.**

**Article 1. Brake Fluid Standards**

**Article 2. Brake Fluid Labeling**

**Article 5. Automotive Spark Ignition Engine Fuel Standards**

**Article 6. Engine Oil Labeling and Exemptions**

**Article 7. Labeling and Specifications of Antifreezes and  
Coolants**

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

**Article 9. Specifications for Dimethyl Ether Used as a Motor  
Vehicle Fuel**



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

## DISCLAIMER

This document represents the Division of Measurement Standards' field manual for enforcing regulations pertaining to weights and measures in California. This field manual is not to be considered as the official Code of Regulations, as published by Barclays Law Publishers.

To find the latest online version of the California Code of Regulations (CCR) Title 4, Division 9, visit the California Office of Administration Law at:

<http://ccr.oal.ca.gov/linkedslice/default.asp?SP=CCR-1000&Action=Welcome>

The CCR may also be accessed at <http://oal.ca.gov/> by clicking the "Publications" tab at the top of the OAL home page.

For information concerning the contents of this document, please contact the Division of Measurement Standards by e-mail at [dms@cdfa.ca.gov](mailto:dms@cdfa.ca.gov).

EXTRACT FROM CALIFORNIA CODE OF REGULATIONS

Title 4, Division 9, Chapter 6

2023 Weights and Measures Automotive Product Specifications §§ 4100. – 4191.

<b>Chapter 6. Automotive Products Specifications §§ 4100. through 4991.</b>	<b>1</b>
<b>Article 1. Brake Fluid Standards</b>	<b>1</b>
§ 4100. Specifications	1
§§ 4100. – 4111. - Repealed 11-19-85	1
<b>Article 2. Brake Fluid Labeling</b>	<b>1</b>
§ 4112. Container Labeling	1
<b>Article 3. Automatic Transmission Fluid Standards</b>	<b>1</b>
§§ 4120. - 4126. - Repealed 8-18-87	1
<b>Article 4. Automatic Transmission Fluid Registration</b>	<b>1</b>
§§ 4130. - Repealed 11-19-85	1
<b>Article 5. Engine Fuel Standards</b>	<b>1</b>
§ 4140. Definitions Used in Title 4, Division 9, Chapters 6 and 7	1
§ 4141. Specifications-Automotive Spark Ignition Engine Fuel	2
§ 4142. Specifications-Kerosene	2
§ 4143. Specifications-Fuel Oil	3
§ 4144. Specifications-Diesel Fuel	3
§ 4145. Specifications – Developmental Fuels	3
§ 4147. Specifications – M85 Fuel Methanol	4
§ 4149. Specifications – Non-Ester Renewable Diesel Blends	5
<b>Article 6. Engine Oil Labeling and Exemptions</b>	<b>6</b>
§ 4151. Exemptions - Prediluted Oil	6
§ 4152. Tolerances	6
<b>Article 7. Labeling and Specifications of Engine Coolants</b>	<b>6</b>
§ 4160. Definitions Used in This Article	6
§ 4163. Specifications – Recycled Glycol Base Engine Coolant for Automobiles and Light Duty Service	8
§ 4164. Specifications - Recycled and Reconditioned Glycol Base Prediluted Engine Coolant for Automobiles and Light Duty Service	8
§ 4165. Exemptions - Reserve Alkalinity	8
§ 4166. Variance from Chloride Standard - Specifications for Recycled Engine Coolant	8
§ 4167. Variance from Chloride Standard – Specifications for Recycled Prediluted Engine Coolant or Reconditioned Engine Coolant	9
§ 4168. Availability of ASTM Standards and Test Procedures	10
§ 4169. Evaluation of Test Results	10
§ 4170. Verification of Claim for Recycled Engine Coolant	11
§ 4171. Verification of Claim for Recycled Prediluted Engine Coolant or Reconditioned Engine Coolant	11
§ 4172. - 4175. Repealed 8-16-02	11
<b>Article 8. Hydrogen Fuel</b>	<b>11</b>
§ 4180. Definitions Used in This Article	11

EXTRACT FROM CALIFORNIA CODE OF REGULATIONS  
Title 4, Division 9, Chapter 6  
2023 Weights and Measures Automotive Product Specifications §§ 4100. – 4191.

§ 4181. Specifications – Hydrogen Fuel Used in Internal Combustion Engines. ....12  
**Article 9. Specifications for Dimethyl Ether Used as a Motor Vehicle Fuel .....12**  
§ 4190. Definitions Used in This Article .....12  
§ 4191. Specifications – Dimethyl Ether used as a Motor Vehicle Fuel. ....12

**Chapter 6. Automotive Products Specifications  
§§ 4100. through 4991.**

**Article 1. Brake Fluid Standards**

**§ 4100. Specifications.**

Brake fluid shall conform to the current specifications of the National Highway Traffic Safety Administration, United States Department of Transportation.

NOTE: Authority cited: Sections 12027 and 13710(c), Business and Professions Code.  
Reference: Section 13710(c), Business and Professions Code.

**§§ 4100. – 4111. - Repealed 11-19-85**

**Article 2. Brake Fluid Labeling**

**§ 4112. Container Labeling.**

In addition to the requirements of Section 13711(d), Business and Professions Code, the label of each container of brake fluid shall bear the brand name in letters not less than one-eighth inch (3.18 mm) in height.

Numerals used in connection with the brand name or merits of the product shall not exceed the actual dry equilibrium reflux boiling point of the product. Nothing in this section prohibits the use of any numeral or combination thereof in such a manner that it cannot reasonably be confused with the dry equilibrium reflux boiling point of the product.

NOTE: Authority cited: Sections 12027, 12609 and 13710(c), Business and Professions Code. Reference: Sections 12602 and 13711(d), Business and Professions Code.

**Article 3. Automatic Transmission Fluid Standards**

**§§ 4120. - 4126. - Repealed 8-18-87**

**Article 4. Automatic Transmission Fluid Registration**

**§§ 4130. - Repealed 11-19-85**

**Article 5. Engine Fuel Standards**

**§ 4140. Definitions Used in Title 4, Division 9, Chapters 6 and 7**

- (a) "Biodiesel" means a fuel comprised of mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats, designated B100, and meeting the

EXTRACT FROM CALIFORNIA CODE OF REGULATIONS

Title 4, Division 9, Chapter 6

2023 Weights and Measures Automotive Product Specifications §§ 4100. – 4191.

specifications set forth by the ASTM International in the latest version of Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels D6751 contained in the ASTM publication entitled: Annual Book of ASTM Standards, Section 5.

- (b) “Diesel fuel” means a light middle or middle distillate fuel which may be blended up to 5. volume percent biodiesel, and meeting the specifications set forth by the ASTM International in the latest version of Standard Specification for Diesel Fuel Oils D975 contained in the ASTM publication entitled: Annual Book of ASTM Standards, Section 5.
- (c) “Biodiesel blend” means biodiesel blended with petroleum-based diesel fuel.
- (d) “Non-ester renewable diesel” means a diesel fuel registered as a motor vehicle fuel or fuel additive under 40 CFR Part 79, as amended by Pub. L. 91-604, produced from nonpetroleum renewable resources that is not a mono-alkyl ester.
- (e) “Non-ester renewable diesel blend” means non-ester renewable diesel blended with petroleum-based diesel fuel.
- (f) “Biomass-based diesel” means a renewable diesel fuel that meets the definition of either biodiesel or non-ester renewable diesel.

NOTE: Authority cited: Sections 12027, 13440 and 13450, Business and Professions Code.  
Reference: Sections 13401, 13440, 13441, 13450 and 13451, Business and Professions Code.

**§ 4141. Specifications-Automotive Spark Ignition Engine Fuel.**

Automotive spark ignition engine fuel specifications shall conform to the latest standards set forth in the ASTM International D 4814 with the following exception:

Vapor pressure specifications shall not be more than the maximum specified by any California state law. When the maximum Reid Vapor Pressure specification for automotive spark-ignition engine fuel is below that established by D 4814, the Vapor Pressure/Distillation Class AA specification for distillation temperatures may be applied in the manufacture of automotive spark-ignition engine fuel.

NOTE: Authority cited: Sections 12027 and 13440, Business and Professions Code.  
Reference: Sections 13401(m), 13440 and 13441, Business and Professions Code.

**§ 4142. Specifications-Kerosene.**

Kerosene shall meet the specifications set forth by the ASTM International in the latest version of Standard Specification for Kerosene D-3699 contained in ASTM publication entitled: Annual Book of ASTM Standards, Section 5, Volume 05:03.

NOTE: Authority cited: Sections 12027, 12609 and 13450, Business and Professions Code.  
Reference: Sections 13401(c) and 13450, Business and Professions Code.

EXTRACT FROM CALIFORNIA CODE OF REGULATIONS  
Title 4, Division 9, Chapter 6  
2023 Weights and MeasuresAutomotive Product Specifications §§ 4100. – 4191.

**§ 4143. Specifications-Fuel Oil.**

Fuel oil shall meet the specifications set forth by the ASTM International in the latest version of Standard Specification for Fuel Oils D-396 contained in the ASTM publication entitled: Annual Book of ASTM Standards, Section 5, Volume 05:01, except the sulfur content shall not exceed the maximum specified by any California state law.

NOTE: Authority cited: Sections 12027 and 13450, Business and Professions Code.  
Reference: Sections 13401(l) and 13450, Business and Professions Code.

**§ 4144. Specifications-Diesel Fuel.**

Diesel fuel shall meet the specifications set forth by the ASTM International in the latest version of Standard Specification for Diesel Fuel Oils D-975 contained in the ASTM publication entitled: Annual Book of ASTM Standards, Section 5, Volume 05:01, except the sulfur content shall not exceed the maximum specified by any California state law. This standard is available from the ASTM International office at 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, Pennsylvania 19428-2959; or by calling (610) 832-9585 or by accessing the internet at: <http://www.astm.org> website.

NOTE: Authority cited: Sections 12027 and 13450, Business and Professions Code.  
Reference: Sections 13401(j), 13450, and 13451, Business and Professions Code.

**§ 4145. Specifications – Developmental Fuels.**

- (a) Sales of developmental engine fuels authorized by the Department are not subject to restrictions imposed upon the sale of non-conforming fuel products as set forth in Business and Professions Code Sections 13441, 13442 and 13451, but the Department's authorization does not create a variance or waiver from any other applicable California statute or regulation.
- (b) An applicant for authorization to sell developmental engine fuel must submit the following information to the Department:
  - (1) a statement of the potential benefit of the fuel to the people of California; and
  - (2) a description of test conditions associated with the use of the fuel, including control and monitoring practices, and the method of distribution and storage.
- (c) Any authorization provided by the Department is subject to the following terms and conditions:
  - (1) The authorization is limited to a period of two years, with an automatic renewal for an additional two years in the absence of action to revoke the authorization by the Department; and,

EXTRACT FROM CALIFORNIA CODE OF REGULATIONS

Title 4, Division 9, Chapter 6

2023 Weights and Measures Automotive Product Specifications §§ 4100. – 4191.

- (2) Damages caused by sale, delivery, storage, handling and usage of the fuel shall be addressed in accordance with contractual provisions negotiated and agreed upon by the authorization holder and the user; and,
- (3) The authorization holder shall report information to the Department as required to monitor the use of the fuel during the process of developing a generally recognized chemical and performance standard through a recognized consensus organization or standards writing organization, such as ASTM International or SAE International. The Department shall specify the reporting requirements on a case by case basis at the time the authorization is granted.
- (4) Any device used for the sale or distribution of a developmental engine fuel must comply with the Business and Professions Code Section § 12500 (e).
- (d) The Department may take action to revoke the authorization at any time. Revocation of the authorization is effective and final upon receipt of written notification by the authorization holder. The Department may take action to revoke the authorization if the Department finds:
  - (1) the authorization holder has violated any of the terms and conditions of the authorization; or,
  - (2) the authorization holder has abandoned efforts to develop a generally recognized chemical and performance standard for the fuel through a recognized consensus organization or standards writing organization.
  - (3) there is a high probability of equipment harm with the continued use of the developmental fuel or to protect the public safety.
- (e) The authorization shall cease to exist upon publication of a generally recognized chemical and performance standard for the fuel.

NOTE: Authority cited: Sections 12027 and 13405, Business and Professions Code.  
Reference: Sections 13401, 13440 - 13443 and 13450 - 13451, Business and Professions Code.

**§ 4146. Specifications – E85 Fuel Ethanol.**

E85 Fuel Ethanol shall meet the specifications set forth by ASTM International in the latest version of “Standard Specification for Fuel Ethanol (Ed75 – Ed85) for Automotive Spark-Ignition Engines D 5798”, contained in the ASTM publication entitled: Annual Book of ASTM Standards, Section 5.

NOTE: Authority cited: Sections 12027 and 13440, Business and Professions Code.  
Reference: Sections 13401(m), 13440 and 13441, Business and Professions Code.

**§ 4147. Specifications – M85 Fuel Methanol.**

M85 Fuel Methanol shall meet the specifications set forth by ASTM International in the latest version of “Standard Specification for Fuel Methanol (M70 – M85) for Automotive Spark-



EXTRACT FROM CALIFORNIA CODE OF REGULATIONS

Title 4, Division 9, Chapter 6

2023 Weights and Measures Automotive Product Specifications §§ 4100. – 4191.

Ignition Engines D 5797”, contained in the ASTM publication entitled: Annual Book of ASTM Standards, Section 5.

NOTE: Authority cited: Sections 12027 and 13440, Business and Professions Code.  
Reference: Sections 13401(m), 13440 and 13441, Business and Professions Code.4074.  
Instructions to Sealers.

**§ 4148. Specifications – Biodiesel Blends.**

Biodiesel Fuel Blends shall meet the following specifications:

- (a) Biodiesel blends with a concentration of 5. volume percent biodiesel or less shall meet the specification set forth by ASTM International in the latest version of the “Standard Specification for Diesel Fuel Oils” D975, publication entitled: Annual Book of ASTM Standards, Section 5.
- (b) Biodiesel blends with a concentration from 6. to 20. volume percent biodiesel shall meet the specifications set forth by ASTM International in the latest version of the “Standard Specification for Diesel Fuel Oil, Biodiesel Blend (B6 to B20)” D7467, contained in the ASTM publication entitled: Annual Book of ASTM Standards, Section 5.
- (c) Any finished biodiesel fuel blend greater than 20. volume percent biodiesel, shall meet the specifications set forth by ASTM International in the latest version of the specifications set forth for biodiesel blends greater than 20. volume percent biodiesel.
  - (1) Absent an ASTM International specification, the CDFA shall establish specifications pursuant to Business and Professions Code, Division 5, Chapter 14, Section 13450 using the data determined upon completion of the California Energy Commission Interagency Agreement, wherein the CDFA will perform test methods and standards development for biodiesel blends greater than 20 volume percent.
  - (2) These interim standards will remain in place until such time as a recognized consensus organization or standards writing organization, such as ASTM International or SAE International, adopts specifications for biodiesel blends greater than 20. volume percent.
  - (3) Biodiesel blends greater than 20. volume percent may only be sold under a developmental engine fuel variance obtained pursuant to Section 4145 of this article. Any variance granted will expire at such time as the CDFA adopts specifications for biodiesel blends greater than 20. volume percent biodiesel.

NOTE: Authority cited: Sections 12027 and 13450, Business and Professions Code.  
Reference: Sections 13401(j) and 13450, Business and Professions Code.

**§ 4149. Specifications – Non-Ester Renewable Diesel Blends.**

Non-ester Renewable Diesel Blends shall meet the specifications set forth by the ASTM International in the latest version of Standard Specification for Diesel Fuel Oils D975 contained in the ASTM publication entitled: Annual Book of ASTM Standards, Section 5.

EXTRACT FROM CALIFORNIA CODE OF REGULATIONS  
Title 4, Division 9, Chapter 6  
2023 Weights and Measures Automotive Product Specifications §§ 4100. – 4191.

NOTE: Authority cited: Sections 12027 and 13450, Business and Professions Code.  
Reference: Sections 13401(j) and 13450, Business and Professions Code

**Article 6. Engine Oil Labeling and Exemptions**

**§ 4150. Labeling.**

In addition to the requirements of Section 13482, Business and Professions Code, the label of each container of motor oil products shall contain the SAE/API Service Classification in letters not less than one-eighth inch (3.18 mm) in height.

NOTE: Authority cited: Sections 12027 and 12609, Business and Professions Code.  
Reference: Section 13482, Business and Professions Code.

**§ 4151. Exemptions - Prediluted Oil.**

Prediluted oil intended only for mixture with gasoline or other motor fuel in a two-cycle engine is exempt from the following requirements of the Business and Professions Code:

- (a) Section 13460(b) - Flash Points for the Various SAE Classifications;
- (b) Section 13460(a) - Service Classifications SAE J183;
- (c) Section 13480(b) - Viscosity Grade Classification Number;
- (d) Section 13482 - SAE/API Service Classification Markings on Containers.

NOTE: Authority cited: Sections 12027 and 12609, Business and Professions Code.  
Reference: Sections 13460, 13480 and 13482, Business and Professions Code.

**§ 4152. Tolerances.**

The ratio of gasoline to motor oil or to motor oil solvent mixture, as required by Sections 13480 and 13490(b) of the Business and Professions Code, shall be within plus or minus 10 percent of the stated ratio on the dispenser.

NOTE: Authority cited: Sections 12027 and 12609, Business and Professions Code.  
Reference: Sections 13480 and 13490, Business and Professions Code.

**Article 7. Labeling and Specifications of Engine Coolants**

**§ 4160. Definitions Used in This Article.**

- (a) "Engine Coolant" means any substance or preparation, regardless of its origin, intended to be diluted before use as the cooling medium in the cooling system of an internal combustion engine to provide protection against freezing, overheating, and corrosion of the cooling system, or any product intended to be diluted before use which is labeled to

EXTRACT FROM CALIFORNIA CODE OF REGULATIONS

Title 4, Division 9, Chapter 6

2023 Weights and Measures Automotive Product Specifications §§ 4100. – 4191.

indicate or imply that it will prevent freezing or overheating of the cooling system of an internal combustion engine. The term “engine coolant”, as used in this article, also means “antifreeze.”

- (b) “Prediluted Engine Coolant” means any substance or preparation, regardless of its origin, intended or labeled for use full strength as the cooling medium or as a top off in the cooling system of an internal combustion engine to provide supplemental protection against freezing, overheating, and corrosion of the cooling system. The term “prediluted engine coolant”, as used in this article, also means “prediluted antifreeze.”
- (c) “Recycled Engine Coolant” means engine coolant that contains recycled ingredients.
- (d) “Recycled Prediluted Engine Coolant” means prediluted engine coolant that contains recycled ingredients.
- (e) “Virgin Engine Coolant” means engine coolant that does not contain recycled or reconditioned ingredients.
- (f) “Virgin Prediluted Engine Coolant” means prediluted engine coolant that does not contain recycled or reconditioned ingredients.
- (g) “Reconditioned Engine Coolant” means recycled prediluted engine coolant produced from prediluted engine coolant that has been removed from a vehicle, reconditioned and is intended to be returned to the same vehicle.

NOTE: Authority cited: Section 12027, Business and Professions Code. Reference: Sections 13700, 13710(a) and 13713, Business and Professions Code.

**§ 4161. Labeling.**

In addition to the requirements of Section 13711(a) and (b), Business and Professions Code, the label of each container of engine coolant, prediluted engine coolant, recycled engine coolant, and recycled prediluted engine coolant shall bear a distinctive brand name in letters not less than one-eighth inch (3.18 mm) in height. Additionally, each container packaged after January 1, 2003, shall clearly identify the applicable American Society for Testing and Materials (ASTM) Standard Designation which the product meets.

NOTE: Authority cited: Sections 12027 and 12609, Business and Professions Code. Reference: Sections 13700 and 13711(a) (b), Business and Professions Code.

**§ 4162. Specifications - Glycol Base Virgin Engine Coolant and Virgin Prediluted Engine Coolant for Automobiles and Light Duty Service.**

Glycol base virgin engine coolant and virgin prediluted engine coolant for use in automobiles and light duty service shall meet the specifications set forth by the American Society for Testing and Materials (ASTM) in the Standard Specifications for Glycol Base Engine Coolant for Automobiles and Light Duty Service D 3306-00a. In addition, the reserve alkalinity of virgin engine coolants shall not be less than 10.0 mL of .1N hydrochloric acid and virgin prediluted engine coolants shall not be less than 5.0 mL of .1N hydrochloric acid when tested by ASTM procedure D 1121-98.

EXTRACT FROM CALIFORNIA CODE OF REGULATIONS  
Title 4, Division 9, Chapter 6  
2023 Weights and Measures Automotive Product Specifications §§ 4100. – 4191.

NOTE: Authority cited: Sections 12027, and 13710(a), Business and Professions Code.  
Reference: Sections 13710(a) and 13713, Business and Professions Code.

**§ 4163. Specifications – Recycled Glycol Base Engine Coolant for Automobiles and Light Duty Service.**

Glycol base recycled engine coolant for use in automobiles and light duty service shall meet the specifications set forth by the American Society for Testing and Materials (ASTM) in the Standard Specification for Recycled Glycol Base Engine Coolant for Automobiles and Light Duty Service D 6472-00. In addition, the reserve alkalinity shall not be less than 10.0 mL of .1N hydrochloric acid when tested by ASTM procedure D 1121-98.

NOTE: Authority cited: Sections 12027 and 13710(a), Business and Professions Code.  
Reference: Sections 13710(a) and 13713, Business and Professions Code.

**§ 4164. Specifications - Recycled and Reconditioned Glycol Base Prediluted Engine Coolant for Automobiles and Light Duty Service.**

Glycol base recycled prediluted engine and reconditioned engine coolant for use in automobiles and light duty service shall meet the specifications set forth by the American Society for Testing and Materials (ASTM) in the Standard Specification for Recycled Prediluted Aqueous Glycol Base Engine Coolant (50 Volume % Minimum) for Automobile and Light Duty Service D6471-99. In addition, the reserve alkalinity shall not be less than 5.0 mL of .1N hydrochloric acid when tested by ASTM procedure D 1121-98.

NOTE: Authority cited: Sections 12027 and 13710(a), Business and Professions Code.  
Reference: Sections 13710(a) and 13713, Business and Professions Code.

**§ 4165. Exemptions - Reserve Alkalinity.**

The Department may exempt any engine coolant, prediluted engine coolant, recycled engine coolant, recycled prediluted engine coolant or reconditioned engine coolant formulation from the reserve alkalinity requirement if the manufacturer, packer, seller, or distributor presents test data showing that the formulation meets the performance requirements specified for the Standard Test Methods for: “Corrosion Test for Engine Coolants in Glassware” - ASTM D 1384-7a, “Simulated Service Corrosion Testing of Engine Coolants” - ASTM D-2570-96, and “Corrosion of Aluminum Alloys in Engine Coolants Under Heat - Rejecting Conditions” - ASTM D 4340 96.

NOTE: Authority cited: Section 12027, Business and Professions Code. Reference: Sections 13710(a) and 13713, Business and Professions Code.

**§ 4166. Variance from Chloride Standard - Specifications for Recycled Engine Coolant.**

The Department may grant a variance for recycled engine coolant from the chloride standard contained in the ASTM specification referenced in Section 4163, if the engine coolant producer

EXTRACT FROM CALIFORNIA CODE OF REGULATIONS

Title 4, Division 9, Chapter 6

2023 Weights and Measures Automotive Product Specifications §§ 4100. – 4191.

or manufacturer of the engine coolant recycling system provides test data that the recycled engine coolant meets all the following conditions:

- (a) The chloride content is less than one hundred fifty parts per million (150 ppm);  
The recycled engine coolant meets all other requirements as specified in Section 4163;
- (c) The recycled engine coolant, when tested in accordance with Annex 3 of ASTM D 6472 00 shall visually provide a similar or smaller amount of precipitate when compared to the results obtained when testing the reference coolant specified in Annex 2 of ASTM D 6472-00;
- (d) The recycled engine coolant shows a Protection Potential,  $E_G$ , of greater (more positive) than or equal to -400 mV v SHE (standard hydrogen electrode) when tested in accordance with the ASTM Standard Test Method for Repassivation Potential of Aluminum and Its Alloy by Galvanostatic Measurement D 6208-97.

Variances granted under this section shall remain in effect until January 1, 2003.

NOTE: Authority cited: Section 12027, Business and Professions Code. Reference: Sections 13710(a), 13710.5 and 13713, Business and Professions Code.

**§ 4167. Variance from Chloride Standard – Specifications for Recycled Prediluted Engine Coolant or Reconditioned Engine Coolant.**

The Department may grant a variance for recycled prediluted engine coolant from the chloride standard contained in the ASTM specifications referenced in Section 4164, if the engine coolant producer or manufacturer of the engine coolant recycling system provides test data that the recycled prediluted engine coolant or reconditioned engine coolant meets all the following conditions:

- (a) The chloride content is less than one hundred fifty parts per million (150 ppm);
- (b) The recycled prediluted engine coolant meets all other requirements as specified in Section 4164;
- (c) The recycled prediluted engine coolant, when tested in accordance with Annex 3 of ASTM D 6471-99 shall provide a similar or smaller amount of precipitate when compared to the results obtained when testing the reference coolant specified in Annex 2 of ASTM D 6471-99;
- (d) The recycled prediluted engine coolant shows a Protection Potential,  $E_G$ , of greater (more positive) than or equal to -400 mV v SHE (standard hydrogen electrode) when tested in accordance with ASTM Standard Test Method for Repassivation Potential of Aluminum and Its Alloys by Galvanostatic Measurement D 6208-97. The test solution shall be prepared as follows: Mix 50 volume percent of the recycled prediluted engine coolant or reconditioned engine coolant with 25 volume percent corrosive water (as specified in ASTM D 6208-97) and 25 percent volume deionized water at room temperature.

EXTRACT FROM CALIFORNIA CODE OF REGULATIONS  
Title 4, Division 9, Chapter 6  
2023 Weights and Measures Automotive Product Specifications §§ 4100. – 4191.

Variances granted under this section shall remain in effect until January 1, 2003.

NOTE: Authority cited: Section 12027, Business and Professions Code. Reference: Sections 13710(a) and 13713, Business and Professions Code.

**§ 4168. Availability of ASTM Standards and Test Procedures.**

The American Society for Testing and Materials (ASTM) product standards and test procedures incorporated by reference in this article, with the exception of ASTM D 3306-00a, are available in the 2000 version of the Annual Book of ASTM Standards, Volume 15.05. ASTM D 3306-00a, is only available as a separate publication until September 2001. After September 2001, ASTM D 3306-00a will be available in the 2001 version of the Annual Book of ASTM Standards, Volume 15.05. These documents are available from the American Society for Testing and Materials (ASTM) located at 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428 2959.

NOTE: Authority cited: Section 12027, Business and Professions Code. Reference: Sections 13710(a) and 13713, Business and Professions Code.

**§ 4169. Evaluation of Test Results**

No adjustments for test precision or bias shall be applied in the evaluation of specifications established in this article for which repeatability, reproducibility, or bias statements have not been established.

- (a) Evaluation of Suspended Matter and Sediment in Engine Coolant and Recycled Engine Coolant. – Shake the engine coolant to insure a homogeneous mixture and combine 140 mL of this mixture with 60 mL of deionized water at room temperature. Immediately pour the blended mixture into a 250 mL Griffin beaker and allow it to stand at room temperature undisturbed for 24 hours. Visually examine the blend for suspended matter and sediment. A flashlight or other similar source of illumination shall be used to aid in the evaluation. The mixture shall not contain visually identifiable suspended matter or sediment.
- (b) Evaluation of Suspended Matter and Sediment in Prediluted Engine Coolant and Prediluted Recycled Engine Coolant. - Shake the prediluted engine coolant to insure a homogeneous mixture. Immediately pour 200 mL of the mixture into a 250 mL Griffin beaker and allow it to stand at room temperature undisturbed for 24 hours. Visually examine the blend for suspended matter and sediment. A flashlight or other similar source of illumination shall be used to aid in the evaluation. The mixture shall not contain visually identifiable suspended matter or sediment.

NOTE: Authority cited: Section 12027, Business and Professions Code. Reference: Sections 13710(a) and 13713, Business and Professions Code.

EXTRACT FROM CALIFORNIA CODE OF REGULATIONS

Title 4, Division 9, Chapter 6

2023 Weights and Measures Automotive Product Specifications §§ 4100. – 4191.

**§ 4170. Verification of Claim for Recycled Engine Coolant.**

Any distributor, manufacturer, producer, or seller of recycled engine coolant which has a chloride ion concentration greater than 25 parts per million (ppm) or a sulfate ion concentration greater than 100 ppm shall provide, upon request of a duly authorized representative of the Department, fleet testing results as specified in ASTM D 6472-00. Any product for which test results are not provided to the Department within 30 days of request shall be deemed adulterated. Verification of fleet testing data by a manufacturer of an engine coolant recycling system is prima facie evidence that the product produced using the same equipment, technique and formulation meets the fleet testing requirements in ASTM D 6472-00.

NOTE: Authority cited: Section 12027, Business and Professions Code. Reference: Sections 13710(a) and 13713, Business and Professions Code.

**§ 4171. Verification of Claim for Recycled Prediluted Engine Coolant or Reconditioned Engine Coolant.**

Any distributor, manufacturer, producer, or seller of recycled prediluted engine coolant or reconditioned engine coolant which has a chloride ion concentration greater than 33 parts per million (ppm) or a sulfate ion concentration greater than 140 ppm shall provide, upon request of a duly authorized representative of the Department, fleet testing results as specified in ASTM D 6471-99. Any product for which test results are not provided to the Department within 30 days of request shall be deemed adulterated. Verification of fleet testing data by a manufacturer of an engine coolant recycling system is prima facie evidence that the product produced using the same equipment, technique and formulation meets the fleet testing requirements in ASTM D 6471-99.

NOTE: Authority cited: Section 12027, Business and Professions Code. Reference: Sections 13710(a) and 13713, Business and Professions Code.

**§ 4172. - 4175. Repealed 8-16-02**

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

**§ 4180. Definitions Used in This Article**

- (a) "Fuel Cell" means an electrochemical energy conversion device in which fuel and an oxidant react to generate electricity without any consumption, physical or chemical, of its electrodes or electrolytes.
- (b) "Internal Combustion Engine" means a device used to generate power by converting chemical energy bound in the fuel via spark-ignition or compression ignition combustion into mechanical work to power a vehicle or other device.

EXTRACT FROM CALIFORNIA CODE OF REGULATIONS  
Title 4, Division 9, Chapter 6  
2023 Weights and Measures Automotive Product Specifications §§ 4100. – 4191.

- (c) “Hydrogen Fuel” means a fuel composed of molecular hydrogen intended for consumption in a surface vehicle or electricity production device with an internal combustion engine or fuel cell.

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) and 13595(a), Business and Professions Code.

**§ 4181. Specifications – Hydrogen Fuel Used in Internal Combustion Engines.**

Hydrogen fuel used in internal combustion engines and fuel cells shall meet the most recent version of SAE International J2719, “Hydrogen Fuel Quality for Fuel Cell Vehicles”.

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.

**Article 9. Specifications for Dimethyl Ether Used as a Motor Vehicle Fuel**

**§ 4190. Definitions Used in This Article**

“Dimethyl Ether Fuel” or DME Fuel is the chemical compound ( $\text{CH}_3\text{OCH}_3$ ) which is intended for consumption in a surface vehicle.

NOTE: Authority cited: Sections 12027, 13450 and 13451, Business and Professions Code.  
Reference: Sections 13401(c), 13401(h), 13401(i), 13401(n), 13413(a), 13591, 13592 and 13595(a), Business and Professions Code.

**§ 4191. Specifications – Dimethyl Ether used as a Motor Vehicle Fuel.**

Dimethyl Ether used as a motor vehicle fuel shall meet the requirements found in the most recent version of ASTM International D7901, “Dimethyl Ether for Fuel Purposes”.

NOTE: Authority cited: Sections 12027, 13450 and 13451, Business and Professions Code.  
Reference: Sections 13401(c), 13401(h), 13401(i), 13401(n), 13413(a), 13591, 13592 and 13595(a), Business and Professions Code.