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② VAC Number/Chapter Title: 2VAC5-425, Vapor Pressure Requirements for Gasoline Ethanol Blends

③ Effective Date of Final Regulation (leave blank for proposed stage): April 19, 2016-October 18, 2017 (emergency regs)

④ Name of Document Incorporated by Reference (include edition or effective/revised date):  
Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as  
Automotive Spark-Ignition Engine Fuel, ASTM D4806-16a

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Requested by: Erin Williams, (804) 786-7157

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*Erin Williams*

Signature of Agency Regulatory Coordinator

April 19, 2016

Date

Approved:

*Tara Perrine*  
Assistant Registrar of Regulations

April 20, 2016

Date

Authorization to File Documents Incorporated by Reference by Description - Summary of Document

Agency: Board of Agriculture and Consumer Services

Regulation: 2 VAC 5-425 *et seq.*, *Vapor Pressure Requirements for Gasoline Ethanol Blends*

Document Incorporated by Reference: Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel, ASTM D4806-16a

Publication Date: February 2016

Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel, ASTM D4806-16a, covers nominally anhydrous denatured fuel ethanol intended to be blended with unleaded or leaded gasolines at one percent to 15 percent by volume for use as automotive spark-ignition engine fuel covered by Specification D4814 as well as other fuel applications involving ethanol. This standard was adopted by ASTM International, one of the world's largest international standards developing organizations.



Designation: D4806 – 16a

## Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel<sup>1</sup>

This standard is issued under the fixed designation D4806; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope\*

1.1 This specification covers nominally anhydrous denatured fuel ethanol intended to be blended with unleaded or leaded gasolines at 1 % to 15 % by volume for use as automotive spark-ignition engine fuel covered by Specification D4814 as well as other fuel applications involving ethanol. The significance of this specification is shown in Appendix X1.

1.2 The user is advised to check with the national regulatory agencies where the ethanol is denatured and used. The sulfur limit and denaturing formulas in this specification are acceptable for the U.S. market. Other countries or jurisdictions may allow or require other denaturing formulas and sulfur limits.

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.4 The following safety hazards caveat pertains only to the method modification in 8.7 of this specification: *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

### 2. Referenced Documents

#### 2.1 ASTM Standards:<sup>2</sup>

D86 Test Method for Distillation of Petroleum Products and Liquid Fuels at Atmospheric Pressure

D381 Test Method for Gum Content in Fuels by Jet Evaporation

D1298 Test Method for Density, Relative Density, or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method

D1613 Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products

D1688 Test Methods for Copper in Water

D2622 Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry

D3120 Test Method for Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry

D4052 Test Method for Density, Relative Density, and API Gravity of Liquids by Digital Density Meter

D4057 Practice for Manual Sampling of Petroleum and Petroleum Products

D4175 Terminology Relating to Petroleum Products, Liquid Fuels, and Lubricants

D4177 Practice for Automatic Sampling of Petroleum and Petroleum Products

D4306 Practice for Aviation Fuel Sample Containers for Tests Affected by Trace Contamination

D4814 Specification for Automotive Spark-Ignition Engine Fuel

D5453 Test Method for Determination of Total Sulfur in Light Hydrocarbons, Spark Ignition Engine Fuel, Diesel Engine Fuel, and Engine Oil by Ultraviolet Fluorescence

D5501 Test Method for Determination of Ethanol and Methanol Content in Fuels Containing Greater than 20% Ethanol by Gas Chromatography

D5580 Test Method for Determination of Benzene, Toluene, Ethylbenzene, *p/m*-Xylene, *o*-Xylene,  $C_9$  and Heavier Aromatics, and Total Aromatics in Finished Gasoline by Gas Chromatography

D5854 Practice for Mixing and Handling of Liquid Samples of Petroleum and Petroleum Products

D6423 Test Method for Determination of pH<sub>E</sub> of Denatured Fuel Ethanol and Ethanol Fuel Blends

D6550 Test Method for Determination of Olefin Content of Gasolines by Supercritical-Fluid Chromatography

D7039 Test Method for Sulfur in Gasoline, Diesel Fuel, Jet Fuel, Kerosine, Biodiesel, Biodiesel Blends, and Gasoline-Ethanol Blends by Monochromatic Wavelength Dispersive X-ray Fluorescence Spectrometry

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.A0.02 on Oxygenated Fuels and Components.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

\*A Summary of Changes section appears at the end of this standard