

**I T E C**  
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**ASTM D 4806-16a**

**United States Specification  
Denatured Fuel Ethanol for Blending with Gasolines  
for Use as Automotive Spark-Ignition Engine Fuel**

Specification	Value	Test Method
Ethanol, % by Vol., min. @ 60/60° F. (15.56/15.56°C)	92.1	ASTM D 5501
Methanol, % by Vol., max. @ 60/60° F. (15.56/15.56°C)	0.5	ASTM D 5501
Solvent-washed gum, mg/100 ml, max.	5.0	ASTM D 381
Water content, % by Vol., max. (% by mass) at 60° F.	1.0 (1.26)	ASTM E 203 or E 1064
Denaturant content <sup>(1)</sup> , % by Vol., min.	1.96 – 2.5	Calculated
Vol. % max.	5.0	Calculated
Inorganic chloride content, mg/kg (mg/L), max.	6.7 (5)	ASTM D 7319 or D 7328
Copper content, mg/kg, max.	0.1	ASTM D 1688
Acidity (as acetic acid CH <sub>3</sub> COOH), mg/kg (% by mass) [mg/L], max.	70 (0.0070) [56]	ASTM D 1613 or D 7795
pHe	6.5 - 9.0	ASTM D 6423
Sulfur, mg/kg, max.	30.	ASTM D 2622, D 3120
Existent sulfate, mg/kg, max.	4	ASTM D 7318, D 7319, D 7328
Appearance	Visibly free of suspended or precipitated contaminants (clear and bright)	Determined at indoor ambient temperature unless otherwise agreed upon between the supplier and purchaser.

<sup>(1)</sup> TTB formulas require a minimum of two parts of approved denaturant to 100 parts of ethanol with a minimum of 195 proof ethanol. EPA stipulates the maximum amount of denaturant in the denatured fuel ethanol for determining volumes for RFS2 compliance purposes is 2.0 % by volume max.