I T E C
Refining and Marketing Company Ltd.

3 Porter School Road
Barrington, IL 60010-2667 USA

Tel: +1 847-304 4700
Fax: +1 847-304 4710
E-mail: alcohol@itecref.com
URL: www.itecref.com

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/100mL, 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(1), % by Vol., min. Vol. % max.	1.96 – 2.5 5.0	Calculated 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_3COOH), 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.

(1) 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.