

### E Grade Denatured Fuel Ethanol Specifications

Specification Points	Method	Minimum	Maximum
Apparent Proof or Density @ 60°F	Hydrometer, D4052		Report
Water, vol%, Maximum	E203, E1064, D7923		1.0
Ethanol, vol%	D5501	93.5	
Methanol, vol%	D5501		0.5
Sulfur, ppm (wt/wt)	D5453		10.
Solvent Washed Gum,	D381		
	mg/100mL (Air Jet Method)		5
Existent Sulfate, mg/kg	D7319, D7328		4
Chloride, mg/L	D7319		5
Copper, mg/L	D1688		
	Method A, Modified per D4806		0.08
Acidity (as acetic acid), Mass %	D7795		0.007
PhE	D6423	6.5	9.0
Workmanship <sup>3/</sup>	MMP		
Denaturant Content vol% <sup>2/</sup>	D4806	1.96	2.50

**Footnotes:**

- 1/ Delivered products meet all applicable requirements at time and place of delivery.
- 2/ Only approved denaturants listed in 40 CFR part 1090.275 are allowed. The denaturant range must be within the guidelines provided for in the RFS and concurrent with IRS notice 2009.06.
- 3/ Workmanship at the time of acceptance, and the finished fuel shall be visually free from undissolved water, sediment, or suspended matter and shall be clear and bright.
- 4/ All fuel shall comply with 40 CFR Subpart M - Renewable Fuel Standard.

**Notes:**

Corrosion Inhibitor Additive, one of the following is required:					
Minimum treat rate	Vendor	Additive	Minimum treat rate	Vendor	Additive
7 lbs/1000 bbls.	Apollo Water Services	FCA-1008	5 lbs/1000 bbls.	Nalco Water	EC5624A Plus
6 lbs/1000 bbls	Ashland	Amergy ECI-6	20 lbs/1000 bbls.	Petrolite	Tolad 3222
20 lbs/1000 bbls.	Betz	ACN 13	13 lbs/1000 bbls.	Petrolite	Tolad 3224
20 lbs/1000 bbls.	G. E. Betz	Endcor GCC9711	2 lbs/1000 bbls.	SPEC-AID	BIO9102
3 lbs/1000 bbls.	G.E. Power & Water	8Q123ULS	10 lbs/1000 bbls.	US Water Services	CorrPro 656X
5 lbs/1000 bbls.	Innospec	DCI-11 Plus/ ClearTrak	13 lbs/1000 bbls.	US Water Services	CorrPro 656 or 656T
3 lbs/1000 bbls.	Midcontinental	MCC5011PHE	5 lbs/1000 bbls.	US Water Services	CorrPro N or NT