

## **W2 Grade Certified Ethanol Denaturant Specifications.**

(Fuel Ethanol Denaturant)

Product Property	Method	Minimum	Maximum
Gravity, °API	D287	75.0	85.0
Reid Vapor Pressure, psi	D5191	12	14
True Vapor Pressure, psi <sup>3/</sup>	D6378		11.0
Distillation,	D86		
90% Evaporated at Degree °F			365
Final Boiling Point at Degree °F			437
Color	D156	+25	
Benzene, vol %	D5580/ D3606		1.10
Doctor	D4952	Negative	
Sulfur, ppm	D5453/ D2622/ D7039		120
Copper Corrosion	D130		1
Haze Rating <sup>2/</sup>	D4176		2
NACE Corrosion	TM0172	B+	

### **Foot Notes:**

- 1/ Delivered products meet all applicable requirements at time and place of delivery.
- 2/ Compliance with ASTM D4176 will be determined using Procedure 2 at the following temperatures, adjusted seasonally:

February 16 – September 30	55 °F max
October 1 – February 15	45 °P max
- 3/ Minnesota origins to perform TVP at 83.2°F or the applicable monthly temperature provided in Des Moines, IA table.

Kansas origins to perform TVP at the applicable monthly temperature provided in Kansas City, KS table.

### **Notes:**

- W2 Grade shipments may not contain any additives.
- W2 meets the requirements of certified ethanol denaturant as listed in 40 CFR 1090.275

Revision Date: January 1, 2017

- W2 shall be designated as certified ethanol denaturant as intended for blending with gasoline as specified in 40 CFR 1090.1010(g).

<u>Des Moines, IA</u>	
<u>Month</u>	<u>Average Ambient Temperatures °F</u>
January	41.4
February	46.4
March	57.9
April	68.9
May	75.7
June	80.9
July	83.2
August	80.7
September	80.7
October	70.7
November	57.4
December	48.0

<u>Sioux Falls, IA</u>	
<u>Month</u>	<u>Average Ambient Temperatures °F</u>
January	41.4
February	46.4
March	57.9
April	68.9
May	75.7
June	80.9
July	83.2
August	80.7
September	80.7
October	70.7
November	57.4
December	48.0

<u>Kansas City, KS</u>	
<u>Month</u>	<u>Average Ambient Temperatures °F</u>
January	49.9
February	55.2
March	63.8
April	71.4
May	77.5
June	84.9
July	87.0
August	84.0
September	83.4
October	75.6
November	62.4
December	53.5