

## Sub-Octane Unleaded Gasoline Specifications

### V1, VMS Grade 81.5 Sub-Octane Unleaded Gasoline Specifications

(Conventional Gasoline - This product does not meet the requirements for reformulated gasoline and may not be used in any reformulated gasoline covered area.)

<b>The following parameters apply <u>before</u> blending with denatured fuel ethanol.</b>				
Product Property	Test Method	Origin Limits Minimum	Origin Limits Maximum	Origin Limits Deliveries <sup>1/</sup>
Gravity, ° API	D287, D1298, D4052		Report	
Color			Undyed	
Distillation <sup>2/</sup>	D86			
RVP <sup>2/</sup>	D5191			
Vapor to Liquid Ratio <sup>2/</sup>	D5188			
Drivability Index <sup>2/</sup>	D4814			
Copper Corrosion	D130		1	
Silver Corrosion	D7667, D7671		1	
Gum, Existent, mg/100 ml	D381		4	5
Mercaptan Sulfur, wt % <sup>3/</sup>	D3227		0.002	
Sulfur, ppm	D2622		80	
Benzene, vol %	D3606		4.9	
Oxidation Stability, minutes	D525	240		
Haze Rating <sup>4/</sup>	D4176		2	3
Oxygenates, vol %	D4815, D5599		0.05	
Phosphorus, g/gal	D3231		0.003	0.005
Lead, g/gal	D3237		0.010	0.05
NACE Corrosion	TM0172, D7548	B+		
Odor <sup>5/</sup>				Nonoffensive

**The following parameter applies either before or before and after blending with denatured fuel ethanol.**

Octane		<u>Base Gasoline</u>	
RON, min	D2699	Report	
MON, min	D2700	Report	
(R+M)/2, min		82.0	
		<u>Base Gasoline and Blend with 10% Ethanol</u>	
RON, min	D2699	Report	Report
MON, min	D2700	Report	Report
(R+M)/2, min		81.5	85.0

**The following parameters apply after blending with denatured fuel ethanol at 10%**

<u>Product Property</u>	<u>Test Method</u>		<u>Origin Limits</u>		
Distillation, 10% Evap (T10), °F 20% Evap (T20), °F 50% Evap (T50), °F, min	D86		Report Report 150		
RVP <sup>6/</sup>	D5191		Report		
Vapor to Liquid Ratio D5188, min <sup>2/7/</sup>	<u>Class 1</u> <b>129</b>	<u>Class 2</u> <b>122</b>	<u>Class 3</u> <b>116</b>	<u>Class 4</u> <b>Report</b>	<u>Class 5</u> <b>Report</b>

- 1/ Delivered products meets all applicable requirements at time and place of delivery.
- 2/ Refer to Magellan’s Seasonal Gasoline Volatility Classes and Schedule of Origin Volatility requirements.
- 3/ Mercaptan Sulfur determination is waived if the result of the Doctor Test ASTM D4952 is negative.
- 4/ 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 °F max
- 5/ Any gasoline exhibiting an offensive odor and/or containing more than 0.30 wt % dicyclopentadiene will not be accepted for shipment.
- 6/ RVP limits on ethanol blended gasoline are controlled by various federal and state regulations and waivers, which are generally greater than the limits for base gasoline.
- 7/ D5188 is the referee test method. The alternate equation in D 4814 may also be used.