

**Frontier Oil And Refining Company  
El Dorado Refinery  
P. O. Box 1121  
El Dorado Kansas, 67042-3698**

**Mid-Grade (89) unleaded gasoline specifications with 10% Ethanol**

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

<b>Product property</b>	<b>Test Method</b>	<b>Minimum</b>	<b>Maximum</b>
Gravity, ° API	D287		Report
Color			Undyed
Volatility (1*)			
Mercaptan Sulfur, wt % (2*)	D3227		0.004
Copper Strip Corrosion	D130		1
Gum, Existent, mg/100ml	D381		4
Oxidation Stability, minutes	D525	240	
Phosphorus, g/gal	D3231		0.003
Lead, g/gal	D5059		0.010
Octane (Base Gasoline) (3*)			
RON	D2699	89.0	
MON	D2700	81.0	
(R+M)/2 after blending		89.0	
Haze Rating	D4176		2
Sulfur, ppm	D2622		300

1. Refer to attached Seasonal Gasoline Volatility Specifications.
2. Mercaptan Sulfur determination is waived if the results of the Doctor Test ASTM D4952 is negative.
3. The calculated minimum R/DON octane number after the addition of 10% ethanol is 89.0. The addition of 10% ethanol is required for the minimum octane to be met.

**Mid-grade (89 octane unleaded) with Ethanol – Seasonal Volatility Specifications**

	<u>1 – 15</u>	<u>16 – 31</u>
January	15.0	15.0
February	15.0	15.0
March	13.5	13.5
April	11.5	11.5
May	9.0	9.0
June	9.0	9.0
July	9.0	9.0
August	9.0	9.0
September	9.0	10.0
October	11.5	11.5
November	13.5	13.5
December	15.0	15.0