

**X, XHO, TB, TC Grade #2 Ultra Low Sulfur Diesel Fuel Specifications**  
**Central, Rocky Mountain, and Southern Systems**

**Central System:**

Product Property <sup>1/</sup>	Method	Minimum	Maximum
Gravity, °API	D287		Report
Color	D1500		2.5
Distillation <sup>4/</sup>	D86, D2887		
50% Recovered, °F			Report
90% Recovered, °F		540	640
End Point °F			700
Copper Corrosion	D130		1
Cetane			
Cetane Number	D613	40	
Or			
Cetane Index, A or B	D4737	40	
Cetane Index <sup>2/</sup>	D976	40	
Flash Point, °F	D93	140	
Stability			
Thermal, % reflectance (W or Y)	D6468 (W)	75	
	D6468 (Y)	82	
Aging Period (Minutes)	D6468	90	
Or			
Oxidation, mg/100 ml	D2274		2.5
Carbon Residue on 10% Bottoms, wt %	D524		0.35
Cloud Point, °F	D2500		
September-March			+15
April-August			+20
Pour Point, °F	D97		
September-March			+0
April-August			+10
Viscosity, cSt at 104 °F	D445	1.9	4.1
Ash, wt %	D482		0.01
Haze Rating <sup>3/</sup>	D4176		2
NACE Corrosion	TM0172, D7548	B+	
Sulfur, ppm	D2622		11

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**Rocky Mountain System:**

Product Property <sup>1/</sup>	Method	Minimum	Maximum
Gravity, °API	D287		Report
Color	D1500		2.5
Distillation <sup>4/</sup>	D86, D2887		
50% Recovered, °F			Report
90% Recovered, °F		540	640
End Point °F			700
Copper Corrosion	D130		1
Cetane			
Cetane Number	D613	40	
Or			
Cetane Index, A or B	D4737	40	
Cetane Index <sup>2/</sup>	D976	40	
Flash Point, °F	D93	134	
Stability			
Thermal, % reflectance (W or Y)	D6468 (W)	75	
	D6468 (Y)	82	
Aging Period (Minutes)	D6468	90	
Or			
Oxidation, mg/100 ml	D2274		2.5
Carbon Residue on 10% Bottoms, wt %	D524		0.35
Cloud Point, °F	D2500		
September-March			+15
April-August			+20
Pour Point, °F	D97		
September-March			+0
April-August			+10
Viscosity, cSt at 104 °F	D445	1.9	4.1
Ash, wt %	D482		0.01
Haze Rating <sup>3/</sup>	D4176		2
NACE Corrosion	TM0172, D7548	B+	
Sulfur, ppm	D2622		12

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**Southern System:**

Product Property <sup>1/</sup>	Method	Minimum	Maximum
Gravity, °API	D287		Report
Color	D1500		2.5
Distillation <sup>4/</sup>	D86, D2887		
50% Recovered, °F			Report
90% Recovered, °F		540	640
End Point °F			700
Copper Corrosion	D130		1
Cetane			
Cetane Number	D613	40	
Or			
Cetane Index, A or B	D4737	40	
Cetane Index <sup>2/</sup>	D976	40	
Flash Point, °F	D93	135	
Stability			
Thermal, % reflectance (W or Y)	D6468 (W)	75	
	D6468 (Y)	82	
Aging Period (Minutes)	D6468	90	
Or			
Oxidation, mg/100 ml	D2274		2.5
Carbon Residue on 10% Bottoms, wt %	D524		0.35
Cloud Point, °F	D2500		
October-February			+15
March-August			+28
September			+20
Pour Point, °F	D97		Report
Viscosity, cSt at 104 °F	D445	1.9	4.1
Ash, wt %	D482		0.01
Haze Rating <sup>3/</sup>	D4176		2
NACE Corrosion	TM0172, D7548	B+	
Sulfur, ppm	D2622		11

**X, XHO, TB, TC Grade #2 Ultra Low Sulfur Diesel Fuel Specifications  
Central, Rocky Mountain, and Southern Systems (continued)**

**Foot Notes:**

- 1/ Delivered products meet all applicable requirements at time and place of delivery and the product transfer documents will include the sulfur per-gallon standard that the fuel meets per 40 CFR 1090.1165(a)(1) and an accurate and clear designation of the fuel per 40 CFR 1090.1165(a)(2).
- 2/ ASTM D976 is used to demonstrate aromatics compliance per 40 CFR 1090.305.
- 3/ Compliance with ASTM D4176 will be determined using Procedure 2 at 77 °F or tank temperature at the time of sampling, whichever is lower.
- 4/ ASTM D2887 Simulated Distillation results must be reported after D86 correlation.

**Notes:**

- X, XHO, TB, and TC comply with the ULSD standards of 40 CFR 1090.305.
- X, TB, and TC are designated as ULSD in accordance with 40 CFR 1090.1115.
- XHO is designated as Certified NTDF in accordance with 40 CFR 1090.1115.
- The presence of biodiesel is prohibited at origin. Deliveries of X-Grade may contain up to 5% biodiesel at the Dubuque, IA terminal.
- X-Grade shipments may not be dyed.