



Yellowstone Pipeline

Distillate, #2 Diesel Fuel, Ultra-Low Sulfur (15 ppm max), (also meets #2 Fuel Oil specifications)

Property	Test Method	Units	Min	Max	Specific	Note#
Viscosity @ 104 F	D445 Kinematic Viscosity	cSt	1.9	3.4		
Water & Sed, total	D2709 Water & Sed by Centr	Vol%		0.05		

Notes:

1. The use of Biodiesel, including Fatty Acid Methyl Esters (FAME's), is strictly prohibited. The fuel may contain antioxidants/sweeteners, corrosion inhibitors, and pour point depressants. Corrosion inhibitors may be required to meet the 1 mil/yr standard pipeline corrosion rate. All additives and their concentrations must be previously approved by the pipeline Quality Control Coordinator, and must be clearly indicated on the Certificate of Analysis.
2. The diesel fuel shall be visually free of undissolved water, sediment, and suspended matter. (ASTM D975)
3. The derived cetane number (DSC) measured by these methods can be used for cetane measurement. D613 is the referee method for cetane.
4. Either the Cetane Index by 2-variables minimum or the Aromatics maximum must be met (see ASTM D975 Table 1 notes for method version)
5. Where cetane number by Test Method D 613 is not available, Test Method D 4737 can be used as an approximation. (ASTM D975 Table 1 Notes)
6. Under United States regulations, if distillates are sold for tax exempt purposes then, at or beyond terminal storage tanks, they are required by 26 CFR Part 48 to contain the dye Solvent Red 164 at a concentration spectrally equivalent to 3.9 lb per thousand barrels of the solid dye standard Solvent Red 26, or the tax must be collected. (ASTM D975 Table 1 Notes)
7. This fuel meets or exceeds all the requirements of ASTM D975 (Ultra Low Sulfur Grade No. 2-D S15 Diesel Fuel Oil) and ASTM D396 (Grade No. 2 Low Sulfur Fuel Oil), with the possible exception of the lubricity/conductivity requirements in ASTM D975. Additives or further blending may be utilized at downstream locations to meet these requirements.
8. ASTM Referee Methods for #2 Diesel Fuel, 15 ppm Sulfur, are as follows:
Cloud Pt, ASTM D2500; Flash Point, ASTM D93; Sulfur, ASTM D5453; Distillation, D 86. (source ASTM D975)
9. ASTM Referee Methods for #2 Fuel Oil, 500 ppm Sulfur, are as follows:
Density, ASTM D1298; Distillation, ASTM D86; Flash Point, ASTM D93; Pour Point, ASTM D97; Sulfur, ASTM D2622. (source ASTM D396)
10. For this product, sulfur test instruments and methods used at each facility must be qualified by the current EPA approved method (see 40 CFR Part 80 for approved methods).


Yellowstone Pipeline

Volatility Schedule, Conventional, All Grades, All product that will be delivered to WA (not MT)

Month(s)	Volatility Class	RVP max. psi	V/L Test Temp min. °F	Drive Index max	Distillation Requirements, °F				End Pt max	Dist Resid max. %
					10% max	50% min	50% max	90% max		
Jan	E-5	15.0	105	1200	122	170	230	365	430	2
Feb	E-5	15.0	105	1200	122	170	230	365	430	2
Mar	E-5	15.0	105	1200	122	170	230	365	430	2
Apr	D-4	13.5	116	1220	131	170	235	365	430	2
May	A-3	9.0	124	1250	158	170	250	374	430	2
Jun	A-2	9.0	133	1250	158	170	250	374	430	2
Jul	A-2	9.0	133	1250	158	170	250	374	430	2
Aug	A-2	9.0	133	1250	158	170	250	374	430	2
Sep 1 - 15	A-2	9.0	133	1250	158	170	250	374	430	2
Sep 16 - 30	C-3	11.5	124	1230	140	170	240	365	430	2
Oct	D-4	13.5	116	1220	131	170	235	365	430	2
Nov	E-5	15.0	105	1200	122	170	230	365	430	2
Dec	E-5	15.0	105	1200	122	170	230	365	430	2

Volatility dates listed are those required at terminals and thus may not be equivalent to the pipeline shipping schedule provided to shippers. The above Volatility Classes are standard as set forth by the Pipeline. Other Volatility Classes may be requested as well.

Values marked with an * indicate a more restrictive requirement than that defined by the underlying ASTM Volatility Class.

Product that may be shipped to Washington State may be ultimately sold as a clear gasoline or a gasoline/ethanol blend. Washington state regulations require clear, finished gasoline to meet the current version of ASTM D4814. For gasolines or subgrades that are intended to be blended with ethanol to produce a finished gasoline-ethanol blend, state regulations allow either meeting the TV/L=20 specification on a clear or blended basis. If certifying on a clear basis, the applicable standards are as follows:

- (1) Class 1 shall be 60EC (140°F)
- (2) Class 2 shall be 56EC (133°F)
- (3) Class 3 shall be 51EC (124°F)
- (4) Class 4 shall be 47EC (116°F)
- (5) Class 5 shall be 41EC (105°F)

If certifying on a blended basis, the applicable standard is the most recent version of ASTM D4814.

Test Methods: (latest version unless otherwise indicated)

Distillation: ASTM D86, corrected to 760 mm Hg;

Driveability Index: ASTM D4814; The DI specification limits are applicable at the refinery or import facility as defined by 40 CFR Part 80.2 and are not subject to correction for precision of the test method.

V/L: ASTM D5188, or the estimate method using Appendix X2 of ASTM D4814;

Vapor Pressure: ASTM D5191-01. For conventional gasoline that meets a summer RVP specification of 9.0 psi or less and which is intended for sale in the summer, EPA requires the use of the EPA equation and also requires that batch reporting of RVP be to 2 decimal places (example; 8.97 psi).


Yellowstone Pipeline

Volatility Schedule, Conventional, All Sub-octane Grades, All product that may be delivered to MT (can also go to WA), all properties (except clear RVP) must be met on 10 vol% ethanol hand blend

Month(s)	Volatility Class	Clear RVP	RVP	V/L Test	Drive	Distillation Requirements, °F					Dist
		max. psi	max. psi	Temp min. °F	Index max	10% max	50% min	50% max	90% max	End Pt max	Resid max. %
Jan	E-5	15.0*	16.0	102	1200	122	150	230	365	430	2
Feb	E-5	15.0*	16.0	102	1200	122	150	230	365	430	2
Mar	E-5	15.0*	16.0	102	1200	122	150	230	365	430	2
Apr	D-4	13.5*	14.5	107	1220	131	150	235	365	430	2
May	A-3	9.0*	10.0	116	1250	158	150	250	374	430	2
Jun	A-2	9.0*	10.0	122	1250	158	150	250	374	430	2
Jul	A-2	9.0*	10.0	122	1250	158	150	250	374	430	2
Aug	A-2	9.0*	10.0	122	1250	158	150	250	374	430	2
Sep 1 - 15	A-2	9.0*	10.0	122	1250	158	150	250	374	430	2
Sep 16 - 30	C-3	11.5*	12.5	116	1230	140	150	240	365	430	2
Oct	D-4	13.5*	14.5	107	1220	131	150	235	365	430	2
Nov	E-5	15.0*	16.0	102	1200	122	150	230	365	430	2
Dec	E-5	15.0*	16.0	102	1200	122	150	230	365	430	2

Volatility dates listed are those required at terminals and thus may not be equivalent to the pipeline shipping schedule provided to shippers. The above Volatility Classes are standard as set forth by the Pipeline. Other Volatility Classes may be requested as well.

Limits marked with an * apply to the fuel without ethanol. Unmarked limits apply to the fuel with 10 vol% ethanol.

A 1.0 psi higher vapor pressure is allowed for conventional gasoline-ethanol blends that contain greater than 1 vol % ethanol, and this allowance is reflected in the table. During the period of May 1 through September 15 this allowance only pertains to blends that contain between 9 and 10 vol % ethanol.

Test Methods: (latest version unless otherwise indicated)

Distillation: ASTM D86, corrected to 760 mm Hg;

Driveability Index: ASTM D4814;

V/L: ASTM D5188, or the estimate method using Appendix X2 of ASTM D4814;

Vapor Pressure: ASTM D5191-01. For conventional gasoline that meets a summer RVP specification of 9.0 psi or less and which is intended for sale in the summer, EPA requires the use of the EPA equation and also requires that batch reporting of RVP be to 2 decimal places (example; 8.97 psi).



Yellowstone Pipeline

Volatility Schedule, Conventional, All Full Octane Grades, All product that may be delivered to MT (can also go to WA)

Month(s)	Volatility Class	Clear RVP max. psi	RVP max. psi	V/L Test Temp min. °F	Drive Index max	Distillation Requirements, °F						
						10% max	Clear 50% min	50% min	50% max	90% max	End Pt max	Dist Resid max, %
Jan	E-5	15.0*	16.0	102	1200	122	170*	150	230	365	430	2
Feb	E-5	15.0*	16.0	102	1200	122	170*	150	230	365	430	2
Mar	E-5	15.0*	16.0	102	1200	122	170*	150	230	365	430	2
Apr	D-4	13.5*	14.5	107	1220	131	170*	150	235	365	430	2
May	A-3	9.0*	10.0	116	1250	158	170*	150	250	374	430	2
Jun	A-2	9.0*	10.0	122	1250	158	170*	150	250	374	430	2
Jul	A-2	9.0*	10.0	122	1250	158	170*	150	250	374	430	2
Aug	A-2	9.0*	10.0	122	1250	158	170*	150	250	374	430	2
Sep 1 - 15	A-2	9.0*	10.0	122	1250	158	170*	150	250	374	430	2
Sep 16 - 30	C-3	11.5*	12.5	116	1230	140	170*	150	240	365	430	2
Oct	D-4	13.5*	14.5	107	1220	131	170*	150	235	365	430	2
Nov	E-5	15.0*	16.0	102	1200	122	170*	150	230	365	430	2
Dec	E-5	15.0*	16.0	102	1200	122	170*	150	230	365	430	2

Volatility dates listed are those required at terminals and thus may not be equivalent to the pipeline shipping schedule provided to shippers. The above Volatility Classes are standard as set forth by the Pipeline. Other Volatility Classes may be requested as well.

Limits marked with an * apply to the fuel without ethanol. Unmarked limits apply to the fuel with 10 vol% ethanol.

A 1.0 psi higher vapor pressure is allowed for conventional gasoline-ethanol blends that contain greater than 1 vol % ethanol, and this allowance is reflected in the table. During the period of May 1 through September 15 this allowance only pertains to blends that contain between 9 and 10 vol % ethanol.

Test Methods: (latest version unless otherwise indicated)

Distillation: ASTM D86, corrected to 760 mm Hg;

Driveability Index: ASTM D4814;

V/L: ASTM D5188, or the estimate method using Appendix X2 of ASTM D4814;

Vapor Pressure: ASTM D5191-01. For conventional gasoline that meets a summer RVP specification of 9.0 psi or less and which is intended for sale in the summer, EPA requires the use of the EPA equation and also requires that batch reporting of RVP be to 2 decimal places (example; 8.97 psi).