

**Bluestem Pipeline LLC  
Demethanized Mix Specifications**

<u>Product Characteristics</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Test Method</u>
<b><u>Composition (% liquid volume):</u></b> Methane (See Note 1) Ethane Ethylene (See Note 1) Propylene (See Note 1) C4 Olefins Total Olefins (See Notes 1 and 3) Aromatics	38.00 of Demethanized Mix (see Note 6)	1.50 of Ethane 55.00 of Demethanized Mix (see Note 6) 1.00 of Ethane 5.00 of Propane 0.35 of Butanes 1.0 of Demethanized Mix 10.00 of Hexanes and Heavier	ASTM E-260 GPA 2177 GPA 2177 ASTM D-2163 ASTM D-2163 ASTM D-2163 ASTM D-2163 GPA 2186
<b><u>Corrosion:</u></b> Copper Strip @ 100°F (Invalid if additive or inhibitor is used.) Corrosion Additive or Inhibitor, PPM by Weight	1a  1a	1b  1b	ASTM D-1838  Applicable Industry
<b><u>Sulfur:</u></b> Total Sulfur PPM by weight in liquid H2S COS		150 None 15 PPM weight of Propane	ASTM D-5623 or ASTM D-6667 ASTM D-5623 ASTM D-5623
<b><u>Carbon Dioxide:</u></b> PPM by weight in liquid		1000	GPA 2177
<b><u>Dryness:</u></b>		No Free Water @ 34° F	Visual
<b><u>Pentanes &amp; Heavier:</u></b> White (See Note 4)		No Color	Visual Using Cup Method
<b><u>Color:</u></b> Saybolt No.	Plus 25		ASTM D-156 or ASTM D-6045
<b><u>Distillation:</u></b> End Point, °F		375°F	ASTM D-86
<b><u>Methanol:</u></b> PPM by weight in liquid		1000	ASTM D-7423
<b><u>Vapor Pressure:</u></b> Determined at 100°F		600 psia	Peng-Robinson or GPA 2177 Appendix B
<b><u>Product Temperature:</u></b>	60°F	120°F	
<b><u>Deleterious Substances:</u></b> Ammonia Halides (including Fluorides) (See Note 5)		1 PPM weight in liquid 1 PPM weight of Normal Butane	ASTM D-7359

**NOTES:**

1. Product Accounting - For accounting purposes, methane and ethylene shall be considered ethane, propylene shall be considered propane, and C4 olefins and neopentane shall be considered normal butane, each within the above listed Specification limits.
2. Any excess of these hydrocarbon components above the Specification limits shall not be accounted for.
3. A modified GPA-2177 method may be used in lieu of ASTM D-2163 for determining ethylene, propylene, C4 Olefin and Total Olefin concentrations.

4. Perform the Saybolt color test after weathering sample to 70°F if white cup indicates possible color.
5. Demethanized Mix shall be merchantable, commercially free from sand, entrained water, nitrogen, amine, particulates, brine, olefins, dust, gum, gum-producing substances, oil, glycol, inhibitors, caustics, chlorides, oxygenates, heavy metals, any other contaminants, or any compound added to the Raw Product to enhance the ability to meet these Specifications, and other impurities which may be injurious to storage facilities, terminals, fractionators, measurement facilities, or the property of third parties, or may interfere with its transmission through storage facilities, terminals, or fractionators.
6. Pipeline will not refuse to accept Demethanized Mix on the basis of ethane content unless the ethane content of such Demethanized Mix is less than 15.0% of Demethanized Mix (% liquid volume) or greater than 65% of Demethanized Mix (% liquid volume), but reserves any and all other rights and remedies with respect to Demethanized Mix that does not conform to the Specifications provided herein.

Abbreviations:

ASTM = American Society for Testing and Materials

GPA = GPA Midstream Association

PPM = parts per million

psia = pounds per square inch absolute

°F = degrees Fahrenheit