



**WILLIAMS MIDSTREAM NATURAL GAS LIQUIDS
SPECIFICATIONS
NORMAL BUTANE, 95%**

SPECIFICATION POINT	TEST METHOD (Note 1)	SPECIFICATIONS
Normal Butane	ASTM D-2163	Minimum 95.00 L.V.%
Iso-Butane	ASTM D-2163	Maximum 5.00 L.V.%
Pentanes & Heavier	ASTM D-2163	Maximum 1.50 L.V.%
Propane & Lighter	ASTM D-2163	Maximum 0.50 L.V.%
Olefins	ASTM D-2163	Maximum 0.30 LV.%
Total Oxygenates	UOP-845, UOP-960, or ATSM D-7423	Maximum 50.00 ppm _w
Methanol	UOP-845, UOP-960, or ATSM D-7423	Maximum 50.00 ppm _w
IPA & Heavier Alcohols	UOP-845, UOP-960, or ATSM D-7423	Maximum 5.00 ppm _w
MTBE & Other Ethers	UOP-845, UOP-960, or ATSM D-7423	Maximum 2.00 ppm _w
Other Oxygenates	UOP-845, UOP-960, or ATSM D-7423	Maximum 5.00 ppm _w
Vapor Pressure	ASTM D-1267 or D-6897	Maximum 50 psig @ 100°F
Volatile Residue	ASTM D-1837	Maximum 36° @ 95% Evaporation
Corrosion	ASTM D-1837	Maximum Number 1 Copper Strip @ 100°F (Note 2)
Volatile Sulfur	ASTM D-2784, D-6667, or D-5623	Maximum 93 ppm _w
Hydrogen Sulfide	ASTM D-2420 or D-5623	Maximum 2 ppm _w (Pass)
Halides (including Fluorides)	UOP-619	1.00 ppm _w
Water Content	Visual Inspection	No Free Water
Contaminants	Normal Butane shall be commercially free from dirt, rust, scale, sand, dust, gums, and gum-forming substances, oil, catalyst poisons, impurities, and other objectionable substances which may be injurious to the system or which may interfere with its transmission through the system. Product will not contain contaminants such as glycol, inhibitors, amine, oxygen, oxygenates, nitrogen, halides, chlorides, arsine/arsenic, mercury, or any compound added to the product to enhance the ability to meet these specifications. Particulate content shall be less than 20 micron in size.	

Notes:

1. The most current version of the published industry test method will be referenced. Other appropriate industry approved test methods may be substituted if all parties are in agreement.
2. The use of corrosion masking agents is strictly prohibited