CERTIFICATE OF ANALYSIS

Customer Name:	Amicus Spend Management	**Cylinder Number:**	009006
Stock/Analyzer Tag #:	06/10/24-3	**Product Class:**	Primary Standard
Customer Reference:	PO4570/PO49379961	**Cylinder Contents (1):**	20 Liters @ 240 PSI
MESA Reference:	137623	**Cylinder CGA:**	20L/160, 1/8" NPT-F
Date of Certification:	August 27, 2024	**Analysis Method:**	GC-TCD
Recommended Shelf Life:	2 Years	**Preparation Method:**	Transfill

Component	**Requested Concentration (2)**	**Reported Concentration (2,3)**	**Analytical Accuracy**
Nitrogen	0.55%	0.5463%	± 0.0055%
Carbon Dioxide	0.20%	0.2008%	± 0.0020%
Ethane	6.00%	6.010%	± 0.020%
Propane	0.50%	0.5011%	± 0.0050%
Isobutane	0.20%	0.1996%	± 0.0020%
Butane	0.20%	0.2004%	± 0.0020%
Isopentane	0.05%	0.0503%	± 0.0005%
Pentane	0.05%	0.0504%	± 0.0005%
Hexane	0.05%	0.0504%	± 0.0005%
Methane	92.20%	92.1907%	± 0.0380%

BTU/CF (Ideal) at 60°F and 14.696 PSIA: 1069.6
Reference: GPA 2172-96/2145-09

BTU/CF (Ideal) at 60°F and 14.7346 PSIA: 1072.4
Reference: GPA 2172-96/2145-09

Lot #: FF29546

Authorized Signature: _____

(1) The fill pressure shown on the COA is as originally quoted. The fill pressure measured by the customer may differ from the fill pressure originally quoted due to temperature effects, compressibility of the individual components when blended together in the cylinder, gauge accuracy or reduction in content volume before shipping as a result of samples withdrawn for laboratory QC necessary to ensure product quality.
(2) Unless otherwise stated, concentrations are given in molar units.
(3) Vapor pressure mixes are blended at a sufficiently low pressure so as to eliminate phase separation under most low temperature conditions encountered during transport or storage. However, it is generally recommended that cylinders containing vapor pressure restricted mixes be placed on the floor in a horizontal position and rolled back and forth to improve homogeneity of the gas phase mixture before being put into service.

Analytical Gas Standards are prepared and analyzed using combinations of NIST traceable weights, SRM's provided by NIST, or internal gas standards that have been verified for accuracy using procedures published by the US-EPA. Pure gases are analyzed and certified for purity using minor component Analytical Gas Standards prepared according to the methods specified above. Balances are calibrated to NIST test weights covered by NIST test number 822/278982-10, S/N 33071. Reference Certification #'s: 1001/B, 1008/A, 1003/B, and 1002/B. Calibration methods are in conformance with MIL-STD 45662A.

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