



TRI Analytical Methods

Analyte	Analysis Method	Level of Accuracy	Level of Precision	Minimum Detection Limit	Maximum Detection Limit
Carbon Monoxide	Gas Chromatography with catalytic conversion then flame ion detector or pulse discharge ionization detector	5% or ± 0.5 ppm, whichever is greater	$\pm 3\%$	0.5 ppm (FID) 0.1 ppm (PDID)	99.999% (PDID)
Carbon Dioxide	Gas Chromatography with catalytic conversion then flame ion detector or pulse discharge ionization detector	5% or ± 5 ppm, whichever is greater	$\pm 3\%$	20 ppm (FID) 0.1 ppm (PDID)	99.999% (PDID)
Methane	Gas Chromatography with flame ion detector or pulse discharge ionization detector	5% or ± 1 ppm, whichever is greater	$\pm 3\%$	1 ppm (FID) 0.1 with (PDID)	99.999% (PDID)
Total Gaseous Hydrocarbons	Gas Chromatography with flame ionization detector	5% or ± 1 ppm, whichever is greater	$\pm 5\%$	1 ppm	2,000 ppm
Helium	Gas Chromatograph with pulse discharge ionization detector	2% or ± 0.1 ppm, whichever is greater	$\pm 2\%$	0.1 ppm	99.999% (PDID)
Hydrogen	Gas Chromatography with thermal conductivity detector or pulse discharge ionization detector	2% or ± 0.1 ppm, whichever is greater	$\pm 2\%$ (TCD & PDID)	0.5%(TCD) 0.1ppm (PDID)	99.999% (PDID)
Oxygen	Gas Chromatography with thermal conductivity detector or pulse discharge ionization detector	$\pm 2\%$ of concentration or 0.5% absolute whichever is greater	$\pm 2\%$ (TCD & PDID)	0.5%(TCD) 0.1ppm (PDID)	99.999% (PDID)
Nitrogen	Gas Chromatography with thermal conductivity detector or pulse discharge ionization detector	$\pm 2\%$ of concentration or 0.5% absolute whichever is greater	$\pm 2\%$ (TCD & PDID)	0.5%(TCD) 0.1ppm (PDID)	99.999% (PDID)
Condensed Hydrocarbons (Oil Mist and Particulates)	Standard Gravimetric, with hexane extraction for oil mist if results are within 90% of specification	± 0.1 mg/m ³	$\pm 1\%$	0.01 mg/m ³ (less on request)	Varies
Moisture Dewpoint	Color indicator tube with critical orifice to measure air flow	$\pm 4^\circ\text{F}$ at -65°F $\pm 30\%$	$\pm 30\%$	-95°F (-70°C)	20°F (-6°C)
Moisture ppmv	Color indicator tube with critical orifice to measure air flow	± 8 ppm at 24 ppm $\pm 30\%$	$\pm 30\%$	2 ppm	3500 ppm

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Nitrous Oxide	Gas Chromatograph with catalytic converter followed by flame ionization detector	$\pm 0.5\%$ or 5000 ppm $\pm 30\%$	$\pm 2\%$	5000 ppm	99.5%
Nitrogen Dioxide	Color indicator tube with critical orifice to measure air flow	$\pm 30\%$	$\pm 20\%$	0.1 ppm	1.0 ppm
Sulphur Dioxide	Color indicator tube with critical orifice to measure air flow	$\pm 30\%$	$\pm 20\%$	0.1 ppm	3 ppm
Hydrocarbon Panel Identification (C1-C13 species)	Gas Chromatograph with mass selective detector	$\pm 10\%$	$\pm 10\%$	0.3 ppm	Varies
Halogenated Solvents (Freon TF, 111-Trichloroethane, and others)	Gas Chromatography with electron capture detector	$\pm 10\%$	$\pm 10\%$	0.01 ppm	10 ppm
Halogenated Hydrocarbons (Freon TF, 111-Trichloroethane, and others)	Gas Chromatography with electron capture detector	$\pm 10\%$	$\pm 10\%$	0.1 ppm	Varies
Execution of ISO 8573 OIL Vapor Method	Gas Chromatography with mass selective detector	$\pm 10\%$	$\pm 10\%$	1 ppm or 0.002 mg/m ³	Varies
Particle Counting and Sizing	Laser Particle Counter 3100	$\pm 1\%$	$\pm 1\%$	0.3 micron	25.0 micron
Particle Counting and Sizing	Laser Particle Counter 1100	$\pm 1\%$	$\pm 1\%$	0.1 micron	1.0 micron



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