

Natural Gas: Processing, Transportation, Storage and Custody Transfer



What it is?

Natural gas is an important energy fuel used worldwide for power generation, domestic use, transportation, and petrochemical production. Before natural gas can be used as a fuel, it must be processed to remove impurities, including water to meet specification of the natural gas market. In addition to water removal, heavy hydrocarbons, carbon dioxide and hydrogen sulfide are often also removed to yield a fuel with typical BTU value range of 950 to 1050.

Pipelines are the primary mode of transporting and distributing natural gas. There are 317,000 miles of natural gas pipelines in North America alone.

Why is moisture measurement important?

Pipeline operators mandate a maximum allowable moisture content to prevent corrosion of equipment, minimize transportation costs and to ensure consistent quality of natural gas product. Exceeding this limit often results in being shut out of the grid and substantial loss of revenue.

Moisture is typically measured at the following points:

- Outlet of dehydration, typically a triethylene glycol (TEG) dryer or molecular sieve dryer
- Interconnect points of pipelines
- Custody transfer
- In to and out of storage facilities



Why Aurora Moisture Analyzers?

Aurora's fast response immediately alerts when moisture concentrations are out of compliance or natural gas dehydration process is upset; once corrected, Aurora's fast response ensures gas can be quickly cleared for re-entry to the grid. The measurement is non-contact so there is no drift or need for calibration. Aurora analyzers require very little maintenance and come with complete sample system and easy intuitive user interface for easy installation and startup. With a local service team to support them, you have the confidence of knowing that Aurora analyzers are always ready for immediate moisture measurement. Just connect and go.

Table of critical specifications:

	Aurora Trace	Aurora
Accuracy	At nominal gas composition, ± 50 ppb or 2% of reading. Up to 10% variation in ethane content from nominal, ± 150 ppb or 5% of reading.	± 4 ppm _v (parts per billion by volume) or $\pm 2\%$ of reading, whichever is greater
Repeatability	± 10 ppb _v	± 2 ppb _v below 200 ppm, 1% above 200 ppm
Hazardous Area Certification	US/Canada: Explosion-proof for Class I, Division 1, Groups B, C, D ATEX and IEC Ex: Ex de IIB+H2 T6 -20°C to +60°C Flameproof with increased safety compartment	ATEX and IEC Ex: Ex de IIB+H2 T6 -20°C to +65°C Flameproof with increased safety compartment



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