

Gas Quality Specifications

TransCanada and other pipelines



TransCanada Pipelines

Specs	Canadian Mainline System	Alberta System	Foothills System (BC) Zone 8	Foothills System (Sask.) Zone 9	GTN System	North Baja System	ANR
Hydrogen Sulphide	Max 23 mg/m ³	Max 23 mg/m ³	Max 23 mg/m ³	Max 23 mg/m ³	Max 0.25 grains/Ccf ³	Max 0.25 grains/Ccf ³	Max 1 grains/Ccf ³ SE & SW area 1/4 grains/Ccf ³ Mainline area
Total Sulphur	Max 115 mg/m ³	Max 115 mg/m ³	Max 230 mg/m ³	Max 230 mg/m ³	Max 10 grains/Ccf ³	Max 0.75 grains/Ccf ³ Total, 0.3 grains/Ccf ³ mercaptan	Max 20 grains/Ccf ³
Carbon Dioxide	Max 2% by volume	Max 2% by volume	Max 2% by volume	Max 2% by volume	Max 2% by volume	Max 2% by volume	Max 2% by volume
Oxygen	Max 0.4% by volume	Max 0.4% by volume	Max 0.4% by volume	Max 0.4% by volume	Max 0.4% by volume	Max 0.2% by volume	Max 1% by volume
Nitrogen	See TCPL Mainline Tariff	Not specified	Not specified	Not specified	Not specified	Max 3% incl. CO ₂ , N ₂ , He, O ₂	Max 3% by volume
Temperature	Max. 50°C	Max. 49°C	Max. 43.3°C	Max. 49°C	Max. 110°F	Max. 105°F or Min. 50°F	Min 40°F Max 120°F
Heating Value	Min. 36 MJ/m ³ Max, 41.34 MJ/m ³	Min. 36 MJ/m ³	Min. 36 MJ/m ³	Min. 36 MJ/m ³	Min. 995 BTU/ft ³	Min. 990 BTU/ft ³ or Max. 1150 BTU/ft ³	Min. 967BTU/ft ³ Max. 1200 BTU/ft ³
Water	Max. 65 mg/m ³	Max. 65 mg/m ³ or Min. -10°C @>8275 kPa	Max. 65 mg/m ³ or Min. -10°C @>8275 kPa	Max. 65 mg/m ³ or Min. -10°C @>8275 kPa	Max. 4 lbs/MMcf	Max. 7 lbs/MMcf	Max. 7 lbs/MMcf
Hydrocarbon Dewpoint	Min. -10°C at 5500kPa absolute	Min. -10°C at operating pressure	Min. -10°C at operating pressure	Min. -10°C at operating pressure	Min. 15°F up to 800 psig	Min. 20°F pressures up to 600 psig	Min. 15°F or less
Interchangeability	See TCPL Mainline Tariff	Not Specified	Not Specified	Not Specified	Not Specified	Wobbe Number: Min: 1279 Max: 1385	Not Specified

Canadian Pipelines

Specs	Alliance Canada	ATCO	TransGas	WEST COAST	TQM	GazMetro
Hydrogen Sulphide	Max. 23 mg/m ³	Max. 6 mg/m ³	Max. 6 mg/m ³	Max. 6 mg/m ³	Max. 23 mg/m ³	Not specified
Total Sulphur	Max. 115 mg/m ³	Max. 23 mg/m ³ total, 5 mg/m ³ mercaptan	Max. 23 mg/m ³ total, 6 mg/m ³ mercaptan	Max. 23 mg/m ³	Max. 115 mg/m ³	Not specified
Carbon Dioxide	Max. 2% by volume	Max. 2% by volume	Max. 2% by volume	Max. 2% by volume	Max. 2% by volume	Not specified
Oxygen	Max. 0.4% by volume	Max. 0.4% by volume	Max. 0.4% by volume	Max. 0.4% by volume	Max. 0.4% by volume	Not specified
Nitrogen	Not specified	Not specified	Max. 15 ml/m ³ each (nitric oxide & total oxides of nitrogen)	Not specified	Not specified	Not specified
Temperature	Max. 50°C	Max. 50°C	Max. 50°C	Max. 54°C	Max. 50°C	Not specified
Heating Value	Min. 36 MJ/m ³ , Max. 60 MJ/m ³	Min. 36 MJ/m ³	Min. 35 MJ/m ³	Min. 36 MJ/m ³	Min. 36 MJ/m ³	Min. 36 MJ/m ³
Water	Max. 65 mg/m ³	Max. 64 mg/m ³	Max. 65mg/m ³ at 101.325 kPa and 15°C	Max. 65 mg/m ³	Max. 65 mg/m ³	Not specified
Hydrocarbon Dewpoint	Min. -10°C at opt. Pressure	Min. -10°C at 5500 kPa	Min. -10°C at 5500 kPa absolute	Min. -9°C at del. pres.	Not specified	Not specified
Interchangeability	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified

The Gas Quality Specifications tables are intended to be used for planning purposes only and although TransCanada endeavours to maintain the information in such a way that is accurate and current, it may not provide accurate results. Use of this information is at user's sole risk and TransCanada shall not be liable for user's, or any party's, use of or reliance on any results obtained from it.

Website: <http://www.transcanada.com/customerexpress/index.html>

E-mail: customer_express@transcanada.com

The Pipeline: 403.920.PIPE (7473)

June 2011

Gas Quality Specifications

TransCanada and other pipelines



US Pipelines

Specs	Alliance USA	Empire	GLGT	Iroquois	Northern Border
Hydrogen Sulphide	Max. 1 grains/Ccf ³	Max. 1 grains/Ccf ³	Max. 1/4 grains/Ccf ³	Max. 1/4 grains/Ccf ³	Max. 0.3 grains/Ccf ³
Total Sulphur	Max. 5 grains/Ccf ³	Max. 20 grains/Ccf ³	Max. 20 grains/Ccf ³	Max. 1.25 grains/Ccf ³	Max. 2 grains/Ccf ³ , (0.3 grains mercaptan/Ccf ³)
Carbon Dioxide	Max. 2% by volume	Max. 2% by volume	Max. 2% by volume	Max. 2% by volume	Max. 2% by volume
Oxygen	Max. 0.4% by volume	Max. 1% by volume	Max. 1% by volume	Max. 0.2% by volume	Max. 0.4% by volume
Nitrogen	Not specified	Not specified	Max. 3% by volume	Max. 2.5% N ₂ +O ₂ 4% N ₂ + CO ₂	Not specified
Temperature	Max. 122°F	Max. 120°F, Min. 40°F	Max. 120°F, Min. 20°F	Max. 120°F	Min. 32°F Max. 120°F
Heating Value	Min. 962 BTU/ft ³	Min. 950 BTU/ft ³ Max. 1200 BTU/ft ³	Min. 967 BTU/ft ³ Max. 1069 BTU/ft ³	Min. 967 BTU/ft ³ Max. 1110 BTU/ft ³	Min. 967 BTU/ft ³
Water	Max. 4 lbs/MMcf	Max. 7 lbs/MMcf	Max. 4 lbs/MMcf	Max. 4 lbs/MMcf @ 14.73 psi & 60°F	Max. 4 lbs/MMcf
Hydrocarbon Dewpoint	Min. 14°F at opt. pres.	Not specified	Not specified	Not specified	Min. -5°F (800psia) -10°F (1000 psia) -18°F@(1100 psia)
Interchangeability	Not specified	Not specified	Not specified	See Iroquois Tariff	Not specified
Specs	NWP	PNGTS	SOCAL	Tennessee GP	Viking
Hydrogen Sulphide	Max. 0.25 grains/Ccf ³	Max. 0.25 grains/Ccf ³	Max. 0.25 grains/Ccf ³	Max. 0.25 grains/Ccf ³	Max. 1/4 grains/Ccf ³
Total Sulphur	Max. Non Laplata Facilities 5 grains/Ccf ³ , Laplata Facilities 0.75 grains/Ccf ³ , 0.3 grains mercaptan/Ccf ³	Max. 20 grains/Ccf ³	Max. 0.75 grains/Ccf ³ (0.3 grains mercaptan/Ccf ³)	Max. 20 grains/Ccf ³	Max. 20 grains/Ccf ³
Carbon Dioxide	Max. 2% by volume	Max. 3% by volume	Max. 3% by volume	Max. 3% by volume	Max. 3% by volume
Oxygen	Max. 0.2% by volume	Max. 0.2% by volume	Max. 0.2% by volume	Max. 0.2% by volume	Max. 0.2% by volume
Nitrogen	Max. 3% incl. O ₂ , CO ₂	Max. 4% incl. CO ₂	Max. 4% incl. O ₂ , and CO ₂	Max. 4% incl. CO ₂	Max. 4% incl. CO ₂
Temperature	Max. 120°F	Max. 120°F	Max. 105°F, Min. 50°F	Max. 120°F	Max. 120°F
Heating Value	Min. 985 BTU/ft ³	Min. 967 BTU/ft ³ Max. 1100 BTU/ft ³	Min. 990 BTU/ft ³ Max. 1150 BTU/ft ³	Min. 967 BTU/ft ³ Max. 1100 BTU/ft ³	Min. 967 BTU/ft ³ Max. 1100 BTU/ft ³
Water	Max. 7 lbs/MMcf	Max. 7 lbs/MMcf	Max. 7 lbs/MMcf @<800psi or < 20°F @>800psi	Max. 7 lbs/MMcf @14.73psi @ 60°F	Max. 7 lbs/MMcf @14.73psi @ 60°F
Hydrocarbon Dewpoint	Min. 15°F (100-1000psi)	Not specified	See SOCAL Tariff	Min. 15°F	Not specified
Interchangeability	Not Specified	Not Specified	See SOCAL Tariff	Not Specified	Not Specified

The Gas Quality Specifications tables are intended to be used for planning purposes only and although TransCanada endeavours to maintain the information in such a way that is accurate and current, it may not provide accurate results. Use of this information is at user's sole risk and TransCanada shall not be liable for user's, or any party's, use of or reliance on any results obtained from it.

Website: <http://www.transcanada.com/customerexpress/index.html>
 E-mail: customer_express@transcanada.com
 The Pipeline: 403.920.PIPE (7473)
 June 2011

