

Natural Gas Specification

Unless otherwise agreed with Jemena, gas delivered onto the Queensland Gas Pipeline at the receipt points must comply with Australian Standard “AS 4564 – specification for general purpose natural gas” (current version, 2011) including the specification limits reproduced below.

Standard AS 4564:

Characteristics and components	Limit	Units / Measure
Wobbe Index	Minimum	46.0 MJ/m ³
	Maximum	52.0 MJ/m ³
Higher heating value	Maximum	42.3 MJ/m ³
Oxygen	Maximum	0.2 mol%
Hydrogen sulphide	Maximum	5.7 mg/m ³
Total sulphur	Maximum	50 mg/m ³
Water content	Maximum	Dewpoint 0°C at the highest MAOP in the relevant transmission system (in any case, no more than 112.0 mg/m ³)
Hydrocarbon dewpoint	Maximum	2.0°C at 3500 kPa gauge
Total inert gases [*]	Maximum	7.0 mol%
Oil	Maximum	20 mL/TJ

NOTES PER AS 4564:

- 1 m³ means 1 cubic metre of dry gas at the standard conditions.
- mol% means the mole fraction of gas expressed as a percentage.
- The sulphur level upstream of the point(s) of addition of odorant needs to be such as to allow for any increase due to the odorant.
- The hydrocarbon dewpoint limit is intended to ensure that condensation, and in particular retrograde condensation, does not occur to an excessive extent.
- Higher heating value:* For the previous edition of AS 4564 it was expected that for all practical gases available, or likely to be available commercially, higher heating values would be in the range of 37 to 42 MJ/m³ and no limit was specified. A normative maximum limit has now been included in AS 4564.
- Relative density:* It is expected that for all practical gases available, or likely to be available commercially, relative density values would be in the range of 0.55 to 0.70.
- For applications such as natural gas vehicles requiring compression to higher pressure than the maximum transmission pressure it may be necessary to use a gas dryer to remove moisture from the gas to prevent liquid water or hydrate formation.
- Appendix A of AS 4564 includes further explanatory information.

The gas shall not contain:

- (a) Materials, dust, and other solid or liquid matter, waxes, gums, gum forming constituents, and unsaturated or aromatic hydrocarbons to an extent which might cause damage to, or interfere with the proper operation of, pipes, meters, regulators, control systems, equipment or appliances or which might cause the gas to be harmful or toxic to persons having contact with it in normal work operations or usage;
- (b) Unsaturated or aromatic hydrocarbons to an extent that causes unacceptable sooting; or
- (c) Other substances to the extent that they cause damage to, or problems in operation of, pipelines or appliances or that cause the products of combustion to be toxic, or hazardous to health, other than substances that are usually found in natural gas combustion products.

For the purpose of this specification, carbon dioxide is an inert gas.

The details in this specification are in addition to the requirements imposed by the *Petroleum and Gas Production and Safety Act 2004* (Qld) and other laws that regulates the quality of gas in Queensland.