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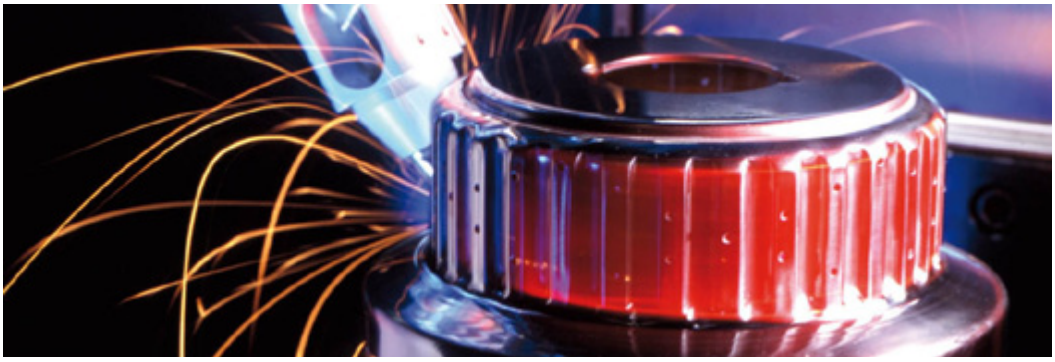
Product data sheet.
Liquid Carbon Dioxide, Industrial Quality.



Application

The industrial quality of carbon dioxide is used primarily within the areas: traditional welding, neutralization as well as replacement of some organic substances. CO_2 is used as shielding gas at MAG-welding, both as pure gas as well as in a mixture with argon. When CO_2 is added to water it forms carbonic acid, which is a weak acid. CO_2 is used for neutralization of basic waste water as an environmentally friendly alternative to strong acids. In some industrial processes CO_2 replaces the environmentally harmful substances, e.g. CO_2 replaces Freon in the production of soft foam and the utilization of CO_2 in supercritical form replaces organic solvents in extraction and impregnation processes.

Physical properties

Liquid carbon dioxide is a colourless liquid that is slightly heavier than water. In gaseous form, it is colourless with a sour pungent odour/taste. Carbon dioxide is neither flammable nor does it support combustion; it is, on the other hand, a product of the decomposition/combustion of organic and some inorganic materials. Atmospheric air contains around 0,04 vol% carbon dioxide and exhaled air contains around 4 vol. %. In gaseous form, carbon dioxide is around 1,4 times heavier than air. At atmospheric pressure, carbon dioxide in its solid form (dry ice) with a temperature of -78° C will not melt like ordinary water-ice, but instead will evaporate and become gaseous carbon dioxide (when a substance converts straight from its solid form to its gaseous form, it is called sublimation). Carbon dioxide reacts violently with strong alkalis, especially at high temperatures. Carbon dioxide is extracted as a by-product of various processes such as fertiliser production and from natural sources. Carbon dioxide must be kept at a pressure greater than 5,2 bar in order to remain liquid.

Specification

Material No. 101983
Product name: Liquid Carbon Dioxide, Industrial Quality

Purity	
Carbon dioxide (CO_2)	≥ 99,7 vol. %
Impurities	
Water (H_2O)	≤ 20 ppm
Oxygen (O_2)	≤ 20 ppm
Carbon Monoxide (CO)	≤ 10 ppm

The specifications are exclusively valid for deliveries in pressure tanks.

Physical data

Gas type	Boiling Point	Latent heat of vaporization	Specific Heat Capacity (15° C)
Carbon dioxide, CO_2, LIC	-78,5° C	348 kJ/kg	0,81 kJ/kg K

Conversion Factors	Critical Values
1 nm^3 = 1,530 litre = 1,808 kg	Critical Temperature 31,04° C
1 litre = 0,652 nm^3 = 1,181 kg	Critical pressure 73,82 bar
1 kg = 0,553 nm^3 = 0,847 litres	Critical Density 0,468 kg/l

1 nm^3=1 m^3 at 15° C and 0,98 KPa.

The litre-designation is used for gas in its liquid phase.

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