

Methylene chloride

Dichloromethane

Methylene Chloride is a colorless, neutral liquid heavier than water and of characteristic narcotic odor.

Methylene Chloride is used as solvent for the synthesis of chemicals and pharmaceuticals, production of polycarbonates and cellulose triacetate (for films and fibres), metal degreasing (surface treatment) and paint removal, as extraction solvent in the food industry (removal of caffeine from unroasted coffee beans and tea) and as laboratory solvent. For more information on Methylene Chloride, please download our Application Guide or Product Data Sheet.

CAS number
75-09-2

REACH number
01-2119480404-41

EINECS/ELINCS No.
200-838-9

Molecular weight
84.93

Characteristics

Auto ignition temperature, 1013 mbar	605 °C
Boiling temperature, 1013 mbar	39.4-39.7 °C
Critical molar volume	0.191 m ³ /mol
Critical pressure	60.8 bar
Critical temperature	236.9 °C
Density (vacuum), 20°C	1.3254-1.3258 kg/l
Dynamic viscosity, 20°C	0.413 mPa.s
Evaporation number (Diethylether = 1)	1.8
Explosion limits in air, 1013 mbar	13-22 % v/v
Freezing temperature	~95 °C
Fusion energy, -97.7°C	72.5 J/g
Heat capacity, 25°C	1.19 J/g.K
Heat of combustion $\Delta H^{\circ}c$ (gas), 25°C, 1013 mbar	-13400 J/g
Heat of formation $\Delta H^{\circ}f$ (liquid), 25°C, 1013 mbar	-1461 J/g
Heat of formation $\Delta H^{\circ}f$ (vapor), 25°C, 1013 mbar	-1126 J/g
Minimum ignition energy in air, 1013 mbar, 20°C of the most sensitive vapor air mixture (18 % (v/v))	9.30 J
Odor threshold	~160-230 ppm
Refractive index n _D , 20°C	1.423-1.424
Solubility in water, 20°C	13.2 g/l
Specific conductance (free from traces of water or ethanol), 25°C	2.9×10 ⁻⁸ S/cm
Static dielectric constant, 20°C	9.08
Surface tension, 25°C	27.20 mN/m
Vapor pressure, 20°C	476 kPa
Vaporization energy, 40°C	330 kJ/kg
Water pick up, 20°C	16 g/kg

Notes:

Valid only for Methylene Chloride not containing stabilizers. Depending on the nature and amount of the stabilization agent the specified values may vary in small proportions. This pure Methylene Chloride is classified as a 'non-inflammable liquid' according to the European dangerous goods regulation. However, the absence of a flash point for Methylene Chloride must not mislead users into thinking that this substance is incombustible or completely thermally stable (cf. explosion limits).

Storage

Tank material for Methylene Chloride is usually made of steel (carbon steel, mild steel) though stainless steel (alloyed steel, CrNiMo-steel, "V4A") is best to maintain the high purity. Wet, non-stabilized Methylene Chloride may corrode metal surfaces minimal to the decomposition to hydrochloric acid. This process is accelerated by the presence of acid, rust and corroded metals, especially at higher temperatures. Steel tanks for storage and in chemical tankers may be coated with inorganic zinc silicate as far as the product is within the specification limits for water and acid. Steel drums may have a resistant internal lacquer coating of stove varnish or annealed enamel. Gaskets may be made of suited metals or graphite (e.g. Sigraflex[®]). With respect to these recommendations stabilized Methylene Chloride will be stable during storage for at least 2 years.

Packaging and transport

Methylene Chloride is dispatched in bulk by, road or rail tanker, ISO-containers, chemical tankers, non-returnable drums (tight head drums of carbon/mild steel, without coating inside, 2" and 3/4" bungs, 250 or 270 kg filling, UN permission). Cargo tanks with all accessories (pumps, discharge valves and pipes, tubes) must be thoroughly cleaned to avoid any possibility of contamination by different previous loads or decomposition of Methylene Chloride.

UN number

1593

Safety and handling

When exposed to open flames, hot glowing surfaces, or electric arcs Methylene Chloride will decompose to form toxic and corrosive fumes of hydrogen chloride, phosgene, etc. Strong alkalis in solid state or as concentrated aqueous liquid (e.g. caustic soda, caustic potash, potassium tert.-butylate, alkaline hydrides, sodium amide, etc.) may cause violent decomposition of Methylene Chloride under strong generation of heat. Sodium azide (solid and in aqueous solution) may give a very sensitive explosive substance with Methylene Chloride. For additional safety data and/or PPE usage, we refer to our material safety data sheets (MSDS).

All information concerning this product and/or suggestions for handling and use contained herein are offered in good faith and are believed to be reliable. Nouryon, however, makes no warranty as to accuracy and/or sufficiency of such information and/or suggestions, as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. Nouryon does not accept any liability whatsoever arising out of the use of or reliance on this information, or out of the use or the performance of the product. Nothing contained herein shall be construed as granting or extending any license under any patent. Customer must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes. The information contained herein supersedes all previously issued information on the subject matter covered. The customer may forward, distribute, and/or photocopy this document only if unaltered and complete, including all of its headers and footers, and should refrain from any unauthorized use. Don't copy this document to a website.

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The Nouryon logo consists of a stylized orange 'N' followed by the word 'ouryon' in a lowercase, sans-serif font. The 'N' is significantly larger and more prominent than the rest of the text.