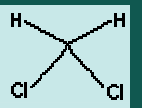
METHYLENE CHLORIDE



PRODUCT IDENTIFICATION

CAS NO.	75-09-2
EINECS NO.	200-838-9
FORMULA	CH_2Cl_2
MOL WT.	84.93
H.S. CODE	2903.12
TOXICITY	Oral rat LD50: 1600mg/kg
SYNONYMS	Dichloromethane; Freon 30; Methylene dichloride; Chlorure De Methylene (French); Chlorocarbon; Methylene Bichloride; Metylenu Chlorek (Polish);
DESCRIPTION	
CLASSIFICATION	

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Clear, colorless liquid
MELTING POINT	-97 C
BOILING POINT	40 C
SPECIFIC GRAVITY	1.32
SOLUBILITY IN WATER	slightly soluble
pH	
VAPOR DENSITY	2.9
AUTOIGNITION	556 C
NFPA RATINGS	Health: 2 Flammability: 1 Reactivity: 0
REFRACTIVE INDEX	1.4242
FLASH POINT	
STABILITY	Stable under ordinary conditions

APPLICATIONS

Halogenoalkanes, also known as haloalkanes or alkyl halides, are organic compounds in which one or more hydrogen atoms in an alkane have been replaced by halogen atoms, fluorine, chlorine, bromine or iodine. In carbon-halogen bond, halogens have significantly greater electronegativities than carbon except iodine. In result, this functional group is polarized so that the carbon is electrophilic and the halogen is nucleophilic. Halogenoalkanes are can be classified depending on the halogen atom position on the chain of carbon atoms. The carbon which is attached with the halogen atom is linked up with only one other alkyl group in primary halogenoalkanes, whereas directly linked up with two and three other alkyl groups in secondary halogenoalkanes and tertiary halogenoalkanes respectively. In some case, primary halogenoalkanes are counted even though there are no alkyl groups attached to the carbon with the halogen on it. Three characteristics provide important influences on the chemical behavior of halogenoalkanes, these are electronegativity, covalent bond strength and the relative stability of the corresponding halide anions. Fluoroalkanes have the strongest of the carbon-halogen covalent bonds so that they are unreactive. This is stronger single bond than a carbon-carbon bond. The carbon-chlorine covalent bond is slightly weaker than a carbon-carbon bond, and the bonds to the other halogens are weaker. The stability may be estimated from the relative acidities of the H-X acids. All the hydrohalic acids are very strong, but with small differences in the direction HCl < HBr < HI, with the exception of HF. Halogenoarenes, also called haloarene, or aryl Halide, are an organic compound in which one or more hydrogen atoms in an aromatic ring have been replaced by halogen atoms. The Haloarenes exhibit many differences compare to haloalkanes in the method of preparation and their chemical and phisical properties. Haloalkanes are used in as refrigerants, solvents, blowing

agents, aerosol propellants, fire extinguishing media , and in semiconductor device fabrication. One of big consumption of halogenoalkanes (properly speaking, halogenoalkenes) is as a raw material to prepare plastics such as PVC [poly(chloroethene)] from chloroethene and PTFE [poly(tetrafluoroethene)] from tetrafluoroethene. Halogenoalkanes and halogenoarenes react with lots of compounds resulting in a wide range of different target substances. They are useful intermediates in making other organic compounds.

Methylene chloride is used in paint and varnish remover formulations, solvent vapor depressent in aerosol applications, general cleaning solvent and as a foam blowing agent for flexible polyurethane foams,

SALES SPECIFICATION	
APPEARANCE	Clear liquid free from suspended matter
ASSAY	99.9% min
SPECIFIC GRAVITY	1.318 - 1.321
NONVOLATILES	10ppm max
WATER	100ppm max
COLOR, APHA	10max
ACIDITY (HCl)	5ppm max
FREE HALOGENS	Passes test
TRANSPORTATION	
PACKING	260kgs in Drum
HAZARD CLASS	6.1
UN NO.	1593

OTHER INFORMATION

European Hazard Symbols: XN, Risk Phrases: 40, Safety Phrases: 23C/24/25/36/37

CHLORINATED SOLVENTS

COMPOUND	CAS #	FORMULA (MOL WT.)	BOILING POINT C	DENSITY	VAPOR DENSITY
Methyl chloride	74-87-3	CH_3Cl (50.49)	-24.2	0.915	1.74
Methylene chloride	75-09-2	CH_2Cl_2 (84.93)	39.8	1.3	2.9
Chloroacetic Acid	79-11-8	$ClCH_2COOH$ (94.50)	188	1.58	3.3
1,1-Dichloroethene	75-35-4	$CH_2=CCl_2$ (96.94)	31.7	1.213	3.4
1,2-Dichloroethylene (isomer mixture)	540-59-0	ClCH=CHCl (96.94)	48 - 60	1.3	3.4
1,1-Dichloroethane	75-34-3	CH_3CHCl_2 (98.96)	57.3	1.2	3.4
Ethylene dichloride	107-06-2	$ClCH_2CH_2Cl$ (98.96)	83.5	1.2	3.4
Chloroacetic Chloride	79-04-9	$ClCH_2COCl$ (112.94)	105	1.42	3.9
1,2-Dichloropropane	78-87-5	$CH_3CHClCH_2Cl$ (112.99)	96.8	1.2	3.9
Chloroform (Trichloromethane)	67-66-3	$CHCl_3$ (119.38)	61.7	1.5	4.1
Trichloroethylene	79-01-6	$ClCH=CCl_2$ (131.39)	86.7	1.5	4.5
1,1,1-Trichloroethane (Methyl Chloroform)	71-55-6	Cl_3CCH_3 (133.40)	74.1	1.3	4.6
1,1,2-Trichloroethane	79-00-5	$ClCH_2CHCl_2$ (133.40)	113.8	1.4	4.6
1,2,3-Trichloropropane	96-18-4	$CH_2ClCHClCH_2Cl$ (147.43)	156	1.4	5.1
Carbon Tetrachloride	56-23-5	CCl_4 (153.82)	76.7	1.6	5.3

1,1,2,2-Tetrachloroethylene	127-18-4	$CCl_2=CCl_2$ (165.83)	121.1	1.6	5.8
1,1,2,2-Tetrachloroethane	79-34-5	$CHCl_2CHCl_2$ (167.85)	146.3	1.6	5.8

The production and use of 1,1,1-trichloroethane and carbon tetrachloride have been phased out throughout the world because of suspected harm to the earth's ozone layer.