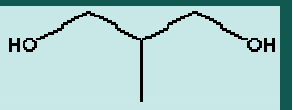
2-METHYL-1,3-PROPANEDIOL



PRODUCT IDENTIFICATION

CAS NO.	2163-42-0
EINECS NO.	412-350-5
FORMULA	$HOCH_2CH(CH_3)CH_2OH$
MOL WT.	90.12
H.S. CODE	2905.39
TOXICITY	Oral, rat LD 50: >5000 mg/kg
SYNONYMS	MPD; 1,3-Propanediol-2-methyl; Methyl Propanediol;
DERIVATION	proprietary hydroformulation of allyl alcohol
CLASSIFICATION	SOLVENT / DIOLS /

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	white to Clear colourless liquid
MELTING POINT	-54 C
BOILING POINT	212 C
SPECIFIC GRAVITY	1.015
SOLUBILITY IN WATER	soluble
pH	6.5
VAPOR DENSITY	
AUTOIGNITION	380 C
NFPA RATINGS	
REFRACTIVE INDEX	
FLASH POINT	127 C
STABILITY	Stable under ordinary conditions

APPLICATIONS

2-Methyl-1,3-Propanediol, clear liquid, is a non-symmetric aliphatic diol (two primary hydroxyl groups) with a methyl branch. It is an isomer of 1,3 Butylene Glycol. It has low viscosity and is miscible in water and alcohols. It remains in liquid even in cold temperatures due to itsnon-symmetrical molecular structure. It is used in the production of polyesters, polyurethane coatings, adhesives, sealants or elastomers required to keep transparency, weatherability and long stability. It is also used as an emulsifier and a humectant for the end applications of personal care products.

SALES SPECIFICATION

APPEARANCE	Clear colourless liquid
ASSAY	98.0% min
HYDROXYL GROUPS	1230 (mg KOH/g) min
ACID VALUE	0.05 (mg KOH/g) max
WATER	0.1% max
COLOR (APHA)	20 max

TRANSPORTATION

PACKING	200kgs in Drum
HAZARD CLASS	not regulated
UN NO.	

OTHER INFORMATION

Hazard Symbols: XI, Risk Phrases: 36/37/38, Safety Phrases: 24/25

GENERAL DESCRIPTION OF 1,3-PROPANEDIOL

Glycol: any of a class of organic chemicals characterized by having separate two hydroxyl (-OH) groups, contribute to high water solubility, hygroscopicity and reactivity with many organic compounds, on usually linear and aliphatic carbon chain. The general formula is $C_nH_{2n}(OH)_2$ or $(CH_2)_n(OH)_2$. The broadened names include diols, dihydric alcohols, and dihydroxy alcohols. Ethylene glycol, $HOCH_2CH_2OH$, is the simplest member of the glycol family. Mono-, di- and triethylene glycols are the first three members of a homologous series of dihydroxy alcohols. Propylene glycol prepared by hydrolysis of propylene oxide and widely used as an ingredient of

antifreeze and humectant in cosmetics is 1,2-propanediol indicating the two hydroxyl group position at 1,2, while trimethylene glycol is 1,3-propanediol with two hydroxyl group on the primary carbon atoms. 1,3-propanediol is called beta-propylene glycol. Trimethylene glycol is a clear, oily liquid; soluble in water; soluble in oxygenated solvents and completely soluble in alcohol; melting point -27 C; boiling point 210 C.

Trimethylene glycol has similar applications to Propylene glycol. It is can be used as a comonomer of unsaturated polyester resins, alkyd resins, polyester foams, polyester-based plasticizers, and as chain extender for polyurethane. It is a useful chemical intermediate which have two hydroxyl group on the primary carbon atoms and one alpha-carbon atom. 1,3-propanediol, or a derivative thereof, is used for the synthesis of lubricants, plasticizers, adhesives, photographic materials, pharmaceuticals, insect repellent, fragrances, antioxidant compound, antistatic agents