## 2-METHYL-1,3-PROPANEDIOL

### PRODUCT IDENTIFICATION
- **CAS NO.**: 2163-42-0
- **EINECS NO.**: 412-350-5
- **FORMULA**: HOCH₂CH(CH₃)CH₂OH
- **MOL WT.**: 90.12
- **H.S. CODE**: 2905.39
- **TOXICITY**: Oral, rat LD₅₀: >5000 mg/kg
- **SYNONYMS**: MPD; 1,3-Propanediol-2-methyl; Methyl Propanediol; proprietary hydroformulation of allyl alcohol
- **DERIVATION**: 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 its non-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 CₙH₂ₙ(OH)₂ or (CH₂)ₙ(OH)₂. The broadened names include diols, dihydric alcohols, and dihydroxy alcohols. Ethylene glycol, HOCH₂CH₂OH, is the simplest member of the glycol family. Mono-, di- and triethylene glycals 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.