

# MATERIAL SAFETY DATA SHEET

## 2-Methyl-1-propanol, 99%

### Section 1 - Chemical Product and Company Identification

|                   |                              |
|-------------------|------------------------------|
| <b>MSDS Name:</b> | 2-Methyl-1-propanol, 99%     |
| <b>Synonyms:</b>  | Isobutyl alcohol; Isobutanol |

|                                     |   |
|-------------------------------------|---|
| Company Identification: (INDIA)     | Veritas House, 70 Mint Road, Fort, Mumbai - 400 001. INDIA                      |
| For information in the INDIA, call: | Tel: +91 - 22 - 2275 5555 / 6184 0000,<br>Fax: +91 - 22 - 2275 5556 / 6184 0001 |

### Section 2 - Composition, Information on Ingredients

| CAS#    | Chemical Name:      | %   | EINECS#   |
|---------|---------------------|-----|-----------|
| 78-83-1 | 2-Methyl-1-propanol | 99% | 201-148-0 |

|  |                |
|--|----------------|
| <b>Hazard Symbols:</b>   | XI             |
|  |                |
| <b>Risk Phrases:</b>   | 10 37/38 41 67 |

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

*Flammable. Irritating to respiratory system and skin. Risk of serious damage to eyes. Vapours may cause drowsiness and dizziness.*

#### Potential Health Effects

### Section 4 - First Aid Measures

|                            |   |
|----------------------------|---|
| <b>Eyes:</b>               | Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.   |
| <b>Skin:</b>               | Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.  |
| <b>Ingestion:</b>          | Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid.   |
| <b>Inhalation:</b>         | Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. |
| <b>Notes to Physician:</b> |   |

### Section 5 - Fire Fighting Measures

|                             |   |
|-----------------------------|---|
| <b>General Information:</b> | As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. |
| <b>Extinguishing Media:</b> | In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam. Use water spray to cool fire-exposed containers.  |

## Section 6 - Accidental Release Measures

|                             |   |
|-----------------------------|---|
| <b>General Information:</b> | Use proper personal protective equipment as indicated in Section 8.   |
| <b>Spills/Leaks:</b>        | Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. |

## Section 7 - Handling and Storage

|                  |   |
|------------------|---|
| <b>Handling:</b> | Use spark-proof tools and explosion proof equipment. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Use only in a chemical fume hood. |
| <b>Storage:</b>  | Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. Flammables-area.   |

## Section 8 - Exposure Controls, Personal Protection

|                              |  |
|------------------------------|--|
| <b>Engineering Controls:</b> |  |
|                              | Use adequate ventilation to keep airborne concentrations low.  |
| <b>Exposure Limits</b>       |  |
|                              | CAS# 78-83-1:  |
|                              | United Kingdom, WEL - TWA: 50 ppm TWA; 154 mg/m3 TWA United Kingdom, WEL - STEL: 75 ppm STEL; 231 mg/m3 STEL |
|                              | United States OSHA: 100 ppm TWA; 300 mg/m3 TWA   |
|                              | Belgium - TWA: 50 ppm VLE; 154 mg/m3 VLE   |
|                              | France - VME: 50 ppm VME; 150 mg/m3 VME  |
|                              | Germany: 100 ppm TWA; 310 mg/m3 TWA  |
|                              | Japan: 50 ppm OEL; 150 mg/m3 OEL   |
|                              | Malaysia: 50 ppm TWA; 152 mg/m3 TWA  |
|                              | Netherlands: 50 ppm MAC; 150 mg/m3 MAC   |
|                              | Spain: 50 ppm VLA-ED; 154 mg/m3 VLA-ED   |

|                                      |   |
|--------------------------------------|---|
| <b>Personal Protective Equipment</b> |   |
| <b>Eyes:</b>                         | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.   |
| <b>Skin:</b>                         | Wear appropriate protective gloves to prevent skin exposure.  |
| <b>Clothing:</b>                     | Wear appropriate protective clothing to prevent skin exposure.  |
| <b>Respirators:</b>                  | Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. |

## Section 9 - Physical and Chemical Properties

|                        |                      |
|------------------------|----------------------|
| <b>Physical State:</b> | Clear liquid         |
| <b>Color:</b>          | APHA: 10 max         |
| <b>Odor:</b>           | Not available        |
| <b>pH:</b>             | Not available        |
| <b>Vapor Pressure:</b> | 11.7 mbar @ 20 deg C |
| <b>Viscosity:</b>      | Not available        |

|                                   |                                     |
|-----------------------------------|-------------------------------------|
| <b>Boiling Point:</b>             | 108 deg C @ 760.00mm Hg ( 226.40°F) |
| <b>Freezing/Melting Point:</b>    | -108 deg C ( -162.40°F)             |
| <b>Autoignition Temperature:</b>  | 430 deg C ( 806.00 deg F)           |
| <b>Flash Point:</b>               | 28 deg C ( 82.40 deg F)             |
| <b>Explosion Limits: Lower:</b>   | 1.60 vol %                          |
| <b>Explosion Limits: Upper:</b>   | 10.90 vol %                         |
| <b>Decomposition Temperature:</b> | Not available                       |
| <b>Solubility in water:</b>       | 95 g/l (20°C)                       |
| <b>Specific Gravity/Density:</b>  | 0.8030g/cm3                         |
| <b>Molecular Formula:</b>         | C4H10O                              |
| <b>Molecular Weight:</b>          | 74.12                               |

## Section 10 - Stability and Reactivity

|   |   |
|---|---|
| <b>Chemical Stability:</b>                    | Stable under normal temperatures and pressures.           |
| <b>Conditions to Avoid:</b>                   | Incompatible materials, ignition sources.                 |
| <b>Incompatibilities with Other Materials</b> | Strong oxidizing agents, acid chlorides, acid anhydrides. |
| <b>Hazardous Decomposition Products</b>       | Carbon monoxide, carbon dioxide.                          |
| <b>Hazardous Polymerization</b>               | Will not occur.   |

## Section 11 - Toxicological Information

|                         |   |
|-------------------------|---|
| <b>RTECS#:</b>          | CAS# 78-83-1: NP9625000   |
| <b>LD50/LC50:</b>       | RTECS:<br><b>CAS# 78-83-1:</b> Inhalation, mouse: LC50 = 15500 mg/m3/2H;<br>Inhalation, rabbit: LC50 = 2630 mg/m3/4H;<br>Inhalation, rat: LC50 = 19200 mg/m3/4H;<br>Oral, mouse: LD50 = 3500 mg/kg;<br>Oral, rabbit: LD50 = 74.1 mg/kg;<br>Oral, rat: LD50 = 2460 mg/kg;<br>Skin, rabbit: LD50 = 3400 mg/kg;<br>.<br>Other: Inhalation, rat: LCL0 = 8000 ppm/4H Skin, rabbit: 20 mg/24H moderate Eye, rabbit: 2 mg open severe Eye, rabbit: 2 mg/24H severe |
| <b>Carcinogenicity:</b> | 2-Methyl-1-propanol - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.  |
| <b>Other:</b>           | See actual entry in RTECS for complete information.   |

## Section 12 - Ecological Information

|                     |               |
|---------------------|---------------|
| <b>Ecotoxicity:</b> | Not available |
|---------------------|---------------|

## Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

## Section 14 - Transport Information

|                       | <b>IATA</b> | <b>IMO</b> | <b>RID/ADR</b> |
|-----------------------|-------------|------------|----------------|
| <b>Shipping Name:</b> | ISOBUTANOL  | ISOBUTANOL | ISOBUTANOL     |

|                       |      |      |      |
|-----------------------|------|------|------|
| <b>Hazard Class:</b>  | 3    | 3    | 3    |
| <b>UN Number:</b>     | 1212 | 1212 | 1212 |
| <b>Packing Group:</b> | III  | III  | III  |

USA RQ: CAS# 78-83-1: 5000 lb final RQ; 2270 kg final RQ

## Section 15 - Regulatory Information

### European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XI

#### Risk Phrases:

- R 10 Flammable.
- R 37/38 Irritating to respiratory system and skin.
- R 41 Risk of serious damage to eyes.
- R 67 Vapours may cause drowsiness and dizziness.

#### Safety Phrases:

- S 7/9 Keep container tightly closed and in a well-ventilated place.
- S 13 Keep away from food, drink and animal feeding stuffs.
- S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S 37/39 Wear suitable gloves and eye/face protection.
- S 46 If swallowed, seek medical advice immediately and show this container or label.

#### WGK (Water Danger/Protection)

- CAS# 78-83-1: 1

#### Canada

- CAS# 78-83-1 is listed on Canada's DSL List

#### US Federal

- TSCA
- CAS# 78-83-1 is listed on the TSCA Inventory.

## Section 16 - Other Information

|                            |               |
|----------------------------|---------------|
| <b>MSDS Creation Date:</b> | July 24, 2015 |
| <b>Revision #0 Date</b>    |               |

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