



## Material Safety Data Sheet

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**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING**

**Material Name** : Methyl DIPROXITOL  
**Uses** : Use as a solvent only in industrial manufacturing processes.  
**Product Code** : U5139

**Manufacturer/Supplier** : Shell Chemicals Europe B.V.  
PO Box 8610  
3009 AP Rotterdam  
Netherlands

**Local Contact** : Shell Chemicals UK  
**Telephone** : +31 (0)10231 7425  
**Fax** : +31 (0)10231 7115

**Emergency Telephone Number** : +44 (0)208 7628322

**Other Information** : DIPROXITOL is a trademark owned by Shell Trademark Management B.V. and Shell Brands Inc. and used by affiliates of Royal Dutch Shell plc.

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**2. COMPOSITION/INFORMATION ON INGREDIENTS**

**Material Formal Name** : 1-(1-methoxy-propoxy)-2-propanol  
**Synonyms** : Methoxy dipropanol  
DPGME  
DPM  
2-(2-methoxymethylethoxy)propanol

**CAS No.** : 34590-94-8  
**EINECS No.** : 252-104-2

**Hazardous Components**

| Chemical Name                     | CAS        | EINECS    | Symbol(s) | R-phrases(s)          | Conc.   |
|-----------------------------------|------------|-----------|-----------|-----------------------|---------|
| Dipropylene glycol methyl ether   | 34590-94-8 | 252-104-2 |           |                       | 99.00 % |
| 2-methoxy-1-propanol              | 1589-47-5  | 216-455-5 | T         | R61; R10; R37/38; R41 | 0.19 %  |
| Monopropylene glycol              | 57-55-6    | 200-338-0 |           |                       | 0.15 %  |
| Propylene Glycol Monomethyl Ether | 107-98-2   | 203-539-1 |           | R10                   | 0.06 %  |

**Additional Information** : Stabilized with 25 ppm BHT.

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**3. HAZARDS IDENTIFICATION**

**Health Hazards** : Not classified as dangerous under EC criteria.  
Vapours may cause drowsiness and dizziness. Moderately



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- Signs and Symptoms** : irritating to eyes. Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision. Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing. Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.
- Safety Hazards** : Combustible liquid and vapour.

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### 4. FIRST AID MEASURES

- General Information** : In general no treatment is necessary, however, obtain medical advice.
- Inhalation** : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
- Skin Contact** : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
- Eye Contact** : Flush eyes with water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision, or swelling persist, transport to the nearest medical facility for additional treatment.
- Ingestion** : If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
- Advice to Physician** : Causes central nervous system depression. Potential for chemical pneumonitis. Consider: gastric lavage with protected airway, administration of activated charcoal. Consult a Poison Control Centre for guidance.

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### 5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

- Specific Hazards** : Carbon monoxide may be evolved if incomplete combustion occurs. The vapour is heavier than air, spreads along the ground and distant ignition is possible.
- Extinguishing Media** : Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only. Do not discharge extinguishing waters into the aquatic environment.
- Protective Equipment for Firefighters** : Wear full protective clothing and self-contained breathing apparatus.
- Additional Advice** : Keep adjacent containers cool by spraying with water.

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### 6. ACCIDENTAL RELEASE MEASURES

Observe all relevant local and international regulations.

- Protective measures** : Avoid contact with spilled or released material. Immediately remove all contaminated clothing. For guidance on selection of

personal protective equipment see Chapter 8 of this Material Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Material Safety Data Sheet. Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment (of product and fire fighting water) to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas indicator.

- Clean Up Methods** : For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For small liquid spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
- Additional Advice** : See Chapter 13 for information on disposal. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.

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## 7. HANDLING AND STORAGE

- General Precautions** : Avoid breathing of or contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Handling** : Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge ( $\leq 10$  m/sec). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations. Handling Temperature: Ambient.
- Storage** : Storage Temperature: Ambient.
- Product Transfer** : Keep containers closed when not in use. Do not use compressed air for filling, discharging or handling.
- Recommended Materials** : For container paints, use epoxy paint, zinc silicate paint. For containers, or container linings use mild steel, stainless steel.
- Unsuitable Materials** : Aluminium. Most plastics. Natural, butyl, neoprene or nitrile rubbers.
- Container Advice** : Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform

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**Additional Information** : similar operations on or near containers.  
 : Glycol ethers can be peroxide formers. Stabilized with 25 ppm BHT.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**
**Occupational Exposure Limits**

| Material                        | Source   | Type     | ppm    | mg/m3     | Notation                          |
|---------------------------------|----------|----------|--------|-----------|-----------------------------------|
| Dipropylene glycol methyl ether | ELV (IE) | TWA      | 50 ppm | 308 mg/m3 |                                   |
|                                 | ELV (IE) | SKIN_DES |        |           | Can be absorbed through the skin. |

**Additional Information** : Wash hands before eating, drinking, smoking and using the toilet.

**Exposure Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits. Eye washes and showers for emergency use.

**Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

**Respiratory Protection** : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for organic gases and vapours [boiling point >65 °C (149 °F)] meeting EN141. Where air-filtering respirators are unsuitable (e.g., airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.

**Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection:  
 Incidental contact/Splash protection: PVC. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.

**Eye Protection** : Chemical splash goggles (chemical monogoggles).

**Protective Clothing** : Use protective clothing which is chemical resistant to this material. Safety shoes and boots should also be chemical resistant.

**Monitoring Methods** : Monitoring of the concentration of substances in the breathing



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zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Examples of sources of recommended air monitoring methods are given below or contact supplier.

Further national methods may be available. National Institute of Occupational Safety and Health (NIOSH), USA: Manual of analytical Methods

<http://www.cdc.gov/niosh/nmam/nmammenu.html> Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha-slc.gov/dts/sltc/methods/toc.html>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hsl.gov.uk/search.htm>

**Environmental Exposure Controls** : Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

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|--|--|
| Appearance                             | : Clear. Liquid.   |
| Odour                                  | : Ethereal.  |
| pH                                     | : Not applicable.  |
| Boiling point                          | : 184 - 190 °C / 363 - 374 °F                                |
| Melting / freezing point               | : -83 °C / -117 °F   |
| Flash point                            | : 79 °C / 174 °F (ASTM D-93 / PMCC)                          |
| Explosion / Flammability limits in air | : 1.3 - 8.7 %(V)   |
| Auto-ignition temperature              | : 205 °C / 401 °F (ASTM E-659)                               |
| Vapour pressure                        | : 52 Pa at 20 °C / 68 °F                                     |
| Specific gravity                       | : 0.95 - 0.96 at 20 °C / 68 °F                               |
| Density                                | : 952 - 956 kg/m <sup>3</sup> at 20 °C / 68 °F (ASTM D-4052) |
| Solubility in other solvents           | : Organic solvents Miscible.                                 |
| Vapour density (air=1)                 | : Data not available.  |
| Volatile organic carbon content        | : 56.8 % (EC/1999/13)  |
| Evaporation rate (nBuAc=1)             | : 0.01 (ASTM D 3539, nBuAc=1)                                |

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**10. STABILITY AND REACTIVITY**

|   |  |
|---|--|
| <b>Stability</b>                        | : Stable under normal conditions of use. Glycol ethers can be peroxide formers.  |
| <b>Conditions to Avoid</b>              | : Avoid heat, sparks, open flames and other ignition sources. Exposure to air.   |
| <b>Materials to Avoid</b>               | : Strong oxidising agents. Aluminium. Acids. Strong bases. Salts of strong bases.  |
| <b>Hazardous Decomposition Products</b> | : Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation. |
| <b>Hazardous Reactions</b>              | : Hygroscopic.   |

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**11. TOXICOLOGICAL INFORMATION**

|  |   |   |
|--|---|---|
| <b>Basis for Assessment</b>                    | : | Information given is based on product testing.  |
| <b>Acute Oral Toxicity</b>                     | : | Low toxicity: LD50 >2000 mg/kg , Rat  |
| <b>Acute Dermal Toxicity</b>                   | : | Low toxicity: LD50 >2000 mg/kg , Rabbit   |
| <b>Acute Inhalation Toxicity</b>               | : | Low toxicity: LC50 greater than near-saturated vapour concentration. / 7 hours, Rat<br>High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death. |
| <b>Skin Irritation</b>                         | : | Not irritating to skin.   |
| <b>Eye Irritation</b>                          | : | Moderately irritating to eyes (but insufficient to classify).   |
| <b>Respiratory Irritation</b>                  | : | Inhalation of vapours or mists may cause irritation to the respiratory system.  |
| <b>Sensitisation</b>                           | : | Not a skin sensitiser.  |
| <b>Repeated Dose Toxicity</b>                  | : | Low systemic toxicity on repeated exposure.   |
| <b>Mutagenicity</b>                            | : | No evidence of mutagenic activity.  |
| <b>Carcinogenicity</b>                         | : | Not expected to be carcinogenic.  |
| <b>Reproductive and Developmental Toxicity</b> | : | Not expected to impair fertility.<br><br>Not a developmental toxicant.  |

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**12. ECOLOGICAL INFORMATION**

|                                  |   |  |
|----------------------------------|---|--|
| <b>Acute Toxicity</b>            | : |  |
| <b>Fish</b>                      | : | Expected to have low toxicity: LC/EC/IC50 > 1000 mg/l  |
| <b>Aquatic Invertebrates</b>     | : | Expected to have low toxicity: LC/EC/IC50 > 1000 mg/l  |
| <b>Algae</b>                     | : | Expected to have low toxicity: LC/EC/IC50 > 1000 mg/l  |
| <b>Microorganisms</b>            | : | Expected to have low toxicity: LC/EC/IC50 > 1000 mg/l  |
| <b>Mobility</b>                  | : | Dissolves in water.<br>If product enters soil, it will be highly mobile and may contaminate groundwater. |
| <b>Persistence/degradability</b> | : | Expected to be readily biodegradable.<br>Oxidises rapidly by photo-chemical reactions in air.            |
| <b>Bioaccumulation</b>           | : | Not expected to bioaccumulate significantly.   |

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**13. DISPOSAL CONSIDERATIONS**

|                           |   |  |
|---------------------------|---|--|
| <b>Material Disposal</b>  | : | Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. |
| <b>Container Disposal</b> | : | Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not puncture, cut or weld uncleaned drums. Send to drum recoverer or metal reclaimer.   |
| <b>Local Legislation</b>  | : | Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.   |

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**14. TRANSPORT INFORMATION****ADR**

This material is not classified as dangerous under ADR regulations.

**RID**

This material is not classified as dangerous under RID regulations.

**IMDG**

This material is not classified as dangerous under IMDG regulations.

**IATA (Country variations may apply)**

This material is not classified as dangerous under IATA regulations.

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**15. REGULATORY INFORMATION**

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

|                      |   |   |
|----------------------|---|---|
| EC Classification    | : | Not classified as dangerous under EC Directive, 88/379/EEC.<br>Not classified as dangerous under EC criteria. |
| EC Safety Phrases    | : | S24 Avoid contact with skin.  |
| AICS                 | : | Listed.   |
| DSL                  | : | Listed.   |
| INV (CN)             | : | Listed.   |
| ENCS (JP)            | : | Listed. (7)-97  |
| TSCA                 | : | Listed.   |
| EINECS               | : | Listed. 252-104-2   |
| KECI (KR)            | : | Listed. KE-12230  |
| PICCS (PH)           | : | Listed.   |
| National Legislation | : |   |
| OE_HP V              | : | Listed.   |

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**16. OTHER INFORMATION**

## R-phrases)

|        |  |
|--------|--|
| R10    | Flammable.                                 |
| R37/38 | Irritating to respiratory system and skin. |
| R41    | Risk of serious damage to eyes.            |
| R61    | May cause harm to the unborn child.        |

**MSDS Version Number** : 1.6

**MSDS Effective Date** : 24.04.2006



## Material Safety Data Sheet

- MSDS Revisions** : A vertical bar (|) in the left margin indicates an amendment from the previous version.
- MSDS Regulation** : The content and format of this safety data sheet is in accordance with Commission Directive 2001/58/EC of 27 July 2001, amending for the second time Commission Directive 91/155/EEC.
- Uses and Restrictions** : Use as a solvent only in industrial manufacturing processes.
- MSDS Distribution** : The information in this document should be made available to all who may handle the product
- Disclaimer** : This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.