

# SAFETY DATA SHEET

## Heavy Propylene Glycols

Version 1.2

Revision Date 16.04.2018

Print Date 03.09.2022

### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product name : Heavy Propylene Glycols

Product code : U1531

Synonyms : Propylene glycols

#### Manufacturer or supplier's details

Manufacturer/Supplier : **SHELL EASTERN CHEMICALS (S)**  
A REGISTERED BUSINESS OF SHELL EASTERN  
TRADING (PTE) LTD (UEN:198902087C)  
9 North Buona Vista Drive , #07-01  
The Metropolis Tower 1  
Singapore 138588  
Singapore

Telephone : +65 6384 8737

Telefax : +65 6384 8454

Emergency telephone number : +65 6542 9595 (Alert-SGS)

#### Recommended use of the chemical and restrictions on use

Recommended use : Use only as a chemical intermediate.

Restrictions on use : This product must not be used in applications other than the above without first seeking the advice of the supplier.

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

#### Hazardous components

| Chemical name       | CAS-No.<br>EC-No.<br>Registration<br>number | Classification<br>(67/548/EEC) | Classification<br>(REGULATION<br>(EC) No<br>1272/2008) | Concentration<br>[%] |
|---------------------|---|--------------------------------|--|----------------------|
| Tripropylene glycol | 1638-16-0                                   |                                |  | 60 - 90              |
| Dipropylene glycol  | 25265-71-8                                  |                                |  | 5 - 25               |
| Water               | 7732-18-5                                   |                                |  | >= 0 - <= 1.5        |

### 3. HAZARDS IDENTIFICATION

Based on available data this substance / mixture does not meet the classification criteria.

#### Label elements

Hazard pictograms : No Hazard Symbol required

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|                          |   |
|--------------------------|---|
| Signal word              | : No signal word  |
| Hazard statements        | : <b>PHYSICAL HAZARDS:</b><br>Not classified as a physical hazard according to CLP criteria.<br><b>HEALTH HAZARDS:</b><br>Not classified as a health hazard under CLP criteria.<br><b>ENVIRONMENTAL HAZARDS:</b><br>Not classified as environmental hazard according to CLP criteria. |
| Precautionary statements | : <b>Prevention:</b><br>No precautionary phrases.<br><b>Response:</b><br>No precautionary phrases.<br><b>Storage:</b><br>No precautionary phrases.<br><b>Disposal:</b><br>No precautionary phrases.   |

### Other hazards

Not classified as flammable but will burn.

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## 4. FIRST-AID MEASURES

|   |  |
|---|--|
| General advice  | : Not expected to be a health hazard when used under normal conditions.  |
| If inhaled  | : No treatment necessary under normal conditions of use.<br>If symptoms persist, obtain medical advice.  |
| In case of skin contact                                     | : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.<br>If persistent irritation occurs, obtain medical attention.          |
| In case of eye contact                                      | : Flush eye with copious quantities of water.<br>Remove contact lenses, if present and easy to do. Continue rinsing.<br>If persistent irritation occurs, obtain medical attention. |
| If swallowed  | : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.   |
| Most important symptoms and effects, both acute and delayed | : Not expected to give rise to an acute hazard under normal conditions of use.   |
| Protection of first-aiders                                  | : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.                      |
| Notes to physician  | : Treat symptomatically. Following cases of gross over-exposure, investigation of liver, kidney and eye function may be advisable. Records of such incidents should be maintained  |

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for future reference.

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### 5. FIRE-FIGHTING MEASURES

- |   |  |
|---|--|
| Suitable extinguishing media                  | : Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.   |
| Unsuitable extinguishing media                | : Do not use water in a jet.   |
| Specific hazards during firefighting          | : Material will not burn unless preheated.<br>Carbon monoxide may be evolved if incomplete combustion occurs.<br>Containers exposed to intense heat from fires should be cooled with large quantities of water.  |
| Specific extinguishing methods                | : Standard procedure for chemical fires.<br>Evacuate the area of all non-essential personnel.<br>Keep adjacent containers cool by spraying with water.   |
| Special protective equipment for firefighters | : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469). |

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### 6. ACCIDENTAL RELEASE MEASURES

- |   |   |
|---|---|
| Personal precautions, protective equipment and emergency procedures | : Observe all relevant local and international regulations.<br>Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.<br>Local authorities should be advised if significant spillages cannot be contained. |
|   | : Avoid contact with skin, eyes and clothing.   |
| Environmental precautions   | : Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers.<br>Use appropriate containment to avoid environmental contamination.<br>Ventilate contaminated area thoroughly.                      |
| Methods and materials for containment and cleaning up               | : Contain run-off from residue flush and dispose of properly.<br>Soak up residue with an absorbent such as clay, sand or other suitable material.   |
|   | For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, 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          |

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contaminated soil and dispose of safely.  
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.

Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.  
For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

### 7. HANDLING AND STORAGE

General Precautions : Avoid breathing of or direct 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 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.  
Ensure that all local regulations regarding handling and storage facilities are followed.

Advice on safe handling : Use local exhaust extraction over processing area.  
Handle and open container with care in a well-ventilated area.  
Do not empty into drains.  
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.  
Handling Temperature:  
Ambient.

Avoidance of contact : Strong oxidising agents.  
Strong acids.  
Strong bases.

Product Transfer : Keep containers closed when not in use. Do not pressurize drum containers to empty.

#### Storage

Conditions for safe storage : Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.

Other data : Tanks must be clean, dry and rust-free.  
Keep container tightly closed.  
Must be stored in a diked (bunded) well- ventilated area, away from sunlight, ignition sources and other sources of heat.  
Cleaning, inspection and maintenance of storage tanks is a specialist operation, which requires the implementation of strict procedures and precautions.  
Drums should be stacked to a maximum of 3 high.

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Storage Temperature:  
Ambient.

- Packaging material : Suitable material: Stainless steel., Mild steel., Carbon steel  
Unsuitable material: Data not available
- Container Advice : Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.
- Specific use(s) : Not applicable

Ensure that all local regulations regarding handling and storage facilities are followed.

### 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

#### Biological occupational exposure limits

No biological limit allocated.

#### Monitoring Methods

Monitoring of the concentration of substances in the breathing 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.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the 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/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods  
<http://www.osha.gov/>

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

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany  
<http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

- Engineering measures : 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 ventilation to control airborne concentrations.  
Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.  
Eye washes and showers for emergency use.

General Information:

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Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping. Define procedures for safe handling and maintenance of controls. Educate and train workers in the hazards and control measures relevant to normal activities associated with this product. Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation. Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or subsequent recycle.

**Personal protective equipment****Protective measures**

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 unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. If air-filtering respirators are suitable for conditions of use: Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection  
Remarks

: 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. Longer term protection: Nitrile rubber gloves. Incidental contact/Splash protection: PVC or neoprene rubber gloves. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact

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composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

- Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.
- Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.  
It is good practice to wear chemical resistant gloves.
- Thermal hazards : Not applicable
- Hygiene measures : Wash hands before eating, drinking, smoking and using the toilet.  
Launder contaminated clothing before re-use.

### Environmental exposure controls

- General advice : Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.  
Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.  
Information on accidental release measures are to be found in section 6.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid.
- Colour : colourless
- Odour : odourless
- Odour Threshold : Data not available
- pH : Typical 7
- Melting / freezing point : Data not available
- Boiling point/boiling range : > 255 °C / 491 °F
- Flash point : 145 °C / 293 °F  
Method: ASTM D93 (PMCC)
- Evaporation rate : Data not available
- Flammability (solid, gas) : Not applicable

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|  |  |
|--|--|
| Upper explosion limit                  | : 12.6 %(V)  |
| Lower explosion limit                  | : Data not available   |
| Vapour pressure                        | : < 1 Pa (20 °C / 68 °F)   |
| Relative vapour density                | : Data not available   |
| Relative density                       | : 1.0204 (20 °C / 68 °F)   |
| Density                                | : 1,020 - 1,025 kg/m <sup>3</sup> (20 °C / 68 °F)  |
| Solubility(ies)                        |  |
| Water solubility                       | : Completely miscible.   |
| Partition coefficient: n-octanol/water | : Data not available   |
| Auto-ignition temperature              | : 310 °C / 590 °F  |
| Decomposition temperature              | : Data not available   |
| Viscosity                              |  |
| Viscosity, dynamic                     | : Data not available   |
| Viscosity, kinematic                   | : Data not available   |
| Explosive properties                   | : Not applicable   |
| Oxidizing properties                   | : Data not available   |
| Surface tension                        | : 71.4 mN/m, 22 °C / 72 °F   |
| Conductivity                           | : Electrical conductivity: > 10,000 pS/m<br>A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid, This material is not expected to be a static accumulator. |
| Molecular weight                       | : Data not available   |

### 10. STABILITY AND REACTIVITY

|                                    |  |
|------------------------------------|--|
| Reactivity                         | : The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph. |
| Chemical stability                 | : No hazardous reaction is expected when handled and stored according to provisions Oxidises on contact with air.      |
| Possibility of hazardous reactions | : None known.  |
| Conditions to avoid                | : Extremes of temperature and direct sunlight.   |



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Product cannot ignite due to static electricity.

Incompatible materials : Strong oxidising agents.  
Strong acids.  
Strong bases.

Hazardous decomposition products : Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

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### 11. TOXICOLOGICAL INFORMATION

Basis for assessment : Information given is based on product testing, and/or similar products, and/or components.

Information on likely routes of exposure : Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

#### Acute toxicity

##### Product:

Acute oral toxicity : LD50 : > 5000 mg/kg  
Remarks: Low toxicity:

Acute inhalation toxicity : Remarks: Low toxicity by inhalation.

Acute dermal toxicity : LD50 : > 5000 mg/kg  
Remarks: Low toxicity:

#### Skin corrosion/irritation

##### Product:

Remarks: Not irritating to skin.

#### Serious eye damage/eye irritation

##### Product:

Remarks: Not irritating to eye.

#### Respiratory or skin sensitisation

##### Product:

Remarks: Not a sensitiser.  
Based on available data, the classification criteria are not met.

#### Germ cell mutagenicity

##### Product:

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Remarks: Not mutagenic.

### Carcinogenicity

#### Product:

Remarks: Not a carcinogen., Based on available data, the classification criteria are not met.

| Material            | GHS/CLP Carcinogenicity Classification |
|---------------------|--|
| Tripropylene glycol | No carcinogenicity classification.     |
| Dipropylene glycol  | No carcinogenicity classification.     |
| Water               | No carcinogenicity classification.     |

### Reproductive toxicity

#### Product:

Remarks: Not a developmental toxicant., Based on available data, the classification criteria are not met., Does not impair fertility.

### STOT - single exposure

#### Product:

Remarks: Based on available data, the classification criteria are not met.

### STOT - repeated exposure

#### Product:

Remarks: Based on available data, the classification criteria are not met.

### Aspiration toxicity

#### Product:

Not an aspiration hazard.

### Further information

#### Product:

Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

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## 12. ECOLOGICAL INFORMATION

Basis for assessment : Incomplete ecotoxicological data are available for this product.  
The information given below is based partly on a knowledge of the components and the ecotoxicology of similar products.

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### Ecotoxicity

#### Product:

|   |   |   |
|---|---|---|
| Toxicity to fish (Acute toxicity)                 | : | Remarks: LL/EL/IL50 > 100 mg/l<br>Practically non toxic:<br>Based on available data, the classification criteria are not met. |
| Toxicity to crustacean (Acute toxicity)           | : | Remarks: Practically non toxic:<br>LL/EL/IL50 > 100 mg/l  |
| Toxicity to algae/aquatic plants (Acute toxicity) | : | Remarks: Practically non toxic:<br>LL/EL/IL50 > 100 mg/l  |
| Toxicity to fish (Chronic toxicity)               | : | Remarks: NOEC/NOEL > 1.0 - <=10 mg/l (based on test data)   |
| Toxicity to crustacean (Chronic toxicity)         | : | Remarks: NOEC/NOEL > 1.0 - <=10 mg/l (based on test data)   |
| Toxicity to microorganisms (Acute toxicity)       | : | Remarks: Practically non toxic:<br>LL/EL/IL50 > 100 mg/l  |

### Persistence and degradability

#### Product:

|                  |   |                                 |
|------------------|---|---------------------------------|
| Biodegradability | : | Remarks: Readily biodegradable. |
|------------------|---|---------------------------------|

### Bioaccumulative potential

#### Product:

|  |   |  |
|--|---|--|
| Bioaccumulation                        | : | Remarks: Does not bioaccumulate significantly. |
| Partition coefficient: n-octanol/water | : | Remarks: Data not available                    |

### Mobility in soil

#### Product:

|          |   |   |
|----------|---|---|
| Mobility | : | Remarks: Dissolves in water., If product enters soil, it will be highly mobile and may contaminate groundwater. |
|----------|---|---|

### Other adverse effects

no data available

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## 13. DISPOSAL CONSIDERATIONS

### Disposal methods

|                     |   |  |
|---------------------|---|--|
| Waste from residues | : | Recover or recycle if possible.<br>Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, |
|---------------------|---|--|

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preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.

Remove all packaging for recovery or waste disposal.

Do not dispose into the environment, in drains or in water courses

Waste product should not be allowed to contaminate soil or water.

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.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.

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### 14. TRANSPORT INFORMATION

#### International Regulations

##### ADR

Not regulated as a dangerous good

##### IATA-DGR

Not regulated as a dangerous good

##### IMDG-Code

Not regulated as a dangerous good

#### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Z  
Ship type : 3  
Product name : Propylene glycol

#### Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

**Additional Information** : This product may be transported under nitrogen blanketing. Nitrogen is an odourless and invisible gas. Exposure to nitrogen enriched atmospheres displaces available oxygen which may cause asphyxiation or death. Personnel must observe strict safety precautions when involved with a confined space entry.

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### 15. REGULATORY INFORMATION

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

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The Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 (amended version issued 2000). The Factories Act, 1948, The Second Schedule: Permissible levels of certain chemical substances in work environment, as amended through 1987. India Central motor Vehicles (Amendment) Rules 1993.

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

### Other international regulations

#### The components of this product are reported in the following inventories:

|       |          |
|-------|----------|
| AICS  | : Listed |
| DSL   | : Listed |
| IECSC | : Listed |
| KECI  | : Listed |
| NZIoC | : Listed |
| PICCS | : Listed |
| TCSI  | : Listed |
| TSCA  | : Listed |
| ENCS  | : Listed |

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## 16. OTHER INFORMATION

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

SDS Regulation : Regulation 1907/2006/EC

### Further information

Training advice : Provide adequate information, instruction and training for operators.

Other information : A vertical bar (|) in the left margin indicates an amendment from the previous version.

Sources of key data used to compile the Safety Data Sheet : The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID data base, EC 1272 regulation, etc).

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.