SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers
   Product name : Diethylene Glycol
   CAS-No. : 111-46-6

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Identified uses : Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet
   Company : Central Drug House (P) Ltd
              7/28 Vardaan House
              New Delhi -110002
              INDIA
   Telephone : +91 11 49404040
   Email : care@cdhfinechemical.com

1.4 Emergency telephone number
   Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification according to Regulation (EC) No 1272/2008
   Acute toxicity, Oral (Category 4), H302
   Specific target organ toxicity - repeated exposure (Category 2), H373
   For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements
   Labelling according Regulation (EC) No 1272/2008
   Pictogram
   Signal word : Warning
   Hazard statement(s) :
   H302 : Harmful if swallowed.
   H373 : May cause damage to organs through prolonged or repeated exposure.
   Precautionary statement(s) : none
   Supplemental Hazard : none
2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients
3.1 Substances
Synonyms:
- 2,2'-Oxydiethanol
- Bis(2-hydroxyethyl) ether
- Diglycol
- 2-Hydroxyethyl ether

Formula: C₄H₁₀O₃
Molecular weight: 106.12 g/mol
CAS-No.: 111-46-6
EC-No.: 203-872-2
Index-No.: 603-140-00-6

Hazardous ingredients according to Regulation (EC) No 1272/2008

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol</td>
<td>Acute Tox. 4; STOT RE 2;</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>111-46-6</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>203-872-2</td>
<td>H302, H373</td>
</tr>
<tr>
<td>Index-No.</td>
<td>603-140-00-6</td>
<td></td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures
4.1 Description of first aid measures
General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures
5.1 Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Cool containers/tanks with water spray.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

- hygroscopic
- Storage class (TRGS 510): Combustible liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

- Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

- Personal protective equipment

  - Eye/face protection
  Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

  - Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

- Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineer protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance Form: viscous liquid
   Colour: colourless
b) Odour slight
c) Odour Threshold No data available
d) pH 5.0 - 8 at 500 g/l at 20 °C
e) Melting point/freezing point Melting point/range: -10 °C
f) Initial boiling point and boiling range 245 °C
g) Flash point 143 °C - closed cup
h) Evaporation rate < 0.01 - Butyl acetate
i) Flammability (solid, gas) No data available
j) Upper/lower flammability or explosive limits
   Upper explosion limit: 12.3 %(V)
   Lower explosion limit: 2 %(V)
k) Vapour pressure 0.008 hPa at 25 °C
l) Vapour density 3.66 - (Air = 1.0)
m) Relative density 1.118 g/mL at 25 °C
n) Water solubility completely miscible
o) Partition coefficient: n-octanol/water log Pow: -1.999
p) Auto-ignition temperature 372 °C at 1,013.25 hPa
q) Decomposition temperature No data available
r) Viscosity No data available
s) Explosive properties No data available
t) Oxidizing properties No data available

9.2 Other safety information

Surface tension 48.5 mN/m at 25 °C
Relative vapour density 3.66 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available
10.4 Conditions to avoid
Heating in air. Exposure to moisture

10.5 Incompatible materials
Strong oxidizing agents, Strong acids, Zinc

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 12,565 mg/kg(Diethylene glycol)
LD50 Oral - Human - 1,000 mg/kg(Diethylene glycol)
Remarks: Effects due to ingestion may include: Drowsiness Gastrointestinal disturbance Liver disorders
Behavioral: Muscle weakness.
Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) Diethylene glycol
LD50 Dermal - Rabbit - 11,890 mg/kg(Diethylene glycol)

Skin corrosion/irritation
Skin - Rabbit(Diethylene glycol)
Result: No skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit(Diethylene glycol)
Result: No eye irritation

Respiratory or skin sensitisation
Maximisation Test - Guinea pig(Diethylene glycol)
Result: Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity
No data available(Diethylene glycol)

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as
probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
No data available(Diethylene glycol)

Specific target organ toxicity - single exposure
No data available(Diethylene glycol)

Specific target organ toxicity - repeated exposure
May cause damage to organs through prolonged or repeated exposure.
Oral - Kidney(Diethylene glycol)

Aspiration hazard
No data available(Diethylene glycol)

Additional Information
Repeated dose toxicity - Rat - Oral - No observed adverse effect level - 100 mg/kg(Diethylene glycol)
RTECS: ID5950000

Symptoms and signs of poisoning are:(Diethylene glycol)
Confusion, Dizziness, Kidney injury may occur., Unconsciousness, Convulsions, Nausea, Headache,
Vomiting, Pulmonary edema. Effects may be delayed.(Diethylene glycol)
SECTION 12: Ecological information

12.1 Toxicity
   Toxicity to fish
   LC50 - Pimephales promelas (fathead minnow) - 75,200 mg/l - 96 h(Diethylene glycol)
   LC50 - Carassius auratus (goldfish) - 5,000 mg/l - 24 h(Diethylene glycol)
   Toxicity to daphnia and other aquatic invertebrates
   EC50 - Daphnia magna (Water flea) - > 10,000 mg/l - 24 h(Diethylene glycol)
   (DIN 38412)

12.2 Persistence and degradability
   Biodegradability
   Anaerobic - Exposure time 28 d(Diethylene glycol)
   Result: 90 - 100 % - Readily biodegradable
   (OECD Test Guideline 301B)

12.3 Bioaccumulative potential
   Bioaccumulation
   Leuciscus idus melanotus - 3 d
   - 0.05 mg/l(Diethylene glycol)

   Bioconcentration factor (BCF): 100

12.4 Mobility in soil
   No data available(Diethylene glycol)

12.5 Results of PBT and vPvB assessment
   This substance/mixture contains no components considered to be either persistent, bioaccumulative and
   toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
   No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
   Product
   Offer surplus and non-recyclable solutions to a licensed disposal company.

   Contaminated packaging
   Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number
   ADR/RID: -     IMDG: -     IATA: -

14.2 UN proper shipping name
   ADR/RID: Not dangerous goods
   IMDG: Not dangerous goods
   IATA: Not dangerous goods

14.3 Transport hazard class(es)
   ADR/RID: -     IMDG: -     IATA: -

14.4 Packaging group
   ADR/RID: -     IMDG: -     IATA: -

14.5 Environmental hazards
   ADR/RID: no     IMDG Marine pollutant: no     IATA: no

14.6 Special precautions for user
   No data available
SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H302 Harmful if swallowed.
H373 May cause damage to organs through prolonged or repeated exposure.

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be
used only as a guide. The information in this document is based on the present state of our knowledge
and is applicable to the product with regard to appropriate safety precautions. It does not represent
any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not
be held liable for any damage resulting from handling or from contact with the above product. See
www.cdhfinechemical.com for additional terms and conditions of sale.