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

1.1 Product identifiers
   Product name : 1,3-Dioxolane
   CAS-No. : 646-06-0

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
   Flammable liquids (Category 2), H225
   Eye irritation (Category 2), H319
   Reproductive toxicity (Category 1B), H360
   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 : Danger
   Hazard statement(s)
   H225 : Highly flammable liquid and vapour.
   H319 : Causes serious eye irritation.
Precautionary statement(s)
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P370 + P378 In case of fire: Use dry powder or dry sand to extinguish.
P403 + P235 Store in a well-ventilated place. Keep cool.
Supplemental Hazard Statements none

Restricted to professional users.

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: Ethylene glycol methylene ether
Formaldehyde ethylene acetal

Formula: \( \text{C}_3\text{H}_6\text{O}_2 \)
Molecular weight: 74.08 g/mol
CAS-No.: 646-06-0
EC-No.: 211-463-5
Index-No.: 605-017-00-2

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>1,3-Dioxolane</td>
<td>Flam. Liq. 2; Eye Irrit. 2; Repr.</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>646-06-0</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>211-463-5</td>
<td>1B; H225, H319, H360</td>
</tr>
<tr>
<td>Index-No.</td>
<td>605-017-00-2</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
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. 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
Use water spray to cool unopened containers.

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. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low 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
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

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. Avoid exposure - obtain special instructions before use.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. 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.
Store under inert gas.
Storage class (TRGS 510): Flammable 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
Impervious clothing. Flame retardant antistatic protective clothing. 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 enginee 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: clear, liquid
Colour: colourless
b) Odour odourlessodourless
c) Odour Threshold No data available
d) pH No data available
e) Melting point/freezing point Melting point/range: -95 °C - lit.
f) Initial boiling point and boiling range 75 - 76 °C at 1013 hPa
75 - 76 °C at 1013 hPa
g) Flash point -3 °C - closed cup-3 °C - closed cup
h) Evaporation rate No data available
i) Flammability (solid, gas) No data available
j) Upper/lower flammability or explosive limits No data available
k) Vapour pressure 70 mmHg at 20 °C
70 mmHg at 20 °C
l) Vapour density 2.56 - (Air = 1.0)
m) Relative density 1.06 g/cm3 at 25 °C
n) Water solubility soluble
o) Partition coefficient: n-octanol/water 
   log Pow: 0.37
p) Auto-ignition temperature 
   250 °C 
   at 1,019.3 - 1,027.5 hPa
   250 °C 
   at 1,019.3 - 1,027.5 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 
   71.7 mN/m at 20 °C
Relative vapour density 
   2.56 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity 
   No data available

10.2 Chemical stability 
   Stable under recommended storage conditions. Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions 
   No data available

10.4 Conditions to avoid 
   Heat, flames and sparks.

10.5 Incompatible materials 
   Strong oxidizing agents

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 - male and female - 5,200 mg/kg(1,3-Dioxolane) 
   (OECD Test Guideline 401)
   LD50 Oral - Rat - male and female - 5,200 mg/kg(1,3-Dioxolane) 
   (OECD Test Guideline 401)
   LC50 Inhalation - Rat - male and female - 4 h - 68.4 mg/l(1,3-Dioxolane) 
   (OECD Test Guideline 403)
   LC50 Inhalation - Rat - male and female - 4 h - 68.4 mg/l(1,3-Dioxolane) 
   (OECD Test Guideline 403)
   LD50 Dermal - Rat - 15,000 mg/kg(1,3-Dioxolane)
   LD50 Dermal - Rat - 15,000 mg/kg(1,3-Dioxolane)
Skin corrosion/irritation
Skin - Rabbit(1,3-Dioxolane)
Result: No skin irritation
Skin - Rabbit(1,3-Dioxolane)
Result: No skin irritation

Serious eye damage/eye irritation
Eyes - Rabbit(1,3-Dioxolane)
Result: Irritating to eyes.
Eyes - Rabbit(1,3-Dioxolane)
Result: Irritating to eyes.

Respiratory or skin sensitisation
- Mouse(1,3-Dioxolane)
Result: Did not cause sensitisation on laboratory animals.
(OECD Test Guideline 429)
- Mouse(1,3-Dioxolane)
Result: Did not cause sensitisation on laboratory animals.
(OECD Test Guideline 429)

Germ cell mutagenicity
In vitro mammalian cell gene mutation test(1,3-Dioxolane)
mouse lymphoma cells
Result: negative
In vitro mammalian cell gene mutation test(1,3-Dioxolane)
mouse lymphoma cells
Result: negative
OECD Test Guideline 474(1,3-Dioxolane)
Mouse - male and female - Bone marrow
Result: negative
OECD Test Guideline 474(1,3-Dioxolane)
Mouse - male and female - Bone marrow
Result: negative

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
Presumed human reproductive toxicant(1,3-Dioxolane)
Presumed human reproductive toxicant(1,3-Dioxolane)

Specific target organ toxicity - single exposure
No data available(1,3-Dioxolane)
No data available(1,3-Dioxolane)

Specific target organ toxicity - repeated exposure
No data available
No data available

Aspiration hazard
No data available(1,3-Dioxolane)
No data available(1,3-Dioxolane)

Additional Information
Repeated dose toxicity - Rat - male - Oral - No observed adverse effect level - 75 mg/kg(1,3-Dioxolane)
Repeated dose toxicity - Rat - male - Oral - No observed adverse effect level - 75 mg/kg(1,3-Dioxolane)
RTECS: JH6760000
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (1,3-Dioxolane)

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (1,3-Dioxolane)

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish

- semi-static test LC50 - Lepomis macrochirus - > 95.4 mg/l - 96 h (1,3-Dioxolane) (OECD Test Guideline 203)
- semi-static test LC50 - Lepomis macrochirus - > 95.4 mg/l - 96 h (1,3-Dioxolane) (OECD Test Guideline 202)

Toxicity to daphnia and other aquatic invertebrates

- Immobilization EC50 - Daphnia magna (Water flea) - > 772 mg/l - 48 h (1,3-Dioxolane) (OECD Test Guideline 202)
- Immobilization EC50 - Daphnia magna (Water flea) - > 772 mg/l - 48 h (1,3-Dioxolane) (OECD Test Guideline 202)

Toxicity to algae

- Growth inhibition EC50 - Pseudokirchneriella subcapitata - > 877 mg/l - 72 h (1,3-Dioxolane) (OECD Test Guideline 201)
- Growth inhibition EC50 - Pseudokirchneriella subcapitata - > 877 mg/l - 72 h (1,3-Dioxolane) (OECD Test Guideline 201)

12.2 Persistence and degradability

Biodegradability

- aerobic - Exposure time 35 d (1,3-Dioxolane)
  Result: 3.7 % - According to the results of tests of biodegradability this product is not readily biodegradable.
  (OECD Test Guideline 301D)
- aerobic - Exposure time 35 d (1,3-Dioxolane)
  Result: 3.7 % - According to the results of tests of biodegradability this product is not readily biodegradable.
  (OECD Test Guideline 301D)

12.3 Bioaccumulative potential

No data available
No data available

12.4 Mobility in soil

No data available (1,3-Dioxolane)
No data available (1,3-Dioxolane)

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
No data available
SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. 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: 1166  IMDG: 1166  IATA: 1166

14.2 UN proper shipping name
ADR/RID: DIOXOLANE
IMDG: DIOXOLANE
IATA: DIOXOLANE

14.3 Transport hazard class(es)
ADR/RID: 3  IMDG: 3  IATA: 3

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

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.
H225  Highly flammable liquid and vapour.
H319  Causes serious eye irritation.
H360  May damage fertility or the unborn child.

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.cdhhfinechemical.com for additional terms and conditions of sale.