



1,3-DIOXOLANE
CAS No 646-06-0

MATERIAL SAFETY DATA SHEET
SDS/MSDS

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
H319

Highly flammable liquid and vapour.
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	:	C ₃ H ₆ 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

Component		Classification	Concentration
1,3-Dioxolane			
CAS-No.	646-06-0	Flam. Liq. 2; Eye Irrit. 2; Repr.	<= 100 %
EC-No.	211-463-5	1B; H225, H319, H360	
Index-No.	605-017-00-2		

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/cm ³ 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)

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(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)

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RTECS: JH6760000

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

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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 203)
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

