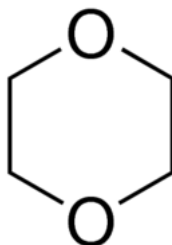


MATERIAL SAFETY DATA SHEET (MSDS)

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

1.1. Product identifier

Product form : Substance
:
EC Index-No. : 603-024-00-5
EC-No. : 204-661-8
CAS-No. : 123-91-1
Product code : 3495B
Formula : C₄H₈O₂
Chemical structure :



Synonyms : Diethylene oxide

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Industrial/Professional use spec : Industrial
For professional use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

LOBA CHEMIE PVT.LTD.
107 Wode House Road, Jehangir Villa, Colaba
400005 Mumbai - INDIA
T +91 22 6663 6663 - F +91 22 6663 6699
info@lobachemie.com - www.lobachemie.com

1.4. Emergency telephone number

Emergency number : + 91 22 6663 6663 (9:00am - 6:00 pm)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, H225
Category 2
Serious eye damage/eye irritation, Category 2 H319

1,4-DIOXANE SCINTILLATION GRADE

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Carcinogenicity, Category 2
Specific target organ toxicity — Single exposure, Category 3,
Respiratory tract irritation

Full text of H statements : see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Carc.Cat.3; R40
F; R11
Xi; R36/37
R19
R66

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP)

: Danger

Hazard statements (CLP)

: H225 - Highly flammable liquid and vapour.
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.
H351 - Suspected of causing cancer.

Precautionary statements (CLP)

: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 - Avoid breathing vapours, spray, dust, fume, gas.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : 1,4-DIOXANE SCINTILLATION GRADE
CAS-No. : 123-91-1
EC-No. : 204-661-8

1,4-DIOXANE SCINTILLATION GRADE

Safety Data Sheet

EC Index-No. : 603-024-00-5

Full text of R- and H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Suspected of causing cancer.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
First-aid measures after skin contact	: Rinse skin with water/shower. Take off immediately all contaminated clothing. Repeated exposure may cause skin dryness or cracking.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do not induce vomiting. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Chronic symptoms	: Suspected carcinogen.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Carbon dioxide. Dry powder. Foam. Water spray.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Highly flammable liquid and vapour.
Explosion hazard	: May form flammable/explosive vapour-air mixture. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. May form explosive peroxides.

5.3. Advice for firefighters

Firefighting instructions	: DO NOT fight fire when fire reaches explosives. Evacuate area.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.
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6.1.1. For non-emergency personnel

Emergency procedures	: Evacuate unnecessary personnel.
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6.1.2. For emergency responders

Protective equipment	: Use personal protective equipment as required.
Emergency procedures	: Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

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6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Collect spillage. On land, sweep or shovel into suitable containers.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapours are flammable. Hazardous waste due to potential risk of explosion.

Precautions for safe handling : Avoid contact with skin and eyes. Use only non-sparking tools. Obtain special instructions before use. Do not breathe vapours. Use only outdoors or in a well-ventilated area. Keep away from sources of ignition - No smoking.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment.

Storage conditions : Keep in fireproof place. Keep container tightly closed.

Incompatible products : Oxidizing agent.

Incompatible materials : Heat sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Hand protection : Protective gloves

Eye protection : Chemical goggles or safety glasses

Skin and body protection : Wear suitable protective clothing

Respiratory protection : [In case of inadequate ventilation] wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Molecular mass : 88.11 g/mol

Colour : Clear Colorless.

Odour : faint ether-like odor.

Odour threshold : No data available

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pH	: 6 - 8
Relative evaporation rate (butylacetate=1)	: 2.7
Melting point	: 10 - 12 °C
Freezing point	: No data available
Boiling point	: 100 - 102 °C
Flash point	: 12 °C
Auto-ignition temperature	: 180 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: Flammable Highly flammable liquid and vapour.
Vapour pressure	: 36 hPa at 20 °C
Relative vapour density at 20 °C	: 3.03
Relative density	: No data available
Density	: 1.03 g/cm ³
Relative gas density	: 3.04
Solubility	: No data available
Log Pow	: -0.27
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: May form explosive peroxides.
Oxidising properties	: No data available
Explosive limits	: 0.02 - 0.22 vol %

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Highly flammable liquid and vapour. May form flammable/explosive vapour-air mixture.

10.3. Possibility of hazardous reactions

Reacts vigorously with strong oxidizers and acids.

10.4. Conditions to avoid

Open flame. Heat. Sparks.

10.5. Incompatible materials

Oxidizing agent.

10.6. Hazardous decomposition products

May release flammable gases. May form explosive peroxides.

1,4-DIOXANE SCINTILLATION GRADE

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified pH: 6 - 8
Additional information	: Repeated exposure may cause skin dryness or cracking.
Serious eye damage/irritation	: Causes serious eye irritation. pH: 6 - 8
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer.
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause respiratory irritation.
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

1,4-DIOXANE SCINTILLATION GRADE (123-91-1)

Log Pow	-0.27
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12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

1,4-DIOXANE SCINTILLATION GRADE

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations	: Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Additional information	: Handle empty containers with care because residual vapours are flammable. Hazardous waste due to potential risk of explosion.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR)	: 1165
UN-No. (IMDG)	: 1165
UN-No. (IATA)	: 1165
UN-No. (ADN)	: 1165
UN-No. (RID)	: 1165

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: DIOXANE
Proper Shipping Name (IMDG)	: DIOXANE
Proper Shipping Name (IATA)	: Dioxane
Proper Shipping Name (ADN)	: DIOXANE
Proper Shipping Name (RID)	: DIOXANE
Transport document description (ADR)	: UN 1165 DIOXANE, 3, II, (D/E)
Transport document description (IMDG)	: UN 1165 DIOXANE, 3, II (12°C c.c.)
Transport document description (IATA)	: UN 1165 Dioxane, 3, II
Transport document description (ADN)	: UN 1165 DIOXANE, 3, II
Transport document description (RID)	: UN 1165 DIOXANE, 3, II

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 3
Danger labels (ADR)	: 3



IMDG

Transport hazard class(es) (IMDG)	: 3
Danger labels (IMDG)	: 3



IATA

Transport hazard class(es) (IATA)	: 3
Hazard labels (IATA)	: 3

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ADN

Transport hazard class(es) (ADN) : 3

Danger labels (ADN) : 3



RID

Transport hazard class(es) (RID) : 3

Danger labels (RID) : 3



14.4. Packing group

Packing group (ADR) : II

Packing group (IMDG) : II

Packing group (IATA) : II

Packing group (ADN) : II

Packing group (RID) : II

14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport

Classification code (ADR) : F1

Limited quantities (ADR) : 1I

Excepted quantities (ADR) : E2

Packing instructions (ADR) : P001, IBC02, R001

Mixed packing provisions (ADR) : MP19

Portable tank and bulk container instructions (ADR) : T4

Portable tank and bulk container special provisions (ADR) : TP1

Tank code (ADR) : LGBF

Vehicle for tank carriage : FL

Transport category (ADR) : 2

Special provisions for carriage - Operation (ADR) : S2, S20

Hazard identification number (Kemler No.) : 33

1,4-DIOXANE SCINTILLATION GRADE

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Orange plates



Tunnel restriction code (ADR)

: D/E

EAC code

: •2YE

- Transport by sea

Limited quantities (IMDG)

: 1 L

Excepted quantities (IMDG)

: E2

Packing instructions (IMDG)

: P001

IBC packing instructions (IMDG)

: IBC02

Tank instructions (IMDG)

: T4

Tank special provisions (IMDG)

: TP1

EmS-No. (Fire)

: F-E

EmS-No. (Spillage)

: S-D

Stowage category (IMDG)

: B

Flash point (IMDG)

: 12°C c.c.

Properties and observations (IMDG)

: Colourless liquid with an ether-like odour. Flashpoint: 12°C c.c. Explosive limits: 2% to 22% Miscible with water. Harmful by inhalation.

MFAG-No

: 127

- Air transport

PCA Excepted quantities (IATA)

: E2

PCA Limited quantities (IATA)

: Y341

PCA limited quantity max net quantity (IATA)

: 1L

PCA packing instructions (IATA)

: 353

PCA max net quantity (IATA)

: 5L

CAO packing instructions (IATA)

: 364

CAO max net quantity (IATA)

: 60L

ERG code (IATA)

: 3L

- Inland waterway transport

Classification code (ADN)

: F1

Limited quantities (ADN)

: 1 L

Excepted quantities (ADN)

: E2

Carriage permitted (ADN)

: T

Equipment required (ADN)

: PP, EX, A

Ventilation (ADN)

: VE01

Number of blue cones/lights (ADN)

: 1

- Rail transport

Classification code (RID)

: F1

Limited quantities (RID)

: 1L

Excepted quantities (RID)

: E2

Packing instructions (RID)

: P001, IBC02, R001

Mixed packing provisions (RID)

: MP19

Portable tank and bulk container instructions (RID)

: T4

Portable tank and bulk container special provisions (RID)

: TP1

Tank codes for RID tanks (RID)

: LGBF

Transport category (RID)

: 2

Colis express (express parcels) (RID)

: CE7

Hazard identification number (RID)

: 33

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

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

1,4-DIOXANE SCINTILLATION GRADE is not on the REACH Candidate List

1,4-DIOXANE SCINTILLATION GRADE is not on the REACH Annex XIV List

15.1.2. National regulations

Germany

Reference to AwSV : Water hazard class (WGK) 2, significant hazard to water (Classification according to AwSV; ID No. 86)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : 1,4-DIOXANE SCINTILLATION GRADE is listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark

Class for fire hazard : Class I-1

Store unit : 1 liter

Classification remarks : F <Flam. Liq. 2>; Emergency management guidelines for the storage of flammable liquids must be followed

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product
The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

15.2. Chemical safety assessment

No additional information available

1,4-DIOXANE SCINTILLATION GRADE

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SECTION 16: Other information

Full text of R-, H- and EUH-statements:

Carc. 2	Carcinogenicity, Category 2
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
R11	Highly flammable
R19	May form explosive peroxides
R36/37	Irritating to eyes and respiratory system
R40	Limited evidence of a carcinogenic effect
R66	Repeated exposure may cause skin dryness or cracking
F	Highly flammable
Xi	Irritant

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