

Material Safety Data Sheet



1,4-DIOXAN LR

VERSION : 05
REVISION DATE : 14/06/2025
EFFECTIVE DATE : 16/06/2025

Product Code : 14250

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1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name : 1,4-DIOXAN LR
Product code : 14250
Identification of the product : 1,4-DIOXAN LR
CAS No : 123- 91- 1
EC Index-No. : 603-024-00-5
EC No. : 204-661-8
Synonyms : Dioxane, Diethylene oxide, p-Dioxane, Diethylene ether

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

Identified uses : Laboratory chemicals, Manufacture of substances

1.3. Details of the supplier of the safety data sheet

Company identification
MOLYCHEM INDIA LLP
Office: Maker Tower 'E', 41-A2, 4th Floor, Above Maker Arcade, Cuffe Parade, Mumbai 400 005 (INDIA)
Tel: +91 22 4066 8111, 2205 7772 .
Email : info@molychem.net
Works: Plot No. B/9, Badlapur M.I.D.C.,
OPP.Shobhavat Textile Co., Kulgaon, Badlapur (E),
Dist.-Thane-421 503.

1.4. Emergency telephone number

Emergency number : +91 22 4066 8111 (10:00am - 6:00 pm)

2. Hazards identification

2.1. Classification of the substance or mixture

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

Flammable liquids, Category 2 H225
Serious eye damage/eye irritation, Category 2 H319
Carcinogenicity, Category 2 H351
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation H335

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

Adverse physicochemical, human health and environmental effects

Highly flammable liquid and vapour. Suspected of causing cancer. May cause respiratory irritation.

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Causes serious eye irritation.

2.2. Label elements

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

Hazard pictograms (CLP)



GHS02

GHS07

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 dust/fume/gas/mist/vapours/spray.

P280 - Wear protective clothing, eye protection, face protection, protective gloves

P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water .

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

3. Composition/information on ingredients

3.1. Substances

Name : 1,4-DIOXAN LR

CAS-No : 123- 91- 1

3.2. Mixtures

Not applicable

4. First aid measures

4.1. Description of first aid measures

First-aid measures general : IF exposed or concerned: Get medical advice/attention.

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First-aid measures after inhalation	Call a poison center or a doctor if you feel unwell. : Remove person to fresh air and keep comfortable for breathing. Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. Call a poison center or a 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. If eye irritation persists: Get medical advice/attention. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth out with water. If you feel unwell, seek medical advice. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: Repeated exposure may cause skin dryness or cracking.
Symptoms/effects after eye contact	: Causes serious eye irritation. Eye irritation.
Symptoms/effects after ingestion	: None under normal conditions.

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

Treat symptomatically.

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: dry chemical powder, alcohol-resistant foam, carbon dioxide (CO ₂). Water spray. Dry powder. Foam. Carbon dioxide.
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
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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.

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3 Advice for firefighters

Firefighting instructions : DO NOT fight fire when fire reaches explosives. Evacuate area. Do not enter fire area without proper protective equipment, including respiratory protection.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

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. Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material damage.

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel. Do not breathe dust, fume, gas, mist, spray, vapours. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Use personal protective equipment as required. For further information refer to section 8: "Exposure controls/ personal protection"

Emergency procedures : Stop release. Evacuate unnecessary personnel. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Absorb spilled material with sand or earth. Contain any

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Methods for cleaning up

spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak without risks if possible.

: Take up liquid spill into absorbent material. Collect spillage. On land, sweep or shovel into suitable containers. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Notify authorities if product enters sewers or public waters.

Other information

: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

7. Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling

: No open flames. No smoking. Use only non-sparking tools. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Keep away from sources of ignition - No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Avoid contact with skin and eyes.
: Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

Hygiene measures

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. Store in a well-ventilated place. Keep cool. Store locked

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Storage away from

up.
: Open flame. Direct sunlight. Heat. Sparks. Overheating.
Avoid contact with hot surfaces. No flames, no sparks.
Eliminate all sources of ignition.

7.3. Specific end use(s)

No additional information available

8. Exposure controls/personal protection

8.1. Control parameters

8.1.1. National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Eye protection	: Chemical goggles or safety glasses
Hand protection	: Wear protective gloves
Skin protection	: Wear suitable protective clothing
Respiratory protection	: Wear appropriate mask.
Thermal hazards	: No additional information available

8.2.3. Environmental exposure controls

Avoid release to the environment

9. Physical and chemical properties

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9.1 Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: clear liquid
Molecular mass	: 88.11 g/mol
Colour	: colourless
Odour	: faint ether-like odor
Odour threshold	: Not available
pH	: 6 – 8 at 20 °C
Melting point	: Not applicable
Freezing point	: Not below 11.5 ⁰ C
Boiling point	: 100 – 102 °C
Flash point	: 12 °C
Auto-ignition temperature	: 180 °C
Decomposition temperature	: Not available
Flammability	: Flammable Highly flammable liquid and vapour.
Vapour pressure	: 36 hPa at 20 °C
Relative vapour density at 20 °C	: 3.04 (Air = 1.0)
Relative density	: Not available
Density	: 1.030-1.035g
Solubility	: Water: > 800 g/l at 25 °C - Miscible
Partition coefficient n-octanol/water (Log Pow)	: -0.27
Viscosity, kinematic	: Not available
Explosive limits	: Not applicable

9.2. Other information

No additional information available

10. Stability and reactivity

10.1. Reactivity

Highly flammable liquid and vapour.

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

Reacts vigorously with strong oxidizers and acids.

10.4. Conditions to avoid

Open flame. Direct sunlight. Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

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10.5. Incompatible materials

Oxidizing agent.

10.6 Hazardous decomposition products

May release flammable gases. May form explosive peroxides.

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Not classified
Additional information	: Repeated exposure may cause skin dryness or cracking.
Serious eye damage/irritation	: Causes serious eye irritation.
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

12. Ecological information

12.1. Toxicity

Ecology - general	The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute)	Not classified
Hazardous to the aquatic environment, long-term (chronic)	Not classified

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5 Results of PBT and vPvB assessment

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No additional information available

12.6 Other adverse effects

No additional information available

13. Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions
Sewage disposal recommendations	: Disposal must be done according to official regulations.
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. Disposal must be done according to official regulations
Additional information	: Handle empty containers with care because residual vapours are flammable. Hazardous waste due to potential risk of explosion. Flammable vapours may accumulate in the container. Do not re-use empty containers.

14. Transport information

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

14.1. UN number

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

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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

Danger labels (IATA) : 3

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) : 11

Excepted quantities (ADR) : E2

Packing instructions (ADR) : P001, IBC02, R001

Mixed packing provisions (ADR) : MP19

Portable tank and bulk container : T4

instructions (ADR)

Portable tank and bulk container special : TP1

provisions (ADR)

Tank code (ADR) : LGBF

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Vehicle for tank carriage : FL
Transport category (ADR) : 2
Hazard identification number (Kemler No.) : 33
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
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

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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

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

15. Regulatory information

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

15.1.1 EU-Regulations

EU restriction list (REACH Annex XVII)

Reference code Applicable on	Reference code Applicable on
3(a)	1,4-DIOXANE
3(b)	1,4-DIOXANE
40	1,4-DIOXANE

Not listed on REACH Annex XIV (Authorisation List)

Listed on the REACH Candidate List: 1,4-dioxane

Not listed on the PIC list (Regulation EU 649/2012)

Not listed on the POP list (Regulation EU 2019/1021)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

Contains no substance subject to the COUNCIL REGULATION (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items.

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

France

Occupational diseases

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RG 84	Conditions caused by liquid organic solvents for professional use: saturated or unsaturated aliphatic or cyclic liquid hydrocarbons and mixtures thereof; liquid halogenated hydrocarbons; nitrated derivatives of aliphatic hydrocarbons; alcohols; glycols, glycol ethers; ketones; aldehydes; aliphatic and cyclic ethers, including tetrahydrofuran; esters; dimethylformamide and dimethylacetamine; acetonitrile and propionitrile; pyridine; dimethylsulfone and dimethylsulfoxide

Germany

Water hazard class (WGK) : WGK 2, Significantly hazardous to water (Classification according to AwSV; ID No. 86).
Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

SZW-lijst van kankerverwekkende stoffen : 1,4-DIOXANE is listed
SZW-lijst van mutagene stoffen : The substance is not listed
SZW-lijst van reprotoxische stoffen – Borstvoeding : The substance is not listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : The substance is not listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling : The substance is not listed

Denmark

Classification remarks : Emergency management guidelines for the storage of flammable liquids must be followed
Danish National Regulations : 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

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

16. Other information

Abbreviations and acronyms	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road

MOLYCHEM INDIA LLP

H.Q. : Maker Tower 'E', 41-A2, 4th Floor, Above Maker Arcade, Cuffe Parade, Mumbai 400 005 (INDIA)

Tel. : +91 22 4066 8111 • Email: info@molychem.net • Web: www.molychem.net

Works : Unit I - Plot No. B/9, Unit II - Plot No. B/11, Badlapur M.I.D.C., Opp. Shobhavat Textile Co., Kulgaon, Badlapur (E), Dist.-Thane-421 503.

•ISO 9001:2015 • ISO 14001: 2015 • ISO 45001:2018 • WHO-GMP Certified • MSME Registered • CAA Registered

Material Safety Data Sheet



1,4-DIOXAN LR

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ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand
COD	Chemical oxygen demand
COD	Chemical oxygen demand
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties
Full text of H- and EUH-statements	
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, Narcosis
H225	Highly flammable liquid and vapour.

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H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
EUH066	Repeated exposure may cause skin dryness or cracking.

Safety Data Sheet (SDS), EU 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.

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