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MATERIAL SAFETY DATA SHEET (MSDS)

TETRAHYDROFURAN HPLC

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

1.1. Product identifier

Trade name : TETRAHYDROFURAN HPLC

Product code : SS0109901000

Identification of the product : Tetrahydrofuran
 CAS No: 109-99-9
 EC No :203-726-8
 Annex No :603-025-00-0

Chemical formula : C₄H₈O

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

Use : Industrial. For professional use only.

1.3. Details of the supplier of the safety data sheet

Company identification SUVCHEM
 Chaitanya Tower, 2nd Floor, Office # 206,
 Siddharth Nagar, S.V. Road,
 Goregaon (West), Mumbai - 400062,
 Maharashtra, India.
 Contact: +91 22 28725393 / 94 / 95
 Email ID: info@suvchem.com/care@suvchem.com

1.4. Emergency telephone number

Phone no. : + 91 22 28725393 / 94 / 95 (9:00am - 6:00 pm) [Office hours]

2. Hazards identification -DSD

2.1. Classification of the substance or mixture

Classification EC 67/548 or EC 1999/45

Classification : F; R11
 R19
 Xi; R36/37

Hazard Class and Category Code(s), Regulation (EC) No 1272/2008 (CLP)

Health hazards : Specific Target Organ Toxicity - Single exposure - Respiratory tract irritation -
 Category 3 - Warning (CLP : STOT SE 3) H335
 Eye irritation - Category 2A - Warning (CLP : Eye Irrit. 2) H319
 Physical hazards : Flammable liquids - Category 2 - Danger (CLP : Flam. Liq. 2) H225

2.2. Label elements

MATERIAL SAFETY DATA SHEET (MSDS)
TETRAHYDROFURAN HPLC
2. Hazards identification -DSD (continued)
Labelling EC 67/548 or EC 1999/45
Symbol(s)

Symbol(s)

 : F : Highly flammable
 : Xi : Irritant

R Phrase(s)

 : R11 : Highly flammable.
 : R19 : May form explosive peroxides.
 : R36/37 : Irritating to eyes and respiratory system.

S Phrase(s)

 : S2 : Keep out of the reach of children.
 : S16 : Keep away from sources of ignition - No smoking.
 : S29 : Do not empty into drains.
 : S33 : Take precautionary measures against static discharges.

Contains

: Tetrahydrofuran

Labelling Regulation EC 1272/2008 (CLP)
Hazard pictograms

Signal words

: Danger

Hazard statements

 : H225 : Highly flammable liquid and vapour.
 : H319 : Causes serious eye irritation.
 : H335 : May cause respiratory irritation.

Precautionary statements
• General

 : P102: Keep out of reach of children.
 : P103: Read label before use.
 : P101: If medical advice is needed, have product container or label at hand.

• Prevention

 : P240: Ground/bond container and receiving equipment.
 : P241: Use explosion-proof electrical, ventilating, lighting, ..., equipment.
 : P210: Keep away from heat, sparks, open flames or hot surfaces. - No smoking.
 : P280: Wear protective gloves, protective clothing, eye protection, face protection.
 : P271: Use only outdoors or in a well-ventilated area.
 : P261: Avoid breathing dust, fume, gas, mist, vapours, spray.
 : P233: Keep container tightly closed.
 : P264: Wash thoroughly after handling.

• Response

 : P305+P351+P338: IF IN EYES : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 : P304+P340: IF INHALED : Remove to fresh air and keep at rest in a position comfortable for breathing.
 : P303+P361+P353: IF ON SKIN (or hair) : Remove immediately all contaminated clothing. Rinse skin with water/shower.
 : P337+P313: If eye irritation persists: Get medical advice/attention.
 : P370+P378: In case of fire: Use for extinction.

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MATERIAL SAFETY DATA SHEET (MSDS)

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2. Hazards identification -DSD (continued)

- **Storage** : P403+P233: Store in well-ventilated place. Keep container tightly closed.
 P403+P235: Store in well-ventilated place. Keep cool.
 P405: Store locked up.
- **Disposal considerations** : P501: Dispose of this material and its container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
- Contains** : Tetrahydrofuran

2.3. Other hazards

- Other hazards** : The substance does not fulfil the criteria to be identified as PBT substance or vPvB substance according to Annex XIII of Regulation REACH.

3. Composition/information on ingredients

Substance / Preparation : Tetrahydrofuran

EC No :203-726-8
 Annex No :603-025-00-0
 Substance.

Substance name	Contents	CAS No	EC No	Annex No	REACH Ref.	Classification
Tetrahydrofuran	100 %	109-99-9	203-726-8	603-025-00-0	-----	F; R11 R19 Xi; R36/37 ----- Flam. Liq. 2 _ H225 Eye irrit 2 _ H319 STOT SE 3 _ H335 Expl. _ EUH019

Contains no other components or impurities which will influence the classification of the product.

4. First aid measures

4.1. Description of first aid measures

- Inhalation** : Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.
- Skin contact** : Wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing.
- Eye contact** : Get medical advice. If eye irritation persists : Remove contact lenses, if present and easy to do. Continue rinsing. Rinse cautiously with water for several minutes.
- Ingestion** : Obtain emergency medical attention. Rinse mouth. Do NOT induce vomiting.

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

- Symptoms relating to use** : Causes serious eye irritation. May cause respiratory irritation.

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

MATERIAL SAFETY DATA SHEET (MSDS)
TETRAHYDROFURAN HPLC
4. First aid measures (continued)

General information : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

5. Fire-fighting measures
5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media : Do not use a heavy water stream.
Surrounding fires : Use water spray or fog for cooling exposed containers.

5.2. Special hazards arising from the substance or mixture

Flammable class : Highly flammable liquid and vapour.
 May form explosive peroxides.
Hazardous combustion products : Under fire conditions, hazardous fumes will be present. May form flammable/ explosive vapour-air mixture.

5.3. Advice for fire-fighters

Protection against fire : Do not enter fire area without proper protective equipment, including respiratory protection.
Special procedures : Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment. Evacuate area. DO NOT fight fire when fire reaches explosives.

6. Accidental release measures
6.1. Personal precautions, protective equipment and emergency procedures

For emergency responders : Equip cleanup crew with proper protection.
 Ventilate area.
Technical measures : Use special care to avoid static electric charges.
Special precautions : Remove ignition sources. No naked lights. No smoking. Reacts vigorously with strong oxidizers and acids.
For non-emergency personnel : Evacuate unnecessary personnel.

6.2. Environmental precautions

Environmental precautions : Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Clean up methods : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Store away from other materials. Collect spillage.

MATERIAL SAFETY DATA SHEET (MSDS)
TETRAHYDROFURAN HPLC
6. Accidental release measures (continued)
6.4. Reference to other sections

See section 8. Exposure controls/personal protection

7. Handling and storage
7.1. Precautions for safe handling

Handling	: Handle empty containers with care because residual vapours are flammable. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling.
Technical protective measures	: Provide good ventilation in process area to prevent formation of vapour. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical, ventilating, lighting, ..., equipment.
Special precautions	: No naked lights. No smoking. Avoid breathing dust, fume, gas, mist, vapours, spray.

7.2. Conditions for safe storage, including any incompatibilities

Storage	: Keep only in the original container in a cool, well ventilated place. Keep in fireproof place. Ground/bond container and receiving equipment. Keep container tightly closed.
Storage - away from	: Strong bases. Strong acids. Sources of ignition. Direct sunlight. Heat sources. Oxidizing agent.

7.3. Specific end use(s)

Specific end use(s)	: None.
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8. Exposure controls/personal protection
8.1. Exposure controls

Personal protection	: Avoid all unnecessary exposure.
• Respiratory protection	: Wear approved mask.
• Hand protection	: Wear protective gloves.
• Eye protection	: Chemical goggles or safety glasses.
• Others	: When using, do not eat, drink or smoke.

8.2. Control parameters

Occupational Exposure Limits	: No data available.
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MATERIAL SAFETY DATA SHEET (MSDS)
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9. Physical and chemical properties
9.1. Information on basic physical and chemical properties

Physical state at 20 °C	: Liquid.
Colour	: Clear Colorless
Odour	: Ether odor
Odour threshold	: No data available.
pH value	: No data available.
Melting point [°C]	: -108 °C
Decomposition point [°C]	: N/A
Critical temperature [°C]	: N/A
Auto-ignition temperature [°C]	: 321 °C
Flammability (solid, gas)	: Flammable. Highly flammable liquid and vapour.
Flash point [°C]	: -17 °C
Boiling point [°C]	: 65 - 67 °C
Initial boiling point [°C]	: 65 °C
Final boiling point [°C]	: 67 °C
Evaporation rate	: N/A
Vapour pressure [20°C]	: 190.7 hPa at 20°C
Vapour pressure mm/Hg	: N/A
Vapour density	: 2,5
Density [g/cm3]	: 0,88
Relative density, gas (air=1)	: N/A
Relative density, liquid (water=1)	: N/A
Solubility in water [% weight]	: In water, material soluble.
Solubility in water	: N/A
Log Pow octanol / water at 20°C	: No data available.
Solubility	: 7
Viscosity at 40°C [mm2/s]	: N/A

9.2. Other information

Explosive properties	: May form explosive peroxides. N/A
Explosion limits - upper [%]	: 11,80%
Explosion limits - lower [%]	: 1,80%
Oxidising properties	: No data available.

10. Stability and reactivity
10.1. Reactivity

MATERIAL SAFETY DATA SHEET (MSDS)
TETRAHYDROFURAN HPLC
10. Stability and reactivity (continued)

Reactivity : Not established.

10.2. Chemical stability

Chemical stability : Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions : Not established.

10.4. Conditions to avoid

Conditions to avoid : Direct sunlight. Extremely high or low temperatures. Open flame. Heat. Sparks.
Open flame. Direct sunlight. Overheating.

10.5. Incompatible materials

Materials to avoid : Strong acids. Strong bases.
Oxidizing agent.

10.6. Hazardous decomposition products

Hazardous decomposition products : Fumes. Carbon monoxide. Carbon dioxide.
May release flammable gases.

11. Toxicological information
11.1. Information on toxicological effects
Acute toxicity

- **Inhalation** : Based on available data, the classification criteria are not met.
- **Dermal** : Based on available data, the classification criteria are not met.
- **Ingestion** : Based on available data, the classification criteria are not met.

Corrosion : Based on available data, the classification criteria are not met.

Irritation : Causes serious eye irritation.
May cause respiratory irritation.

Sensitization : Based on available data, the classification criteria are not met.

Mutagenicity : Based on available data, the classification criteria are not met.

Carcinogenicity : Based on available data, the classification criteria are not met.

Toxic for reproduction : Based on available data, the classification criteria are not met.

STOT-single exposure : Based on available data, the classification criteria are not met.

STOT-repeated exposure : Based on available data, the classification criteria are not met.

Aspiration hazard : Based on available data, the classification criteria are not met.

MATERIAL SAFETY DATA SHEET (MSDS)
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12. Ecological information
12.1. Toxicity

Toxicity information : Not established.

12.2. Persistence - degradability

Persistence - degradability : Biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential : Not established.

12.4. Mobility in soil

Mobility in soil : Not established.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment : The substance does not fulfil the criteria to be identified as PBT substance or vPvB substance according to Annex XIII of Regulation REACH.

12.6. Other adverse effects

Environmental precautions : Avoid release to the environment.

13. Disposal considerations
13.1. Waste treatment methods

General : Avoid release to the environment. Dispose in a safe manner in accordance with local/national regulations.
 Hazardous waste due to potential risk of explosion.
 Dispose of this material and its container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Special precautions : Handle empty containers with care because residual vapours are flammable.

14. Transport information
14.1. Land transport (ADR-RID)

Proper shipping name : TETRAHYDROFURAN
 UN N° : 2056
 H.I. nr : 33
 ADR - Class : 3

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14. Transport information (continued)

Labelling - Transport : 3 : Flammable liquid.



ADR - Classification code : F1

ADR - Group : II

ADR - Packing instructions : P001 R001

ADR - Limited Quantity : 1 L

ADR - Tunnel code : D/E : Bulk or tank carriage: Passage forbidden through tunnels of category D and E. Other carriage: Passage forbidden through tunnels of category E.


14.2. Sea transport (IMDG) [English only]

Proper shipping name : TETRAHYDROFURAN

UN N° : 2056

IMO-IMDG - Class or division : 3 : Flammable liquid.

IMO-IMDG - Packing group : II

IMO-IMDG - Packing instructions : P001

IMO-IMDG - Limited quantities : 1 L

IMO-IMDG - Marine pollution : No

EMS-Nr : F-E S-D

14.3. Air transport (ICAO-IATA) [English only]

Proper shipping name : TETRAHYDROFURAN

UN N° : 2056

IATA - Class or division : 3 : Flammable liquid.

IATA - Packing group : II

IATA - Passenger and Cargo Aircraft : ALLOWED

- Passenger and Cargo - Packing instruction : 353

- Passenger and Cargo - Maximum Quantity/Packing : 5 L

IATA - Cargo only : ALLOWED

- Cargo only - Packing instruction : 364

- Cargo only - Maximum Quantity/Packing : 60 L

MATERIAL SAFETY DATA SHEET (MSDS)

TETRAHYDROFURAN HPLC

In accordance with REACH Regulation (CE) N° 1907/2006 and with CLP Regulation (CE) N° 1272/2008

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