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MATERIAL SAFETY DATA SHEET (MSDS)

ISO-PENTANE LR (FOR SYNTHESIS)

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

1.1. Product identifier

Trade name : ISO-PENTANE LR (FOR SYNTHESIS)

Product code : SS0117802500

Identification of the product : isopentane- 2-methylbutane
 CAS No: 78-78-4
 EC No :201-142-8
 Annex No :601-085-00-2

Chemical formula : C₅H₁₂

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+; R12
 Xn; R65
 R66
 R67
 N; R51-53

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

Health hazards : Specific Target Organ Toxicity - Single exposure - Narcotic effects - Category 3 -
 Warning (CLP : STOT SE 3) H336
 Aspiration hazard - Category 1 - Danger (CLP : Asp. Tox. 1) H304

MATERIAL SAFETY DATA SHEET (MSDS)
ISO-PENTANE LR (FOR SYNTHESIS)
2. Hazards identification -DSD (continued)

Physical hazards : Flammable liquids - Category 1 - Danger (CLP : Flam. Liq. 1) H224
Environmental hazards : Hazardous to the aquatic environment - Chronic hazard - Category 2 (CLP : Aquatic Chronic 2) H411

2.2. Label elements
Labelling EC 67/548 or EC 1999/45
Symbol(s)

Symbol(s)

: F+ : Extremely flammable
 Xn : Harmful
 N : Dangerous for the environment

R Phrase(s)

: R12 : Extremely flammable.
 R65 : Harmful : may cause lung damage if swallowed.
 R66 : Repeated exposure may cause skin dryness or cracking.
 R67 : Vapours may cause drowsiness and dizziness.
 R51/53 : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S Phrase(s)

: S2 : Keep out of the reach of children.
 S9 : Keep container in a well-ventilated place.
 S16 : Keep away from sources of ignition - No smoking.
 S29 : Do not empty into drains.
 S33 : Take precautionary measures against static discharges.
 S61 : Avoid release to the environment. Refer to special instructions/Safety data sheets.
 S62 : If swallowed, do not induce vomiting : seek medical advice immediately and show this container or label.

Contains

: isopentane- 2-methylbutane

Labelling Regulation EC 1272/2008 (CLP)
Hazard pictograms

Signal words

: Danger

Hazard statements

: H224 : Extremely flammable liquid and vapour.
 H304 : May be fatal if swallowed and enters airways.
 H336 : May cause drowsiness or dizziness.
 H411 : Toxic to aquatic life with long lasting effects.

Precautionary statements

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MATERIAL SAFETY DATA SHEET (MSDS)

ISO-PENTANE LR (FOR SYNTHESIS)

2. Hazards identification -DSD (continued)

- **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.
P273: Avoid release to the environment.
P233: Keep container tightly closed.
- **Response** : P301+P310: IF SWALLOWED : Immediately call a POISON CENTER or doctor.
P391: Collect spillage.
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.
P370+P378: In case of fire: Use for extinction.
- **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** : isopentane- 2-methylbutane

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 : isopentane- 2-methylbutane

EC No :201-142-8
 Annex No :601-085-00-2
 Substance.

Hazardous component(s) : This product is hazardous.

Substance name	Contents	CAS No	EC No	Annex No	REACH Ref.	Classification
isopentane- 2-methylbutane	> 99 %	78-78-4	201-142-8	601-085-00-2	----	F+; R12 Xn; R65 R66 R67 N; R51-53 ----- Flam. Liq. 1 _ H224 Asp. Tox 1 _ H304 STOT SE 3 _ H336 STOT RE _ EUH066 Aquatic Chronic 2 _ H411

MATERIAL SAFETY DATA SHEET (MSDS)
ISO-PENTANE LR (FOR SYNTHESIS)
3. Composition/information on ingredients (continued)

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	: Call a POISON CENTER or doctor if you feel unwell. Remove to fresh air and keep at rest in a position comfortable for breathing.
Skin contact	: Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water.
Eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
Ingestion	: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting. Rinse mouth.

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

Symptoms relating to use	: May be fatal if swallowed and enters airways. May cause drowsiness or dizziness. Repeated exposure may cause skin dryness or cracking.
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4.3. Indication of any immediate medical attention and special treatment needed

General information	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
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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	: Extremely flammable liquid and vapour.
Hazardous combustion products	: Under fire conditions, hazardous fumes will be present.

5.3. Advice for fire-fighters

Protection against fire	: Do not enter fire area without proper protective equipment, including respiratory protection.
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MATERIAL SAFETY DATA SHEET (MSDS)
ISO-PENTANE LR (FOR SYNTHESIS)
5. Fire-fighting measures (continued)

Special procedures : Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.

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

For emergency responders : Equip cleanup crew with proper protection.
 Ventilate area.
 Avoid breathing dust, fume, gas, mist, vapours, spray.

Technical measures : Use special care to avoid static electric charges.

Special precautions : Remove ignition sources. No naked lights. No smoking.

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.
 Avoid release to the environment.

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. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See section 8. Exposure controls/personal protection

7. Handling and storage
7.1. Precautions for safe handling

Handling : Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work.
 Handle empty containers with care because residual vapours are flammable.
 Use only outdoors or in a well-ventilated area. Take precautionary measures against static discharge.

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 only non-sparking tools. Use explosion-proof electrical, ventilating, lighting, ..., equipment.

Special precautions : No naked lights. No smoking.
 Avoid breathing dust, fume, gas, mist, vapours, spray.

MATERIAL SAFETY DATA SHEET (MSDS)
ISO-PENTANE LR (FOR SYNTHESIS)
7. Handling and storage (continued)
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. Keep container tightly closed. Ground/bond container and receiving equipment.
Storage - away from	: Strong bases. Strong acids. Sources of ignition. Direct sunlight. Heat sources.

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	: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Wear respiratory protection.
• 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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9. Physical and chemical properties
9.1. Information on basic physical and chemical properties

Physical state at 20 °C	: Liquid.
Colour	: Colorless
Odour	: Characteristic.
Odour threshold	: No data available.
pH value	: No data available.
Melting point [°C]	: -51°C -closed cup
Decomposition point [°C]	: No data available.
Critical temperature [°C]	: No data available.
Auto-ignition temperature [°C]	: No data available.

MATERIAL SAFETY DATA SHEET (MSDS)
ISO-PENTANE LR (FOR SYNTHESIS)
9. Physical and chemical properties (continued)

Flammability (solid, gas)	: Extremely flammable liquid and vapour.
Flash point [°C]	: No data available.
Initial boiling point [°C]	: No data available.
Final boiling point [°C]	: 30°C.
Evaporation rate	: No data available.
Vapour pressure [20°C]	: 769,92hPa at 20 °C
Vapour density	: 2.49 (Air = 1)
Density [g/cm ³]	: 0,62 g/mL at 25 °C
Relative density, liquid (water=1)	: No data available.
Solubility in water	: No data available.
Log Pow octanol / water at 20°C	: No data available.
Viscosity at 40°C [mm ² /s]	: No data available.

9.2. Other information

Explosive properties	: No data available.
Explosion limits - upper [%]	: No data available.
Explosion limits - lower [%]	: No data available.
Oxidising properties	: No data available.

10. Stability and reactivity
10.1. Reactivity

Reactivity	: Not established.
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10.2. Chemical stability

Chemical stability	: Stable under recommended storage conditions.
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10.3. Possibility of hazardous reactions

Hazardous reactions	: Not established.
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10.4. Conditions to avoid

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

Materials to avoid	: Strong acids. Strong bases.
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MATERIAL SAFETY DATA SHEET (MSDS)
ISO-PENTANE LR (FOR SYNTHESIS)
10. Stability and reactivity (continued)
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 : May be fatal if swallowed and enters airways.
- Dermal : Based on available data, the classification criteria are not met.
- Ingestion : May be fatal if swallowed and enters airways.

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

Irritation : Repeated exposure may cause skin dryness or cracking.

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 : May cause drowsiness or dizziness.

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

Aspiration hazard : May be fatal if swallowed and enters airways.

12. Ecological information
12.1. Toxicity

Toxicity information : Toxic to aquatic life with long lasting effects.

12.2. Persistence - degradability

Persistence - degradability : May cause long-term adverse effects in the environment.

12.3. Bioaccumulative potential

Bioaccumulative potential : Not established.

12.4. Mobility in soil

Mobility in soil : Not established.

MATERIAL SAFETY DATA SHEET (MSDS)
ISO-PENTANE LR (FOR SYNTHESIS)
12. Ecological information (continued)
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.
 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.
 Hazardous waste due to toxicity.

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

Proper shipping name : PENTANES, liquid
UN N° : 1265
H.I. nr : 33
ADR - Class : 3
Labelling - Transport : 3 : Flammable liquid.



ADR - Classification code : F1
 F1
ADR - Group : I
ADR - Packing instructions : P001
ADR - Limited Quantity : 0
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.

MATERIAL SAFETY DATA SHEET (MSDS)
ISO-PENTANE LR (FOR SYNTHESIS)
14. Transport information (continued)

14.2. Sea transport (IMDG) [English only]

Proper shipping name	: PENTANES, liquid
UN N°	: 1265
IMO-IMDG - Class or division	: 3 : Flammable liquid.
IMO-IMDG - Packing group	: I
IMO-IMDG - Packing instructions	: P001
IMO-IMDG - Limited quantities	: None
IMO-IMDG - Marine pollution	: Yes
EMS-Nr	: F-E S-D

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

Proper shipping name	: PENTANES, liquid
UN N°	: 1265
IATA - Class or division	: 3 : Flammable liquid.
IATA - Packing group	: I
IATA - Passenger and Cargo Aircraft	: ALLOWED
- Passenger and Cargo - Packing instruction	: 351
- Passenger and Cargo - Maximum Quantity/Packing	: 1 L
IATA - Cargo only	: ALLOWED
- Cargo only - Packing instruction	: 361
- Cargo only - Maximum Quantity/Packing	: 30 L
ERG-Nr	: 3H

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

Safety, health and environmental regulations/legislation specific for the substance or mixture	: Ensure all national/local regulations are observed.
REACH Restrictions - Annex XVII	: The components of this product are not subject to restrictions.

MATERIAL SAFETY DATA SHEET (MSDS)

ISO-PENTANE LR (FOR SYNTHESIS)

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

DISCLAIMER:

- **SUVCHEM** Products are to be used as Lab Chemicals for R&D only. Not for drug, medicinal, household or other uses.
- **SUVCHEM** shall not be responsible for any damage resulting from handling or from contact with the above product.
- **SUVCHEM** provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product.

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