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MATERIAL SAFETY DATA SHEET (MSDS)

iso-OCTANE LR (2,2,4-TRIMETHYL PENTANE)

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

1.1. Product identifier

Trade name : iso-OCTANE LR (2,2,4-TRIMETHYL PENTANE)

Product code : SS0103600500

Identification of the product : 2,2,4-TRIMETHYLPENTANE (ISO-OCTANE) 99.5%
 CAS No: 540-84-1

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
 Xn; R65
 R67
 Xi; R38
 N; R50-53

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
 Skin irritation - Category 2 - Warning (CLP : Skin Corr. 2) H315

Physical hazards : Flammable liquids - Category 2 - Danger (CLP : Flam. Liq. 2) H225

Environmental hazards : Hazardous to the aquatic environment - Acute hazard - Category 1 - Warning (CLP : Aquatic Acute 1) H400
 Hazardous to the aquatic environment - Chronic hazard - Category 1 - Warning (CLP : Aquatic Chronic 1) H410

MATERIAL SAFETY DATA SHEET (MSDS)
iso-OCTANE LR (2,2,4-TRIMETHYL PENTANE)
2. Hazards identification -DSD (continued)
2.2. Label elements
Labelling EC 67/548 or EC 1999/45
Symbol(s)

Symbol(s)

: F : Highly flammable
 N : Dangerous for the environment
 Xn : Harmful

R Phrase(s)

: R11 : Highly flammable.
 R38 : Irritating to skin.
 R50/53 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 R65 : Harmful : may cause lung damage if swallowed.
 R67 : Vapours may cause drowsiness and dizziness.

S Phrase(s)

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 S16 : Keep away from sources of ignition - No smoking.
 S29 : Do not empty into drains.
 S33 : Take precautionary measures against static discharges.
 S60 : This material and its container must be disposed of as hazardous waste.
 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.

Labelling Regulation EC 1272/2008 (CLP)
Hazard pictograms

Signal words

: Danger

Hazard statements

: H225 : Highly flammable liquid and vapour.
 H304 : May be fatal if swallowed and enters airways.
 H315 : Causes skin irritation.
 H336 : May cause drowsiness or dizziness.
 H410 : Very toxic to aquatic life with long lasting effects.

Precautionary statements
• 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.

MATERIAL SAFETY DATA SHEET (MSDS)
iso-OCTANE LR (2,2,4-TRIMETHYL PENTANE)
2. Hazards identification -DSD (continued)

- Response** : P264: Wash thoroughly after handling.
 : P301+P310: IF SWALLOWED : Immediately call a POISON CENTER or doctor.
 P302+P352: IF ON SKIN : Wash with plenty of soap and water.
 P332+P313: If skin irritation occurs : Get medical advice.
 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.
 P363: Wash contaminated clothing before reuse.
 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.

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 : 2,2,4-TRIMETHYLPENTANE (ISO-OCTANE) 99.5%

Substance.

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. Specific treatment (see on this label). Get medical advice. Wash contaminated clothing before reuse. If skin irritation occurs :
- 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. Rinse mouth. Do NOT induce vomiting.

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

MATERIAL SAFETY DATA SHEET (MSDS)
iso-OCTANE LR (2,2,4-TRIMETHYL PENTANE)
4. First aid measures (continued)

Symptoms relating to use : May be fatal if swallowed and enters airways.
 Causes skin irritation.
 May cause drowsiness or dizziness.

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).

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.
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.
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.

MATERIAL SAFETY DATA SHEET (MSDS)
iso-OCTANE LR (2,2,4-TRIMETHYL PENTANE)
6. Accidental release measures (continued)
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 : Handle empty containers with care because residual vapours are flammable. Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.

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.

7.3. Specific end use(s)

Specific end use(s) : None.

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.
- **Skin protection** : Wear suitable protective clothing.
- **Eye protection** : Chemical goggles or safety glasses.

MATERIAL SAFETY DATA SHEET (MSDS)
iso-OCTANE LR (2,2,4-TRIMETHYL PENTANE)
8. Exposure controls/personal protection (continued)

• Others : When using, do not eat, drink or smoke.

8.2. Control parameters

Occupational Exposure Limits : No data available.

9. Physical and chemical properties
9.1. Information on basic physical and chemical properties

Physical state at 20 °C	: Liquid.
Colour	: Clear Colorless
Odour	: Benzene-like
Odour threshold	: No data available.
pH value	: No data available.
Melting point [°C]	: -107.45°C
Decomposition point [°C]	: N/A
Critical temperature [°C]	: N/A
Auto-ignition temperature [°C]	: 418°C
Flammability (solid, gas)	: Flammable. Highly flammable liquid and vapour.
Flash point [°C]	: -12°C
Boiling point [°C]	: 98 - 99 °C
Initial boiling point [°C]	: 98°C
Final boiling point [°C]	: 99 °C
Evaporation rate	: N/A
Vapour pressure [20°C]	: 5.4 kPa (@ 20°C)
Vapour pressure mm/Hg	: N/A
Vapour density	: 3.93
Density [g/cm ³]	: 0.69194
Relative density, gas (air=1)	: N/A
Relative density, liquid (water=1)	: 0.69194
Solubility in water [% weight]	: Insoluble.
Solubility in water	: N/A
Log Pow octanol / water at 20°C	: No data available.
Solubility	: N/A
Viscosity at 40°C [mm ² /s]	: N/A

9.2. Other information

Explosive properties : N/A

MATERIAL SAFETY DATA SHEET (MSDS)
iso-OCTANE LR (2,2,4-TRIMETHYL PENTANE)
9. Physical and chemical properties (continued)

Explosion limits - upper [%]	: 6%
Explosion limits - lower [%]	: 1%
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. Open flame.
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10.5. Incompatible materials

Materials to avoid	: Strong acids. Strong bases.
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10.6. Hazardous decomposition products

Hazardous decomposition products	: Fumes. Carbon monoxide. Carbon dioxide. May release flammable gases.
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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.
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Irritation	: Causes skin irritation.
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Sensitization	: Based on available data, the classification criteria are not met.
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Mutagenicity	: Based on available data, the classification criteria are not met.
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Carcinogenicity	: Based on available data, the classification criteria are not met.
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MATERIAL SAFETY DATA SHEET (MSDS)
iso-OCTANE LR (2,2,4-TRIMETHYL PENTANE)
11. Toxicological information (continued)

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	: Very toxic to aquatic life with long lasting effects.
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12.2. Persistence - degradability

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

Bioaccumulative potential	: Not established.
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12.4. Mobility in soil

Mobility in soil	: Not established.
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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.
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12.6. Other adverse effects

Environmental precautions	: Avoid release to the environment.
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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.

MATERIAL SAFETY DATA SHEET (MSDS)
iso-OCTANE LR (2,2,4-TRIMETHYL PENTANE)
14. Transport information
14.1. Land transport (ADR-RID)

Proper shipping name : OCTANES
 UN N° : 1262
 H.I. nr : 33
 ADR - Class : 3
 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 : OCTANES
 UN N° : 1262
 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 : Yes
 EMS-Nr : F-E S-E

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

Proper shipping name : OCTANES
 UN N° : 1262
 IATA - Class or division : 3 : Flammable liquid.
 IATA - Packing group : II
 IATA - Passenger and Cargo Aircraft : ALLOWED
 - Passenger and Cargo - Packing instruction : 353

MATERIAL SAFETY DATA SHEET (MSDS)

iso-OCTANE LR (2,2,4-TRIMETHYL PENTANE)

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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