

CHAITANYA CHS, 2nd FLOOR, OFFICE # 206, SIDDHARTH NAGAR, S.V.ROAD, GOREGAON (W), MUMBAI 400062, MH, INDIA.
CONTACT: +9122 28725393 /94/ 95 | EMAILID: CARE@SUVCHEM.COM

MATERIAL SAFETY DATA SHEET (MSDS)**FERROCENE (FOR SYNTHESIS)****1. Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Trade name : FERROCENE (FOR SYNTHESIS)

Product code : F0098301000

Identification of the product : FERROCENE FOR SYNTHESIS (DICYCLOPENTADIENYLIRON)
CAS No: 102-54-5

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; R22

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

Health hazards : Acute toxicity, Oral - Category 4 - Warning (CLP : Acute Tox. 4) H302

Physical hazards : Flammable solids - Category 1 - Danger (CLP : Flam. Sol. 1) H228

2.2. Label elements**Labelling EC 67/548 or EC 1999/45**

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FERROCENE (FOR SYNTHESIS)
2. Hazards identification -DSD (continued)

Symbol(s)



Symbol(s)

 : F : Highly flammable
 Xn : Harmful

R Phrase(s)

 : R11 : Highly flammable.
 R22 : Harmful if swallowed.

S Phrase(s)

 : S26 : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 S36 : Wear suitable protective clothing.

Labelling Regulation EC 1272/2008 (CLP)

Hazard pictograms



Signal words

: Danger

Hazard statements

 : H228 : Flammable solid.
 H302 : Harmful if swallowed.

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.
 P264: Wash thoroughly after handling.
 P270: Do not eat, drink or smoke when using this product.

• Response

 : P301+P312: IF SWALLOWED : Call a POISON CENTER or doctor if you feel unwell.
 P370+P378: In case of fire: Use for extinction.

• 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

 : FERROCENE FOR SYNTHESIS (DICYCLOPENTADIENYLIRON)
 Substance.

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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	: Assure fresh air breathing. Allow the victim to rest.
Skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
Eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
Ingestion	: Obtain emergency medical attention. Call a POISON CENTER or doctor if you feel unwell. Do NOT induce vomiting. Rinse mouth.

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

Symptoms relating to use	: Swallowing a small quantity of this material will result in serious health hazard.
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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	: Flammable solid.
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.

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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.
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.
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6.3. Methods and material for containment and cleaning up

Clean up methods	: On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.
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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. Do not eat, drink or smoke when using this product.
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.

7.2. Conditions for safe storage, including any incompatibilities

Storage	: Keep only in the original container in a cool, well ventilated place. Keep container closed when not in use. Keep in fireproof place. 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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FERROCENE (FOR SYNTHESIS)
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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9. Physical and chemical properties
9.1. Information on basic physical and chemical properties

Physical state at 20 °C	: Solid.
Colour	: Orange brown
Odour	: Camphor
Odour threshold	: No data available.
pH value	: Not applicable.
Melting point [°C]	: 173 - 1760C
Decomposition point [°C]	: N/A
Critical temperature [°C]	: N/A
Auto-ignition temperature [°C]	: N/A
Flammability (solid, gas)	: N/A Flammable solid.
Flash point [°C]	: N/A
Boiling point [°C]	: 2490C
Initial boiling point [°C]	: N/A
Final boiling point [°C]	: N/A
Evaporation rate	: N/A
Vapour pressure [20°C]	: N/A
Vapour pressure mm/Hg	: N/A
Vapour density	: N/A
Density [g/cm ³]	: N/A
Relative density, gas (air=1)	: N/A
Relative density, liquid (water=1)	: N/A
Solubility in water [% weight]	: Insoluble in water

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9. Physical and chemical properties (continued)

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
Explosion limits - upper [%]	: N/A
Explosion limits - lower [%]	: N/A
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. Overheating. Heat. Sparks.
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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

MATERIAL SAFETY DATA SHEET (MSDS)
FERROCENE (FOR SYNTHESIS)
11. Toxicological information (continued)

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	: Harmful if swallowed.
Corrosion	: Based on available data, the classification criteria are not met.
Irritation	: Based on available data, the classification criteria are not met.
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.

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.

MATERIAL SAFETY DATA SHEET (MSDS)
FERROCENE (FOR SYNTHESIS)
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.

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

Proper shipping name	: FLAMMABLE SOLID, ORGANIC, N.O.S.
UN N°	: 1325
H.I. nr	: 40
ADR - Class	: 4.1
Labelling - Transport	: 4.1 : Flammable solids, self-reactive substances and desensitized explosives.



ADR - Classification code	: F1
ADR - Group	: II
ADR - Packing instructions	: P002
ADR - Limited Quantity	: 1 KG
ADR - Tunnel code	



: E : Passage forbidden through tunnels of category E.

14.2. Sea transport (IMDG) [English only]

Proper shipping name	: FLAMMABLE SOLID, ORGANIC, N.O.S.
UN N°	: 1325
IMO-IMDG - Class or division	: 4.1 : Flammable solids, self-reactive substances and desensitized explosives.
IMO-IMDG - Packing group	: II
IMO-IMDG - Packing instructions	: P002
IMO-IMDG - Limited quantities	: 1 kg
IMO-IMDG - Marine pollution	: No

MATERIAL SAFETY DATA SHEET (MSDS)
FERROCENE (FOR SYNTHESIS)
14. Transport information (continued)

EMS-Nr : F-A S-G

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

Proper shipping name : FLAMMABLE SOLID, ORGANIC, N.O.S.

UN N° : 1325

IATA - Class or division : 4.1 : Flammable solids, self-reactive substances and desensitized explosives.

IATA - Packing group : II

IATA - Passenger and Cargo Aircraft : ALLOWED

- Passenger and Cargo - Packing instruction : 445

- Passenger and Cargo - Maximum Quantity/Packing : 15 kg

IATA - Cargo only : ALLOWED

- Cargo only - Packing instruction : 448

- Cargo only - Maximum Quantity/Packing : 50 kg

IATA - Limited Quantities : 5 kg

ERG-Nr : 3L

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.

REACH Authorisation - Annex XIV : The components of this product are not subject to authorization.

15.2. Chemical Safety Assessment

Chemical Safety Assessment : It has not been carried out.

16. Other information

Revision : Revision - See : *

 Abbreviations and acronyms : PBT: persistent, bioaccumulative and toxic.
vPvB: very persistent and very bioaccumulative

Sources of key data used : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

MATERIAL SAFETY DATA SHEET (MSDS)

FERROCENE (FOR SYNTHESIS)

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

DISCLAIMER:

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- **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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