

Section 1. Product and Company Identification

Product Name Ferrocene
CAS Number 102-54-5

Parchem - fine & specialty chemicals
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EMERGENCY RESPONSE NUMBER
CHEMTEL
Toll Free US & Canada: 1 (800) 255-3924
All other Origins: 1 (813) 248-0585
Collect Calls Accepted

Section 2. Hazards Identification

Classification of the substance or mixture

GHS label elements

- 2.7/1** - Flammable solid.
- 3.1/3** - Toxic if swallowed.
- 4.1/2** - Toxic to aquatic life with long lasting effects.

GHS Label Elements

Pictograms:



Signal word: Warning

Hazard and precautionary statements

Prevention

- Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- Ground/bond container and receiving equipment.
- Use explosion-proof electrical/ventilating/lighting equipment.
- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Avoid release to the environment.
- Wear protective gloves/protective clothing/eye protection/face protection.

Response

- If swallowed: Immediately call a POISON CENTER or doctor/physician.
- Specific treatment (See label). Rinse mouth.
- In case of fire: Use for extinction: CO₂, powder or water spray. Collect spillage.



Storage

Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard description

Xn: Harmful

F: Highly flammable

N: Dangerous for the environment

Information pertaining to particular dangers for man and environment

R11: Highly flammable.

R22: Harmful if swallowed.

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

Health (acute effects) = 1

Flammability = 3

Reactivity = 1

Section 3. Composition / Information on Ingredients

Common Name Ferrocene

CAS Number 102-54-5

Section 4. First Aid Measures

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing

Seek immediate medical advice.

Section 5. Firefighting Measures

Suitable extinguishing agents

Use carbon dioxide, extinguishing powder or foam. Water may be ineffective but may be used for cooling exposed containers.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:
Carbon monoxide and carbon dioxide

Protective equipment:

Wear self-contained respirator.
Wear fully protective impervious suit.

Section 6. Accidental Release Measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Dispose contaminated material as waste according to item 13.

Additional information:

See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

Section 7. Handling and Storage

Handling**Information for safe handling:**

Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Prevent formation of dust.

Information about protection against explosions and fires:

Keep ignition sources away.
Protect against electrostatic charges.



Storage

Requirements to be met by storerooms and receptacles:

Store in a cool location.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Section 8. Exposure Controls / Personal Protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace: Not required.

Additional information: No data

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves

Eye protection: Safety glasses

Body protection: Protective work clothing.

Section 9. Physical and Chemical Properties

General Information

Form: Crystalline

Color: Orange

Odor: Characteristic

Change in condition

Melting point/Melting range: 174-176°C (345-349°F)

Boiling point/Boiling range: 249°C (480°F)

Sublimation temperature/start: Not determined

Flash point: Not applicable

Flammability (solid, gaseous): Highly flammable

Ignition temperature: >150°C (>302°F)

Decomposition temperature: Not determined
Explosion limits:
Lower: Not determined
Upper: Not determined
Vapor pressure at 100°C (212°F): 3.4 hPa (3 mmHg)
Density at 20°C (68°F): 1.49 g/cm³
Solubility in /Miscibility with Water: Insoluble

Section 10. Stability and Reactivity

Thermal decomposition/conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided: Oxidizing agents

Dangerous reactions: No dangerous reactions known

Dangerous products of decomposition: Carbon monoxide and carbon dioxide

Section 11. Toxicological Information

Acute toxicity:

LD/LC50 values that are relevant for classification:

Oral LD50 832 mg/kg (mouse) 1320 mg/kg (rat)

Primary irritant effect:

on the skin: May cause irritation

on the eye: May cause irritation

Sensitization:

No sensitizing effects known.

Skin sensitization test: Negative (guinea pig)

Other information (about experimental toxicology):

Mutagenicity:

Ames salmonella typhimurium test: Negative

Mammal cell test: Negative

Mouse Lymphoma test: Positive

Subacute to chronic toxicity:

Iron compounds may cause vomiting, diarrhea, pink urine, black stool, and liver damage. May cause damage to the kidneys. Irritating to the respiratory tract, they may cause pulmonary fibrosis if dusts are inhaled.

Subacute to chronic toxicity:

Dicyclopentadiene is irritating to the eyes, skin and mucous membranes. Vapors may cause headaches, dizziness, nausea and narcosis. Pulmonary edema or bronchiopneumonia may be caused by liquid aspirated into the lungs following ingestion. Chronic exposure may cause injury to the lungs, liver and kidneys.



Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for components in this product.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Section 12. Ecological Information

Ecotoxicological effects:

Remark: Toxic for fish

General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Also poisonous for fish and plankton in water bodies.

Do not allow material to be released to the environment without proper governmental permits.

Toxic for aquatic organisms

Section 13. Disposal Considerations

Waste Treatment Methods: Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.

Section 14. Transport Information

DOT Regulations:

Hazard class: 4.1

Identification number: UN1325

Packing group: II

Proper shipping name (technical name): FLAMMABLE SOLID, ORGANIC, N.O.S. (Ferrocene)

Label: 4.1

Land transport ADR/RID (cross-border)

ADR/RID class: 4.1 (F1) Flammable solids, self-reactive substances and solid desensitised explosives

Danger code (Kemler): 40

UN-Number: 1325

Packaging group: II

Description of goods: 1325 FLAMMABLE SOLID, ORGANIC, N.O.S. (Ferrocene)

Maritime transport IMDG:

IMDG Class: 4.1

UN Number: 1325

Label: 4.1

Packaging group: II

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

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA class: 4.1

UN/ID Number: 1325

Label: 4.1

Packaging group: II

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

UN "Model Regulation": UN1325, FLAMMABLE SOLID, ORGANIC, N.O.S., 4.1, II

Environmental hazards: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID

Section 15. Regulatory Information

Product related hazard informations:

Hazard symbols:

Xn Harmful

P Highly flammable

N Dangerous for the environment

Risk phrases:

11 Highly flammable.

22 Harmful if swallowed.

51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety phrases:

16 Keep away from sources of ignition - No smoking.

22 Do not breathe dust.

36 Wear suitable protective clothing.

61 Avoid release to the environment. Refer to special instructions/Safety data sheets

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use: For use only by technically qualified individuals.



Section 16. Other Information

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

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