



CYNOR LABORATORY

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MATERIAL SAFETY DATA SHEET

Product Name	FERROCENE
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Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : FERROCENE

Product code : 03843

Identification of the product : FERROCENE

CAS No : 102-54-5

1.2 Relevant identified uses of the substance or mixture and uses advised againstUse

Industrial. For professional use only.

1.3 Details of the supplier of the safety data sheet

Company identification: CYNOR LABORATORIES

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SECTION 2 :Hazards Identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008[CLP]

Flammable solids, H228
Category 1

Acute toxicity (oral), H302
Category 4

Full text of H statements : see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

F; R11
Xn; R22

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]
classification

Hazard pictograms (CLP)



GHS02



GHS07



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Signal word (CLP)

- Danger

Hazard statements (CLP)

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

Precautionary statements (CLP)

- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

2.3. Other hazards

No additional information available

3.1. Substances

Name : FERROCENE FOR SYNTHESIS

CAS-No : 102-54-5

Full text of R- and H-statements: see section 16

3.2. Mixtures

Not applicable

4.1. Description of first aid measures

First-aid measures after inhalation :

- Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention.



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First-aid measures after skin contact

- Gently wash with plenty of soap and water. Wash contaminated clothing before reuse.

First-aid measures after eye contact

- Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

First-aid measures after ingestion

- Rinse mouth. Call a POISON CENTER/doctor if you feel unwell.

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

Symptoms/effects after ingestion

- Harmful if swallowed.

4.3. Indication of any immediate medical attention and special treat

No additional information available

5.1. Extinguishing media

Suitable extinguishing media :

- Water spray. Foam. Dry powder. Carbon dioxide.

Unsuitable extinguishing media

- Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard

- Flammable solid.

Explosion hazard

- May form flammable/explosive vapour-air mixture.

5.3. Advice for firefighters

Protection during firefighting

- Do not attempt to take action without suitable protective equipment.

6.1. Personal precautions, protective equipment and emergency procedures

General measures :

- Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

6.1.1. For non-emergency personnel

Emergency procedures :

- Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment

- Use personal protective equipment as required.

Emergency procedures :

- Ventilate area.

6.2. Environmental precautions

- Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Collect spillage. On land, sweep or shovel into suitable containers. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.

6.4. Reference to other sections

- No additional information available

7.1. Precautions for safe handling

Additional hazards when processed :

- Handle empty containers with care because residual vapours are flammable.

Precautions for safe handling :

- No open flames. No smoking.

Hygiene measures :

- Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

T

Technical measures :

- Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment.

Storage conditions :

- Keep container tightly closed. Keep in fireproof place. Store in a well-ventilated place. Keep cool. Store in original container.

7.3. Specific end use(s)

- No additional information available

8.1. Control parameters

- No additional information available

8.2. Exposure controls

Hand protection :

- Protective gloves

Eye protection :

- Chemical goggles or safety glasses

Skin and body protection :

- Wear suitable protective clothing

Respiratory protection :

- [In case of inadequate ventilation] wear respiratory protection.

9.1. Information on basic physical and chemical properties

- Physical state : Solid
- Molecular mass : 186.04 g/mol
- Colour : Orange brown.
- Odour : camphor.
- Odour threshold : No data available
- pH : No data available
- Relative evaporation rate (butylacetate=1) : No data available
- Melting point : 173 - 176 °C
- Freezing point : No data available
- Boiling point : 249 °C
- Flash point : No data available



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- Auto-ignition temperature : No data available
- Decomposition temperature : No data available
- Flammability (solid, gas) : Flammable solid.
- Vapour pressure : No data available
- Relative vapour density at 20 °C : No data available
- Relative density : No data available
- Solubility : Water : Insoluble in water
- Log Pow : No data available
- Viscosity, kinematic : No data available
- Viscosity, dynamic : No data available
- Explosive properties : No data available
- Oxidising properties : No data available
- Explosive limits : No data available

9.2. Other information

No additional information available

10.1. Reactivity

No additional information available

10.2. Chemical stability

- Flammable solid. May form flammable/explosive vapour-air mixture.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

- Open flame. Overheating. Direct sunlight. Heat. Sparks.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

- May release flammable gases.

11.1. Information on toxicological effects

- **Acute toxicity** : Oral: Harmful if swallowed.
- **Skin corrosion/irritation** : Not classified
- **Serious eye damage/irritation** : Not classified
- **Respiratory or skin sensitisation** : Not classified
- **Germ cell mutagenicity** : Not classified
- **Carcinogenicity** : Not classified
- **Reproductive toxicity** : Not classified
- **STOT-single exposure** : Not classified
- **STOT-repeated exposure** : Not classified
- **Aspiration hazard** : Not classified
- **Potential adverse human health effects and symptoms** : Harmful if swallowed



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12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bio accumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

13.1. Waste treatment methods

Product/Packaging disposal recommendations

- Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Additional information :

- Handle empty containers with care because residual vapours are flammable.

In accordance with ADR / RID / IMDG / IATA / ADN



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14.1. UN number

- UN-No. (ADR) : 1325
- UN-No. (IMDG) : 1325
- UN-No. (IATA) : 1325
- UN-No. (ADN) : 1325
- UN-No. (RID) : 1325

14.2. UN proper shipping name

Proper Shipping Name (ADR) :

- FLAMMABLE SOLID, ORGANIC, N.O.S.

Proper Shipping Name (IMDG) :

- FLAMMABLE SOLID, ORGANIC, N.O.S.

Proper Shipping Name (IATA) :

- Flammable solid, organic, n.o.s.

Proper Shipping Name (ADN) :

- FLAMMABLE SOLID, ORGANIC, N.O.S.

Proper Shipping Name (RID) :

- FLAMMABLE SOLID, ORGANIC, N.O.S.

Transport document description (ADR) :

- UN 1325 FLAMMABLE SOLID, ORGANIC, N.O.S., 4.1, II, (E)

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Transport document description (IMDG) :

- UN 1325 FLAMMABLE SOLID, ORGANIC, N.O.S., 4.1, II

Transport document description (IATA) :

- UN 1325 Flammable solid, organic, n.o.s., 4.1, II

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 4.1
Danger labels (ADR) : 4.1



IMDG

Transport hazard class(es) (IMDG) : 4.1
Danger labels (IMDG) : 4.1



IATA

Transport hazard class(es) (IATA) : 4.1
Hazard labels (IATA) : 4.1



ADN

Transport hazard class(es) (ADN) : 4.1
 Danger labels (ADN) : 4.1



RID

Transport hazard class(es) (RID) : 4.1
 Danger labels (RID) : 4.1



14.4. Packing group

Packing group (ADR) : II
Packing group (IMDG) : II
Packing group (IATA) : II
Packing group (ADN) : II
Packing group (RID) : II



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14.5. Environmental hazards

Marine pollutant	: No
Dangerous for the environment	: No
Order information	: supplementary information available

14.6. Special precautions for user

- Overland transport

➤ Classification code (ADR)	: F1
➤ Special provisions (ADR)	: 274
➤ Limited quantities (ADR)	: 1kg
➤ Excepted quantities (ADR)	: E2
➤ Packing instructions (ADR)	: P002, IBC08
➤ Special packing provisions (ADR)	: B4
➤ Mixed packing provisions (ADR)	: MP10
➤ Portable tank and bulk container instructions (ADR)	: TP33
➤ Portable tank and bulk container special provisions (ADR)	: TP33
➤ Tank code (ADR)	: SGAN
➤ Vehicle for tank carriage	: AT
➤ Transport category (ADR)	: 2



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- Special provisions for carriage - Packages (ADR) : V11
- Hazard identification number (Kemler No.) : 40
- Orange plates :



- Tunnel restriction code (ADR) : E
- EAC code : 1Z

- Transport by sea

- Special provisions (IMDG) : 274, 915
- Limited quantities (IMDG) : 1 kg
- Excepted quantities (IMDG) : E2
- Packing instructions (IMDG) : P002
- IBC packing instructions (IMDG) : IBC08
- IBC special provisions (IMDG) : B21, B4
- Tank instructions (IMDG) : T3
- Tank special provisions (IMDG) : TP33
- EmS-No. (Fire) : F-A
- EmS-No. (Spillage) : S-G
- Stowage category (IMDG) : B
- MFAG-No : 133



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- Air transport

- PCA Excepted quantities (IATA) : E2
- PCA Limited quantities (IATA) : Y441
- PCA limited quantity max net quantity(IATA) : 5kg
- PCA packing instructions (IATA) : 445
- PCA max net quantity (IATA) : 15kg
- CAO packing instructions (IATA) : 448
- CAO max net quantity (IATA) : 50kg
- Special provisions (IATA) : A3, A803
- ERG code (IATA) : 3L

- Inland waterway transport

- Classification code (ADN) : F1
- Special provisions (ADN) : 274
- Limited quantities (ADN) : 1 kg
- Excepted quantities (ADN) : E2
- Equipment required (ADN) : PP
- Number of blue cones/lights (ADN) : 1



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- Rail transport

- Classification code (RID) : F1
- Special provisions (RID) : 274
- Excepted quantities (RID) : E2
- Packing instructions (RID) : P002, IBC08
- Special packing provisions (RID) : B4
- Mixed packing provisions (RID) : MP10
- Portable tank and bulk container instructions (RID) : T3
- Portable tank and bulk container special provisions (RID) : TP33
- Tank codes for RID tanks (RID) : SGAN
- Transport category (RID) : 2
- Special provisions for carriage – Packages (RID) : W1
- Colis express (express parcels) (RID) : CE10
- Hazard identification number (RID) : 40

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

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

15.1.1. EU-Regulations

- No REACH Annex XVII restrictions
- FERROCENE FOR SYNTHESIS is not on the REACH Candidate List
- FERROCENE FOR SYNTHESIS is not on the REACH Annex XIV List

15.1.2. National regulations

Germany

Reference to AwSV :

- Water hazard class (WGK) 2, significant hazard to water (Classification according to AwSV; ID No. 1489)

12th Ordinance Implementing the Federal

Immission Control Act - 12.BImSchV

- Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen

- : The substance is not listed

SZW-lijst van mutagene stoffen

- : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding

- : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid

- : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling

- : The substance is not listed

Denmark

Recommendations Danish Regulation

- : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment

No additional information available

Full text of R-, H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Flam. Sol. 1	Flammable solids, Category 1
H228	Flammable solid.
H302	Harmful if swallowed.
R11	Highly flammable
R22	Harmful if swallowed
F	Highly flammable
Xn	Harmful

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product



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