

Printing date 07/17/2021

Reviewed on 07/17/2021

## 1 Identification

- **Product name**
- **Trade name:** Iron nonacarbonyl, 99%
- **Item number:** 26-2640
- **CAS Number:**  
15321-51-4
- **EC number:**  
239-359-5
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Strem Chemicals, Inc.  
7 Mulliken Way  
NEWBURYPORT, MA 01950  
USA  
info@strem.com
- **Information department:** Technical Department
- **Emergency telephone number:**  
EMERGENCY: CHEMTREC: + 1 (800) 424-9300  
During normal opening times: +1 (978) 499-1600

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Sol. 1 H228 Flammable solid.

- **Label elements**
- **GHS label elements**  
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02

- **Signal word** Danger
- **Hazard statements**  
H228 Flammable solid.
- **Precautionary statements**

P231	Handle under inert gas.
P235	Keep cool.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P422	Store contents under inert gas.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0  
Fire = 2  
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = 0  
Fire = 0  
Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**  
15321-51-4 Diiron nonacarbonyl
- **Identification number(s)**
- **EC number:** 239-359-5

### 4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.

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- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:**  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

· **PAC-1:**

Substance is not listed.

· **PAC-2:**

Substance is not listed.

· **PAC-3:**

Substance is not listed.

**7 Handling and storage**

- **Handling:** Handle under inert gas.
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.  
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**  
Keep cool.  
Store contents under inert gas.
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Recommended storage temperature:** Store at temperatures not exceeding -18 °C. Keep cool.
- **Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Store protective clothing separately.

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- **Breathing equipment:** A NIOSH approved respirator in accordance with 29 CFR 1910.134.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:** Safety glasses

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

**Form:** Crystalline

**Color:** Yellow

- **Odor:** undistinguishable

- **Odor threshold:** Not determined.

- **pH-value:** Not applicable.

- **Change in condition**

**Melting point/Melting range:** 100 °C (212 °F)

**Boiling point/Boiling range:** Undetermined.

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Flammable.

- **Ignition temperature:**

**Decomposition temperature:** Not determined.

- **Auto igniting:** Not determined.

- **Danger of explosion:** Not determined.

- **Explosion limits:**

**Lower:** Not determined.

**Upper:** Not determined.

- **Vapor pressure:** Not applicable.

- **Density at 20 °C (68 °F):** 2.85 g/cm<sup>3</sup> (23.78325 lbs/gal)

- **Relative density** Not determined.

- **Vapor density** Not applicable.

- **Evaporation rate** Not applicable.

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- |   |   |
|---|---|
| · <b>Solubility in / Miscibility with Water:</b>  | <i>Insoluble.</i>                                 |
| · <b>Partition coefficient (n-octanol/water):</b> | <i>Not determined.</i>                            |
| · <b>Viscosity:</b>                               |   |
| <b>Dynamic:</b>                                   | <i>Not applicable.</i>                            |
| <b>Kinematic:</b>                                 | <i>Not applicable.</i>                            |
| · <b>Solvent content:</b>                         |   |
| <b>Organic solvents:</b>                          | <i>0.0 %</i>                                      |
| <b>VOC content:</b>                               | <i>0.0 g/l / 0.00 lb/gl</i>                       |
| · <b>Solids content:</b>                          | <i>100.0 %</i>                                    |
| · <b>Other information</b>                        | <i>No further relevant information available.</i> |

**10 Stability and reactivity**

- **Reactivity** *No further relevant information available.*
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** *No decomposition if used according to specifications.*
- **Possibility of hazardous reactions** *No dangerous reactions known.*
- **Conditions to avoid** *No further relevant information available.*
- **Incompatible materials:** *No further relevant information available.*
- **Hazardous decomposition products:** *No dangerous decomposition products known.*

**11 Toxicological information**

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** *No irritant effect.*
- **on the eye:** *No irritating effect.*
- **Sensitization:** *No sensitizing effects known.*
- **Additional toxicological information:**

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

*Substance is not listed.*

· **NTP (National Toxicology Program)**

*Substance is not listed.*

· **OSHA-Ca (Occupational Safety & Health Administration)**

*Substance is not listed.*

**12 Ecological information**

- **Toxicity**
- **Aquatic toxicity:** *No further relevant information available.*
- **Persistence and degradability** *No further relevant information available.*
- **Behavior in environmental systems:**
- **Bioaccumulative potential** *No further relevant information available.*

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- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Not known to be hazardous to water.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

**13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

· <b>UN-Number</b>	
· <b>DOT, IMDG, IATA</b>	UN1325
· <b>UN proper shipping name</b>	
· <b>DOT</b>	Flammable solids, organic, n.o.s.
· <b>IMDG, IATA</b>	FLAMMABLE SOLID, ORGANIC, N.O.S.
· <b>Transport hazard class(es)</b>	
· <b>DOT</b>	
	
· <b>Class</b>	4.1 Flammable solids, self-reactive substances and solid desensitised explosives
· <b>Label</b>	4.1
· <b>IMDG</b>	
	
· <b>Class</b>	4
· <b>Label</b>	4.1
· <b>IATA</b>	
	
· <b>Class</b>	4.1 Flammable solids, self-reactive substances and solid desensitised explosives

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· <b>Label</b>	4.1
· <b>Packing group</b> · <b>DOT, IMDG, IATA</b>	II
· <b>Environmental hazards:</b> · <b>Marine pollutant:</b>	No
· <b>Special precautions for user</b> · <b>EMS Number:</b> · <b>Stowage Category</b>	Not applicable. F-A,S-G B
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b> · <b>DOT</b> · <b>Quantity limitations</b>	On passenger aircraft/rail: 15 kg On cargo aircraft only: 50 kg
· <b>UN "Model Regulation":</b>	UN 1325 FLAMMABLE SOLIDS, ORGANIC, N.O.S., 4.1, II

**15 Regulatory information**

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
· **Sara**

· <b>Section 355 (extremely hazardous substances):</b>	Substance is not listed.
· <b>Section 313 (Specific toxic chemical listings):</b>	Substance is not listed.
· <b>TSCA (Toxic Substances Control Act):</b>	Substance is listed.
· <b>Proposition 65</b>	
· <b>Chemicals known to cause cancer:</b>	Substance is not listed.
· <b>Chemicals known to cause reproductive toxicity for females:</b>	Substance is not listed.
· <b>Chemicals known to cause reproductive toxicity for males:</b>	Substance is not listed.
· <b>Chemicals known to cause developmental toxicity:</b>	Substance is not listed.
· <b>Carcinogenic categories</b>	
· <b>EPA (Environmental Protection Agency)</b>	Substance is not listed.
· <b>TLV (Threshold Limit Value established by ACGIH)</b>	Substance is not listed.
· <b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>	Substance is not listed.

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· **GHS label elements**

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· **Hazard pictograms**



GHS02

· **Signal word Danger**

· **Hazard statements**

H228 Flammable solid.

· **Precautionary statements**

P231 Handle under inert gas.

P235 Keep cool.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P422 Store contents under inert gas.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Technical Department.

· **Contact:** Technical Director

· **Date of preparation / last revision** 07/17/2021 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flam. Sol. 1: Flammable solids – Category 1