SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier

Product code: S1274
Product Name: SODIUM FERROCYANIDE, REAGENT

Other means of identification

Synonyms: Sodium hexacyanoferrate(II) decahydrate
Tetrasodium ferrocyanide decahydrate
CAS #: 14434-22-1
RTECS #: Not available
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against: No information available

Supplier: Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000.

Order Online At: https://www.spectrumchemical.com
Emergency telephone number: Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Not classified

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available
### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
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<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
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<td>14434-22-1</td>
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### 4. FIRST AID MEASURES

**First aid measures**

**General Advice:** National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

**Skin Contact:** Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention if irritation develops. If skin irritation persists, call a physician.

**Eye Contact:** Flush eyes with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

**Inhalation:** Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

**Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** May cause eye/skin/respiratory tract irritation. May cause digestive (gastrointestinal) tract irritation. Ingestion may cause nausea, vomiting, and diarrhea. It may affect the kidneys. May affect the liver.

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician:** Treat symptomatically.

**Protection of first-aiders**

**First-Aid Providers:** Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

### 5. FIRE-FIGHTING MEASURES

**Extinguishing Media**

**Suitable Extinguishing Media:** The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

**Unsuitable Extinguishing Media:** No information available.

**Specific hazards arising from the chemical**

**Hazardous Combustion Products:** No information available.

**Specific hazards:** No information available.

**Special Protective Actions for Firefighters**

**Specific Methods:** No information available.
Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Do not let this chemical enter the environment.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions: Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials.

Safe Handling Advice Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapors/dust. Do not breathe dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions: Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials: Oxidizing agents Acids

8. EXPOSURE CONTROLS/PERSOAL PROTECTION

Control parameters

National occupational exposure limits

United States

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<tr>
<th>Components</th>
<th>CAS-No.</th>
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<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WHEEL</th>
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Canada

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Product code: S1274 Product name: SODIUM FERROCYNANIDE, REAGENT
Australia and Mexico

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<td>14434-22-1</td>
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</table>

**Appropriate engineering controls**

**Engineering measures to reduce exposure:** Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Individual protection measures, such as personal protective equipment**

**Personal Protective Equipment**

- **Eye protection:** Goggles or Safety glasses with side-shields
- **Skin and body protection:** Long sleeved clothing. Chemical resistant apron. Gloves.
- **Respiratory protection:** Effective dust mask. or. Wear respirator with dust filter. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds), inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.
- **Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

- **Physical state:** Solid
- **Appearance:** Crystalline. Crystals.
- **Color:** Light yellow.
- **Odor:** Odorless.
- **Taste:** No information available.
- **Formula:** Na4Fe(CN)6.10H2O
- **Flammability:** No information available
- **Flashpoint (°C/°F):** No information available
- **Autoignition Temperature (°C/°F):** No information available
- **Lower Explosion Limit (%):** No information available
- **Flash Point Tested according to:** Not applicable
- **Melting point/range(°C/°F):** No information available
- **Decomposition temperature(°C/°F):** 435 °C/815 °F
- **Boiling point/range(°C/°F):** No information available
- **Bulk density:** No information available
- **Density (g/cm3):** 1.458
- **Specific gravity:** No information available
- **pH:** No information available
- **Vapor pressure @ 20°C (kPa):** No information available
- **Evaporation rate:** No information available
- **Vapor density:** No information available
- **VOC content (g/L):** No information available

**Product code:** S1274  **Product name:** SODIUM FERROCYANIDE, REAGENT
10. STABILITY AND REACTIVITY

Reactivity
It may liberate toxic cyanide fumes when it is mixed with acids

Chemical stability
Stability: Stable under recommended storage conditions.
Possibility of Hazardous Reactions: Hazardous polymerization does not occur
Conditions to avoid: Avoid dust formation. Incompatible materials.
Incompatible Materials: Oxidizing agents Acids

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Principal Routes of Exposure: Inhalation. Ingestion.

Acute Toxicity

Component Information

<table>
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<tr>
<th>Component</th>
<th>LD50/oral/rat</th>
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<th>LD50/dermal/rabbit</th>
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Product Information

Product code: S1274  Product name: SODIUM FERROCYANIDE, REAGENT
LD50/oral/rat = VALUE- Acute Tox Oral = No information available
LD50/oral/mouse = VALUE - Acute Tox Oral = No information available
LD50/dermal/rabbit = VALUE - Acute Tox Dermal = No information available
LD50/dermal/rat = VALUE - Acute Tox Dermal = No information available
LC50/inhalation/rat = VALUE-Vapor = No information available
LC50/Inhalation/mouse = VALUE-Vapor = No information available
LC50/Inhalation/mouse = VALUE-Gas = No information available
LC50/Inhalation/mouse = VALUE-Dust/Mist = No information available

**Symptoms**

**Skin Contact:** May cause skin irritation.

**Eye Contact:** Contact with eyes may cause irritation.

**Inhalation** May cause irritation of respiratory tract.

**Ingestion** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Aspiration hazard** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Chronic Toxicity** Prolonged or repeated ingestion may affect the liver, and kidneys. Prolonged or repeated ingestion may cause nausea, vomiting, stomach pain, constipation, black bowel movements. Hemochromatosis may rarely occur after chronic ingestion of excessive iron or iron salts.

**Sensitization:** No information available.

**Mutagenic Effects:** No information available

**Carcinogenic effects:** Not considered carcinogenic.

<table>
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<tr>
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<th>CAS-No.</th>
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<th>ACGIH - Carcinogens</th>
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*ACGIH (American Conference of Governmental Industrial Hygienists)*

*IARC (International Agency for Research on Cancer)*

*NTP (National Toxicology Program)*

**Product code:** S1274 **Product name:** SODIUM FERROCYANIDE, REAGENT
Reproductive toxicity
No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity
STOT - single exposure: No information available.
STOT - repeated exposure: No information available.
Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Ecotoxicity effects: No data available.

Persistence and degradability: No information available
Bioaccumulative potential: No information available.
Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

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</table>

14. TRANSPORT INFORMATION

DOT
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Class: No information available
Packing group: No information available
Emergency Response Guide Number: No information available
Marine Pollutant: No data available
DOT RQ (lbs): No information available
Special Provisions: No Information available
Symbol(s): No information available
15. REGULATORY INFORMATION

International Inventories

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<th>Components</th>
<th>CAS-No.</th>
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<th>KOREA KECL</th>
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<th>Japan ENCS</th>
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U.S. Regulations

Product code: S1274
Product name: SODIUM FERROCYANIDE, REAGENT

**Chemicals Known to the State of California to Cause Cancer:**
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

**Chemicals Known to the State of California to Cause Reproductive Toxicity:**
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

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<th>Components</th>
<th>CAS-No.</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
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**CERCLA/SARA**

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<th>Components</th>
<th>CAS-No.</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
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**U.S. TSCA**

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<th>Components</th>
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<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
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**Canada**

**WHMIS hazard class:**
Non-controlled

**Canada Controlled Products Regulation:**
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

**Inventory**

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<tr>
<th>Components</th>
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**Components**

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**EU Classification**

**R-phrase(s)**
R32 - Contact with acids liberates very toxic gas.

**S-phrase(s)**

| Product code: S1274 | Product name: SODIUM FERROCYANIDE, REAGENT |
S50A - Do not mix with acids

<table>
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<th>Components</th>
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<th>Concentration Limits:</th>
<th>Safety Phrases</th>
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</table>

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
None.

16. OTHER INFORMATION

Preparation Date: 2/10/2017
Revision Date: 2/10/2017
Prepared by: Sonia Owen

Disclaimer: All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet