1. Identification

Product identifier: SODIUM NITROFERRICYANIDE

Other means of identification
Product No.: 3792

Recommended use and restriction on use
Recommended use: Not available.
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer
Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
center Valley, PA 18034
Telephone: Customer Service: 855-282-6867
Fax:
Contact Person: Environmental Health & Safety
e-mail: info@avantormaterials.com

Emergency telephone number:
24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard classification
Health hazards
Acute toxicity (Oral) Category 3

Label elements
Hazard symbol:

Signal word: Danger

Hazard statement: Toxic if swallowed.

Precautionary statement
Prevention: Wash thoroughly after handling. Do not eat, drink or smoke when using this product.
Response: IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. Specific treatment (see this label).
Storage: Store locked up.
Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical identity</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>Content in percent (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM NITROFERRICYANIDE (HYDRATED FORM)</td>
<td></td>
<td>13755-38-9</td>
<td>90 - 100%</td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance. If cyanide poisoning occurs, immediately start first aid, then get medical attention. A cyanide antidote kit should be available in any cyanide work area.

Ingestion: Administer antidote kit and oxygen per pre-planned instructions if symptoms occur. If patient is conscious, immediately give activated charcoal slurry. Never give liquid to an unconscious person. Do NOT induce vomiting.

Inhalation: Move into fresh air and keep at rest. Administer antidote kit and oxygen per pre-planned instructions if symptoms occur. Do not give mouth-to-mouth resuscitation.

Skin contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention immediately.

Most important symptoms/effects, acute and delayed

Symptoms: Fatal if swallowed.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General fire hazards: In case of fire and/or explosion do not breathe fumes. Fire may produce irritating, corrosive and/or toxic gases.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: Contact with metals may evolve flammable hydrogen gas. Fire may produce irritating, corrosive and/or toxic gases.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Keep unauthorized personnel away. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Methods and material for containment and cleaning up: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures: Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.

Environmental precautions: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling: Observe good industrial hygiene practices. Do not breathe dust. Remove contaminated clothing and wash the skin thoroughly with soap and water after work. When using do not eat, drink or smoke. Special training should be given to workers using cyanide. A cyanide antidote kit should be available in any cyanide work area. The antidotes should be checked annually to ensure they are still within their shelf-lives. Avoid contact with eyes. Avoid contact with skin. Use only with adequate ventilation. See Section 8 of the MSDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities: Keep away from food, drink and animal feeding stuffs. Keep container tightly closed. Store in cool, dry place. Store in a well-ventilated place.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits None of the components have assigned exposure limits.

Appropriate engineering controls No data available.
Individual protection measures, such as personal protective equipment

**General information:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

**Eye/face protection:** Wear safety glasses with side shields (or goggles). Use tight fitting goggles if dust is generated.

**Skin protection**

**Hand protection:** Chemical resistant gloves

**Other:** Wear suitable protective clothing.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator.

**Hygiene measures:** Provide eyewash station and safety shower. Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Do not eat, drink or smoke when using the product. Wash contaminated clothing before reuse.

### 9. Physical and chemical properties

**Appearance**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Form</td>
<td>Crystals or powder.</td>
</tr>
<tr>
<td>Color</td>
<td>Red</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available.</td>
</tr>
<tr>
<td>pH</td>
<td>No data available.</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available.</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

**Upper/lower limit on flammability or explosive limits**

<table>
<thead>
<tr>
<th>Limit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability limit - upper (%)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability limit - lower (%)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Explosive limit - upper (%)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Explosive limit - lower (%)</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

**Vapor pressure:** No data available.

**Vapor density:** No data available.

**Relative density:** 1.72 (20 °C)

**Solubility(ies)**

| Solubility in water             | 430 g/l (16 °C)              |
| Solubility (other)              | No data available.           |
| Partition coefficient (n-octanol/water) | No data available. |
| Auto-ignition temperature       | No data available.           |
| Decomposition temperature       | No data available.           |
| Viscosity                       | No data available.           |
### 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>No dangerous reaction known under conditions of normal use.</td>
</tr>
<tr>
<td>Chemical stability</td>
<td>Material is stable under normal conditions.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions:</td>
<td>Hazardous polymerization does not occur.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Heat. Contact with incompatible materials.</td>
</tr>
<tr>
<td>Hazardous decomposition products:</td>
<td>Thermal decomposition may produce oxides of carbon and nitrogen.</td>
</tr>
<tr>
<td></td>
<td>Hydrogen cyanide. Contact with acids liberates toxic gas.</td>
</tr>
</tbody>
</table>

### 11. Toxicological information

#### Information on likely routes of exposure
- **Ingestion:** Toxic if swallowed.
- **Inhalation:** May be harmful if inhaled.
- **Skin contact:** May cause irritation.
- **Eye contact:** Causes eye irritation.

#### Information on toxicological effects

**Acute toxicity (list all possible routes of exposure)**
- **Oral**
  - **Product:** LD 50 (Rat): 99 mg/kg
- **Dermal**
  - **Product:** No data available.
- **Inhalation**
  - **Product:** No data available.
- **Repeated dose toxicity**
  - **Product:** No data available.

**Skin corrosion/irritation**
- **Product:** May cause skin irritation.

**Serious eye damage/eye irritation**
- **Product:** Causes eye irritation.

**Respiratory or skin sensitization**
- **Product:** Not a skin sensitizer.

**Carcinogenicity**
- **Product:** This substance has no evidence of carcinogenic properties.

- **IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:** No carcinogenic components identified
- **US. National Toxicology Program (NTP) Report on Carcinogens:** No carcinogenic components identified
No carcinogenic components identified

Germ cell mutagenicity
In vitro
Product: No mutagenic components identified
In vivo
Product: No mutagenic components identified

Reproductive toxicity
Product: No components toxic to reproduction

Specific target organ toxicity - single exposure
Product: None known.

Specific target organ toxicity - repeated exposure
Product: None known.

Aspiration hazard
Product: Not classified

Other effects: None known.

12. Ecological information

Ecotoxicity:
Acute hazards to the aquatic environment:
Fish
Product: No data available.

Aquatic invertebrates
Product: No data available.

Chronic hazards to the aquatic environment:
Fish
Product: No data available.

Aquatic invertebrates
Product: No data available.

Toxicity to Aquatic Plants
Product: No data available.

Persistence and degradability
Biodegradation
Product: There are no data on the degradability of this product.

BOD/COD ratio
Product: No data available.

Bioaccumulative potential
Bioconcentration factor (BCF)
Product: No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow)
Product: No data available.
Mobility in soil: The product is water soluble and may spread in water systems.

Other adverse effects: The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT
UN number: UN 3288
UN proper shipping name: Toxic solid, inorganic, n.o.s. (SODIUM NITROFERRICYANIDE)
Transport hazard class(es):
  Class(es): 6.1
  Label(s): 6.1
Packing group: III
Marine Pollutant: No

IMDG
UN number: UN 3288
UN proper shipping name: TOXIC SOLID, INORGANIC, N.O.S. (SODIUM NITROFERRICYANIDE)
Transport hazard class(es):
  Class(es): 6.1
  Label(s): 6.1
  EmS No.: F-A, S-A
Packing group: III
Marine Pollutant: No

IATA
UN number: UN 3288
Proper Shipping Name: Toxic solid, inorganic, n.o.s. (SODIUM NITROFERRICYANIDE)
Transport hazard class(es):
  Class(es): 6.1
  Label(s): 6.1
Marine Pollutant: No
Packing group: III

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):
None present or none present in regulated quantities.
Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

- [x] Acute (Immediate)
- [x] Chronic (Delayed)
- [ ] Fire
- [ ] Reactive
- [ ] Pressure Generating

SARA 302 Extremely hazardous substance
None present or none present in regulated quantities.

SARA 304 Emergency release notification
None present or none present in regulated quantities.

SARA 311/312 Hazardous chemical

<table>
<thead>
<tr>
<th>Chemical identity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM NITROFERRICYANIDE (HYDRATED FORM)</td>
<td>500 lbs</td>
</tr>
</tbody>
</table>

SARA 313 (TRI reporting)
None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

US state regulations

US. California Proposition 65
No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act
No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List
No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances
No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK
No ingredient regulated by RI Right-to-Know Law present.

Inventory Status:

- Canada DSL Inventory List: On or in compliance with the inventory
- EU EINECS List: On or in compliance with the inventory
- Korea Existing Chemicals Inv. (KECI): On or in compliance with the inventory
- US TSCA Inventory: On or in compliance with the inventory
- Australia AICS: On or in compliance with the inventory
- Japan (ENCS) List: Not in compliance with the inventory.
- China Inv. Existing Chemical Substances: On or in compliance with the inventory
- Canada NDSL Inventory: Not in compliance with the inventory.
- Philippines PICCS: On or in compliance with the inventory
- New Zealand Inventory of Chemicals: On or in compliance with the inventory
- Japan ISHL Listing: Not in compliance with the inventory.
- Japan Pharmacopoeia Listing: Not in compliance with the inventory.

16. Other information, including date of preparation or last revision
NFPA Hazard ID

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Health</th>
<th>Reactivity</th>
<th>Special hazard.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Issue date: 07-29-2014
Revision date: No data available.
Version #: 2.0
Further information: No data available.

Disclaimer:

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