

# Safety Data Sheet

Date of Revision: 11/27/2017

## Sodium Ferrocyanide

### Section 1 - Chemical Product and Company Identification

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**Product/Chemical Name:** Sodium Ferrocyanide

**Chemical Formula:**  $\text{Na}_4\text{Fe}(\text{CN})_6 \cdot 10\text{H}_2\text{O}$

**CAS Number:** 14434-22-1

**Other Designations:** Sodium Ferrocyanide decahydrate; sodium hexacyanoferrate; YPS

**Derivation:**

**General Use:** Manufacture of sodium ferricyanide, blue pigments, blueprint paper, anti-caking agent for salt, ore flotation, pickling metals, polymerization catalyst, photographic fixing agent.

**Emergency Telephone: (ChemTel) Contract MIS0000335; 800 255-3924; INTL 813 248-0585**

### Section 2 - Hazards Identification

#### ☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

**MAY CAUSE EYE AND SKIN IRRITATION. AVOID CONTACT WITH EYES, SKIN AND CLOTHING. WASH THOROUGHLY AFTER HANDLING. MAY BE HARMFUL IF SWALLOWED.**

HMIS	
H	2
F	0
R	0
PPE†	
†Sec. 8	

#### Potential Health Effects

**Primary Entry Routes:** Inhalation, Ingestion

**Target Organs:** None listed

#### HAZARDS IDENTIFICATION

**Label elements**

None

**Hazard symbol**

None

**Signal word**

None

**Hazard statement**

The mixture does not meet the criteria for classification.

**Precautionary statement**

**Prevention**

Observe good industrial hygiene practices.

**Response**

Wash hands after handling.

**Storage**

Store away from incompatible materials.

**Disposal**

Dispose of waste and residues in accordance with local authority requirements.

**Hazard(s) not otherwise classified (HNOC) None**

**Acute Effects**

**Inhalation:** May cause respiratory tract irritation. May cause anoxia, characterized by weakness, headache, dizziness, confusion, cyanosis, weak and irregular heartbeat, collapse, unconsciousness, convulsions, coma and death.

**Eye:** May cause mild eye irritation.

**Skin:** May cause skin irritation.

**Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

**Carcinogenicity:** IARC, NTP, and OSHA do not list sodium ferrocyanide as a carcinogen.

**Medical Conditions Aggravated by Long-Term Exposure:**

**Chronic Effects:** unknown

# Sodium Ferrocyanide

## Section 3 - Composition / Information on Ingredients

Ingredient Name	CAS Number	EINECS/ELINCS	% wt or % vol
Sodium Ferrocyanide	14434-22-1	237-081-9	100

**Limit values:** No limit values have been established for this product for use in the USA and Canada.

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
	TWA	STEL	TWA	STEL	TWA	STEL	IDLH
Sodium Ferrocyanide	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.

## Section 4 - First Aid Measures

**Inhalation:** Supply fresh air. If required, provide artificial respiration.

**Eye Contact:** Rinse opened eye for several minutes under running water. Then consult a doctor if irritation persists.

**Skin Contact:** Immediately wash with water and soap and rinse thoroughly. Seek medical advice if irritation persists.

**Ingestion:** If material is swallowed, induce vomiting if patient is conscious. Never give anything by mouth to an unconscious person. Seek medical advice.

*After first aid, get appropriate in-plant, paramedic, or community medical support.*

**Note to Physicians:** Treat symptomatically and supportively.

## Section 5 - Fire-Fighting Measures

**Flash Point:** not applicable

**Flash Point Method:**

**Burning Rate:**

**Auto-ignition Temperature:** not determined

**LEL:** not determined

**UEL:** not determined

**Flammability Classification:** Product is not flammable.

**Extinguishing Media:** Product is not flammable. Use firefighting measures that suit the surrounding fire.

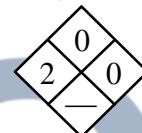
**Unusual Fire or Explosion Hazards:** none

**Hazardous Combustion Products:**

**Fire-Fighting Instructions:** Do not release runoff from fire control methods to sewers or waterways.

**Fire-Fighting Equipment:** Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face-piece operated in pressure-demand or positive-pressure mode.

NFPA



## Section 6 - Accidental Release Measures

**Spill /Leak Procedures:** Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation. Avoid raising dust. Eliminate flammables. Eliminate all ignition sources. Dispose contaminated material as waste according to official regulations.

**Large Spills**

**Containment:** For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways.

**Cleanup:** Water, if necessary with cleansing agents.

**Regulatory Requirements:** Follow applicable OSHA regulations (29 CFR 1910.120).

## Section 7 - Handling and Storage

**Handling Precautions:** Keep container tightly sealed.

**Storage Requirements:** Store in a cool, dry, well-ventilated area away from incompatible substances.

## Section 8 - Exposure Controls / Personal Protection

**Engineering Controls:**

**Ventilation:** Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

**Administrative Controls:**

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**Respiratory Protection:** Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA.

*Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.* If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

**Protective Clothing/Equipment:** Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

**Safety Stations:** Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

**Contaminated Equipment:** Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

**Comments:** Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

### Section 9 - Physical and Chemical Properties

**Physical State:** solid

**Appearance and Odor:** yellow semi-transparent crystals/odorless

**Odor Threshold:** not determined

**Vapor Pressure:** N/A

**Vapor Density (Air=1):**

**Formula Weight:** 484.06

**Density/Specific Gravity (H<sub>2</sub>O=1, at 4 °C):** 1.458

**pH:** N/A

**Flash Point:** not applicable

**Flash Point Method:**

**Burning Rate:** not determined

**Auto-ignition Temperature:** not determined

**Water Solubility:** 318.5 g/l @ 20 °C

**Other Solubilities:** not determined

**Boiling Point:** N/A

**Freezing/Melting Point:** N/A

**Decomposition Point:** 815 °F (435 °C)

**Viscosity:** not determined

**Refractive Index:** not determined

**Surface Tension:** not determined

**% Volatile:** N/A

**Evaporation Rate:** N/A

**LEL:** not determined

**UEL:** not determined

### Section 10 - Stability and Reactivity

**Stability:** Sodium Ferrocyanide is stable at room temperature in closed containers under normal storage and handling conditions.

**Polymerization:** Hazardous polymerization cannot occur.

**Chemical Incompatibilities:** Oxidizing agents, ammonia, chromic acid and strong acids.

**Conditions to Avoid:** incompatibilities. ACIDS: Evolution of highly toxic and flammable hydrogen cyanide gas. OXIDIZERS (STRONG): Fire and explosion hazard.

**Hazardous Decomposition Products:** Thermal oxidative decomposition of Sodium Ferrocyanide can produce oxides of nitrogen, carbon monoxide, carbon dioxide and hydrogen cyanide.

### Section 11- Toxicological Information

SODIUM FERROCYANIDE:

**ADDITIONAL DATA:** Because of the strong chemical bond between the cyanide group and the iron, ferrocyanides do not release cyanide under normal conditions. However, certain industrial processes may release hydrogen cyanide which is a chemical asphyxiant.

#### Toxicity

Oral (rat) LD<sub>50</sub>: 5100 mg/kg

**HEALTH EFFECTS:**

**INHALATION:**

**ACUTE EXPOSURE: SODIUM FERROCYANIDE:** May cause irritation to the respiratory tract. Ferrocyanides have a low order of toxicity. However, certain industrial processes may release hydrogen cyanide which is a chemical asphyxiant.

**CHRONIC EXPOSURE: SODIUM FERROCYANIDE:** No data available.

**SKIN CONTACT:**

**ACUTE EXPOSURE:**

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SODIUM FERROCYANIDE: May cause irritation.

### CHRONIC EXPOSURE:

SODIUM FERROCYANIDE: No specific data available. No dermatitis was reported in workers handling potassium ferrocyanide over a number of years.

### EYE CONTACT:

#### ACUTE EXPOSURE:

SODIUM FERROCYANIDE: Dust may cause irritation.

#### CHRONIC EXPOSURE:

SODIUM FERROCYANIDE: No data available.

### INGESTION:

ACUTE EXPOSURE: SODIUM FERROCYANIDE: The reported probable lethal dose in humans is 0.5-5.0 gm/kg. Ferrocyanide salts are rapidly excreted in urine without metabolic alteration.

CHRONIC EXPOSURE: SODIUM FERROCYANIDE: No data available.

\* See NIOSH, *RTECS*, for additional toxicity data.

## Section 12 - Ecological Information

**Ecotoxicity:** data not available.

**Environmental Fate:** data not available.

**Environmental Degradation:** data not available.

**Soil Absorption/Mobility:** data not available.

## Section 13 - Disposal Considerations

**Disposal:** Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

**Disposal Regulatory Requirements:**

## Section 14 - Transport Information

Not regulated for transportation

### US DOT(49 CFR 172.101):

PSN:  
Hazard Class:  
UN Number:  
Packing Group:

### IATA

PSN:  
Hazard Class:  
UN Number:  
Packing Group:

### IDG

PSN:  
Hazard Class:  
UN Number:  
Packing Group:

### IMDG/IMO

PSN:  
Hazard Class:  
UN Number:  
Packing Group:

## Section 15 - Regulatory Information

### U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):  
Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):  
Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: No

CHRONIC: No

FIRE: No

REACTIVE: No

SUDDEN RELEASE: No

## Sodium Ferrocyanide

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

### STATE REGULATIONS:

California Proposition 65: Not regulated.

### CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: D2B. Material causing toxic effects (TOXIC): No products were found.

### NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

## Section 16 - Other Information

**Disclaimer:** All information, recommendations and suggestions appearing herein are based upon sources believed to be reliable. However, it is the user's responsibility to determine the safety, toxicity and suitability for its own use of this product. WEGO CHEMICAL GROUP DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE USE BY OTHERS OF THIS PRODUCT.

