

SPI Supplies Division

Structure Probe, Inc.

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Manufacturer's CAGE: 1P573

Safety Data Sheet

Date Effective: June 12, 2017

SPI Catalog # 02537-AB

SPI Chem™ Potassium Ferrocyanide

Section 1.1: Identification

Chemical Name/Synonyms Potassium Ferrocyanide, trihydrate

Product or Trade Name SPI Chem™ Potassium Ferrocyanide

CAS #'s 11459-95-1

Chemical Formula..... $K_4Fe(CN)_6 \cdot 3H_2O$

Section 1.2: Relevant Uses/Restrictions

Laboratory chemical

Section 1.3: Supplier of the Safety Data Sheet

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Section 1.4: Emergency telephone number

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...

Worldwide phone: 1-(703)-741-5970

Toll-free phone: 1-(800)-424-9300 USA + Canada only

Section 2: Hazard Identification

2.1 Classification of the substance

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute aquatic toxicity (Category 3)

Chronic aquatic toxicity (Category 3)

2.2 Label elements

Pictogram: None

Signal Word: None

Hazard statements:

- H402 Harmful to aquatic life.
- H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

- P273 Avoid release to the environment
- P501 Dispose of contents / container to an approved waste disposal plant.

2.3 Other hazards not otherwise classified (HNOC) or not covered by GHS:

Contact with acids liberates very toxic gas.

Hazardous Material Information System USA

- Health 1
- Fire Hazard 0
- Reactivity 0
- Personal Protection

NFPA Rating (estimated)

- Health 1
- Flammability..... 0
- Reactivity 0

Section 3: Composition

3.1 Substances:

Potassium ferrocyanide trihydrate CAS # 14459-95-1 98 – 100%

Section 4: First Aid Measures

4.1 Description of first aid measures:

General information:

- Get medical advice/ attention if you feel unwell.
- Show this safety data sheet to the doctor in attendance.

Inhalation

- Move to fresh air.
- Get medical attention if symptoms persist.

Skin Contact

- Wash skin thoroughly with soap and water.
- Get medical attention if irritation persists after washing.
- Wash contaminated clothing before reuse.

Eye Contact

- Flush thoroughly with water.
- If irritation occurs, get medical assistance.

Ingestion

- Rinse mouth thoroughly.
- Get medical attention if symptoms occur.

4.2 Most important symptoms and effects, both acute and delayed
Symptoms: May cause irritation to skin, eyes, and respiratory tract.

4.3 Indication of any immediate medical attention and special treatment needed
Treatment: Treat symptomatically. Symptoms may be delayed.

Section 5: Fire Fighting Measures

General information: In case of fire and/ or explosion, do not breathe fumes.

5.1 Extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed.

5.3 Advice for firefighters

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.

Special protective equipment for fire-fighters:

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

Section 6: Accidental Release Measures

6.1 Personal precautions

Keep unauthorized personnel away.

Ventilate closed spaces before entering them.

Use personal protective equipment.

See Section 8 of the SDS for personal protective Equipment.

6.2 Environmental precautions

Do not contaminate water sources or sewer.

Prevent further leakage or spillage if safe to do so.

6.3 Methods and material for containment and cleaning up

Sweep up and place in a clearly labeled container for chemical waste.

Clean surface thoroughly to remove residual contamination.

Prevent entry into waterways, sewer, basements or confined areas.

Inform authorities if large amounts are involved.

6.4 Reference to other sections

For disposal, see Section 13.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Use personal protective equipment as required.
Avoid contact with eyes, skin, and clothing.
Do not eat, drink or smoke when using this product.
Use methods to minimize dust formation.
Avoid inhalation of dust.
Wash thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed.
Store in a well-ventilated place.
Store in a dry place.

7.3 Specific end uses

Laboratory chemical.
This material is not being offered for clinical or diagnostic applications, agricultural uses or for human or animal consumption.

Section 8: Exposure Controls and Personal Protection

8.1 Control parameter and Personal Protection

Workplace exposure limits

NIOSH: 25 mg/m³ IDLH (except Hydrogen Cyanide) as CN (related to Cyanide compounds).
OSHA (US): 5 mg/m³ TWA as CN (related to Cyanide compounds).

Biological limit values

No data available.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

No data available.

8.2.2 Individual protection measures

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: Use tightly fitting goggles if dust is generated.

Skin protection:

Hand protection: Wear protective gloves.

Other: Wear suitable protective clothing.

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

Hygiene measures: Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. Wash skin thoroughly with soap and water. Do not eat, drink or smoke when using the product. Wash contaminated clothing before reuse.

8.2.3 Environmental exposure controls

No additional information available.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance: Solid, yellow, granules

Odor: Odorless

Odor threshold: No data available

pH: No data available

Melting point/Freezing point: 60 °C (loses water)

Boiling point/Boiling point range: No data available

Flash Point: Not applicable

Evaporation rate: No data available

Flammability (solid, gas): No data available

Upper/lower flammability or explosive limits: No data available

Vapor Pressure: No data available

Vapor density: No data available

Relative density: 1.85 (20 °C)

Solubility

In water: Soluble

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

9.2 Other information: No further information available.

Section 10: Stability and Reactivity

10.1 Reactivity

Contact with acid liberates poisonous gas.

10.2 Chemical Stability

Material is stable under normal conditions.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization does not occur.

10.4 Conditions to avoid

Contact with incompatible materials.

10.5 Incompatible materials

Strong oxidizing agents. Strong acids.

10.6 Hazardous decomposition products

Thermal decomposition may produce oxides of nitrogen. Cyanides.

Section 11: Toxicological Information

Information on the likely routes of exposure

Inhalation

Dust may irritate respiratory system.

Skin contact

May cause irritation.

Eye contact

May cause temporary eye irritation.

Ingestion

Large amount may cause gastrointestinal upset.

11.1 Information on toxicological effects

A. Acute toxicity

Oral: LD50 (Rat): 6,400 mg/kg

Dermal: No data available

Inhalation: No data available

Repeated dose toxicity: No data available

B. Skin corrosion/irritation

Product: May cause skin irritation.

C. Serious eye damage/irritation

Product: May irritate eyes.

D. Respiratory of skin sensitization

Product: Not a skin sensitizer

E. Germ cell mutagenicity

In vitro

Product: No mutagenic components identified.

In vivo

Product: No mutagenic components identified.

F. 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.

US OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified.

G. Reproductive toxicity

Product: No components toxic to reproduction.

H. STOT-single exposure

Product: None known.

I. STOT-repeated exposure

Product: None known.

J. Aspiration hazard

Product: Not classified.

Other Effects: None known.

Section 12: Ecological Information

12.1 Toxicity

Eco-toxicity:

Fish: No data available.

Aquatic invertebrates: No data available.

Chronic hazards to the aquatic environment:

Fish: No data available.

Aquatic invertebrates: No data available.

Toxicity to Aquatic Plants: No data available.

12.2 Persistence and degradability

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

BOD/COD ratio: No data available.

12.3 Bio-accumulative potential

Bio-concentration factor (BCF): No data available on bio-accumulation.

Partition coefficient n-octanol / water (log K_{ow}): No data available.

12.4 Mobility in soil

The product is water soluble and may spread in water systems.

12.5 Results of PBT and vPvB assessment

PBT: No data available.

vPvB: No data available.

12.6 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.

Section 13: Disposal Considerations

13.1 Waste treatment methods

Disposal Instructions: Discharge, treatment or disposal may be subject to national, state or local laws.

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

Section 14: Transport Information

DOT: Not regulated.

IATA: Not regulated.

IMDG: Not regulated.

Section 15: Regulatory Information

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

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:

Acute (Immediate): yes

Chronic (Delayed): yes

Fire: no

Reactive: no

Pressure Generating: no

SARA 302 Extremely Hazardous Substances:

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 Chemicals:

None present or none present in regulated quantities.

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® 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 Right-to-Know Act:

Potassium ferrocyanide trihydrate, CAS # 14459-95-1, is listed. Revision Date: 1990-01-01.

US Massachusetts RTK – Substance List:

No ingredient regulated by MA Right-to-Know Law present.

US Pennsylvania RTK – Hazardous Substances:

Potassium ferrocyanide trihydrate, CAS # 14459-95-1, is listed. Revision Date: 1990-01-01.

US Rhode Island RTK:

Potassium ferrocyanide trihydrate, CAS # 14459-95-1, is listed.

15.2 Chemical Safety Assessment

Date of Preparation: 12 June 2017.

Abbreviations and acronyms

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

CMRG: Chemical Manufacturer's Recommended Guidelines

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

AIHA: American Industrial Hygiene Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bio-accumulative and Toxicological

vPvB: very Persistent and very Bio-accumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

STEL: Short Term Exposure Limit

CEIL: Ceiling

Section 16: Other Information

Disclaimer of Liability:

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues of fluids.

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