

# SAFETY DATA SHEET

Creation Date 10-Feb-2011

Revision Date 19-Dec-2025

Revision Number 5

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

## 1. Identification

**Product Name** Potassium ferrocyanide trihydrate

**Cat No. :** AC211090000; AC211090025; AC211095000

**CAS No** 14459-95-1  
**Synonyms** Potassium hexacyanoferrate(II)

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

### Details of the supplier of the safety data sheet

#### Company

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

#### **Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

## 2. Hazard(s) identification

### Classification

Classification according to [US] OSHA (29 CFR 1910.1200, 2024)

### Label Elements

None required

### Hazards not otherwise classified (HNOC)

Harmful to aquatic life with long lasting effects

### Hazards classified under paragraph (d)(1)(ii) of 1910.1200

No information available

WARNING. Cancer and Reproductive Harm - <https://www.p65warnings.ca.gov/>.

### 3. Composition/information on Ingredients

Component	CAS No	Weight %
Potassium ferrocyanide trihydrate	14459-95-1	>95
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)-	13943-58-3	-

### 4. First-aid measures

<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
<b>Inhalation</b>	Remove to fresh air. Get medical attention immediately if symptoms occur. If not breathing, give artificial respiration.
<b>Ingestion</b>	Do NOT induce vomiting. Get medical attention.
<b>Most important symptoms and effects</b>	No information available.
<b>Notes to Physician</b>	Treat symptomatically

### 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.
<b>Unsuitable Extinguishing Media</b>	No information available
<b>Flash Point</b>	No information available
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	Not applicable
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

#### Specific Hazards Arising from the Chemical

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Keep product and empty container away from heat and sources of ignition.

#### Hazardous Combustion Products

Nitrogen oxides (NO<sub>x</sub>). Hydrogen cyanide (hydrocyanic acid). Heavy metal oxides.

#### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

#### NFPA

**Health**  
1

**Flammability**  
0

**Instability**  
1

**Physical hazards**  
N/A

## 6. Accidental release measures

<b>Personal Precautions</b>	Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes or clothing.
<b>Environmental Precautions</b>	Avoid release to the environment. See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system. Should not be released into the environment. Do not allow material to contaminate ground water system. Collect spillage.
<b>Methods for Containment and Clean Up</b>	Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

## 7. Handling and Storage

<b>Handling</b>	Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation.
<b>Storage.</b>	Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Protect from direct sunlight. Incompatible Materials. Acids. Strong oxidizing agents. Strong acids.

## 8. Exposure controls / personal protection

### Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Potassium ferrocyanide trihydrate	TWA: 1 mg/m <sup>3</sup>	(Vacated) TWA: 1 mg/m <sup>3</sup> (Vacated) TWA: 5 mg/m <sup>3</sup>	IDLH: 25 mg/m <sup>3</sup> REL = 1 mg/m <sup>3</sup> (TWA)	TWA: 1 mg/m <sup>3</sup>
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)-	TWA: 1 mg/m <sup>3</sup>	(Vacated) TWA: 1 mg/m <sup>3</sup> (Vacated) TWA: 5 mg/m <sup>3</sup>	IDLH: 25 mg/m <sup>3</sup> REL = 1 mg/m <sup>3</sup> (TWA)	TWA: 1 mg/m <sup>3</sup>

### Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

**Engineering Measures** None under normal use conditions.

### Personal Protective Equipment

<b>Eye/face Protection</b>	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
<b>Skin and body protection</b>	Wear appropriate protective gloves and clothing to prevent skin exposure.
<b>Respiratory Protection</b>	No protective equipment is needed under normal use conditions.
<b>Recommended Filter type:</b>	Particle filter.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

### Appearance

<b>Physical State</b>	Powder Solid
<b>Color</b>	Yellow
<b>Odor</b>	Odorless
<b>Odor Threshold</b>	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>• Method</u>
Melting Point/Range	70 °C / 158 °F		
Softening Point	No data available		
Boiling Point/Range	No information available		
Flash Point	No information available		
Flammability (liquid)	Not applicable		
Flammability (solid,gas)	No information available		
Explosion Limits	No data available		
Autoignition Temperature	Not applicable		
Decomposition Temperature	> 70°C		
pH	9.5 @ 25°C	100g/l aq.sol	
Viscosity	Not applicable		Solid
Water Solubility	270 g/L (12°C)		
Solubility in other solvents	No information available		
Partition Coefficient (n-octanol/water)			
Vapor Pressure	negligible		
Density / Specific Gravity	1.850		
Bulk Density	No data available		
Vapor Density	Not applicable		Solid
Particle characteristics	No data available		
<b>Other Information</b>			
Molecular Formula	C6 Fe K4 N6 . 3 H2 O		
Molecular Weight	422.4		
Evaporation Rate	Not applicable - Solid		

## 10. Stability and reactivity

<b>Reactive Hazard</b>	None known, based on information available
<b>Stability</b>	Stable under normal conditions. Light sensitive.
<b>Conditions to Avoid</b>	Avoid dust formation. Incompatible products. Excess heat. Exposure to light.
<b>Incompatible Materials</b>	Acids, Strong oxidizing agents, Strong acids
<b>Hazardous Decomposition Products</b>	Nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid), Heavy metal oxides
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	Contact with acids liberates very toxic gas.

## 11. Toxicological information

### Information on expected route of exposure

<b>Inhalation</b>	May cause irritation. Toxic by inhalation. Avoid breathing dust or spray mist.
<b>Ingestion</b>	May be harmful if swallowed. May cause irritation.
<b>Eyes</b>	Avoid contact with eyes.
<b>Skin</b>	May be harmful in contact with skin. May cause irritation. Avoid contact with skin. Harmful in contact with skin.

### Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)-	LD50 = 3613 mg/kg ( Rat )	-	-

**Toxicologically Synergistic Products** No information available

**(b) skin corrosion/irritation;** No data available

**(c) serious eye damage/irritation;** No data available

**(d) respiratory or skin sensitization;**  
**Respiratory** No data available  
**Skin** No data available

**(e) germ cell mutagenicity;** No data available

**(f) carcinogenicity;**

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Potassium ferrocyanide trihydrate	14459-95-1	Not listed	Not listed	Not listed	Not listed	Not listed
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)-	13943-58-3	Not listed	Not listed	Not listed	Not listed	Not listed

**(g) reproductive toxicity;** No data available

**(h) STOT-single exposure;** No data available

**(i) STOT-repeated exposure;** No data available

**Target Organs** No information available.

**(j) aspiration hazard;** Not applicable  
Solid

**Other Adverse Effects** The toxicological properties have not been fully investigated.

**Symptoms / effects,both acute and delayed** No information available.

**Other Adverse Effects** The toxicological properties have not been fully investigated.

**Endocrine Disrupting Properties** This product does not contain any known or suspected endocrine disruptors.

## 12. Ecological information

**Ecotoxicity**

This product contains the following substance(s) which are hazardous for the environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Ferrate(4-),	Not listed	LC50: > 100 mg/L, 96h	Not listed	Not listed

hexakis(cyano-C)-, tetrapotassium, (OC-6-11)-	(Pimephales promelas) LC50: = 19 mg/L, 96h static (Poecilia reticulata)		
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**Persistence and Degradability** May persist based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

**DOT** Not regulated  
**TDG** Not regulated  
**IATA** Not regulated  
**IMDG/IMO** Not regulated

### 15. Regulatory Information

#### United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Potassium ferrocyanide trihydrate	14459-95-1	-	-	-
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)-	13943-58-3	X	ACTIVE	-

#### Legend:

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)** Not applicable

**TSCA 12(b)** - Notices of Export Not applicable

#### International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Potassium ferrocyanide trihydrate	14459-95-1	-	-	-	X	-		X	X	-
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)-	13943-58-3	X	-	237-722-2	X	X	X	X	X	KE-33660

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

#### U.S. Federal Regulations

##### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting thresholds

Potassium ferrocyanide trihydrate	14459-95-1	>95	1.0 %	-
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)-	13943-58-3	-	1.0 %	-

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)**

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Potassium ferrocyanide trihydrate	-	-	X	X
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)-	-	-	X	X

**Clean Air Act**

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Potassium ferrocyanide trihydrate	X		-
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)-	X		-

**OSHA** - Occupational Safety and Health Administration Not applicable

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**California Proposition 65**

This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Potassium ferrocyanide trihydrate	14459-95-1	Reproductive Toxicity	-	Reproductive Toxicity
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)-	13943-58-3	Male Reproductive	-	

**U.S. State Right-to-Know Regulations**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Potassium ferrocyanide trihydrate	-	X	X	X	X
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)-	-	X	X	X	X

**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
 DOT Marine Pollutant Y  
 DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations****Mexico - Grade**

No information available

**Authorisation/Restrictions according to EU REACH**

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Potassium ferrocyanide trihydrate	14459-95-1	-	-	-
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)-	13943-58-3	-	Use restricted. See entry 75. (see link for restriction details)	-

**REACH links**<https://echa.europa.eu/substances-restricted-under-reach>**Safety, health and environmental regulations/legislation specific for the substance or mixture**

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Potassium ferrocyanide trihydrate	14459-95-1	Not applicable	Not applicable	Not applicable	Not applicable
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)-	13943-58-3	Listed	Not applicable	Not applicable	Not applicable

**Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?**

Not applicable

**Other International Regulations**

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Potassium ferrocyanide trihydrate	14459-95-1	Not applicable	Not applicable	Not applicable	Annex I - Y33
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)-	13943-58-3	Not applicable	Not applicable	Not applicable	Annex I - Y33

**16. Other Information****Prepared By**Product stewardship (Regulatory Affairs)  
Thermo Fisher Scientific  
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**Revision Date** 19-Dec-2025  
**Print Date** 19-Dec-2025  
**Revision Summary** Updated to the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) which published its Final Rule in the Federal Register revising the Hazard Communication Standard (HCS/HazCom), 29 CFR 1910.1200 (2024) (HCS §1910.1200, 2024), May 20, 2024, effective July 19, 2024.

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**