RICCA CHEMICAL COMPANY®

# Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

## SECTION 1: Identification

### 1.1. Product Identifier

**Trade Name or Designation** ORP Standard, +250 mV
vs. Ag/AgCl (4M KCl sat. with AgCl filling solution)
**Product Number** R5464510
**Other Identifying Product Numbers** R5464510-500B

### 1.2. Recommended Use and Restrictions on Use

General Laboratory Reagent

### 1.3. Details of the Supplier of the Safety Data Sheet

**Company** Ricca Chemical Company
**Address** 412 West Fork Drive

Arlington, TX 76012 USA

**Telephone** 888-467-4222

### 1.4. Emergency Telephone Number (24 hours)

CHEMTREC (USA) 800-424-9300
CHEMTREC (International) 1+ 703-527-3887

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## SECTION 2: Hazard(s) Identification

### 2.1. Classification of the Substance or Mixture

This product is not categorized as hazardous in any GHS hazard class.

### 2.2. GHS Label Elements

**Pictograms:** None Required.

**Signal Word:** None Required.

**Hazard Statements:** None Required.

**Precautionary Statements:** None Required.

### 2.3. Hazards not Otherwise Classified

No other hazards identified.

### 2.4. Ingredients of Unknown Acute Toxicity

1.1 percent of this mixture consists of ingredient(s) of unknown acute dermal and inhalation toxicity.

## SECTION 3: Composition / Information on Ingredients

### 3.1. Components of Mixture

| Chemical Name (IUPAC) | Common Name and Synonyms | CAS Number | Weight% |
|---|---|---|---|
| water | Water | 7732-18-5 | 98.91 |
| Potassium chloride | Potassium Chloride; Hydrochloric acid, potassium salt | 7447-40-7 | 0.75 |
| tetrapotassium iron(2+) hexacyanide trihydrate | Potassium Ferrocyanide Trihydrate; Potassium hexacyanoferrate(II) trihydrate | 14459-95-1 | 0.20 |
| tripotassium iron(3+) hexacyanide | Potassium Ferricyanide | 13746-66-2 | 0.15 |

## SECTION 4: First-Aid Measures

### 4.1. Description of Necessary Measures

**Eye Contact:** May cause slight irritation.

**Ingestion:** Dilute with water or milk. Do not induce vomiting. Call a physician if necessary.

**Inhalation:** Not expected to require first aid. If necessary, remove to fresh air.

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

### 4.2. Most Important Symptoms and Effects, Acute and Delayed

Does not present any significant health hazards. Wash areas of contact with water. EYE CONTACT: May cause slight irritation. SKIN CONTACT: May cause slight irritation.

### 4.3. Immediate Medical Attention or Special Treatment Needed

Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops. Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Flush with plenty of water for at least 15 minutes. Call a physician if irritation develops. Dilute with water or milk. Do not induce vomiting. Call a physician if necessary.

## SECTION 5: Fire-Fighting Measures

### 5.1. Extinguishing Media

Use any means suitable for extinguishing surrounding fire.

### 5.2. Specific Hazards Arising from the Substance or Mixture in a Fire

Not considered to be a fire or explosion hazard.

### 5.3. Special Protective Equipment and Precautions for Firefighters

Use protective clothing and breathing equipment appropriate for the surrounding fire.

## SECTION 6: Accidental Release Measures

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Wear appropriate PPE for the size and nature of the spill. As a general rule, wear safety glasses and gloves.

### 6.2. Cleanup and Containment Methods and Materials

Absorb with suitable material and treat as normal refuse. Small amounts of the liquid may be flushed to the drain with excess water. Always dispose of in accordance with local regulations.

## SECTION 7: Handling and Storage

### 7.1. Precautions for Safe Handling and Storage Conditions

As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. Store in the refrigerator.

## SECTION 8: Exposure Controls / Personal Protection

### 8.1. Exposure Limits

#### U.S. OSHA - Permissible Exposure Limits (PEL) - Time Weighted Averages (TWA)

| Chemical Name | CAS Number | Exposure Limit |
|---|---|---|
| Potassium Ferricyanide | 13746-66-2 | "5 mg/m3 TWA (as CN)" As Cyanides [RR-00812-8] |
| Potassium Ferrocyanide Trihydrate | 14459-95-1 | "5 mg/m3 TWA (as CN)" As Cyanides [RR-00812-8] |

#### U.S. OSHA - Permissible Exposure Limits (PEL) - Ceiling Limits

No limits found.

#### U.S. OSHA - Permissible Exposure Limits (PEL) - Short Term Exposure Limits (STEL)

No limits found.

#### U.S. OSHA - Specifically Regulated Chemicals

No limits found.

#### ACGIH - Threshold Limit Values - Ceilings (TLV-C)

No limits found.

#### ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)

No limits found.

#### ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

| Chemical Name | CAS Number | Exposure Limit |
|---|---|---|
| Potassium Ferricyanide | 13746-66-2 | "1 mg/m3 TWA (as Fe)" As Iron salts, soluble [RR-00521-0] |
| Potassium Ferrocyanide Trihydrate | 14459-95-1 | "1 mg/m3 TWA (as Fe)" As Iron salts, soluble [RR-00521-0] |

### 8.2. Engineering Controls

No specific controls are needed. Normal room ventilation is adequate.

### 8.3. Individual Protective Measures and Personal Protective Equipment

**Respiratory Protection:** Normal room ventilation is adequate.

**Skin Protection:** Chemical resistant gloves.

**Eye Protection:** Safety glasses or goggles.

## SECTION 9: Physical and Chemical Properties

### 9.1. Basic Physical and Chemical Properties

| | |
|---|---|
| **Physical State:** | liquid |
| **Color:** | Yellow-green |
| **Odor:** | Data not available. |
| **Odor Threshold:** | Data not available. |
| **Melting/Freezing Point:** | 0.0°C |
| **Boiling Point/Range:** | 100°C |
| **Flammability:** | Data not available. |
| **Flammability/Explosive Limits:** | Data not available. |
| **Flash Point:** | Not flammable |
| **Auto-Ignition Temperature:** | Data not available. |
| **Decomposition Temperature:** | Data not available. |
| **pH:** | Data not available. |
| **Kinematic Viscosity:** | Data not available. |
| **Solubility:** | miscible |
| **Vapor Pressure:** | Data not available. |
| **Evaporation Rate:** | Data not available. |
| **Relative Density:** | 1.01 |
| **Relative Vapor Density:** | Data not available. |
| **Particle Characteristics:** | Data not available. |
| **Partition Coefficient n-octanol/water, log** | Data not available. |

## SECTION 10: Stability and Reactivity

### 10.1. Reactivity and Chemical Stability

Stable under normal conditions of use and storage.

### 10.2. Possibility of Hazardous Reactions

Data not available.

### 10.3. Conditions to Avoid and Incompatible Materials

Acids, Bromine Trifluoride, Sodium Nitrate, ammonia, Chromium Trioxide, Chromic Anhydride, Cupric Nitrate.

### 10.4. Hazardous Decomposition Products

Will not occur.

## SECTION 11: Toxicological Information

### 11.1. Information on Toxicological Effects

**Acute Toxicity - Oral Exposure:**

Not acutely toxic.

| Chemical Name | CAS Number | Toxicity |
|---|---|---|
| Potassium Ferricyanide | 13746-66-2 | Oral LD50 Mouse 2970 mg/kg (Source: NLM_CIP) |
| Potassium Ferrocyanide Trihydrate | 14459-95-1 | Oral LD50 Rat >5110 mg/kg (no deaths occurred, Source: ECHA) As Ferrate(4-), hexacyano-, tetrapotassium [13943-58-3] |
| Potassium Chloride | 7447-40-7 | Oral LD50 Rat 2600 mg/kg (Source: NLM_CIP) |

**Acute Toxicity - Dermal Exposure:**

No information found.

**Acute Toxicity - Inhalation Exposure:**

No information found.

### 11.2 Carcinogenicity:

**International Agency for Research on Cancer (IARC)**

| Chemical Name | CAS Number | Classification |
|---|---|---|
| | No data found. | |

**National Toxicology Program (NTP)**

| Chemical Name | CAS Number | Classification |
|---|---|---|
| | No data found. | |

**U.S. OSHA specifically regulated carcinogens**

| Chemical Name | CAS Number | Classification |
|---|---|---|
| | No data found. | |

### 11.3 Additional Toxicology Information:

Data not available.

## SECTION 12: Ecological Information

### 12.1. Ecotoxicity

| Chemical Name | CAS Number | Species | Exposure | Toxicity |
|---|---|---|---|---|
| Potassium Chloride | 7447-40-7 | Freshwater Algae | Acute | EC50 72 h Desmodesmus subspicatus 2500 mg/L (IUCLID) |
| Potassium Ferrocyanide Trihydrate | 14459-95-1 | Freshwater Fish | Acute | "LC50 96 h Poecilia reticulata 19 mg/L [static]; LC50 96 h Pimephales promelas >100 mg/L" As Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)- [13943-58-3] |
| Potassium Chloride | 7447-40-7 | Freshwater Fish | Acute | LC50 96 h Lepomis macrochirus 1060 mg/L [static] (EPA); LC50 96 h Pimephales promelas 750 - 1020 mg/L [static] (EPA) |
| Potassium Chloride | 7447-40-7 | Water Flea | Acute | EC50 48 h Daphnia magna 825 mg/L (IUCLID); EC50 48 h Daphnia magna 83 mg/L [Static] (EPA) |

### 12.2. Persistence and Degradability

Data not available.

### 12.3. Bioaccumulative Potential

Data not available.

### 12.4. Mobility in soil

Data not available.

### 12.5. Other Adverse Ecological Effects

Data not available.

## SECTION 13: Disposal Considerations

### 13.1. Waste Treatment Methods

Data not available.

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## SECTION 14: Transportation Information

### 14.1 Transportation by Land - Department of Transportation (DOT, United States of America)

Not regulated according to DOT regulations.

### 14.2 Transportation by Air - International Air Transport Association (IATA)

Not regulated according to IATA Dangerous Goods Regulations.

### 14.3 Transportation of Dangerous Goods (TDG, Canada)

Not regulated according to TDG regulations.

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## SECTION 15: Regulatory Information

### 15.01. Occupational Safety and Health Administration (OSHA) Hazards

| Chemical Name | CAS Number | Regulatory Information |
|---|---|---|
| | | No data found. |

### 15.02. Superfund Amendments and Reauthorization Act (SARA) 302 Extremely Hazardous Substances

| Chemical Name | CAS Number | RQ |
|---|---|---|
| | | No data found. |

### 15.03. Superfund Amendments and Reauthorization Act (SARA) 311/312 Hazardous Chemicals

| Chemical Name | CAS Number | Regulatory Information |
|---|---|---|
| | | No data found. |

### 15.04. Superfund Amendments and Reauthorization Act (SARA) 313 Toxics Release Inventory (TRI)

| Chemical Name | CAS Number | List | Regulatory Information |
|---|---|---|---|
| Potassium Ferricyanide | 13746-66-2 | Emission Reporting | "1.0 % de minimis concentration (X+CN- where X=H+ or any other group where a formal dissociation can be made, for example, KCN or Ca(CN)2, listed under Chemical Category N106)" As Cyanide compounds [RR-00812-8] |
| Potassium Ferrocyanide Trihydrate | 14459-95-1 | Emission Reporting | "1.0 % de minimis concentration (X+CN- where X=H+ or any other group where a formal dissociation can be made, for example, KCN or Ca(CN)2, listed under Chemical Category N106)" As Cyanide compounds [RR-00812-8] |

### 15.05. Massachusetts Right-to-Know Substance List

| Chemical Name | CAS Number | Regulatory Information |
|---|---|---|
| | | No data found. |

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### 15.06. Pennsylvania Right-to-Know Hazardous Substances

| Chemical Name | CAS Number | Regulatory Information |
|---|---|---|
| Potassium Ferricyanide | 13746-66-2 | "Environmental hazard" As Cyanide compounds [RR-00812-8]; "Environmental hazard" As Iron salts [RR-04647-9] |
| Potassium Ferrocyanide Trihydrate | 14459-95-1 | "Environmental hazard" As Cyanide compounds [RR-00812-8]; "Environmental hazard" As Iron salts [RR-04647-9] |

### 15.07. New Jersey Worker and Community Right-to-Know Components

| Chemical Name | CAS Number | Regulatory Information |
|---|---|---|
| Potassium Ferricyanide | 13746-66-2 | "sn 2308" As Cyanide compounds [RR-00812-8] |
| Potassium Ferrocyanide Trihydrate | 14459-95-1 | "sn 2308" As Cyanide compounds [RR-00812-8] |

### 15.08. California Proposition 65

| Chemical Name | CAS Number | Regulatory Information |
|---|---|---|
| | | No data found. |

### 15.09. Canada Domestic Substances List / Non-Domestic Substances List (DSL/NDSL)

| Chemical Name | CAS Number | List | Status |
|---|---|---|---|
| Potassium Ferricyanide | 13746-66-2 | DSL | Present |
| Potassium Ferrocyanide Trihydrate | 14459-95-1 | DSL | "Present" As Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)- [13943-58-3] |
| Potassium Chloride | 7447-40-7 | DSL | Present |
| Water | 7732-18-5 | DSL | Present |

### 15.10. United States of America Toxic Substances Control Act (TSCA) List

| Chemical Name | CAS Number | Status |
|---|---|---|
| Potassium Ferricyanide | 13746-66-2 | Present (ACTIVE) |
| Potassium Ferrocyanide Trihydrate | 14459-95-1 | "Present (ACTIVE)" As Ferrate(4-), hexakis(cyano-.kappa.C)-, potassium (1:4), (OC-6-11)- [13943-58-3] |
| Potassium Chloride | 7447-40-7 | Present (ACTIVE) |
| Water | 7732-18-5 | Present [XU] (ACTIVE) |

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### 15.11. European Inventory of Existing Commercial Chemical Substances (EINECS), European List of Notified Chemical Substances (ELINCS), and No Longer Polymers (NLP)

| Chemical Name | CAS Number | List | Number |
|---|---|---|---|
| Potassium Ferricyanide | 13746-66-2 | EINECS | 237-323-3 |
| Potassium Ferrocyanide Trihydrate | 14459-95-1 | EINECS | "237-722-2" As Tetrapotassium hexacyanoferrate [13943-58-3] |
| Potassium Chloride | 7447-40-7 | EINECS | 231-211-8 |
| Water | 7732-18-5 | EINECS | 231-791-2 |

### 15.12. China - Inventory of Existing chemical Substances (IECSC)

| Chemical Name | CAS Number | Status |
|---|---|---|
| Potassium Ferricyanide | 13746-66-2 | Present [34366] |
| Potassium Ferrocyanide Trihydrate | 14459-95-1 | Present [23502] |
| Potassium Chloride | 7447-40-7 | Present [24074] |
| Water | 7732-18-5 | Present [32224] |

### 15.13. Korea - Existing Chemicals Inventory (KECI/KECL)

| Chemical Name | CAS Number | List | Status |
|---|---|---|---|
| Potassium Ferricyanide | 13746-66-2 | Annex 1 | Present [KE-34764] |
| Potassium Ferricyanide | 13746-66-2 | Annex 3 | "Present (97-1-90)" As Inorganic cyanide compounds [RR-00573-2] |
| Potassium Ferrocyanide Trihydrate | 14459-95-1 | Annex 1 | "Present [KE-33660]" As Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, (OC-6-11)- [13943-58-3] |
| Potassium Ferrocyanide Trihydrate | 14459-95-1 | Annex 3 | "Present (97-1-90)" As Inorganic cyanide compounds [RR-00573-2] |
| Potassium Chloride | 7447-40-7 | Annex 1 | Present [KE-29086] |
| Water | 7732-18-5 | Annex 1 | Present [KE-35400] |

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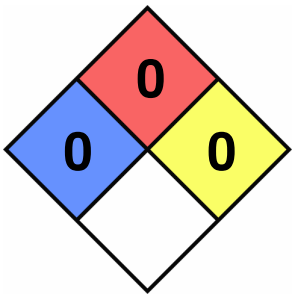
### 15.14. Japan - Existing and New Chemical Substances Inventory (ENCS)

| Chemical Name | CAS Number | MITI No. |
|---|---|---|
| Potassium Ferricyanide | 13746-66-2 | (1)-134 |
| Potassium Ferrocyanide Trihydrate | 14459-95-1 | "(1)-815" As Tetrapotassium hexacyanoferrate [13943-58-3] |
| Potassium Chloride | 7447-40-7 | (1)-228 |
| Water | 7732-18-5 | - (listed on Japanese Pharmacopoeia 8th Edition) |

## SECTION 16: Other Information

### 16.1 National Fire Protection Associate (NFPA) Rating

**Health:** 0
**Flammability:** 0
**Reactivity** 0
**Special Hazard:**




### 16.2 Document Revision

**Last Revision Date:**
2026-05-06

## DISCLAIMER

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and RICCA CHEMICAL COMPANY assumes no legal responsibility or liability whatsoever resulting from its use.