

Safety Data Sheet (SDS)

Section 1: Identification

Product identifier: Potassium Ferricyanide

Other name(s): Murakami's reagent part A

Item number(s): 196A

Identified use: SU24 Scientific research and development.

Details of the supplier of the safety data sheet:

ES Laboratory, LLC

2041 E. Gladstone St. Unit N Glendora, CA 91740 USA

Tel: 626-208-9011

Emergency telephone number:

CHEMTREC® 1-800-424-9300 (US & Canada Only)

Section 2: Hazard(s) Identification

Hazardous classification of the substance or mixture: Not a hazardous substance or mixture.

Signal word: N/A

Pictogram: N/A

Hazard statement(s): None

Precautionary statement(s): None

Response statement(s): None

Storage statement(s): None

Disposal statement(s): None

Hazard(s) not otherwise classified: Contact with acids liberates very toxic gas.

Label elements: See tables above

HMIS Ratings:

Health: 1

Flammability: 0

Reactivity: 0

NFPA Ratings:

Health: 1

Flammability: 0

Reactivity: 0

Special hazard: None

Section 3: Composition/Information on Ingredients

Component	CAS No.	Concentration (wt%)
Tripotassium hexacyanoferrate	13746-66-2	<=100%

Section 4: First-Aid Measures

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical aid immediately.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid immediately.

Skin contact: Wash the areas of contact with water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately.

Ingestion: Rinse mouth. Get medical aid immediately.

Most important symptoms and effects, both acute and delayed: No information.

Recommendation for immediate medical care and special treatment needed, when necessary: No information.

Section 5: Fire-Fighting Measures

General Information: This product itself does not burn.

Extinguishing media: dry powder.

Special hazards arising from the substance or mixture: In the case of fire, the following can be released: carbon oxides, nitrogen oxides, potassium oxide, iron oxides.

Special protective equipment or precautions for firefighters: Wear full protective clothing and a self-contained respirator.

Section 6: Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures: Wear protective equipment. Keep unprotected persons away.

Environmental precautions: Do not allow the material to be released to the environment without proper government permits.

Methods and materials for containment and cleaning up: Pick up or orange disposal without creating dust. Sweep up and shovel. Do not flush with water. Keep in suitable, closed container for disposal.

Section 7: Handling and Storage

Precautions for safe handling: Wear protective equipment. Keep container tightly sealed. Store in cool, dry place in tightly closed containers.

Condition for safe storage: Keep container tightly sealed. Never allow the product to get in contact with water during storage. Do not store near acids. Keep dry.

Incompatibilities: Acids.

Specific storage requirement(s): No information.

Section 8: Exposure Controls/Personal Protection

Exposure Limits

Component	CAS No.	ACGIH TLV	OSHA PEL
Tripotassium hexacyanoferrate	13746-66-2	C 5 mg/m ³ TWA 1 mg/m ³	C 4.7 ppm or 5 mg/m ³ TWA 1 mg/m ³

Note: Exposure limits shown are expressed as cyanide (as CN); tripotassium hexacyanoferrate has no substance-specific occupational exposure limit.

Engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before and after use.

Eye protection: Wear safety glasses or goggles.

Skin protection: Wear protective clothing and chemical resistant gloves.

Respiratory protection: Use self-contained respiratory device in an emergency situation.

Section 9: Physical and Chemical Properties

Appearance:	Red powder
UFL/UEL:	Not determined
LFL/LEL:	Not determined
Odor:	No data
Vapor pressure:	Not determined
Odor threshold:	Not determined
Vapor density:	Not determined
pH:	6 – 9 at 329 g/l at 25 deg. C
Relative density:	1.890 g/cm ³
Melting Point/Freezing point:	Not determined
Solubility in water:	329 g/l at 20 deg. C
Boiling point/boiling range:	Not determined
Flash point:	Not applicable
Evaporation Rate:	Not determined
Flammability (solid, gas):	Not applicable
Partition coefficient (n-octanol/water):	Not determined
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Viscosity:	Not determined

Section 10: Stability and Reactivity

Reactivity: Contact with acids liberate very toxic gas.

Chemical stability: Stable under recommended storage conditions.

Stabilizer(s): Not required.

Safety issues that may arise should the product change in

appearance: No information.

Thermal decomposition/ conditions to avoid: Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions: No data.

Incompatibilities: Acids, strong oxidizing agents, ammonia, hydrochloric acid, cyanides.

Hazardous decomposition products: No data. In event of fire: see section 5.

Revised Date: 6/19/2026

Section 11: Toxicological Information

For Potassium Ferricyanide:

Acute toxicity:

Oral mouse LD50: 2970 mg/kg.

Other exposure effect:

Inhalation: No data.

On the Skin: No data.

On the Eye: No data.

Sensitization: No data.

Additional toxicological information: To the best of our knowledge, the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from NTP, OSHA, ACGIH, or IARC.

Section 12: Ecological Information

Toxicity:

Aquatic toxicity:

Toxic to fish. LC50 rainbow trout: 869 mg/l, 96h

Toxic to daphnia and other aquatic invertebrates. EC50 water flea: 549 mg/l, 48h.

Persistence and degradability: No information.

Behavior in environmental system:

Bioaccumulative potential: No information.

Mobility in soil: No information.

Additional ecological information: Avoid transfer into the environment.

Other adverse effects: No information.

Section 13: Disposal Considerations

Place in a chemical waste container for proper disposal in an approved waste disposal facility. Dispose of the content and container in accordance with local, regional, national, and international regulations.

Section 14: Transport Information

D.O.T. shipping name: N/A

D.O.T. hazard class: N/A

UN number: N/A

Packing group: N/A

Section 15: Regulatory Information

Not meant to be all inclusive, selected regulations represented

OSHA status: Not classified as hazardous under OSHA HCS.

TSCA status: All components are listed.

Section 16: Other Information

Disclaimer: The information above is believed to be accurate and represents the best information currently available to us.

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Safety Data Sheet (SDS)

Section 1: Identification

Product identifier: Sodium Hydroxide Solution

Other name(s): Murakami's reagent part B

Item number(s): 196B

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet:

ES Laboratory, LLC

2041 E. Gladstone St. Unit N Glendora, CA 91740 USA

Tel: 626-208-9011

Emergency telephone number:

CHEMTREC® 1-800-424-9300 (US & Canada Only)

Section 2: Hazard(s) Identification

Hazardous classification of the substance or mixture:

Hazard Class	Category code
Skin Corrosion	1A
Serious Eye Damage	1

Signal word: Danger

Pictogram:



Hazard statement(s):

H314 Causes severe skin burns and eye damage.

Precautionary statement(s):

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P264 Wash skin thoroughly after handling.

Response statement(s):

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P301+P330+P331+P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

P363 Wash contaminated clothing before reuse.

Storage statement(s):

P405 Store locked up.

Disposal statement(s):

P501 Dispose of contents/container to an approved waste disposal plant.

Hazard(s) not otherwise classified: No information.

Label elements: See tables above

HMIS Ratings:

Health: 3
Flammability: 0
Reactivity: 1

NFPA Ratings:

Health: 3
Flammability: 0
Reactivity: 1
Special hazard: None

Section 3: Composition/Information on Ingredients

Component	CAS No.	Concentration (wt%)
Sodium Hydroxide	1310-73-2	9-11%

Any concentration shown as a range is to protect the confidentiality or is due to batch variation. Only hazardous components are shown.

Section 4: First-Aid Measures

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical aid immediately.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid immediately.

Skin contact: Wash the areas of contact with water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately.

Ingestion: Do not induce vomiting. Rinse mouth. Get medical aid immediately.

Most important symptoms and effects, both acute and delayed: No information.

Recommendation for immediate medical care and special treatment needed, when necessary: No information.

Section 5: Fire-Fighting Measures

Extinguishing media: Water, dry chemical, foam, or carbon dioxide.

Special hazards arising from the substance or mixture: In the case of fire, the following can be released: sodium oxides.

Special protective equipment or precautions for firefighters: Wear full protective clothing and a self-contained respirator.

Section 6: Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures: Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation.

Environmental precautions: Do not allow the material to be released to the environment without proper government permits.

Methods and materials for containment and cleaning up: Use a neutralizing agent. Absorb with a liquid binding material (sand, diatomite, acid binder, universal binders, sawdust). Dispose of contaminated material as waste according to section 13. Ensure adequate ventilation.

Section 7: Handling and Storage

Precautions for safe handling: Wear protective equipment. Ensure good ventilation in the workplace. Avoid inhalation of vapor or mist.

Condition for safe storage: Keep container tightly sealed. Store in an approved corrosive liquid storage container/area.

Incompatibilities: Store away from strong acids.

Specific storage requirement(s): No information.

Section 8: Exposure Controls/Personal Protection

Exposure Limits

Component	CAS No.	ACGIH TLV	OSHA PEL
Sodium hydroxide	1310-73-2	C 2 mg/m ³	2 mg/m ³

Engineering controls: Use general and/or local exhaust ventilation to control the vapor concentration.

Eye protection: Wear safety glasses or goggles.

Skin protection: Wear protective clothing and chemical-resistant gloves.

Respiratory protection: Use a self-contained respiratory device in an emergency situation.

Section 9: Physical and Chemical Properties

Appearance:

Clear liquid gel

UFL/UEL:

Not determined

LFL/LEL:	Not determined
Odor:	No odor
Vapor pressure:	Not determined
Odor threshold:	Not determined
Vapor density:	Not determined
pH:	>14
Relative density:	Not determined
Melting Point/Freezing point:	Not determined
Solubility in water:	Miscible
Boiling point/boiling range:	Not determined
Flashpoint:	Not determined
Evaporation Rate:	Not determined
Flammability (solid, gas):	Not applicable
Partition coefficient (n-octanol/water):	Not determined
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Viscosity:	Not determined

Section 10: Stability and Reactivity

Reactivity: No information.

Chemical stability: Stable under recommended storage conditions.

Stabilizer(s): Not required.

Safety issues that may arise should the product change in appearance: No information.

Thermal decomposition/ conditions to avoid: Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions: see incompatibilities.

Incompatibilities: Strong acids, organic materials, chlorinated solvents, aluminum, tin, zinc.

Hazardous decomposition products: sodium oxides, when heated to decomposition.

Section 11: Toxicological Information

For Sodium Hydroxide:

Acute Toxicity:

Oral: LD50 (rabbit) 325 mg/kg.

Dermal: LD50 (rabbit) 1,350 mg/kg.

Other exposure effect:

Inhalation: No data available.

On the Skin: rabbit: 500 mg/24H severe irritation.

On the Eye: rabbit: 50 µg/24H severe irritation.

Sensitization: Not a skin or respiratory sensitizer.

Additional toxicological information: To the best of our knowledge, the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from NTP, IARC or OSHA.

Section 12: Ecological Information

Toxicity:

Aquatic toxicity: No information.

Persistence and degradability: No information.

Behavior in environmental system:

Bioaccumulative potential: No information.

Mobility in soil: No information.

Additional ecological information: Avoid transfer into the environment.

Other adverse effects: No information.

Section 13: Disposal Considerations

Place in a chemical waste container for proper disposal in an approved waste disposal facility. Dispose of the content and container in accordance with local, regional, national, and international regulations.

Section 14: Transport Information

D.O.T. shipping name: Sodium hydroxide solution

D.O.T. hazard class: 8

UN number: UN1824

Packing group: II

Section 15: Regulatory Information

Not meant to be all-inclusive, selected regulations represented

OSHA status: These items meet the OSHA Hazard Communication Standard (29 CFR 1910.1200) definition of a hazardous material.

TSCA status: All components are listed.

Section 16: Other Information

Disclaimer: The information above is believed to be accurate and represents the best information currently available to us.

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