SDS

Safety Data Sheet

1. IDENTIFICATION

Product Identifier: **Sodium Cyanide Solution, 10% w/v Aqueous**

Product Code(s): S1026

Synonyms: Prussiate of Soda Solution

Recommended Use: For manufacturing, industrial, and laboratory use only. Use as a solvent or as a laboratory reagent.

Uses Advised Against: Not for food, drug, or household use.

Supplier: Rocky Mountain Reagents, Inc.
4621 Technology Drive, Golden, CO 80403
Phone: (303) 762-0800 Fax: (303) 762-1240

Emergency Phone Number: (800) 255-3924 (CHEM-TEL)

2. HAZARDS IDENTIFICATION

Hazard Classifications:

Acute Toxicity – Oral:	Category 3
Acute Toxicity – Dermal:	Category 2
Acute Toxicity – Inhalation:	Category 4
Specific Target Organ Toxicity (Repeated Exposure):	Category 1

Signal Word: DANGER

Hazard Statements:
Toxic if swallowed.
Fatal in contact with skin.
Harmful if inhaled.
Causes damage to organs through prolonged or repeated exposure.

Pictograms:

Precautionary Statements:

Prevention:
Wash thoroughly after handling.
Do not eat, drink, or smoke when using this product.

Do not get in eyes, on skin, or on clothing.
Wear protective gloves and protective clothing.
Avoid breathing fume, mist, vapors, or spray.
Use only outdoors or in a well-ventilated area.
Do not breathe dust.

Response: Get medical attention if you feel unwell.
If swallowed: Immediately call a poison center or doctor. Follow specific treatment procedures (see Section 4 or product label). Rinse mouth.
If on skin: Wash with plenty of water. Immediately call a poison center or doctor. Take off immediately all contaminated clothing and wash it before reuse.
If inhaled: Remove to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell.

Storage: Store locked up.

Disposal: Dispose of contents and container in accordance with local, regional, national, and international regulations.

Hazards Not Otherwise Classified: Very toxic to aquatic life with long-lasting effects. Avoid release to the environment.

Toxicity Statement: Not applicable.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Component	Common Name / Synonyms	CAS#	Chemical Formula	% by Weight
Water	Water	7732-18-5	H_2O	90
Sodium Cyanide	Prussiate of Soda	143-33-9	NaCN	10

Trade Secret Statement: Not applicable.

4. FIRST AID MEASURES

First Aid Procedures:

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious, or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately.

Ingestion: Do not induce vomiting. If vomiting occurs, keep head low so that vomit does not enter lungs. Administer antidote kit and oxygen per pre-planned instructions. If patient is conscious, immediately give activated charcoal slurry. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Skin Contact: Wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician immediately.

Eye Contact: Check for and remove contact lenses, if present and easy to do. Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Call a physician immediately.

General Advice:	Poison information centers in each state can provide additional assistance for scheduled poisons. Ensure that those providing first aid and medical personnel are aware of the material(s) involved and take precautions to protect themselves. Material is highly toxic; avoid additional exposures in providing assistance.
Symptoms and Effects:	Ingestion may cause nausea, vomiting, and death. Inhalation may cause irritation, coughing, shortness of breath, and headache. Skin exposure may cause irritation and death. Eye exposure may cause irritation.
Immediate Medical Care/ Special Treatment:	Get medical attention immediately. Administer appropriate specific treatment as described above.

5. FIREFIGHTING MEASURES

Suitable Extinguishing Media:	Water spray, dry powder, alcohol resistant foam.
Unsuitable Extinguishing Media:	Do not use carbon dioxide. Do not use a solid (straight) water stream, as it may scatter and spread fire.
Hazardous Combustion Products:	Sodium oxides, carbon oxides, nitrogen oxides, hydrogen cyanide.
Specific Hazards:	Excessive thermal conditions may cause decomposition and yield corrosive and/or toxic fumes. Use of carbon dioxide may yield hazardous hydrogen cyanide.
Special Protective Equipment/ Precautions for Firefighters:	As in any fire, wear MSHA/NIOSH-approved (or equivalent), self-contained, positive-pressure or pressure-demand breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment:	Isolate hazard area and keep unnecessary and unprotected personnel away from the area of the leak or spill. Wear appropriate personal protective equipment (see Section 8). Avoid contact with eyes, skin, and clothing.
Emergency Procedures:	Evacuate surrounding personnel as needed. In case of chemical emergency, or if unsure how to address an accidental release, consult a professional (see Section 1).
Methods for Containment:	Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements, or confined areas. Dike the spilled material, where this is possible. Product should not be released to the environment. Contain and recover liquid when possible.
Methods for Cleanup:	Absorb spill with an inert material (e.g. vermiculite, dry sand, earth, cloth, or fleece) and place in a non-combustible container for reclamation or disposal. Do not flush to sewer. Clean contaminated surface thoroughly. Residues from spills can be neutralized with dilute sodium hypochlorite solution and diluted with water. Never return spills in original containers for reuse. Clean up in accordance with all applicable regulations.

7. HANDLING AND STORAGE

Handling:	Wear personal protective equipment (see Section 8). Avoid contact with skin, eyes, and clothing. Do not ingest. When using, do not eat, drink, or smoke. Keep away from incompatible materials (see Section 10). Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Containers of this material may be hazardous when empty, as they retain product residues. Observe all warnings and precautions listed for this product.

Storage: Store in a cool, dry, ventilated area. Store in a segregated and approved area away from heat and incompatible materials (see Section 10). Store in original container. Keep containers tightly closed and upright. Keep away from food, drink, and animal foodstuffs. Keep out of the reach of children. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of this product.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:

Water: No information found.

Sodium Cyanide: OSHA (TWA): 5 mg/m^3
ACGIH (TLV): 5 mg/m^3
NIOSH (REL): 5 mg/m^3

Engineering Controls: Ensure adequate ventilation. 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.

Personal Protective Measures:

Eye/Face Protection: Wear safety glasses with side shields or safety goggles. Wear a face shield. Maintain approved eye wash station and accessible rinse facilities in work area.

Skin Protection: Wear appropriate chemical resistant clothing (with long sleeves) and appropriate chemical resistant gloves.

Respiratory Protection: An air-purifying, NIOSH-approved respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a positive-pressure, air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are unknown, or if any other circumstances exist where air-purifying respirators may not provide adequate protection.

Specific Requirements for Personal Protective Equipment: Ensure that glove material is compatible with this product. This information is available from glove manufacturers.

9. PHYSICAL AND CHEMICAL PROPERTIES

Unless otherwise indicated, all properties are given at 25 °C and standard pressure.

Appearance: Colorless, clear, transparent liquid.

Odor: Slight, almond.

Odor Threshold: No information found.

Formula Weight: 49.01 as sodium cyanide.

pH: 11 – 12 (1 M aqueous)

Melting/Freezing Point: No information found.

Boiling Point/Range: No information found.

Decomposition Temperature: No information found.

Flash Point: Not applicable.

Auto-ignition Temperature: Not applicable.

Flammability: Not flammable.

Flammability/Explosive Limits:	Not applicable.
Solubility:	410 g/L aqueous.
Vapor Pressure:	No information found.
Vapor Density:	No information found.
Specific Gravity:	> 1.0
Evaporation Rate:	No information found.
Viscosity:	No information found.
Partition Coefficient (n-octanol/water):	No information found.

10. STABILITY AND REACTIVITY

Reactivity Data:	Contact with incompatible materials may yield toxic gas.
Chemical Stability:	Stable under normal conditions.
Conditions to Avoid:	Excessive heat, incompatible materials.
Incompatible Materials:	Acids, oxidizers, carbon dioxide.
Hazardous Decomposition Products:	Sodium oxides, carbon oxides, nitrogen oxides, hydrogen cyanide.
Possibility of Hazardous Reactions:	May react vigorously or violently with the incompatible materials listed above. Contact with acids or carbon dioxide may yield hazardous hydrogen cyanide. Excessive thermal conditions may yield hazardous decomposition products listed above.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure:	Inhalation, ingestion, skin contact, eye contact.		
Acute Effects:	May be fatal if swallowed or exposed to the skin. Harmful if inhaled. May cause irritation if exposed to the skin or eyes. May affect the stomach.		
Chronic Effects:	Prolonged or repeated exposure may cause organ system toxicity, mutagenic effects, reproductive effects, or damage to the unborn child.		
Toxicological Data:	Water:	Not applicable.	
	Sodium Cyanide:	LD_{50} Oral, Rat:	6.44 mg/kg
		LD_{50} Dermal, Rabbit:	10.4 mg/kg
		LC_{50} Inhalation, Rat:	< 0.5 mg/L 4 h
Symptoms of Exposure:	Irritation, coughing, shortness of breath, headache, nausea, vomiting.		
Carcinogenic Effects:	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.		

12. ECOLOGICAL INFORMATION

Ecotoxicological Data:	Water:	Not applicable.

Sodium Cyanide:	EC_{50} Water Flea (Daphnia magna):	0.09 mg/L 96 h
	LC_{50} Rainbow Trout (Oncorhynchus mykiss):	0.05 mg/L 96 h

Persistence and Degradability: No information found.

Environmental Effects: Very toxic to aquatic organisms. Avoid release to the environment.

13. DISPOSAL INFORMATION

Disposal Instructions: Dispose of this material and its container to an approved waste collection point. Minimize exposure to product waste (see Section 8). Do not dispose unused waste down drains or into sewers. All wastes must be handled in accordance with local, state, and federal regulations.

Contaminated Packaging: Because containers retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

Waste Codes: Sodium Cyanide: P106 (US RCRA Acute Hazardous Waste)

14. TRANSPORT INFORMATION

DOT:

UN Number: UN3414

Proper Shipping Name: Sodium cyanide, solution

Hazard Class: 6.1

Packing Group: II

ERG Number: 157

Environmental Hazard Regulations: Sodium Cyanide: IMDG Marine Pollutant

Other Transport Precautions: No information found.

15. REGULATORY INFORMATION

U.S. Federal Regulations:

OSHA: This product is considered a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Inventory: All components of this product are on the U.S. TSCA Inventory.

U.S. EPCRA (SARA Title III):

Section 302: Sodium Cyanide

Sections 311/312:

Hazard Category	List (Yes/No)
Section 311 – Hazardous Chemical	Yes
Immediate Hazard	Yes
Delayed Hazard	Yes
Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No

Section 313: Sodium Cyanide

CERCLA Reportable Quantities: No information found.

International Inventories:

Country or Region	Inventory Name	On Inventory (Yes/No)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

*A "Yes" indicates that the listed components of this product comply with the inventory requirements administered by the governing country or region.

16. OTHER INFORMATION

Disclaimer: Rocky Mountain Reagents, Inc. provides the information in this Safety Data Sheet in the belief that it is reliable but assumes no responsibility for its completeness or accuracy. The physical properties reported in this SDS are obtained from literature and do not constitute product specifications. Rocky Mountain Reagents, Inc. makes and gives no representations or warranties with respect to the information contained herein or the product to which it refers, whether express, implied, or statutory, including without limitation, warranties of accuracy, completeness, merchantability, non-infringement, performance, safety, suitability, stability, and fitness for a particular purpose. No warranty against infringement of any patent, copyright or trademark is made or implied. This SDS is intended only as a guide to the appropriate handling of the material by a properly trained person. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. Accordingly, Rocky Mountain Reagents, Inc. assumes no liability whatsoever for the use of or reliance upon this information including results obtained, incidental or consequential damages, or lost profits.

Issue Date: November 17, 2016

Reason for Revision: Update of Sections 2, 4, 8, 11, and 12 over 06/08/2016 version.