

Safety Data Sheet

1. IDENTIFICATION

Product Identifier:	Mercuric Nitrate Solution, 0.1-0.25% w/w (0.01-0.014N)
Product Code(s):	M1007, M1020
Synonyms:	Mercury (II) Nitrate Solution; Nitric Acid, Mercury Salt Solution.
Recommended Use:	For manufacturing, industrial, and laboratory use only. Use as a laboratory standard 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:	For health emergency, call Poison Control: (800) 222-1222.

2. HAZARDS IDENTIFICATION

Hazard Classifications:	This product is classified as not hazardous under OSHA's Hazard Communication Standard, 29 CFR 1910.1200 (HCS) and the United Nations' Globally Harmonized System of Classification and Labeling of Chemicals (GHS). However, all chemicals handled and used in the workplace should be treated with caution.
Signal Word:	Not applicable.
Hazard Statements:	Not applicable.
Pictograms:	Not applicable.
Precautionary Statements:	
Prevention:	Not applicable.
Response:	Not applicable.
Storage:	Not applicable.
Disposal:	Not applicable.
Hazards Not Otherwise Classified:	This product may cause adverse mutagenic, reproductive, and teratogenic effects based on animal data.

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 ₂ O	99.6 – 99.7
Mercuric Nitrate, Monohydrate	Mercury (II) Nitrate, Monohydrate	7783-34-8	Hg(NO ₃) ₂ • H ₂ O	0.170 – 0.235
Nitric Acid	Azotic Acid; Aqua Fortis	7697-37-2	HNO ₃	0.0995 – 0.1005

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. Call a physician if symptoms occur.
- Ingestion:** Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, keep head low so that vomit does not enter lungs. Never give anything by mouth to an unconscious person. Call a physician or poison control center if symptoms occur.
- 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 if symptoms occur.
- 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 if symptoms occur.
- 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.

Symptoms and Effects: Irritation, burning, ulceration, coughing, wheezing, choking sensation, pneumonia, pulmonary edema, spasm, laryngitis, shortness of breath, headache, nausea, vomiting, fatigue, behavioral changes, impaired motor function, numbness, visual disturbances. May be harmful if swallowed, inhaled, or absorbed through the skin. May cause irritation of the eyes, skin, respiratory tract, and gastrointestinal tract. Prolonged or repeated exposure may affect the kidneys, teeth, brain, central nervous system, and eyes. Prolonged or repeated exposure may also cause mutagenic effects, reproductive effects, teratogenic effects, and cancer.

**Immediate Medical Care/
Special Treatment:** If exposed or concerned, get medical attention. Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable Extinguishing Media: Water spray, dry powder, alcohol resistant foam, carbon dioxide.

Unsuitable Extinguishing Media: Do not use a solid (straight) water stream, as it may scatter and spread fire.

Hazardous Combustion Products: Hydrogen, nitrogen oxides, mercuric oxides.

Specific Hazards: Contact with metals may produce hydrogen gas. Excess thermal conditions or contact with combustible materials may cause decomposition and yield nitrogen oxides and mercuric oxides.

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: 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 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). Provide sufficient air exchange and/or exhaust in work rooms. Avoid contact with skin, eyes, and clothing. Do not breathe vapors or spray mist. 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.		
	Mercuric Nitrate, Monohydrate:	ACGIH (TLV):	TWA:	0.025 mg/m ³
		OSHA (PEL):	TWA:	0.05 mg/m ³
	Nitric Acid:	OSHA (PEL):	TWA:	2 ppm
			STEL:	4 ppm
		ACGIH (TLV):	TWA:	2 ppm
			STEL:	4 ppm

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 goggles. 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 appropriate cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a full-face, 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
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Appearance: Colorless, transparent liquid.

Odor: Odorless.

Odor Threshold: No information found.

Formula Weight: 342.61 as mercuric nitrate, monohydrate

pH: < 4 at 20 °C

Melting/Freezing Point: ≈ 0 °C

Boiling Point/Range: ≈ 100 °C

Decomposition Temperature: No information found.

Flash Point: Not applicable.

Auto-ignition Temperature: Not applicable.

Flammability: Not flammable.

Flammability/Explosive Limits: Not applicable.

Solubility: Miscible with water.

Vapor Pressure: No information found.

Vapor Density: No information found.

Specific Gravity: 1.005 (Water = 1)

Evaporation Rate: No information found.

Viscosity: No information found.

Partition Coefficient (n-octanol/water): No information found.

10. STABILITY AND REACTIVITY

Reactivity Data:	No information found.
Chemical Stability:	Stable under normal conditions.
Conditions to Avoid:	Excessive heat, incompatible materials.
Incompatible Materials:	Strong bases, reducing agents, metals, combustible materials, aromatic hydrocarbons, unsaturated hydrocarbons, cyanides, thiocyanates.
Hazardous Decomposition Products:	Nitrogen oxides, mercuric oxides, hydrogen.
Possibility of Hazardous Reactions:	May react vigorously or violently with the incompatible materials listed above. Excess thermal conditions may yield hazardous nitrogen oxides. Contact with metals may produce hazardous concentrations of hydrogen gas.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure:	Inhalation, ingestion, skin contact, eye contact.
Acute Effects:	May be harmful if swallowed, inhaled, or absorbed through the skin. May cause irritation of the eyes, skin, respiratory tract, and gastrointestinal tract.
Chronic Effects:	Prolonged or repeated exposure may affect the kidneys, teeth, brain, central nervous system, and eyes. Prolonged or repeated exposure may also cause mutagenic effects, reproductive effects, teratogenic effects, and cancer.
Toxicological Data:	Water: Not applicable.
	Mercuric Nitrate, Monohydrate: LD50 Oral, Rat: 26 mg/kg Causes irritation to eyes and skin based on animal data. Causes mutagenic, reproductive, and teratogenic effects based on animal data.
	Nitric Acid: LC50 Inhalation, Rat: 67 mg/L 4 h LDL Oral, Human: 430 mg/kg Causes severe burns to eyes and skin based on human and animal data.
Symptoms of Exposure:	Irritation, burning, ulceration, coughing, wheezing, choking sensation, pneumonia, pulmonary edema, spasm, laryngitis, shortness of breath, headache, nausea, vomiting, fatigue, behavioral changes, impaired motor function, numbness, visual disturbances.
Carcinogenic Effects:	This product may cause cancer.
IARC:	Mercuric Nitrate, Monohydrate: 3 – Not classifiable as to its carcinogenicity to humans Nitric Acid: 2A – Probably carcinogenic to humans

12. ECOLOGICAL INFORMATION

Ecotoxicological Data:	Water: Not applicable.
	Mercuric Nitrate, Monohydrate: LC50, Fathead Minnow (<i>Pimephales promelas</i>): < 0.35 mg/L 96 h
	Nitric Acid: No information found.
Persistence and Degradability:	Expected to bioaccumulate.
Environmental Effects:	May be toxic to aquatic life. May leach into groundwater. Avoid release to the environment.

13. DISPOSAL INFORMATION

Disposal Instructions:	All wastes must be handled in accordance with local, state, and federal regulations. Minimize exposure to product waste (see Section 8). Do not dispose unused waste down drains or into sewers.
Contaminated Packaging:	Because emptied containers retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.
Waste Codes:	No information found.

14. TRANSPORT INFORMATION

DOT:	Not regulated.
Environmental Hazard Regulations:	Mercuric Nitrate: Marine pollutant according to IMDG and DOT.
Other Transport Precautions:	No information found.

15. REGULATORY INFORMATION

U.S. Federal Regulations:

OSHA: This product is not 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: Extremely Hazardous Substance: Nitric Acid
Reportable Quantity: 1000 lb
Threshold Planning Quantity: 1000 lb

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: Nitric Acid: Threshold Value: 1.0%

CERCLA Reportable Quantities: Mercuric Nitrate, Monhydrate: 10 lb
Nitric Acid: 1000 lb

International Inventories:

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

*A "Yes" indicates that the listed component(s) of this product comply with the inventory requirements administered by the governing country(s).

16. OTHER INFORMATION

Disclaimer:

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