SDS

Safety Data Sheet

1. IDENTIFICATION

Product Identifier: **FAS Indicator, 5% w/v in 1% Nitric Acid**

Product Code(s): F1014

Synonyms: Ammonium Iron (III) Alum – Nitric Acid Solution; Iron (III) Ammonium Sulfate – Nitric Acid Solution; Ferric Ammonium Sulfate Indicator

Recommended Use: For manufacturing, industrial, and laboratory use only. Use 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: Skin Corrosion/Irritation: Category 2
Eye Damage/Irritation: Category 2A

Signal Word: WARNING

Hazard Statements: Causes skin irritation.
Causes serious eye irritation.

Pictograms:

Precautionary Statements:

Prevention: Wash thoroughly after handling.
Wear protective gloves, eye protection, and face protection.

Response: If on skin: Wash with plenty of water. If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash it before reuse.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage: Not applicable.

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

Hazards Not Otherwise Classified: Not applicable.

Toxicity Statement: This product consists of 4.85% ingredients whose acute toxicities are unknown.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Component	Common Name / Synonyms	CAS#	Chemical Formula	% by Weight
Water	Water	7732-18-5	H_2O	94.2
Ferric Ammonium Sulfate, Dodecahydrate	Iron (III) Ammonium Sulfate, Dodecahydrate	7783-83-7	$FeNH_4(SO_4)_2 \cdot 12H_2O$	4.85
Nitric Acid	Azotic Acid; Aqua Fortis	7697-37-2	HNO_3	0.971

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. Get medical attention 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. Immediate medical attention is required. Get medical attention 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: Ingestion may cause sore throat, nausea, vomiting, diarrhea, loss of appetite, abdominal pain, urine discoloration, and black stool. Inhalation may cause coughing, wheezing, shortness of breath, and respiratory inflammation. Contact with skin or eyes may cause irritation and burns.

Immediate Medical Care/ Special Treatment: Get medical attention immediately if feeling unwell or concerned. 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: Sulfur oxides, iron oxides, nitrogen oxides.

Specific Hazards: Excessive thermal conditions may cause decomposition and yield corrosive and/or toxic fumes. Contact with metals may yield hazardous concentrations of hydrogen gas.

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 and neutralized with alkaline material such as soda ash or lime. 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. Limit exposure to light. 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. Never add water directly to product. Instead, add product to water to prevent violent eruption of the solution.

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. Do not store in metallic containers. Keep out of light. 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.

Ferric Ammonium Sulfate, Dodecahydrate:	ACGIH (TLV):	TWA:	1 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

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

Appearance: Orange, transparent liquid.

Odor: Odorless.

Odor Threshold: No information found.

Formula Weight: Mixture.

pH: < 2

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: Miscible with water.

Vapor Pressure: No information found.

Vapor Density (Relative): No information found.

Specific Gravity: 1.03 (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. Sensitive to light.
Conditions to Avoid:	Excessive heat, light, incompatible materials.
Incompatible Materials:	Strong bases, reducing agents, metals, combustible materials, organic materials.
Hazardous Decomposition Products:	Sulfur oxides, iron oxides, nitrogen oxides, hydrogen.
Possibility of Hazardous Reactions:	May react vigorously or violently with the incompatible materials listed above. Excess thermal conditions may yield hazardous decomposition products listed above. Contact with metals may yield hazardous concentrations of hydrogen.
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 exposed to the skin or eyes. Liquid and vapors are corrosive; may cause tissue damage.	
Chronic Effects:	Prolonged or repeated exposure may affect the liver and kidneys; may cause tooth decay, reproductive effects, teratogenic effects, mutagenic effects, and cancer.	
Toxicological Data:	Water:	Not applicable.
	Ferric Ammonium Sulfate, Dodecahydrate:	Causes moderate skin and eye irritation based on animal data. May be mutagenic based on animal data.
	Nitric Acid:	LC_{50} Inhalation, Rat: 67 mg/L 4 h LDL Oral, Human: 430 mg/kg Corrosive to skin and eyes based on human and animal data.
Symptoms of Exposure:	Irritation, burning, ulceration, coughing, wheezing, sore throat, choking sensation, laryngitis, shortness of breath, chest pain, pneumonia, pulmonary edema, headache, nausea, vomiting, diarrhea, loss of appetite, abdominal pain, muscle spasm, black stool, urine discoloration.	
Carcinogenic Effects:	This product may cause cancer.	
IARC:	Nitric Acid:	2A – Probably carcinogenic to humans

12. ECOLOGICAL INFORMATION

Ecotoxicological Data:	Water:	Not applicable.
	Ferric Ammonium Sulfate, Dodecahydrate:	No information found.
	Nitric Acid:	No information found.

Persistence and Degradability: No information found.

Environmental Effects: Not expected to be hazardous to the environment. However, the possibility of an environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. DISPOSAL INFORMATION

Disposal Instructions: Dispose of this material and its container to hazardous or special 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 emptied containers retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

Waste Codes: D002: Waste Corrosive Material (pH ≤ 2 or pH ≥12.5 or corrosive to steel)

14. TRANSPORT INFORMATION

DOT: Not regulated.

Environmental Hazard Regulations: No information found.

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:	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	No
Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No

Section 313: Nitric Acid: Threshold Quantity: 1.0%

CERCLA Reportable Quantities: 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: 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.

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