

Safety Data Sheet

1. IDENTIFICATION

Product Identifier: Nitric Acid, 69% w/w

Product Code(s): N1014, CF1121

Synonyms: Azotic Acid; Aqua Fortis

Recommended Use: For manufacturing, industrial, and laboratory use only. Use for neutralization of basic systems, as a catalyst, 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: Skin Corrosion/Irritation: Category 1A
Eye Damage/Irritation: Category 1
Oxidizing Liquids: Category 3

Signal Word: DANGER

Hazard Statements: Causes severe skin burns and serious eye damage.
May intensify fire; oxidizer.

Pictograms:



Precautionary Statements:

Prevention: Do not breathe fumes, mists, vapors, or spray.
Wash thoroughly after handling.
Wear protective gloves, protective clothing, eye protection, and face protection.
Keep away from heat.
Keep away from clothing and other combustible materials.

Take any precaution to avoid mixing with combustibles.

Response: Immediately call a poison center or doctor.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
In case of fire: Use water spray, dry powder, alcohol resistant foam, or carbon dioxide to extinguish.

Storage: Store locked up.

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

Hazards Not Otherwise Classified: Prolonged or repeated exposure may cause cancer, adverse reproductive effects, and tooth decay.

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	30 – 32
Nitric Acid	Azotic Acid; Aqua Fortis	7697-37-2	HNO ₃	68 – 70

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. Get medical attention immediately.

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. Get medical attention 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.

Symptoms and Effects:	Irritation, burning, ulceration, coughing, wheezing, choking sensation, sore throat, pneumonia, pulmonary edema, spasm, laryngitis, shortness of breath, headache, nausea, vomiting. Corrosive. Harmful if swallowed or inhaled. Causes irritation and burns if exposed to the eyes, skin, respiratory tract, and gastrointestinal tract. May enter lungs if swallowed or vomited. Prolonged or repeated exposure may affect the lungs and mucous membranes; may cause tooth decay, reproductive effects, teratogenic effects, and cancer.
Immediate Medical Care/ Special Treatment:	Immediate medical attention is required. If exposed or concerned, call a physician or poison control center immediately. 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.
Specific Hazards:	Oxidizer. Contact with combustible and organic material may cause fire. May accelerate burning when involved in a fire. May cause explosion hazard if contacted with flammable materials or if heated. Excessive thermal conditions or contact with incompatible materials may yield corrosive and/or toxic fumes. Contact with metals may produce 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:	Ventilate area of leak or spill. Isolate hazard area and keep unnecessary and unprotected personnel away from the area of the leak or spill. Keep upwind. 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 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). Use only in well-ventilated areas. 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. Never add water
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directly to this 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 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.		
Nitric Acid:	OSHA (PEL):	TWA:	2 ppm
		STEL:	4 ppm
	ACGIH (TLV):	TWA:	2 ppm
		STEL:	4 ppm
	NIOSH (REL):	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 and 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 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: Colorless, transparent liquid.

Odor: Acrid, pungent, irritating.

Odor Threshold: No information found.

Formula Weight: 63.01 as HNO₃

pH: < 1

Melting/Freezing Point: -41.8 °C

Boiling Point/Range: 120.5 °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:	7.02 mmHg
Vapor Density:	2.2 (Air = 1)
Specific Gravity:	1.41 (Water = 1)
Evaporation Rate:	No information found.
Viscosity:	2 mPa s at 20 °C
Partition Coefficient (n-octanol/water):	-2.3

10. STABILITY AND REACTIVITY

Reactivity Data:	Oxidizer; may cause or accelerate fire hazards. Corrosive; see Section 11.
Chemical Stability:	Stable under normal conditions.
Conditions to Avoid:	Excessive heat, incompatible materials.
Incompatible Materials:	Strong bases, reducing agents, metals, combustible materials, carbides, hydrogen sulfide, turpentine, water.
Hazardous Decomposition Products:	Nitrogen oxides, hydrogen.
Possibility of Hazardous Reactions:	Oxidizer. May react vigorously, violently, or explosively with the incompatible materials listed above. Contact with combustible and organic material may cause fire. May accelerate burning when involved in a fire. May cause explosion hazard if contacted with flammable materials or if heated. Excess thermal conditions may yield hazardous nitrogen oxides. Contact with metals may produce hazardous concentrations of hydrogen gas. Contact with water or strong bases may cause violent exothermic reaction.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure:	Inhalation, ingestion, skin contact, eye contact.
Acute Effects:	Corrosive. Harmful if swallowed or inhaled. Causes irritation and burns if exposed to the eyes, skin, respiratory tract, and gastrointestinal tract. May enter lungs if swallowed or vomited.
Chronic Effects:	Prolonged or repeated exposure may affect the lungs and mucous membranes; may cause tooth decay, reproductive effects, teratogenic effects, and cancer.
Toxicological Data:	Water: Not applicable.

Nitric Acid: LC₅₀ Inhalation, Rat: 1.56 mg/L 4 h
LDLo Oral, Human: 430 mg/kg
Corrosive to skin and eyes based on animal data.

Symptoms of Exposure: Irritation, burning, ulceration, coughing, wheezing, choking sensation, sore throat, pneumonia, pulmonary edema, spasm, laryngitis, shortness of breath, headache, nausea, vomiting.

Carcinogenic Effects: This product may cause cancer.

IARC: Nitric Acid: 2A – Probably carcinogenic to humans

NTP: Nitric Acid: Known human carcinogen

12. ECOLOGICAL INFORMATION

Ecotoxicological Data: Water: Not applicable.

Nitric Acid: No information found.

Persistence and Degradability: Not expected to bioaccumulate or biodegrade.

Environmental Effects: May be harmful to aquatic organisms. May adversely affect pH of aquatic ecosystems. May leach into groundwater. Avoid release to the environment.

Partition Coefficient (n-octanol/water): -2.3

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

14. TRANSPORT INFORMATION

DOT:

UN Number: UN2031

Proper Shipping Name: Nitric Acid

Hazard Class: 8, 5.1

Packing Group: II

ERG Number: 157

Environmental Hazard Regulations: Not regulated as a 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: 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	Yes
Pressure Hazard	No
Reactivity Hazard	No

Section 313: Nitric Acid

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)	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 component(s) of this product comply with the inventory requirements administered by the governing country(s).

16. OTHER INFORMATION

Disclaimer:

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Update of Section 9 over 12/08/2015 version.