



Effective Date: 04/01/15
Replaces Revision: 01/01/13

NON-EMERGENCY TELEPHONE
610-866-4225

24-HOUR CHEMTREC EMERGENCY TELEPHONE
800-424-9300

SDS – SAFETY DATA SHEET

1. Identification

Product Identifier: NITRIC ACID 20 - 64%

Synonyms: Aqua Fortis, Azotic Acid

Chemical Formula: HNO₃ solution

Recommended Use of the Chemical and Restrictions On Use: Laboratory Reagent

Manufacturer / Supplier: Puritan Products; 2290 Avenue A, Bethlehem, PA 18017 **Phone:** 610-866-4225

Emergency Phone Number: 24-Hour Chemtrec Emergency Telephone 800-424-9300

2. Hazard(s) Identification

Classification of the Substance or Mixture:

Oxidizing liquids (Category 3)

Skin corrosion (Category 1A)

Serious eye damage (Category 1)

Risk Phrases:

Symbol: O, C

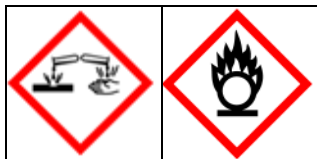
R8: Contact with combustible material may cause fire.

R35: Causes severe burns.

Label Elements:

Trade Name: NITRIC ACID 20 - 64%

Signal Word: Danger



Hazard Statements:

H272: May intensify fire; oxidizer.

H314: Causes severe skin burns and eye damage.

Precautionary Statements:

P220: Keep / Store away from clothing / combustible materials.

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

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

P310: Immediately call a POISON CENTER or doctor / physician.

3. Composition / Information on Ingredients

CAS Number: 7697-37-2

EC Number: 231-714-2

Index Number: 007-004-00-1

Molecular Weight: 63 g/mol

Ingredient	CAS Number	EC Number	Percent	Hazardous	Chemical Characterization
Nitric Acid	7697-37-2	231-714-2	20 - 64%	Yes	Substance
Water	7732-18-5	231-791-2	36 - 80%	No	Mixture

4. First-aid Measures

Immediate first aid treatment reduces the health effects of this substance. In all cases, immediately call a POISON CENTER or doctor / physician.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give Oxygen. Call a physician.

Ingestion: DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Call a physician.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire-fighting Measures

Fire: Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Can react with metals to release flammable Hydrogen gas.

Explosion: May react explosively with combustible organic or readily oxidizable materials such as: alcohols, turpentine, charcoal, organic refuse, metal powder, Hydrogen Sulfide, etc.

Fire Extinguishing Media: Water or water spray.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Increases the flammability of combustible, organic and readily oxidizable materials.

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

Environmental Precautions and Methods and Materials for Containment and Cleaning Up: Contain and recover liquid when possible. Do not let product enter drains. Neutralize with alkaline material (soda ash, lime,) then absorb with an inert material (e. g., vermiculite, dry sand, earth,) and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Precautions for Safe Handling and Conditions for Safe Storage, Including Any Incompatibilities: Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Separate from combustible, organic, or any other readily oxidizable materials. Protect from freezing.

8. Exposure Controls / Personal Protection

Airborne Exposure Limits:

For Nitric Acid:

OSHA Permissible Exposure Limit (PEL): 2 ppm (TWA), 4 ppm (STEL)

ACGIH Threshold Limit Value (TLV): 2 ppm (TWA); 4 ppm (STEL)

Ventilation System: A system of local and / or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved): If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full face piece respirator, air-lined hood, or full face piece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134). Nitric Acid is an oxidizer and should not come in contact with cartridges and canisters that contain oxidizable materials, such as activated charcoal. Canister-type respirators using sorbents are ineffective.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection: Use chemical safety goggles and / or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance: Clear to pale yellow solution

Odor: Suffocating, acrid

Odor Threshold: Not determined

pH: 0.1(1.0N solution)

% Volatiles by volume @ 21C (70F): 100 (as water and acid)

Melting Point: ca. -3C (ca. 27F)

Boiling Point / Boiling Range: ca. 101C (ca. 214F)

Flash Point: Not applicable

Evaporation Rate (BuAC=1): No information found

Flammability: Not applicable

Upper / Lower Flammability or Explosive Limits: Not applicable

Vapor Pressure (mm Hg): 48 @ 20C (68F)

Vapor Density (Air=1): 2-3

Relative Density: 1.419 g/cc for 69 – 70% Nitric Acid solution

Solubility: Infinitely soluble

Partition Coefficient: n-octanol / water: No data available

Auto-ignition Temperature: No data available

Decomposition Temperature: No data available

Viscosity: 2.0 cPs

10. Stability and Reactivity

Reactivity and / or Chemical Stability: Stable under ordinary conditions of use and storage.

Possibility of Hazardous Reactions and Conditions to Avoid: Heat and incompatibles.

Incompatible Materials: Strong bases, metallic powders, carbides, Hydrogen Sulfide, turpentine, and combustible organics.

Hazardous Decomposition Products: When heated to decomposition, emits toxic Nitrogen oxides fumes and Hydrogen Nitrate.

11. Toxicological Information

Emergency Overview: POISON! DANGER! CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. INHALATION MAY CAUSE LUNG AND TOOTH DAMAGE.

Potential Health Effects:

Nitric Acid is extremely hazardous; it is corrosive, reactive, an oxidizer, and a poison.

Inhalation: Corrosive! May cause irritation of the nose, throat, and respiratory tract including coughing and choking. Higher concentrations or prolonged exposure to vapors of nitric acid may lead to pneumonia or pulmonary edema.

Ingestion: Corrosive! Swallowing Nitric Acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract.

Skin Contact: Corrosive! Can cause redness, pain, and severe skin burns.

Eye Contact: Corrosive! Vapors are irritating and may cause severe damage to the eyes. Splashes may cause severe burns and permanent eye damage.

Chronic Exposure: Long-term exposure to concentrated vapors may cause erosion of teeth. Long-term exposures seldom occur due to the corrosive properties of the acid.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders, eye disease, or cardiopulmonary diseases may be more susceptible to the effects of this substance.

Specific Target Organ Toxicity - Single Exposure (Globally Harmonized System:) No data available.

Specific Target Organ Toxicity - Repeated Exposure (Globally Harmonized System:) No data available.

Numerical Measures of Toxicity: Cancer Lists: NTP Carcinogen

Ingredient	Known	Anticipated	IARC Category
Nitric Acid (7697-37-2)	No	No	None
Water (7732-18-5)	No	No	None

Acute Toxicity:

For Nitric Acid:

Oral (human) LDLo: 430 mg/kg

Inhalation, rat, LC50: 67 ppm (NO₂)/4H

Investigated as a mutagen, reproductive effector.

12. Ecological Information

Ecotoxicity: The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms. LC50 - Asterias rubens - 100 - 330 mg/l - 48 h

Persistence and Degradability: No data available.

Bioaccumulative Potential: No bioaccumulation expected.

Mobility in Soil: No data available.

Other adverse effects: US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

13. Disposal Considerations

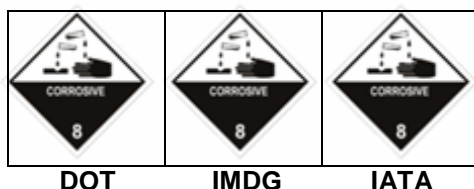
Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

UN Number: UN2031

UN Proper Shipping Name: NITRIC ACID, other than red fuming with less than 65 percent nitric acid

Packing Group: II



Land Transport ADR/RID and GGVS/GGVE (Cross Border / Domestic)

Transport Hazard Class(es): 8

Maritime Transport IMDG/GGVSea

Transport Hazard Class(es): 8

Marine Pollutant: No

Air Transport ICAO-TI and IATA-DGR

Transport Hazard Class(es): 8

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Special Precautions for User: No additional information

15. Regulatory Information

Chemical Inventory Status – Part 1

Ingredient	TSCA	EC	Japan	Australia
Nitric Acid (7697-37-2)	Yes	Yes	Yes	Yes
Water (7732-18-5)	Yes	Yes	Yes	Yes

Chemical Inventory Status – Part 2

Ingredient	Korea	Canada		Phil.
		DSL	NDSL	
Nitric Acid (7697-37-2)	Yes	Yes	No	Yes
Water (7732-18-5)	Yes	Yes	No	Yes

Federal, State & International Regulations - Part 1

Ingredient	SARA 302		SARA 313	
	RQ	TPQ	List Chemical	Catg.
Nitric Acid (7697-37-2)	1000	1000	Yes	No
Water (7732-18-5)	No	No	No	No

Federal, State & International Regulations - Part 2

Ingredient	RCRA		TSCA
	CERCLA	261.33	8(d)
Nitric Acid (7697-37-2)	1000	No	No
Water (7732-18-5)	No	No	No

Chemical Weapons Convention: No		TSCA 12(b): No		CDTA: No
SARA 311/312:	Acute: Yes	Chronic: Yes	Fire: No	Pressure: No
Reactivity: Yes		Mixture / Liquid		

Australian Hazchem Code: 2PE

Poison Schedule: S6

16. Other Information

Effective Date: 04/01/15 – Changed GHS02 symbol GHS03

Replaces Revision: 01/01/13 – GHS Compliant, 05/24/11 – Initial Release

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