

MATERIAL SAFETY DATA SHEET

Product: **Nitric Acid**

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity

Product Name: Nitric Acid, 70% Solution
Product Code: CH-7697372A
Chemical Formula: H₂NO₃
General or Generic ID: Not available.

Company

ArtChemicals.com
2250 Davis Street
San Leandro, CA 94577-2204
510-639-4670

Emergency Telephone Number:

1-800-451-8346

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>CAS No.</u>	<u>Chemical Identity</u>	<u>Common Name</u>	<u>%</u>
7697-37-2	Acid	Nitric Acid	70
7732-18-5	N/A	Water	30

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye:

Very hazardous in case of eye contact (irritant/corrosive). Symptoms include stinging, tearing, redness and impairment of vision. The degree of injury will depend on the amount of material that gets into the eye and the speed and thoroughness of the first aid treatment.

Skin:

Very hazardous in case of skin contact (irritant/permeator/corrosive). Symptoms may include redness, burning of skin, or, occasionally, blistering. The degree of injury will depend on the amount of material that gets on the skin and the speed and thoroughness of the first aid treatment.

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Ingestion:

Very hazardous in case of ingestion (irritant). Inhalation of dust will produce irritation to gastrointestinal tract.

Inhalation:

Very hazardous in case of inhalation (irritant). Breathing in large amounts may cause respiratory irritation, burning, sneezing and coughing.

Symptoms of Exposure:

Not available.

Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Prolonged exposure may result in skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Development Information:

Not available.

The substance may be toxic to kidneys, liver, mucous membranes, upper respiratory tract, skin, eyes, Circulatory System, teeth. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection..

Cancer Information:

Not available.

Primary Route(s) of Entry:

Inhalation, skin absorption, skin contact, and eye contact.

4. FIRST AID MEASURES

Inhalation:

If inhaled, promptly remove individual to fresh air. If not breathing, give oxygen. Get medical attention.

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Ingestion:

Do NOT induce vomiting, unless directed by medical personnel. Seek medical attention. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Do not leave individual unattended. Loosen tight clothing such as collar, tie, belt or waistband. Get medical attention.

Eyes:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15-30 minutes. Cold water may be used. Keep the eyelids apart and away from the eyeballs during irrigation. Do not use oily drops or ointment or HF skin burn treatments on the eyes. Get medical attention immediately, preferably an eye specialist. If a physician is not immediately available, apply one or two drops of ophthalmic anesthetic (e.g. 0.5% Pontocaine Hydrochloride solution). Place ice pack on eyes until reaching emergency room.

Skin:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Note to Physicians:

Not available.

5. FIRE FIGHTING MEASURES

Flash Point: Non-flammable. Not applicable.

Explosive Limit: Not available.

Auto-ignition Temperature: Not applicable.

Hazardous Products of Combustion: Not available.

Extinguishing Media: SMALL FIRE: Use DRY chemical powder.

LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

SPECIAL FIRE-FIGHTING PROCEDURES: Reacts explosively with metallic powders, carbides, cyanides, sulfides, alkalis and turpentine. Can react explosively with many reducing agents. Arsine, phosphine, tetraborane all oxidized explosively in presence of nitric acid. Cesium and rubidium acetylides explode in contact with nitric acid. Explosive reaction with Nitric Acid + Nitrobenzene + water. Detonation with Nitric Acid + 4-Methylcyclohexane. The addition of warm fuming nitric acid to phosphine causes explosion. Addition of water to nitration mixture diluted with an equal volume of

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water can cause a low order explosion. Cyclopentadiene reacts explosively with fuming nitric acid. Mixtures of fuming nitric acid and acetonitrile are high explosives. (Nitric acid, fuming).

NFPA CODES: Health = 3 Flammability = 0 Reactivity = 0

6. PRECAUTIONS FOR SAFE HANDLING AND USE

Steps To Be Taken In Case Material Is Released Or Spilled:

Small Spill:

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: **Neutralize the residue with a dilute solution of sodium carbonate.**

Large Spill:

Corrosive liquid. Poisonous liquid. Oxidizing material.
Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. **Neutralize the residue with a dilute solution of sodium carbonate.** Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

7. PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep container tightly closed. Keep container in a cool, well-ventilated area. Separate from acids, alkalis, reducing agents and combustibles. See NFPA 43A, Code for the Storage of Liquid and Solid Oxidizers. Do not store above 23 °C (73.4 °F). Keep locked up. Keep container dry. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, organic materials, metals, alkalis, moisture. May corrode metallic surfaces. Store in a metallic or coated fiberboard drum using a strong polyethylene inner package. May corrode metallic surfaces and glass. Store in a polyethylene container.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Be sure to use an approved/certified respirator or equivalent.

Skin Protection:

Wear resistant gloves. To prevent repeated or prolonged skin contact, wear impervious clothing and boots or lab coat.

Eye Protection:

Chemical splash goggles in compliance with OSHA regulations are advised. Face shield. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Other Protective Clothing or Equipment:

Provide sufficient mechanical ventilation to maintain exposure below level of overexposure. Boots. Full suit. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling product.

Exposure Limits:

Not available.

Consult local authorities for acceptable exposure limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Colorless to light yellow liquid. (Acrid, strong odor).

Molecular Weight: Not applicable.

pH (1% soln/water): Acidic.

Boiling Point: 121 °C (249.8 °F).

Melting Point: -36.6 °C (-42.9 °F).

Specific Gravity: 1.41-1.42 (Water=1).

Vapor Pressure (@ 20 °C): 2.5 kPa

Evaporation Rate: Not available.

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Solubility in Water: Easily soluble in cold & hot water.

10. STABILITY AND REACTIVITY

Incompatibility: Metals, organic materials, acids, alkalis, reducing and oxidizing agents.

Stability: Stable.

Hazardous Decomposition: N/A

Hazardous Polymerization: Will not occur.

SPECIAL REMARKS ON REACTIVITY: A strong oxidizer. Reacts violently with alcohol, organic material, turpene, charcoal. Violent reaction with Nitric acid + Acetone and Sulfuric acid. Incompatible with combustible materials, metallic powders, hydrogen sulfide, carbides, aldehydes, cyanides, chromic acid, hydrogen sulfide, metals, metal powders, organic solvents, acetic acid, alcohols. Nitric Acid will react with water or steam to produce heat and toxic, corrosive and flammable vapors. (Nitric acid, fuming).

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity (LD50): 342 mg/kg, 1 hours [Mouse].

Acute Potential Health Effects:

Skin: Severely irritates skin. Causes skin burns and may cause deep and penetrating ulcers of the skin with a characteristic yellow to brownish discoloration. May be fatal if absorbed through skin.

Eyes: Severely irritates eyes. Causes eye burns. May cause irreversible eye injury.

Ingestion: May be fatal if swallowed. Causes serious gastrointestinal tract irritation or burns with nausea, vomiting, severe abdominal pain, and possible "coffee grounds" appearance of the vomitus. May cause perforation of the digestive tract.

Inhalation: May be fatal if inhaled. Vapor is extremely hazardous. Vapor may cause nitrous gas poisoning. Effects may be delayed. May cause irritation of the mucous membranes and respiratory tract with burning pain in the nose and throat, coughing, sneezing, wheezing, shortness of breath and pulmonary edema. Other symptoms may include nausea, and vomiting.

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Chronic Potential Health Effects:

Repeated inhalation may produce changes in pulmonary function and/or chronic bronchitis. It may also affect behavior (headache, dizziness, drowsiness, muscle contraction or spasticity, weakness, loss of coordination, mental confusion), and urinary system (kidney failure, decreased urinary output after several hours of uncorrected circulatory collapse). Repeated exposure may cause discoloration and/or erosion of teeth (dental enamel). Eye irritation and respiratory tract signs and symptoms resembling those of frequent upper respiratory viral infections have been associated with chronic nitric acid exposure.

12. ECOLOGICAL INFORMATION

Not available.

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise. The product itself and its products of degradation are less toxic.

13. DISPOSAL CONSIDERATION

Waste Disposal Method:

Dispose of in accordance with all applicable local, state and federal regulations.

14. DOT SHIPPING NAME & IDENTIFICATION:

Nitric Acid, solution. Class 8: Corrosive material. UNNA: 2031. PG: II.
Marine Pollutant.

15. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that information is current, applicable, and suitable to their circumstances.