

MATERIAL SAFETY DATA SHEET

Product Name: Nitric acid

CAS No.: 7697-37-2

Version: 0

1. Identification

Product Code : 90194, 90473
Company Name : Advent Chembio Private Limited
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2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
NITRIC ACID	7697-37-2	65-70 %

3. Hazards Identification**Hazard classification****Physical hazards**

Oxidizing liquids : Category 3
Corrosive to metals : Category 1

Health hazards

Skin corrosion/irritation : Category 1

Unknown toxicity

Acute toxicity, oral : 65 %
Acute toxicity, dermal : 65 %
Acute toxicity, inhalation, vapor : 100 %
Acute toxicity, inhalation, dust or mist : 100 %
Acute hazards to the aquatic environment : 65 %
Chronic hazards to the aquatic environment : 65 %

Labels elements

Hazard symbol



Signal word : Danger
Hazard statement : May intensify fire; oxidizer.
May be corrosive to metals.
Causes severe skin burns and eye damage .

Precautionary statement

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- Prevention** : Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Keep only in original container. Keep away from heat. Keep/Store away from clothing/combustible materials. Take any precaution to avoid mixing with combustibles. Use only outdoors or in a well-ventilated area.
- Response** : In case of fire: Use water spray, foam, dry powder or carbon dioxide for extinction. Immediately call a POISON CENTER/doctor. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Absorb spillage to prevent material damage.
- Storage** : Store locked up. Store in corrosive resistant container with a resistant inner liner. Store in a well-ventilated place. Keep container tightly closed.
- Disposal** : Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal .
- Other hazards which do not result in GHS classification** : None.

4. First Aid Measures

- General information** : Get medical advice/attention if you feel unwell. If medical advice is needed, have product container or label at hand. Show this safety data sheet to the doctor in attendance.
- Ingestion** : Call a physician or poison control center immediately. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
- Inhalation** : Move to fresh air. Call a physician or poison control center immediately. Apply artificial respiration if victim is not breathing. If breathing is difficult, give oxygen.
- Skin contact** : Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.
- Eye contact** : Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air. Get medical attention immediately.
- Most important symptoms/effects, acute and delayed** : Corrosive to skin and eyes. Causes digestive tract burns. Spray mists may cause respiratory tract irritation .

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Indication of immediate medical attention and special treatment needed : Treat symptomatically. Symptoms may be delayed .

5. Fire Fighting Measures

General fire hazards : Strong oxidizer - contact with other material may cause fire.
Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray, fog, CO₂, dry chemical, or regular foam.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Oxidizing Contact with combustible material may cause fire. Fire may produce irritating, corrosive and/or toxic gases.

Special protective equipment and precautions for firefighters

Special fire fighting procedures : Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Self-contained breathing apparatus and full protective clothing must be worn in case of fire .

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures : Keep unauthorized personnel away. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Use personal protective equipment. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing .

Methods and material for containment and cleaning up : Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if possible without any risk. Do not absorb in sawdust or other combustible materials. Absorb spill with vermiculite or other inert material. Collect in a non-combustible container for prompt disposal. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures : Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.

Environmental precautions : Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

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7. Handling and Storage

- Precautions for safe handling** : Keep away from combustible material. Do not get in eyes, on skin, on clothing. Wash hands thoroughly after handling. Do not eat, drink or smoke when using the product. Do not taste or swallow. Never add water to acid! Never pour water into acid/base. Dilute by slowly pouring the product into water while stirring.
- Conditions for safe storage, including any incompatibilities** : Do not store in metal containers. Store away from heat and light. Keep away from combustible material. Keep containers closed when not in use. Store in a cool, dry place. Keep container in a well-ventilated place .

8. Exposure Controls Personal Protection

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
NITRIC ACID	TWA	2 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	5 ppm	US. ACGIH Threshold Limit Values (2011) .
	STEL	4 ppm 10 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	2 ppm 5 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	2 ppm 5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	2 ppm 5 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	4 ppm 10 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

Appropriate engineering controls : No data available.

Individual protection measures, such as personal protective equipment

General information : Good general ventilation (typically 10 air changes per hour) should be used. 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. An eye wash and safety shower must be available in the immediate work area.

Eye/face protection : Wear safety glasses with side shields (or goggles) and a face shield.

Hand protection : Chemical resistant gloves.

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- Other** : Wear suitable protective clothing and gloves.
- Respiratory protection** : In case of inadequate ventilation use suitable respirator. Chemical respirator with acid gas cartridge.
- Hygiene measures** : Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

9. Physical and Chemical Properties

- Appearance** : Colorless to slightly yellow liquid.
- Odor** : Pungent .
- pH** : 1 (0.1 molar aqueous solution) .
- Melting point/freezing point** : -42 °C .
- Initial boiling point and boiling range** : 122 °C .
- Flash Point** : Not applicable
- Vapor pressure** : 6.4 kPa
- Vapor density** : 2.5 .
- Relative density** : 1.41 (20 °C) .
- Solubility in water** : Soluble .
- Solubility (other)** : No data available.
- Formula** : HNO₃
- Molecular Weight** : g/mol .

10. Stability and Reactivity

- Reactivity** : Reacts violently with strong alkaline substances .
- Chemical stability** : Material is stable under normal conditions.
- Possibility of hazardous reactions** : Hazardous polymerization does not occur. Decomposes on heating.
- Conditions to avoid** : Reacts violently with strong alkaline substances. Avoid contact with strong reducing agents. Excessive heat. Contact with incompatible materials.
- Incompatible materials** : Alcohols. Reducing agents. Metals. Alkalies. .
- Hazardous decomposition products** : Nitrogen Oxides By heating and fire, corrosive vapors/gases may be formed.

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11. Toxicological Information**Information on likely routes of exposure**

- Ingestion** : May cause burns of the gastrointestinal tract if swallowed.
- Inhalation** : May cause damage to mucous membranes in nose, throat, lungs and bronchial system.
- Skin contact** : Causes severe skin burns .
- Eye contact** : Causes serious eye damage.

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)**

- Oral Product** : No data available.
- Dermal Product** : No data available.
- Inhalation Product** : No data available.
- Specified substance(s):** : LC 50 (Rat, 4 h): 65 mg/l .
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- Repeated dose toxicity Product** : No data available.
- Skin corrosion/irritation Product** : Causes severe skin burns.
- Serious eye damage/eye irritation Product** : Causes serious eye damage.
- Respiratory or skin sensitization Product** : Not a skin nor a respiratory sensitizer.
- Carcinogenicity Product** : This substance has no evidence of carcinogenic properties.
- IARC Monographs on the Evaluation of Carcinogenic Risks to Humans** : No carcinogenic components identified.
- US. National Toxicology Program (NTP) Report on Carcinogens** : No carcinogenic components identified.
- US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)** : No carcinogenic components identified.
- Germ cell mutagenicity**
- In vitro Product** : No mutagenic components identified.
- In vivo Product** : No mutagenic components identified.
- Reproductive toxicity Product** : No components toxic to reproduction.
- Specific target organ toxicity - single exposure Product** : None known.
- Specific target organ toxicity - repeated exposure Product** : None known.
- Aspiration hazard Product** : Not classified.
- Other effects** : None known.

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12. Ecological Information**Ecotoxicity****Acute hazards to the aquatic environment :**

- Fish Product** : No data available .
Specified substance(s): : LC 50 (Fish, 48 h): 100 - 330 mg/l Mortality .
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Aquatic invertebrates Product : No data available

- Specified substance(s):** : LC 50 (Cockle (Cerastoderma edule), 48 h): 330 - 1,000 mg/l
Mortality
NITRIC ACID : LC 50 (Green or European shore crab (Carcinus maenas), 48 h):
180 mg/l Mortality .

Chronic hazards to the aquatic environment :

- Fish Product** : No data available.
Aquatic invertebrates Product : No data available.
Toxicity to Aquatic Plants Product: : No data available.
Persistence and degradability
Biodegradation Product : Expected to be readily biodegradable .
BOD/COD ratio Product : No data available.
Bioaccumulative potential
Bioconcentration factor (BCF) Product : No data available on bioaccumulation.
Partition coefficient n-octanol / water (log Kow) Product : No data available.
Mobility in soil : The product is water soluble and may spread in water systems.
Other adverse effects : Large amounts of the product may affect the acidity (pH-factor) in water with possible risk of harmful effects to aquatic organisms .

13. Disposal consideration

- Disposal instructions** : Discharge, treatment, or disposal may be subject to national, state, or local laws.
Contaminated packaging : Since emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near this container.

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14. Transport Information

	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
DOT	UN 2031	Nitric Acid	8, 5.1	II	No
IMDG	UN 2031	Nitric Acid	8, 5.1	II	No
IATA	UN 2031	Nitric Acid	8, 5.1	II	No

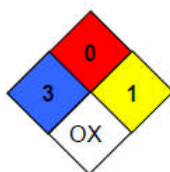
15. Regulatory Information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Safety, health and environmental regulations/legislation specific for the substance or mixture
No Data Available.

16. Other Information

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

COR: Corrosive

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