

MATERIAL SAFETY DATA SHEET NITRIC ACID

Section 1 – Identification of Supplier

Product name: Nitric Acid.

Shipping name: Nitric Acid.

Suppliers details: Chemical Initiatives (Pty) Ltd

Address: AECI Place, Building 24, The Woodlands, Woodlands Drive, Woodmead, 2196, South Africa

Telephone number

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Section 2 – Hazard Identification

Precautionary statements:

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

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

Inhalation: Corrosive! Inhalation of vapours can cause breathing difficulties and lead to pneumonia and pulmonary oedema, which may be fatal. Other symptoms may include coughing, choking, and irritation of the nose, throat and respiratory tract.

Skin contact: Corrosive! Can cause redness, pain and severe skin burns. Concentrated solutions cause deep ulcers and stain skin a yellow or yellow-brown colour.

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

Chronic exposure: Long-term exposure to concentrated vapours may cause erosion of teeth and lung damage. Long-term exposure seldom occurs due to the corrosive properties of the acid.

Ingestion: Corrosive! Swallowing nitric acid can cause immediate pain and burns of the mouth, throat, oesophagus and gastrointestinal tract.

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.

Section 3 – Composition / Information on Ingredients

Component	Concentration
Nitric acid	Ca. 55 – 97 %

Section 4 – First Aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Obtain immediate medical attention.

Skin contact: In case of contact, immediately flush skin with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Obtain immediate medical attention.

Eye contact: Immediately flush eyes with plenty of water for at least 20 minutes, lifting lower and upper eyelids occasionally. Obtain immediate medical attention.

Chronic exposure: Long-term exposure to concentrated vapours may cause erosion of teeth and lung damage. Long-term exposure seldom occurs due to the corrosive properties of the acid.

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

Further professional medical assistance: Symptomatic treatment and supportive therapy as indicated.

Following severe exposure, the patient should be kept under medical review for at least 24 hours as delayed corrosive effects may develop on skin, eyes and respiratory tract without the sensation of pain.

Section 5 – Fire Fighting Measures

Flash point: Not available.

Auto-ignition: Not available.

LEL: Not available.

UEL: Not available.

Fire: Not combustible, but substance is a strong oxidiser and its heat of reaction

with reducing agents or combustibles may cause ignition. Can react with metals to release flammable hydrogen gas.

Explosion: Reacts explosively with combustible organic or readily oxidizable materials such as: alcohols, turpentine, charcoal, organic refuse, metal powder, hydrogen sulfide, etc. Reacts with most metals to release hydrogen gas, which can form explosive mixtures with air.

Extinguishing media agent: Water spray may be used to keep fire-exposed containers cool. Do not get water inside container.

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

Section 6 – Accidental Release Measures

General information: Use proper personal protective equipment as indicated in Section 8.

Environmental precaution: Downwind evacuation may be necessary.

Accidental release measures: Ventilate area of leak or spill. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda ash or lime), then absorb with an inert material (e.g. vermiculite, dry sand or and earth), and place in a chemical waste container. Do not use combustible materials, such as sawdust. Do not flush to sewer!

Section 7 – Handling and Storage

Precautions for safe handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Do not get in eye or skin or on clothing.

Precautions for safe storage: Keep container tightly closed. Do not ingest or inhale. Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat, water and incompatible materials. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing. Containers of this material may be hazardous when empty since they retain product residues (vapours, liquid); observe all warnings and precautions listed for the product.

Section 8 - Exposure Controls and Personal Protection

Components:

TLV-TWA: 5.2 mg/m³ - 2 ppm

TLV-STEL: 10 mg/m³ - 4 ppm

ACGIH: 92 to 93

Engineering control: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal respirators: If the exposure limit is exceeded, wear a supply air, full face-piece respirator, air-lined hood, or full face-piece self-contained breathing apparatus. Nitric acid is an oxidizer and should not come in contact with cartridges and canisters that contain oxidisable 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 full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Section 9 – Physical and Chemical Properties

	55 – 60 %	96 %
Appearance:	Clear, colourless or yellow or red-brown fuming liquid with a choking odour.	Clear, colourless or yellow or redbrown fuming liquid with a choking odour.
Freezing point:	-42 °C	-42 °C
Boiling point (@101.3kPa):	118°C	93°C
Density:	1339 g/ml	1339 g/ml
Vapour pressure:	6.7 kPa	6.8 kPa
Solubility:	Soluble in water.	Soluble in water.
Molecular formula:	NHO ₃	NHO ₃
pH:	1.0	1.0

Section 10 – Stability and Reactivity

Stable under normal conditions: Stable under ordinary conditions of use and storage. Containers may burst when heated.

Hazardous decomposition product(s): When heated to decomposition, emits toxic nitrogen oxides fumes and hydrogen nitrate. Will react with water or steam to produce heat, toxic and corrosive fumes.

Hazardous reactions: Will not occur.

Incompatibilities: A dangerous powerful oxidising agent, concentrated nitric acid is compatible with most substances, especially strong bases, metallic powders, carbides, hydrogen sulphide, turpentine and combustible organics.

Condition to avoid: Contact with organic materials such as wood, paper, alcohol, turpentine, hydrogen sulphide, etc. may cause fires. Combustible materials can have an increased flammability after contact with nitric acid.

Section 11 – Toxicology

Eye contact: May cause corrosion, pain and deep severe burns.

Skin contact: Irritating to skin. Repeated and/or prolonged contact chemical burns.

Ingestion: May cause corrosion, pain in the mouth, throat and abdomen, vomiting, diarrhoea and perforation of the stomach lining.

Inhalation: May cause corrosion, pain, vomiting, burns to the mouth and throat and perforation of the oesophagus. Inhalation of the oxides of nitrogen may cause fluid buildup on the lung (pulmonary oedema) up to 24 hours after exposure, which could prove fatal. The onset of symptoms following inhalation may be delayed for several hours. Concentrations over 200ppm can cause severe pulmonary damage and may be fatal (in 510 hours) after several minutes of exposure.

Long term exposure: Prolonged/repeated contact may cause redness, cracking and dermatitis of the skin.

Section 12 – Ecological Information

Users should ensure that they comply with local, provincial and national environmental legislation. Environmental fate and mobility: May be very dangerous if allowed to enter drinking water intakes.

Persistence, degradation, bio-accumulation: Bioaccumulation does not occur.

Effect on effluent treatment: Harmful to aquatic life in low concentrations (96

hour TL = 10 to 100 ppm).

Section 13 – Disposal Considerations

Whatever cannot be saved for recovery or re cycling 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. Disposal should be in accordance with relevant legislation. Do not dispose of waste into the sewer system.

Section 14 - Transport

Hazchem code:	2PE.
UN:	2031 and 2032.
Proper shipping name:	Nitric acid.
IMDG class:	8.
IMDP packing group:	II.



Section 15 – Regulatory Information

Users should ensure that they comply with any relevant local, state or national legislation.

Dangerous substances directive 67/548/ECC;

R8: Contact with combustible material may cause fire.

R35: Causes severe burns.

S23: Do not breathe fumes.

S26: In case of contact with eyes, rinse immediately with plenty of water and seek

medical advice.

S26: Wear suitable protective clothing.

Section 16 – Other Information

DISCLAIMER:

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