

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name NITRIC ACID 50%
CAS-No. 7697-37-2
Product code AR1132

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses Chemical for analysis and production.

1.3 Details of the supplier of the safety data sheet

Company Chem-Supply Pty Ltd
38 - 50 Bedford Street, Gillman SA 5013 Australia
Telephone number (08) 8440 2000
Fax number (08) 8440 2001

1.4 Emergency Telephone Number

Emergency phone
Monday - Friday 8:30am - 5:00pm ACST (08) 8440 2000
After hours: CHEMCALL 1800127406 / +6449179888

1.5 Manufacturer

Company RCI LABSCAN LIMITED.
24 Rama 1 Road, Pathumwan, Bangkok 10330 Thailand

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to WHS Regulations (Australia)

Corrosive to metals (Category 1), H290
Skin corrosion (Category 1A), H314
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Pictogram



Signal word Danger

Hazard statement(s)

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

Precautionary statement(s)

P234 Keep only in original packaging.
P260 Do not breathe mist/vapours/spray.
P264 Wash hand thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

| | |
|--------------------|--|
| P304 + P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| 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/doctor. |
| P363 | Wash contaminated clothing before reuse. |
| P390 | Absorb spillage to prevent material-damage. |
| P405 | Store locked up. |
| P406 | Store in corrosion resistant/ container with a resistant inner liner. |

2.3 Other hazards None

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixture

Nitric acid

Synonyms Aqua fortis, Hydrogen nitrate.

| | | | | | |
|-----------|-----------|--------------|------------------|------------------|-------------|
| CAS-No | EC-No | EC-Index-No | Formula | Molecular Weight | Weight % |
| 7697-37-2 | 231-714-2 | 007-004-00-1 | HNO ₃ | 63.01 g/mol | 49.5 - 50.5 |

Hazardous ingredients according to WHS Regulations (Australia)

| Component | Concentration | Classification |
|--------------------------|---------------|--|
| Nitric acid | | |
| CAS-No 7697-37-2 | 49.5 - 50.5% | Corrosive to metals (Category 1), H290 Skin corrosion (Category 1A), H314 |
| EC-No 231-714-2 | | |
| EC-Index-No 007-004-00-1 | | |

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

| | |
|----------------|---|
| General advice | Show this safety data sheet to the doctor in attendance. |
| Inhalation | Move to fresh air in case of accidental inhalation of vapors. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus. |
| Skin contact | Remove contaminated clothing and wash affected skin with soap and water. Dab with polyethylene glycol 400. If signs of poisoning appear, treat as for inhalation. Obtain medical attention. Wash contaminated clothing before reuse. |
| Eye contact | If the substance has got into the eyes, immediately wash out with plenty of water at least 15 minutes. Obtain medical attention. |
| Ingestion | Rinse mouth. Do not induce vomiting. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus. Obtain medical attention. Never give anything by mouth to an unconscious person. |

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2.2 and section 11

4.3 Indication of any immediate medical attention and special treatment needed

After swallowing: make victim drink water (two glasses at the most), avoid vomiting, risk of perforation. Immediately call in physician. Do not attempt to neutralize.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

In adaption to materials stored in the immediate neighborhood.

5.2 Special hazards arising from the substance or mixture

Non-combustible. Ambient fire may liberate hazardous vapors. Hydrogen may form upon contact with metals (danger of explosion). The following may develop in event of fire: nitrogen oxide.

5.3 Advice for firefighters

Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

5.4 Hazchem Code

2R

5.5 Further information

Contain escaping vapors with water. Prevent fire-fighting water from entering surface water or ground water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Do not breathe vapors or spray mist. Wear a positive-pressure supplied-air respirator, flame retardant antistatic protective clothing. Shut off leaks if without risk. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

Contain or absorb leaking liquid with sand or earth, consults an expert. Prevent liquid entering sewers, basements and workpits. If substance has entered a water course or sewer or contaminated soil, advise police.

6.3 Methods and materials for containment and cleaning up

Spillage : soak up with inert absorbent material (e.g. sand, silica gel). Prevent liquid entering sewers, basements and workpits; vapor may create explosive atmosphere. Transfer to covered drums. Dispose of promptly.

6.4 Reference to other sections

For disposal see **Section 13**.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Content may be under pressure. Due to the chemical properties of nitric acid, nitrogen oxides may develop on exposure to light. Provision of good ventilation in the working area. The floor must be acid resistant. Suitable material: Glass, stainless steel, iron, aluminium, polyvinyl chloride, polytetrafluoro ethylene PTFE (Teflon). Unsuitable material: Copper, nickel alloys, nickel, silver, tin and some iron alloys. Do not leave container open. Do not transport together with incompatible substances. Filter the solutions only with glass wool, glass chips, or ceramic filters. Do not use any filtration materials made of paper which risks ignition after drying.

7.2 Conditions for safe storage, including any incompatibilities

Keep tightly closed at room temperature in a dry, cool and well-ventilated place. Keep out of direct sunlight and away from heat, water and incompatible materials. Requirements for containers, no metal containers.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Exposure limit (Safe Work Australia)**

TWA: 2 ppm (5.2 mg/m³) for Nitric acid 70%
 STEL: 4 ppm (10 mg/m³) for Nitric acid 70%

8.2 Exposure controls**Appropriate engineering controls**

The product should only be used in ventilation hoods and fans.

Individual protection measures (Personal protective equipment, PPE)**Eye/face protection**

Goggles giving complete protection to eyes.

Skin protection

Chemical resistant apron / corrosive protective clothing, heavy duty work shoes.

Handle with gloves

- Full contact wears gloves from nitrile rubber material.
- Splash contact wears gloves from nitrile rubber material.

The select protective gloves have to satisfy the specifications of EU Directive 89/686 EEC and standard EN 374 derived from it.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. Required when vapor/aerosols are generated filter E-P2 (EN 141 or EN 14387).

Environmental exposure controls

Prevent liquid entering sewers, basements and workpits.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

| | |
|---------------------------|-------------------|
| Appearance: From | Liquid |
| : Color | Colorless |
| Odour | Pungent |
| Odour Threshold | Not Available |
| pH | <1 at 20°C |
| Melting point/range | -19.2 °C |
| Boiling point/range | 114.7 °C |
| Flash point | Not Available |
| Evaporation rate | Not Available |
| Flammability (solid, gas) | Not Available |
| Explosion limits: lower | Not Available |
| upper | Not Available |
| Vapor Pressure | Not Available |
| Relative Vapor Density | Not Available |
| Density | 1.31 g/ml at 20°C |

| | |
|---|---------------------------------------|
| Water solubility | Soluble at 20°C (development of heat) |
| Partition coefficient (n-octanol/water) | log Pow; -2.3 |
| Auto-Ignition temperature | Not Available |
| Decomposition Temperature | Not Available |
| Viscosity | Not Available |
| Explosive properties | Not Explosive |
| Oxidizing properties | Oxidizing potential. |

SECTION 10: Stability and reactivity

10.1 Reactivity

Strong oxidizing agent.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Risk of explosion in contact with: alcohols, fluorine, reducing agents, oxidizing agents, organic substances, acetone, acetonitrile, alkali acetylides, formic acid, aminopropandiol, aminothiazole/acid, aniline (self-ignition possible), antimony hydride, hydrogen arsenide, cotton, benzidine, benzene, calcium phosphide, cellulose, chlorobenzene, 4-chloronitroaniline, cyclohexanol, cyclohexylamine, cyclopentadiene, 1,2-dichloroethane, dichloromethane, diethyl ether (anhydrous), dimethylhydrazine, dinitrobenzene, dimethyl sulfide, dioxane; divinyl ether, acetic acid, acetic anhydride, ethylene glycol (heat), 5-ethyl-2-methylpyridine (heat), formic aldehyde, 2-formamido-1-phenyl-1,3-propanediol, glycerol/sulfuric acid, rubber, fuels, hexanol, hydrazine, hydrazones, potassium chlorate + organic substances, potassium permanganate + alcohol, coal, hydrocarbons, copper, lithium silicide, organic solvents, manganese (rarely), metal cyanides, metal powders, mesitylene (heat), methylcyclohexanone, methylethylpyridine (rarely), nitrobenzene/ sulphuric acid, nitrochloroaniline, nitromethane, nitrotoluene, organic substances + sulphuric acid, petroleum, phosphorus trichloride, hydrogen phosphide, phthalic anhydride/sulphuric acid, pyrocatechol, mercury nitrate/ ethanol, sulphur dioxide (rarely), hydrogen telluride, tetraborane, thiocyanates, titanium, toluene, triazine/trifluoroacetic anhydride, hydrogen peroxide/mercury oxide, p-xylo (rarely), cellulose containing products, tin (rarely), sugars.

The substance can react dangerously with: amines, ammonia, combustible substances, potassium, lithium, sodium, reducing agents, acrylonitrile, formic acid, antimony, arsenic, boron, bromine pentafluoride, butanthiol, chlorine trifluoride, crotonaldehyde, iron (II)-oxide (powder), ethylaniline, furfuryl alcohol, germanium, glycerol / hydrochloric or hydrofluoric acid, hydrogen iodide, copper (I)-nitride, magnesium (heat), magnesium phosphides, mellitic acid, methyl thiophene, sodium hydride, sodium hypochlorite, phenylenediamine, phosphonium iodide, polypropylene, pyridine, sawdust, sulphur halogenides, conc. sulphuric acid, hydrogen sulphide, selenium, hydrogen selenide, thiols, thiophene, toluidine, triethylamine, uranium, uranium disulphide, bismuth, xylydine.

10.4 Conditions to avoid

Heat.

10.5 Incompatible materials

Organic combustible substances, oxidizable substances, organic solvents, alcohols, ketones, aldehydes, anhydrides, amines, anilines, nitriles, organic nitro compounds, hydrazine and derivatives, acetylidane, metals (generation of hydrogen), metal alloys, metallic oxides, alkali metals, alkaline earth metals, ammonia, alkalis, acids, hydrides, halogens, halogens compounds, nonmetallic oxides, nonmetallic halides, nonmetallic hydrogen compounds, nonmetals, phosphides, nitrides, lithium silicide, hydrogen peroxide.

10.6 Hazardous decomposition products

Hydrogen, nitrous gases (Hazardous decomposition products from under contact with metals). Danger of explosion.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Mixture

Acute toxicity

LD₅₀ (oral, human): 430 mg/kg

LC₅₀ (inhalation, rat): 0.13 mg/l / 4 h (nitrogen dioxide)

Acute oral toxicity

Symptoms: tissues damage (mouth, oesophagus and gastrointestinal tract) strong pain (risk of perforation), bloody vomiting.

Acute inhalation toxicity

Symptoms: burns of mucous membranes, coughing, and dyspnoea. Inhalation may lead to the formation of oedemas in the respiratory tract.

Skin corrosion/irritation

Severe burns.

Serious eye damage/eye irritation

Burns, Risk of blindness.

Respiratory or skin sensitization

Not Available

Germ cell mutagenicity

Bacterial mutagenicity; Ames test is negative.

Carcinogenicity

Not Available

Reproductive toxicity

Not Available

Teratogenicity

Not Available

Specific target organ toxicity (STOT) - single exposure

Not Available

Specific target organ toxicity (STOT) - repeated exposure

Not Available

Aspiration hazard

Not Available

Further information

Strong corrosive substance. The product should be handled with the care usual when dealing with chemicals.

SECTION 12: Ecological information

Mixture

12.1 Toxicity

Toxicity to fish

LC₅₀ Gambusia affinis: 72 mg/l/96h

12.2 Persistence and degradability

Not Available

12.3 Bioaccumulative potential

Partition coefficient (n-octanol/water) log Pow: -2.3(experimental).
 No bioaccumulation is to be expected (log P o/w <1)

12.4 Mobility in soil

Not Available

12.5 Other adverse effects

Harmful effect on aquatic organisms. Toxic effect on fish and plankton. Harmful effect due to pH shift. Forms corrosive mixtures with water even if diluted. Does not cause biological oxygen deficit. Hazard for drinking water supplies. Do not allow to enter waters, waste water or soil.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product**

There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste or burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Contaminated packaging

Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

SECTION 14: Transport information**Land Transport (ADG Code)**

| | |
|------------------------------|-------------|
| UN Number | 2031 |
| UN proper shipping name | NITRIC ACID |
| Transport hazard class(es) | 8 |
| Hazchem Code | 2R |
| Packing group | II |
| Environmental hazards | No |
| Special precautions for user | Yes |

Sea transport (IMDG)

| | |
|------------------------------|-------------|
| UN Number | 2031 |
| UN proper shipping name | NITRIC ACID |
| Transport hazard class(es) | 8 |
| Packing group | II |
| Marine pollutant | No |
| Special precautions for user | Yes |
| EmS | F-A S-B |

Air transport (IATA)

| | |
|----------------------------|-------------|
| UN Number | 2031 |
| UN proper shipping name | NITRIC ACID |
| Transport hazard class(es) | 8 |
| Packing group | II |

| | |
|------------------------------|-----|
| Environmental hazards | No |
| Special precautions for user | Yes |

River transport (AND/ADNR)
(Not examined)

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

| | |
|-------------------------------|---|
| Regulatory Information | Listed in the Australian Inventory of Chemical Substances (AICS). |
| Poisons Schedule | S6 |

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3

| | |
|------|--|
| H290 | May be corrosive to metals. |
| H314 | Causes severe skin burns and eye damage. |

Recommended restrictions

Take notice of labels and safety data sheets for the working.

Reference

Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Labelling according to EC Directives 67/548 EEC and Regulation (EC) No 1272/2008.

Transportation information according to Recommendations on the Transport of Dangerous Goods, Model Regulations. Twelfth revised edition. United Nations.

Institute for Occupational Safety and Health of the German Social Accident Insurance in Sankt Augustin/Germany, Source: IFA for Databases on hazardous substances (GESTIS).

Further information

Contact Chem - Supply Pty Ltd Ph. (08) 8440 2000.

Revision Date

22/11/2019

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.