

# SAFETY DATA SHEET

Version 6.10  
Revision Date 22.07.2025  
Print Date 06.02.2026

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

### 1.1 Product identifiers

Product name : Nitric acid

Product Number : 438073  
Brand : SIGALD  
CAS-No. : 7697-37-2

### 1.2 Other means of identification

No data available

### 1.3 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : For R&D use only. Not for pharmaceutical, household or other uses.

### 1.4 Details of the supplier of the safety data sheet

Company : Merck Life Science Pty Ltd  
Ground Floor, Building 1, 885 Mountain Highway  
BAYSWATER VIC 3153  
AUSTRALIA

Telephone : +61 1800 800 097  
E-mail address : customersupport.anz@merckgroup.com

### 1.5 Emergency telephone number

Emergency Phone # : Free call (24/7): 1800 862 115  
Int'l (24/7): +61 2 9037 2994  
(CHEMTREC)

## SECTION 2: Hazards identification

### 2.1 GHS Classification

Oxidizing liquids (Category 3), H272  
Corrosive to metals (Category 1), H290  
Acute toxicity, Inhalation (Category 3), H331  
Skin corrosion/irritation (Category 1), H314  
Serious eye damage/eye irritation (Category 1), H318

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

### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word : Danger

Hazard Statements

H272 : May intensify fire; oxidizer.  
H290 : May be corrosive to metals.  
H314 : Causes severe skin burns and eye damage.

H331 Toxic if inhaled.

#### Precautionary Statements

##### Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P220 Keep away from clothing and other combustible materials.  
P261 Avoid breathing mist or vapours.  
P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

##### Response

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.  
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.  
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

##### Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

### 2.3 Other hazards

Corrosive to the respiratory tract.

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## SECTION 3: Composition/information on ingredients

Substance / Mixture : Mixture

### 3.2 Mixtures

Formula : HNO<sub>3</sub>

#### Hazardous components

Component	Classification	Concentration
<b>nitric acid</b>		
CAS-No. 7697-37-2 EC-No. 231-714-2 Index-No. 007-030-00-3	Ox. Liq. 3; Met. Corr. 1; Acute Tox. 3; Skin Corr./Irrit. 1A; Eye Dam./Irrit. 1; H272, H290, H331, H314, H318 Concentration limits: >= 1 %: Met. Corr. 1, H290; >= 65 %: Ox. Liq. 3, H272; >= 20 %: Skin Corr. 1A, H314; 5 - < 20 %: Skin Corr. 1B, H314; >= 3 %: Eye Dam. 1, H318; 1 - < 3 %: Eye Irrit. 2, H319; 1 - < 5 %: Skin Irrit. 2, H315;	>= 70 - < 90 %

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

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## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General advice

First aiders need to protect themselves. Show this safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

### 5.2 Special hazards arising from the substance or mixture

Nitrogen oxides (NO<sub>x</sub>)

Not combustible.

Has a fire-promoting effect due to release of oxygen.

Ambient fire may liberate hazardous vapours.

### 5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### 5.4 Further information

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.  
For personal protection see section 8.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

### 6.4 Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

#### Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition.

#### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

No metal containers.

Tightly closed. Keep locked up or in an area accessible only to qualified or authorised persons. Do not store near combustible materials.

#### Storage class

Storage class (TRGS 510): 5.1B: Oxidizing hazardous materials

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.3 no other specific uses are stipulated.

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
nitric acid	7697-37-2	TWA	2 ppm 5.2 mg/m <sup>3</sup>	Australia. Workplace Exposure Standards for Airborne Contaminants.

		STEL	4 ppm 10 mg/m <sup>3</sup>	Australia. Workplace Exposure Standards for Airborne Contaminants.
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## 8.2 Exposure controls

### Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

### Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

#### Skin protection

required

#### Body Protection

protective clothing

#### Respiratory protection

required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

#### Control of environmental exposure

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |   |                   |
|---|-------------------|
| a) Physical state                               | liquid            |
| b) Color  | No data available |
| c) Odor   | No data available |
| d) Melting point/freezing point                 | No data available |
| e) Initial boiling point and boiling range      | No data available |
| f) Flammability (solid, gas)                    | No data available |
| g) Upper/lower flammability or explosive limits | No data available |
| h) Flash point                                  | No data available |
| i) Autoignition temperature                     | Not applicable    |
| j) Decomposition temperature                    | No data available |
| k) pH   | No data available |

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|--|--|
| l) Viscosity                                 | Viscosity, kinematic: No data available<br>Viscosity, dynamic: No data available |
| m) Water solubility                          | No data available  |
| n) Partition coefficient:<br>n-octanol/water | No data available  |
| o) Vapor pressure                            | No data available  |
| p) Density                                   | No data available  |
| Relative density                             | No data available  |
| q) Relative vapour<br>density                | No data available  |
| r) Particle<br>characteristics               | No data available  |
| s) Explosive properties                      | No data available  |
| t) Oxidizing properties                      | No data available  |

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .  
Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

May discolor on exposure to air and light.  
no information available

### 10.5 Incompatible materials

Strong oxidizing agentsMetals

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Mixture

#### Acute toxicity

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Acute toxicity estimate Inhalation - 4 h - 3.79 mg/l - vapour(Calculation method)

Symptoms: Possible symptoms:, mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Dermal: No data available

**Skin corrosion/irritation**

Remarks: Mixture causes severe burns.

**Serious eye damage/eye irritation**

Remarks: Mixture causes serious eye damage.  
Risk of blindness!

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

RTECS: QU5775000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

**Components****nitric acid****Acute toxicity**

Oral: No data available

Acute toxicity estimate Inhalation - 4 h - 2.65 mg/l - vapour  
(Expert judgement)

Dermal: No data available

**Skin corrosion/irritation**

Skin - Rabbit

Result: Causes severe burns.

Remarks: (IUCLID)

Remarks: Causes poorly healing wounds.

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Causes burns.

Remarks: (IUCLID)

Remarks: Causes serious eye damage.

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

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**SECTION 12: Ecological information****12.1 Toxicity****Mixture**

No data available

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Endocrine disrupting properties**

No data available

**12.7 Other adverse effects**

No data available

**Components****nitric acid**

No data available

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

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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**SECTION 14: Transport information****14.1 UN number**

ADR/RID: 2031                      IMDG: 2031                      IATA-DGR: 2031

**14.2 UN proper shipping name**

ADR/RID:                      NITRIC ACID  
IMDG:                      NITRIC ACID  
IATA-DGR:                      Nitric acid  
Passenger Aircraft: Not permitted for transport

**14.3 Transport hazard class(es)**

ADR/RID: 8 (5.1)                      IMDG: 8 (5.1)                      IATA-DGR: 8 (5.1)

**14.4 Packaging group**

ADR/RID: II                      IMDG: II                      IATA-DGR: II

**14.5 Environmental hazards**

ADR/RID: no                      IMDG Marine pollutant: no                      IATA-DGR: no

**14.6 Special precautions for user**

None

**14.7 Incompatible materials**

Strong oxidizing agentsMetals

**Other regulations**

Hazchem Code                      : 2R

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**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Therapeutic Goods (Poisons Standard)                      : No poison schedule number allocated  
Instrument

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**SECTION 16: Other information****Full text of H-Statements referred to under sections 2 and 3.**

H272                      May intensify fire; oxidizer.  
H290                      May be corrosive to metals.  
H314                      Causes severe skin burns and eye damage.  
H315                      Causes skin irritation.  
H318                      Causes serious eye damage.  
H319                      Causes serious eye irritation.  
H331                      Toxic if inhaled.

**Further information**

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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