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SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

Version 8.6 Revision Date 11.03.2025 Print Date 12.03.2025 GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

1.1	Product identifiers Product name	:	Nitric acid
	Product Number Brand Index-No. REACH No. CAS-No.	:	438073 SIGALD 007-004-00-1 01-2119487297-23-XXXX 7697-37-2

1.2 Relevant identified uses of the substance or mixture and uses advised against Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheetCompany :

1.4 Emergency telephone

Emergency Phone #	: +(44)-870-8200418 (CHEMTREC (GB))
	+(353)-19014670 (CHEMTREC Ireland)
	001-803-017-9114 (CHEMTREC India)

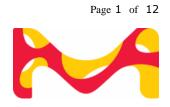
SECTION 2: Hazards identification

2.1	Classification of the substance or Oxidizing liquids, (Category 3)	r mixture H272: May intensify fire; oxidizer.	
	Corrosive to Metals, (Category 1)	H290: May be corrosive to metals.	
	Acute toxicity, (Category 3)	H331: Toxic if inhaled.	
	Skin corrosion, (Sub-category 1A)	H314: Causes severe skin burns and eye damage.	
	Serious eye damage, (Category 1)	H318: Causes serious eye damage.	

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

SIGALD- 438073



Pictogram	
Signal Word	Danger
Hazard Statements H272 H290 H314 H331	May intensify fire; oxidizer. May be corrosive to metals. Causes severe skin burns and eye damage. Toxic if inhaled.
Precautionary Statements P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220 P280	Keep away from clothing and other combustible materials. Wear protective gloves/ protective clothing/ eye protection/ face protection.
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	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard information (EU)EUH071Corrosive to the respiratory tract.

Reduced Labeling (<= 125 ml) Pictogram

Signal Word	Danger
Hazard Statements H331 H314	Toxic if inhaled. Causes severe skin burns and eye damage.
Precautionary Statements P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
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	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Supplemental Hazard inform	nation (FU)

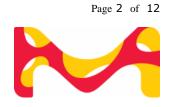
Supplemental Hazard information (EU)EUH071Corrosive to the respiratory tract.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information:

SIGALD- 438073



The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Formula

: HNO3

Component		Classification	Concentration
nitric acid			
CAS-No. EC-No. Index-No. Registration number	7697-37-2 231-714-2 007-030-00-3 01-2119487297-23- XXXX	Ox. Liq. 3; Met. Corr. 1; Acute Tox. 3; Skin Corr. 1A; Eye Dam. 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 %
		Acute inhalation toxicity(vapor): 2.65 mg/l	

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

First aiders need to protect themselves. Show this material 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.

SIGALD- 438073

Page 3 of 12



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.

Most important symptoms and effects, both acute and delayed 4.2

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

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.

Special hazards arising from the substance or mixture 5.2

Nitrogen oxides (NOx) 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/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

The life science business of Merck operates as MilliporeSigma in the US and

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.

SIGALD- 438073

Page 4 of 12



Canada

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 authorized 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 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

8.2 Exposure controls

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

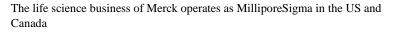
Respiratory protection

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. Recommended Filter type: Filter type ABEK

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Page 5 of 12





Do not let product enter drains.

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

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	Not applicable	
i)	Autoignition temperature	Not applicable	
j)	Decomposition temperature	No data available	
k)	рН	No data available	
I)	Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available	
m)	Water solubility	No data available	
n)	Partition coefficient: n-octanol/water	No data available	
o)	Vapor pressure	No data available	
p)	Density	No data available	
	Relative density	No data available	
q)	Relative vapor density	No data available	
r)	Particle characteristics	No data available	

- s) Explosive properties No data available
- t) Oxidizing properties No data available

9.2 Other safety information No data available

SIGALD- 438073





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

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 esophagus and the stomach. Acute toxicity estimate Inhalation - 4 h - 3.79 mg/l - vapor(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

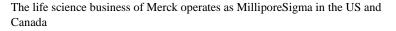
Reproductive toxicity No data available

Specific target organ toxicity - single exposure No data available

Specific target organ toxicity - repeated exposure No data available

SIGALD- 438073

Page 7 of 12





Aspiration hazard

No data available

11.2 Additional Information

Endocrine disrupting properties

Product:

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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 - 2.65 mg/l - vapor (Acute toxicity estimate according to Regulation (EC) No. 1272/2008) 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

SIGALD- 438073

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Page 8 of 12

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

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

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties Product:

Assessment

: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

Components

nitric acid

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods No data available

SIGALD- 438073

Canada

Page 9 of 12



SECTION 14: Transport information			
14.1 UN number ADR/RID: 2031	IMDG: 2031	IATA: 2031	
14.2 UN proper shipping ADR/RID: NITRIC AC IMDG: NITRIC AC IATA: Nitric acid Passenger Aircraft: N	CID CID		
14.3 Transport hazard c ADR/RID: 8 (5.1)	lass(es) IMDG: 8 (5.1)	IATA: 8 (5.1)	
14.4 Packaging group ADR/RID: II	IMDG: II	IATA: II	
14.5 Environmental haza ADR/RID: no	ards IMDG Marine pollutant: no	IATA: no	
14.6 Special precautions	s for user		
Further information	: No data available		
14.7 Maritime transport Not applicable for pro	in bulk according to IMO instrum oduct as supplied.	ents	

SECTION 15: Regulatory information

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

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

Authorisations and/or restrictions on use

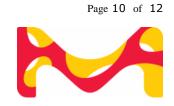
Regulation (EU) 2019/1148 on the marketing and use of explosives precursors		: nitric acid
National legislation Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards		ACUTE TOXIC
involving dangerous substances.	P8	OXIDISING LIQUIDS AND SOLIDS
	H2	ACUTE TOXIC
	P8	OXIDISING LIQUIDS AND SOLIDS

Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

SIGALD- 438073



15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Full text of H-Statements

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.
EUH071	Corrosive to the respiratory tract.

Full text of other abbreviations

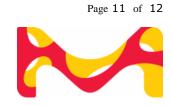
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM -American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS -Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx -Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. -Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS -Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Classification of the mixture

Classification procedure:

		•
Ox. Liq.3	H272	Calculation method
Met. Corr.1	H290	Calculation method
Acute Tox.3	H331	Calculation method
Skin Corr.1A	H314	Calculation method

SIGALD- 438073



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 and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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SIGALD- 438073

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Page 12 of 12