

# Safety Data Sheet

Revision date: 31.01.2025

Version: 7.3

Print date: 31.01.2025

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

### 1.1 Product identifier

Trade name/designation:	Nitric acid 68% AnalAR NORMAPUR®
Product No.:	20422
CAS No.:	7697-37-2
Other means of identification:	none

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

Relevant identified uses:	General chemical reagent
Uses advised against:	The product, as such or as a component of a mixture, is not intended to be used by consumers (as defined by the REACH Regulation).

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

#### **VWR Singapore Pte Ltd.**

Street	18 Gul Drive
Postal code/City	Singapore 629468
Telephone	+65 6505 0760

### 1.4 Emergency phone number

Telephone	+65 (0) 6505 0760 (office hours: 8 am-5 pm)
-----------	---------------------------------------------

#### **Preparation Information**

Product Information Compliance

E-mail (competent person)	SDS@avantorsciences.com
---------------------------	-------------------------

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Hazard classes and hazard categories	Hazard statements
Oxidising liquid, category 2	H272
Substance or mixture corrosive to metals, category 1	H290
Skin corrosion, category 1A	H314
Serious eye damage, category 1	H318
Acute toxicity, category 3, inhalation	H331

### 2.2 Label elements

#### Hazard pictograms



**Signal word:** Danger

Hazard statements	
H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H331	Toxic if inhaled.
H314	Causes severe skin burns and eye damage.

Precautionary statements	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220	Keep/Store away from clothing/combustible materials.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
P308+P310	IF exposed or concerned: Immediately call a POISON CENTER/doctor.

### 2.3 Other hazards

none

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

not applicable

### 3.2 Mixtures

#### Composition / Information on ingredients

Substance name	Concentration	Identifier	Hazard classes and hazard categories
Nitric acid	65 - 70%	CAS No.: 7697-37-2	Ox. Liq. 2 - H272 Met. Corr. 1 - H290 Acute Tox. 1 - H330 Skin Corr. 1A - H314 Eye Dam. 1 - H318

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General information

Do not leave affected person unattended. Causes poorly healing wounds. Risk of blindness. Wash contaminated clothing prior to re-use. When in doubt or if symptoms are observed, get medical advice.

#### After inhalation

Remove casualty to fresh air and keep warm and at rest. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration. Seek medical advice immediately.

#### In case of skin contact

Remove contaminated, saturated clothing immediately. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure. If skin irritation occurs: Get medical help. If extensive skin contact: get medical help immediately and kept under medical surveillance (hospitalization). Seek medical advice immediately.

#### After eye contact:

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. Transport to the ophthalmologist or eye clinic as soon as possible. Continue rinsing with isotonic saline solution during transport, alternatively with water.

#### In case of ingestion

Immediately call a POISON CENTRE/doctor. Never give anything by mouth to an unconscious person or a person with cramps. Rinse mouth thoroughly with water. Spit out all liquid. Do NOT induce vomiting.

#### Self-protection of the first aider

First aider: Pay attention to self-protection! Wear personal protection equipment (refer to section 8). Avoid mouth to mouth resuscitation. Use mouth to mask ventilation with one way valve to exhaust victim's exhaled air away from rescuer.

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

After inhalation: Shortness of breath. Cough. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure. Cyanosis (blue coloured blood) After skin contact: Erythema (Redness). May cause severe damage with formation of corneal ulcers. Occurrence of severe chemical burns resembling a burn. Yellowish to brown permanent discoloration. After eye contact: Conjunctival oedema (chemosis). Corneal damage. Risk of blindness. After ingestion: Burning/pain and tumescence in the mouth/throat/oesophagus/stomach. Vomiting. Circulatory collapse. Gastric perforation.

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

After inhalation, immediate application of glucocorticoids (inhalative), administration of oxygen and immobilization of the affected person are indicated. If necessary, all further measures of pulmonary edema prophylaxis. After vapor inhalation cardiovascular and pulmonary functions should be carefully monitored. After decontamination of the skin pain treatment and shock prophylaxis. After swallowing: Do not induce vomiting. No oral administration of fluids, activated charcoal, or laxatives, no gastric lavage, but aspiration of the fluid from the stomach via a nasogastric tube, avoiding intubation, if this is possible within 60 minutes.

# SECTION 5: Firefighting measures

## 5.1 Extinguishing media

### Suitable extinguishing media

The product itself does not burn.  
May intensify fire; oxidiser.  
Co-ordinate fire-fighting measures to the fire surroundings.

### Extinguishing media which must not be used for safety reasons

no restriction

## 5.2 Special hazards arising from the substance or mixture

In case of fire may be liberated:  
Nitrogen oxides (NOx)

## 5.3 Advice for firefighters

DO NOT fight fire when fire reaches explosives.  
Special protective equipment for firefighters:  
Wear a self-contained breathing apparatus and chemical protective clothing.  
Do not allow run-off from fire-fighting to enter drains or water courses.  
Do not inhale explosion and combustion gases.  
Use water spray jet to protect personnel and to cool endangered containers.  
In case of fire: Evacuate area.

# SECTION 6: Accidental release measures

## 6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Wear personal protection equipment (refer to section 8). Avoid contact with skin, eyes and clothes. Remove victim out of the danger area. Stop leak if safe to do so. Provide adequate ventilation. First Aid, decontamination, treatment of symptoms. For emergency responders: In case of fire: Wear self-contained breathing apparatus. Wear full chemical protective clothing. Substance is non-flammable. Adapt fire and explosion protection measures to the combustible substances in the area.

## 6.2 Environmental precautions

Avoid release to the environment. Do not allow to enter into surface water or drains. Cover drains. Advise Authorities if spillage has entered water course or sewer or has contaminated soil or vegetation.

## 6.3 Methods and material for containment and cleaning up

Large spills: Dike or dam to contain for later disposal. Take up mechanically, placing in appropriate containers for disposal. Take precautionary measures against static discharges. Small spills: Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Dispose according to local legislation.

## 6.4 Reference to other sections

Personal protection equipment: see section 8 Disposal information: see section 13

# SECTION 7: Handling and storage

## 7.1 Precautions for safe handling

Advices on safe handling

Use extractor hood (laboratory).

Use only in well-ventilated areas.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Avoid contact with eyes and skin.

Use personal protective equipment as required.

Measures to prevent fire, aerosol and dust generation

Usual measures for fire prevention.

Use only in well-ventilated areas.

Measures required to protect the environment

Do not empty into drains.

Collect spillage.

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

## 7.2 Conditions for safe storage, including any incompatibilities

Recommended storage temperature: 15-25 °C

Storage class: 5.1B

Store in a well-ventilated place. Keep container tightly closed. Packaging materials: High density polyethylene (HDPE) Glass

Unsuitable container/equipment material: Metal container

## 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

Ingredient (Designation)	Regulatory information	Country	Limit value type (country of origin)	Limit value
Nitric acid	Workplace Safety and Health (General Provisions) Regulations, WORKPLACE SAFETY AND HEALTH ACT (CHAPTER 354A, SECTION 65)	SG	LTV	2 ppm - 5.2 mg/m <sup>3</sup>
Nitric acid	Workplace Safety and Health (General Provisions) Regulations, WORKPLACE SAFETY AND HEALTH ACT (CHAPTER 354A, SECTION 65)	SG	STV	4 ppm - 10 mg/m <sup>3</sup>

### 8.2 Exposure controls

#### Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

#### Personal protection equipment

Wear suitable protective clothing. When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn.

#### *Eye/face protection*

Eye glasses with side protection

#### *Skin protection*

Wear suitable gloves. When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. In the case of wanting to use the gloves again, clean them before taking off and air them well. Check leak tightness/impermeability prior to use.

By short-term hand contact

Suitable material:	Butyl caoutchouc (butyl rubber)
Thickness of the glove material:	0,30 mm
Breakthrough time:	60-120 min

By long-term hand contact

Suitable material:	Butyl caoutchouc (butyl rubber)/FKM (fluoro rubber)
Thickness of the glove material:	0,70 mm
Breakthrough time:	240-480 min

*Respiratory protection*

Respiratory protection necessary at: aerosol or mist formation If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

*Additional information*

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

*Environmental exposure controls*

no data available

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

Physical state:	liquid
Colour:	light yellow
Odour:	pungent

#### Safety relevant basic data

pH:	< 1 (20°C)
Melting point/freezing point:	-38 °C
Initial boiling point and boiling range:	120 °C (1013 hPa)
Flash point:	no data available
Flammability:	Not applicable
Lower and upper explosion limit	
Lower explosion limit:	no data available
Upper explosion limit:	no data available
Vapour pressure:	no data available
Relative vapour density:	no data available
Density and/or relative density	
Density:	1.40 g/cm <sup>3</sup> (20 °C)
Solubility(ies)	
Water solubility:	no data available
Partition coefficient: n-octanol/water:	no data available
Auto-ignition temperature:	no data available
Decomposition temperature:	Not applicable
Viscosity	
Kinematic viscosity:	no data available
Dynamic viscosity:	no data available
Particle characteristics:	does not apply to liquids

### 9.2 Other information

Evaporation rate:	no data available
Explosive properties:	no data available
Oxidising properties:	May intensify fire; oxidiser.
Bulk density:	no data available
Refraction index:	no data available
Dissociation constant:	no data available
Surface tension:	no data available
Henry's Law Constant:	no data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

- Corrosive to metals
- Oxidizer, allows chemicals to burn without an air supply.



## 10.2 Chemical stability

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

## 10.3 Possibility of hazardous reactions

Explosive reaction with:

Alcohols

Acetone

Reducing agent.

Violent reaction with:

Ammonia (NH<sub>3</sub>)

Hydrogen iodide (HI)

Exothermic reaction with:

Water.

Substance, organic

## 10.4 Conditions to avoid

Humidity

Heat

## 10.5 Incompatible materials:

Metal.

## 10.6 Hazardous decomposition products

no data available

# SECTION 11: Toxicological information

## 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

### Acute effects

*Acute oral toxicity:*

Based on available data, the classification criteria are not met.

*Acute dermal toxicity:*

Based on available data, the classification criteria are not met.

*Acute inhalation toxicity:*

Toxic if inhaled.

**Irritant and corrosive effects:***Primary irritation to the skin:*

Causes severe skin burns and eye damage.

*Irritation to eyes:*

Causes serious eye damage.

*Irritation to respiratory tract:*

Not applicable

**Respiratory or skin sensitisation**

In case of skin contact: not sensitising

After inhalation: not sensitising

**STOT-single exposure**

Not applicable

**STOT-repeated exposure**

Not applicable

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)****Carcinogenicity**

No indication of human carcinogenicity.

**Germ cell mutagenicity**

No indications of human germ cell mutagenicity exist.

**Reproductive toxicity**

No indications of human reproductive toxicity exist.

**Aspiration hazard**

Not applicable

**Other adverse effects**

no data available

**Additional information**

no data available

**11.2 Information on other hazards**

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

## SECTION 12: Ecological information

### 12.1 Toxicity

**Fish toxicity:**

no data available

**Daphnia toxicity:**

no data available

**Algae toxicity:**

no data available

**Bacteria toxicity:**

no data available

### 12.2 Persistence and degradability

no data available

### 12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water: no data available

### 12.4 Mobility in soil:

no data available

### 12.5 Results of PBT/vPvB assessment

Not applicable

### 12.6 Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to the environment.

### 12.7 Other adverse effects

no data available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

**Appropriate disposal / Product**

Dispose according to local legislation. Consult the appropriate local waste disposal expert about waste disposal. Product is an acid. Before disposal it needs to be neutralised.

Waste code product: no data available

**Appropriate disposal / Package**

Dispose according to local legislation. Handle contaminated packages in the same way as the substance itself.

**Additional information**

European waste management legislation

none

National waste management legislation  
No further relevant information available.

## SECTION 14: Transport information

### Land transport (ADR/RID)

14.1	UN number or ID number:	2031
14.2	UN proper shipping name:	NITRIC ACID
14.3	Transport hazard class(es):	8 (5.1)
	Classification code:	CO1
	Hazard label(s):	8+5.1
14.4	Packing group:	II
14.5	Environmental hazards:	No
14.6	Special precautions for user:	
	Hazard identification number (Kemler No.):	80
	Tunnel restriction code:	E
		(Passage forbidden through tunnels of category E.)

### Sea transport (IMDG)

14.1	UN number or ID number:	2031
14.2	UN proper shipping name:	NITRIC ACID
14.3	Transport hazard class(es):	8 (5.1)
	Classification code:	
	Hazard label(s):	8+5.1
14.4	Packing group:	II
14.5	Environmental hazards:	No
	Marine pollutant:	No
14.6	Special precautions for user:	
	Segregation group:	1
	EmS-No.	F-A S-Q
14.7	Maritime transport in bulk according to IMO instruments	not relevant

### Air transport (ICAO-TI / IATA-DGR)

14.1	UN number or ID number:	2031
14.2	UN proper shipping name:	NITRIC ACID
14.3	Transport hazard class(es):	8 (5.1)
	Classification code:	
	Hazard label(s):	8+5.1
14.4	Packing group:	II
14.5	Special precautions for user:	

## SECTION 15: Regulatory information

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

#### National regulations

- Workplace Safety and Health Act
- Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order
- Environmental Protection and Management Act (EPMA) - Second Schedule, Part 1, Control of Hazardous Substances
- Maritime and Port Authority of Singapore (MPA) - Dangerous Goods, Petroleum and Explosives Regulations

## SECTION 16: Other information

#### Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists  
 ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road  
 AGS - Committee on Hazardous Substances (Ausschuss für Gefahrstoffe)  
 CLP - Regulation on Classification, Labelling and Packaging of Substances and Mixtures  
 DFG - German Research Foundation (Deutsche Forschungsgemeinschaft)  
 DNEL - Derived No Effect Level  
 Gestis - Information system on hazardous substances of the German Social Accident Insurance (Gefahrstoffinformationssystem der Deutschen Gesetzlichen Unfallversicherung)  
 IATA-DGR - International Air Transport Association-Dangerous Goods Regulations  
 ICAO-TI - International Civil Aviation Organization-Technical Instructions  
 IMDG - International Maritime Code for Dangerous Goods  
 KOSHA - Korea Occupational Safety and Health Agency  
 LTV - Long Term Value  
 NIOSH - National Institute for Occupational Safety and Health  
 OSHA - Occupational Safety & Health Administration  
 PBT - Persistent, Bioaccumulative and Toxic  
 PNEC - Predicted No Effect Concentration  
 RID - Regulation concerning the International Carriage of Dangerous Goods by Rail  
 STV - Short Term Value  
 SVHC - Substances of Very High Concern  
 vPvB - very Persistent, very Bioaccumulative

#### Key literature references and sources for data

This Safety Data Sheet has been prepared based on information available for public as TOXNET information, European Chemicals Agency (ECHA) substance dossier, papers from international cancer research institutes (IARC Monographs), U.S. National Toxicology Program data, U.S. Agency for Toxic Substances and Disease Control (ATSDR), PubChem websites and SDS from our raw material manufacturers.

**Revision date**

31.01.2025

**Version**

7.3

**Print date**

31.01.2025

**Additional information**

Indication of changes

general update

If you need an explanation of the change, contact the supplier (SDS@avantorsciences.com).

*The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.*