We create chemistry

Safety data sheet

BASF Safety data sheet according to the United Nations' Globally Harmonized System (UN GHS)
Date / Revised: 21.09.2023 Version: 7.0
Product: **Nitric Acid 68% Antw**

(ID no. 30042410/SDS_GEN_00/EN)
Date of print 09.10.2025

1. Identification

Product identifier

Nitric Acid 68% Antw

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

Relevant identified uses: Chemical
Recommended use: inorganic acid, Raw material, initial product for chemical syntheses, oxidizing agents, Surface treatment agent

Uses advised against: All consumer uses are strongly advised against.

Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY
Division Monomers

Telephone: +49 621 60 42737
E-mail address: pss.monomers@basf.com

Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

2. Hazards Identification

Classification of the substance or mixture

According to UN GHS criteria

Ox. Liq. 3
Met. Corr. 1
Acute Tox. 3 (Inhalation - vapour)
Skin Corr./Irrit. 1A
Eye Dam./Irrit. 1

Specific Concentration Limits According to UN GHS Criteria

Skin Corr./Irrit. 1A: >= 20 %
Skin Corr./Irrit. 1B: 5 - < 20 %
Ox. Liq. 3: >= 65 %

For the classifications not written out in full in this section the full text can be found in section 16.

Label elements

Globally Harmonized System (GHS)

Pictogram:

Signal Word:
Danger

Hazard Statement:

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

Precautionary Statements (Prevention):

P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves, protective clothing and eye protection or face protection.
P260	Do not breathe dust/gas/mist/vapours.
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.
P264	Wash contaminated body parts thoroughly after handling.
P234	Keep only in original packaging.

Precautionary Statements (Response):

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 or physician.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P370 + P378	In case of fire: Use … to extinguish.

Precautionary Statements (Storage):

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P406	Store in a corrosion-resistant container with a resistant inner liner.

Precautionary Statements (Disposal):

P501	Dispose of contents and container to hazardous or special waste collection point.

According to Regulation (EC) No 1272/2008 [CLP]

Labeling of special preparations (GHS):
Corrosive to the respiratory tract.
Contact with metal liberates toxic gas.

According to UN GHS criteria

Hazard determining component(s) for labelling: nitric acid

Other hazards

According to UN GHS criteria

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

Possible risk by inhalation of aerosols.

3. Composition/Information on Ingredients

Substances

Not applicable

Mixtures

Chemical nature

nitric acid (Content (W/W): 68 %)
HNO_3

Hazardous ingredients (GHS)
According to UN GHS criteria

nitric acid

Content (W/W): >= 50 % - < 75 %	Ox. Liq. 3
CAS Number: 7697-37-2	Met. Corr. 1
	Acute Tox. 3 (Inhalation - vapour)
	Skin Corr./Irrit. 1A
	Eye Dam./Irrit. 1
	H290, H272, H331, H314

Specific concentration limit:
Skin Corr./Irrit. 1A: >= 20 %
Skin Corr./Irrit. 1B: 5 - < 20 %
Ox. Liq. 3: >= 65 %

For the classifications not written out in full in this section the full text can be found in section 16.

4. First-Aid Measures

Description of first aid measures

Immediately remove contaminated clothing. First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position).

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

On skin contact:
Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

On contact with eyes:
Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

Hazards: Symptoms can appear later.

Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote, administer corticosteroid dose aerosol to prevent pulmonary odema. Pulmonary odema prophylaxis. Medical monitoring for at least 24 hours. If necessary, give oxygen.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
water spray

Additional information:
Use extinguishing measures to suit surroundings.

Special hazards arising from the substance or mixture

nitrogen oxides
The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters

Special protective equipment:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
Keep containers cool by spraying with water if exposed to fire. Suppress gases/vapours/mists with water spray jet. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Substance/product is an oxidizing agent and can supply oxygen to stimulate or accelerate the combustion of organic or other combustible substances/products.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Use personal protective clothing. Ensure adequate ventilation. Use breathing apparatus if exposed to vapours/dust/aerosol.

Environmental precautions

Discharge into the environment must be avoided. Due to the pH-value of the product, neutralization is generally required before discharging sewage into treatment plants.

Methods and material for containment and cleaning up

For small amounts: Dilute with water. Neutralize with soda or slaked lime.
For large amounts: Pump off product. Place into suitable container for disposal.

7. Handling and Storage

Precautions for safe handling

Ensure thorough ventilation of stores and work areas.

Protection against fire and explosion:
The product is incombustible. It can lower the ignition temperature of combustible substances. Store in a cool place. If heated the drums can burst due to pressure build-up.

Conditions for safe storage, including any incompatibilities

Segregate from oxidizable substances. Segregate from alkalies and alkalizing substances.

Suitable materials for containers: Stainless steel 1.4401, Stainless steel 1.4402 (V4A), Stainless steel 1.4404, Stainless steel 1.4408, Stainless steel 1.4571, Stainless steel 1.4361, Stainless steel 1.4541, glass, enamelled, High density polyethylene (HDPE)
Further information on storage conditions: Keep container tightly closed and dry; store in a cool place. Protect against contamination. Protect from direct sunlight. Protect contents from the effects of light. Protect from atmospheric humidity.

Specific end use(s)

See exposure scenario(s) in the attachment to this safety data sheet.

8. Exposure Controls/Personal Protection

Control parameters

Components with occupational exposure limits

7697-37-2: nitric acid

Exposure controls

Personal protective equipment

Respiratory protection:
Suitable respiratory protection for lower concentrations or short-term effect: Gas filter for acid inorganic gases/vapours such as SO2, HCl (e.g. EN 14387 Type E). Gas filter for gases/vapours of inorganic compounds (e.g. EN 14387 Type B) Suitable respiratory protection for higher concentrations or long-term effect: Self-contained breathing apparatus.

Hand protection:
Chemical resistant protective gloves (EN ISO 374-1)
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1):
chloroprene rubber (CR) - 0.5 mm coating thickness
butyl rubber (butyl) - 0.7 mm coating thickness
fluoroelastomer (FKM) - 0.7 mm coating thickness
polyvinylchloride (PVC) - 0.7 mm coating thickness

Suitable materials for short-term contact (recommended: At least protective index 2, corresponding > 30 minutes of permeation time according to EN ISO 374-1)
nitrile rubber (NBR) - 0.4 mm coating thickness
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.
Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:
Tightly fitting safety goggles (cage goggles) (e.g. EN 166) and face shield.

Body protection:
chemical-protection suit (f.e. according to EN 14605)

General safety and hygiene measures
Take off immediately all contaminated clothing.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Form:	liquid	
Colour:	colourless to yellowish	
Odour:	pungent odour	
Odour threshold:	Not determined due to potential health hazard by inhalation.	
pH value:	< 1	
Melting point:	-38 °C Literature data.	
boiling temperature:	121 °C Literature data.	
Flash point:	Study scientifically not justified.	
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.	
Flammability:	not flammable	(other)
Lower explosion limit:	For liquids not relevant for classification and labelling., The lower explosion point may be 5 - 15 °C below the flash point.	
Upper explosion limit:	For liquids not relevant for classification and labelling.	
Ignition temperature:	Study scientifically not justified.	
Vapour pressure:	9 hPa (20 °C) Literature data. 49 hPa (50 °C) Literature data.	
Density:	1,405 g/cm3 (20 °C) Literature data.	
Relative density:	1,5129 (20 °C) Literature data.	
Relative vapour density (air):	2,17 (20 °C) Heavier than air.	(calculated)
Solubility in water:	miscible > 500 g/l (20 °C)	

Partitioning coefficient n-octanol/water (log Kow):
Study scientifically not justified.
Information on: nitric acid
Partitioning coefficient n-octanol/water (log Kow):
Study scientifically not justified.

Self ignition:	not self-igniting	Test type: Spontaneous self-ignition at room-temperature.
Thermal decomposition:	No decomposition if correctly stored and handled. To avoid thermal decomposition, do not overheat.	
Viscosity, dynamic:	2,0 mPa.s (20 °C) Literature data.	
Explosion hazard:	Based on the chemical structure there is no indication of explosive properties.	
Fire promoting properties:	Oxidizing.	

Other information

Self heating ability:	It is not a substance capable of spontaneous heating.	
Miscibility with water:	(15 °C) completely (e.g. >=90%)	
pKA:	-1,38	(calculated)
	Study scientifically not justified.	
:	No data available.	
Surface tension:	Based on chemical structure, surface activity is not to be expected.	
Grain size distribution:	The substance / product is marketed or used in a non solid or granular form.	
Molar mass:	63,01 g/mol	

10. Stability and Reactivity

Reactivity

Corrosion to metals:	Corrosive effect on metals.	
Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.

Possibility of hazardous reactions

Exothermic reaction. Reacts with reducing agents. Reacts with bases. Addition of water leads to increase in temperature. Can nitrate, oxidize and explode. Forms nitrous gases and hydrogen on action upon metals.

Conditions to avoid

Avoid heat. See SDS section 7 - Handling and storage.

Incompatible materials

Substances to avoid:
flammable, oxidizable substances, base metals

Hazardous decomposition products

Hazardous decomposition products:
nitrogen oxides

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Toxic by inhalation. The toxicity of the product is based on its corrosivity.

Experimental/calculated data:
(oral):If swallowed, will immediately cause severe corrosion and damage to the gastrointestinal tract.

LC50 rat (by inhalation): > 2,65 mg/l 4 h (OECD Guideline 403)
The vapour was tested.

(dermal):Due to the corrosive properties of the substance higher doses cannot be tested. Study does not need to be conducted.

Information on: nitric acid
Assessment of acute toxicity:
Toxic by inhalation. The toxicity of the product is based on its corrosivity.

Information on: nitric acid
Experimental/calculated data:
LC50 rat (by inhalation): > 2,65 mg/l 4 h (OECD Guideline 403)
The vapour was tested.

Irritation

Assessment of irritating effects:
Highly corrosive! Damages skin and eyes.

Experimental/calculated data:
Skin corrosion/irritation: Study scientifically not justified.

Serious eye damage/irritation: Study scientifically not justified.

Respiratory/Skin sensitization

Assessment of sensitization:

No data available. As the substance is corrosive, conducting sensitization studies is not feasible.

Experimental/calculated data:
Study scientifically not justified.

Information on: nitric acid
Assessment of sensitization:
No data available. As the substance is corrosive, conducting sensitization studies is not feasible.

Germ cell mutagenicity

Assessment of mutagenicity:
The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Carcinogenicity

Assessment of carcinogenicity:
No reliable data was available concerning carcinogenic activity. The chemical structure does not suggest a specific alert for such an effect.

Information on: nitric acid
Assessment of carcinogenicity:
No reliable data was available concerning carcinogenic activity. The chemical structure does not suggest a specific alert for such an effect.

Reproductive toxicity

Assessment of reproduction toxicity:
The results of animal studies gave no indication of a fertility impairing effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Information on: nitric acid
Assessment of reproduction toxicity:
The results of animal studies gave no indication of a fertility impairing effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Developmental toxicity

Assessment of teratogenicity:
No data was available concerning toxicity to development. The chemical structure does not suggest a specific alert for such an effect.

Information on: nitric acid
Assessment of teratogenicity:
No data was available concerning toxicity to development. The chemical structure does not suggest a specific alert for such an effect.

Specific target organ toxicity (single exposure)

Assessment of STOT single:
Apart from effects causing lethality, no specific target organ toxicity was observed in experimental studies.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
After repeated administration the prominent effect is the induction of corrosion.

Information on: nitric acid
Assessment of repeated dose toxicity:
After repeated administration the prominent effect is the induction of corrosion.

Aspiration hazard

Study does not need to be conducted.

Other relevant toxicity information

The toxicity of the product is based on its corrosivity. Inhalation of decomposition products can lead to lung oedema.

12. Ecological Information

Toxicity

Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms.
The ecotoxicological effects are solely caused by the pH.

Toxicity to fish:
LC50 (96 h) 12,5 mg/l pH 3,7, Salmo gairdneri, syn. O. mykiss (static)
Literature data. The product will cause changes in the pH value of the test system. The result refers to an unneutralized sample.

Aquatic invertebrates:
EC50 (48 h) pH 4,4, Ceriodaphnia dubia (other, semistatic)
The product will cause changes in the pH value of the test system. The result refers to an unneutralized sample.

Aquatic plants:
Study not necessary due to exposure considerations.

Microorganisms/Effect on activated sludge:
Study not necessary due to exposure considerations.

Chronic toxicity to fish:
No observed effect concentration (30 d) 58 mg/l, Pimephales promelas (OPP 72-4 (EPA-Guideline), static)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Chronic toxicity to aquatic invertebrates:
No observed effect concentration (35 d) pH 6,14 - 8,3, Ceriodaphnia dubia (other, other)

Information on: nitric acid
Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms.
The ecotoxicological effects are solely caused by the pH.

Information on: nitric acid
Toxicity to fish:
LC50 (96 h) 12,5 mg/l pH 3,7, Salmo gairdneri, syn. O. mykiss (static)
Literature data. The product will cause changes in the pH value of the test system. The result refers to an unneutralized sample.

Information on: nitric acid
Aquatic invertebrates:
EC50 (48 h) pH 4,4, Ceriodaphnia dubia (other, semistatic)
The product will cause changes in the pH value of the test system. The result refers to an unneutralized sample.

Information on: nitric acid
Aquatic plants:
Study not necessary due to exposure considerations.

Assessment of terrestrial toxicity:
No data available.
Study not necessary due to exposure considerations.

Persistence and degradability

Assessment biodegradation and elimination (H2O):
Inorganic product which cannot be eliminated from water by biological purification processes. Can be oxidized to nitrate, or be reduced to nitrogen, by microorganisms.

Elimination information:
not applicable

Assessment of stability in water:
According to structural properties, hydrolysis is not expected/probable.
Study scientifically not justified.
Information on Stability in Water (Hydrolysis):
Study scientifically not justified.

Bioaccumulative potential

Assessment bioaccumulation potential:
Accumulation in organisms is not to be expected.

Bioaccumulation potential:
Study scientifically not justified.

Mobility in soil

Assessment transport between environmental compartments:
Volatility: The substance will not evaporate into the atmosphere from the water surface.
Adsorption in soil: Adsorption to solid soil phase is not expected. Under environmental conditions, the substance will almost completely be in its charged form.

Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): PBT assessment does not apply. Not applicable for inorganic substances.

Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

Additional information

Other ecotoxicological advice:
Do not release untreated into natural waters. Due to the pH-value of the product, neutralization is generally required before discharging sewage into treatment plants. Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

13. Disposal Considerations

Waste treatment methods

Contact manufacturer regarding recycling.
Contact waste centre regarding recycling.
Obtain the consent of pollution control authorities before discharging to wastewater treatment plants.

Contaminated packaging:
Transport containers should be completely emptied and returned.

14. Transport Information

Land transport

ADR

UN number or ID number:	UN2031
UN proper shipping name:	NITRIC ACID
Transport hazard class(es):	8, 5.1
Packing group:	II
Environmental hazards:	no

Special precautions for user:	Tunnel code: E

RID

UN number or ID number:	UN2031
UN proper shipping name:	NITRIC ACID
Transport hazard class(es):	8, 5.1
Packing group:	II
Environmental hazards:	no
Special precautions for user:	None known

Inland waterway transport

ADN

UN number or ID number:	UN2031
UN proper shipping name:	NITRIC ACID
Transport hazard class(es):	8, 5.1
Packing group:	II
Environmental hazards:	no
Special precautions for user:	None known

Transport in inland waterway vessel

UN number or ID number:	UN2031
UN proper shipping name:	NITRIC ACID
Transport hazard class(es):	8, 5.1, N3
Packing group:	II
Environmental hazards:	yes
Type of inland waterway vessel:	N
Cargo tank design:	2
Cargo tank type:	3

Sea transport

IMDG

UN number or ID number:	UN 2031
UN proper shipping name:	NITRIC ACID
Transport hazard class(es):	8, 5.1
Packing group:	II
Environmental hazards:	no Marine pollutant: NO
Special precautions for user:	EmS: F-A; S-Q

Air transport

IATA/ICAO

UN number or ID number:	UN 2031
UN proper shipping name:	NITRIC ACID
Transport hazard class(es):	8, 5.1
Packing group:	II
Environmental hazards:	No Mark as dangerous for the environment is needed
Special precautions for user:	None known

Maritime transport in bulk according to IMO instruments

Regulation:	IBC-Code
Product name:	Nitric acid (less than 70%)
Pollution category:	Y
Ship Type:	2

15. Regulatory Information

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

16. Other Information

Full text of classifications, hazard symbols and hazard statements, if mentioned in section 2 or 3:

Ox. Liq.	Oxidising liquids
Met. Corr.	Corrosive to metals
Acute Tox.	Acute toxicity
Skin Corr./Irrit.	Skin corrosion/irritation
Eye Dam./Irrit.	Serious eye damage/eye irritation
H290	May be corrosive to metals.
H272	May intensify fire; oxidizer.
H331	Toxic if inhaled.
H314	Causes severe skin burns and eye damage.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the

responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.