



PRODUCT SPECIFICATION

Product Name	Nitric Acid
Alternative Name	
Product Grade	60%
	NA266/8 (02/95)

SALES SPECIFICATION

PROPERTIES	GUARANTEE CHARACTERISTICS
	60%
Nitric Acid Content	59.0 to 61.0% m/m
Nitrous Acid content	< 50 ppm m/m
Combined ammonia content	< 5 ppm m/m
Chloride as Cl	< 1ppm m/m
Fluoride as F	< 0.3 ppm m/m
Sulphate as H ₂ SO ₄	< 2 ppm m/m
Calcination residue	< 50 ppm m/m

As an indication of the purity of this nitric acid, the following typical analysis was carried out to detect the presence of a range of metals associated with other process routes:

Aluminium as Al	< 0.10 ppm m/m
Total Silicon as SiO ₂	< 0.50 ppm m/m
Calcium as Ca	0.03 ppm m/m
Vanadium as V	< 0.10 ppm m/m
Chromium as Cr	0.19 ppm m/m
Iron as Fe	0.60 ppm m/m
Copper as Cu	< 0.01 ppm m/m
Zinc as Zn	< 0.01 ppm m/m
Silver as Ag	< 0.05 ppm m/m
Platinum at Pt	< 0.20 ppm m/m
Sulphated Ash	< 9.00 ppm m/m

NOTES

Exclusion of Liability

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Health and Safety

A Material Safety Data Sheet has been issued describing the health, safety and environmental properties of this product, identifying the potential hazards and giving advice on the handling precautions and emergency procedures. This must be consulted fully before handling, storage and use.



SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

1.1 Product Identifier

Chemical Name (EINECS)	Nitric acid
Trade Names	Nitric acid 60%
CAS Number	7697-37-2
EINECS Number	231-714-2
REACH Registration Number	01-2119487297-23-xxxx

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

Identified use(s)

Surface active agent. Fertiliser. Laboratory chemicals. Oxidizing agents. Intermediates. Processing aid (used to generate ion exchange resins), not otherwise listed. Plating agents and metal surface treating agents. pH Regulating agent

Uses advised against - No further information

1.3 Details of the supplier of the safety data sheet

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1.4 Emergency telephone number

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2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Regulation 1272/2008 (CLP)

Met. Corr. 1; H290 May be corrosive to metals

Skin Corr. 1A; H314 Causes severe skin burns and eye damage.

2.2 Label elements

2.2.1 According to Regulation (EC) No. 1272/2008 (CLP).

Hazard Pictogram



GHS05

Signal word(s) Danger.

Hazard statement(s)

H290; May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional information

EUH071 Corrosive to the respiratory tract.

2.3 Other hazards Acid vapours and decomposition gases are both toxic by inhalation

Results of PBT and vPvB assessment · PBT: Not applicable. · vPvB: Not applicable.



3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures – Nitric Acid

CAS Number	EINECS Number	REACH registration number	ECC Index Number	Classification according to Regulation 1272/2008	Content
7697-37-2	231-714-2	01-2119487297-23-xxxx	007-004-00-1	Ox, Liq, 3; H272, Skin Corr. 1A; H314,	60%

Additional Information

For the wording of the listed H- statements refer to Section 16

4. FIRST AID MEASURES

4.1 Description of first aid measures

General Advice

Seek immediate medical advice. Personal protection for the First Aider. Guarantee that the eye flushing systems and safety showers are located close to the working place. Immediately remove any clothing soiled by the product.

Inhalation

Supply fresh air. Call a doctor immediately. Place unconscious person on the side in the recovery position and ensure breathing. If respiratory problems, artificial respiration/oxygen.

Skin contact

Immediately remove any clothing soiled by the product. Immediately rinse with water. Call a doctor immediately. Chemical burns must be treated by a physician.

Eye contact

Promptly wash eyes with plenty of water while lifting the eye lids. Rinse opened eye for several minutes under running water. Call a doctor immediately. Remove contact lenses.

Ingestion

Rinse out mouth and then drink plenty of water. Do not induce vomiting; call for medical help immediately.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing Media

Suitable extinguishing media: Water, CO₂

Unsuitable extinguishing media: Dry chemical. Foam.

5.2 Special hazards arising from the substance or mixture

Nitrogen oxides (NO_x)

5.3 Advice for fire-fighters

Wear self-contained respiratory protective device. Wear fully protective suit.

Additional information

Cool endangered receptacles with water spray.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation. Avoid contact with eyes and skin. Avoid contact with liquid and vapour. Avoid breathing vapours.

6.2 Environmental precautions

Do not allow to enter sewers/ surface or ground water. Inform respective authorities in case of seepage into water course or sewage system.

6.3 Methods and material for containment and cleaning up

Dilute with plenty water. Use neutralising agent. Use inert absorbent material (sand, vermiculite, diatomaceous earth, Kieselguhr, etc.) to soak up leaked product. Fill the material into labelled containers. Dispose contaminated material as waste according to item 13.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

The usual precautionary measures are to be adhered to when handling chemicals. Ensure good ventilation/exhaustion at the workplace. Avoid contact with eyes and skin. Avoid inhalation of vapours. Keep away from heat and direct sunlight.

When diluting always pour product into water and not vice versa.

Information about fire - and explosion protection:

Protect from heat. Keep ignition sources away - Do not smoke.



7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

Store at room temperature. Store only in the original receptacle. Store receptacle in a well ventilated area.

Suitable Material/Coatings for receptacles: Low carbon or stabilised stainless steel

Information about storage in one common storage facility:

Keep away from combustible material.

Store separated from: Organic substances. Alkalis. Alkali metals. Store away from metals. Store away from reducing agents.

Further information about storage conditions: Keep container tightly sealed.

Specific end use(s)

7.3 Specific end use(s)

No further relevant information available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

7697-37-2 Nitric acid

WEL Short-term value: 2.6 mg/m³, 1 ppm

Additional information:

This is based on data that was valid at the time of writing. Use engineering controls to reduce air contamination to permissible exposure level.

8.2 Exposure controls

Appropriate engineering controls

Use engineering controls to reduce air contamination to permissible exposure level.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals. Local exhaust ventilation required. Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin. Do not inhale gases / fumes / aerosols. Eyewash and safety shower facilities should be available when handling this product.

Respiratory protection

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device. NIOSH or European Standard EN 149 approved respirator

Hand protection

Protective gloves

Gloves material

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Material of gloves: PVC gloves. Butyl rubber, BR

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection

Tightly sealed goggles. Face protection (EN 166)

Body protection

Wear suitable protective clothing. Wear rubber apron. Boots.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Liquid
Colour	Colourless
Odour (Vapours or Fumes)	Pungent
pH (Value)	<1 Strongly acidic
Melting Point (°C)	-23°C
Boiling point/boiling range (°C)	118 °C
Flash point (°C)	No data
Decomposition temperature	Undetermined
Self-igniting	Product is not self-igniting
Danger of explosion	Product does not present an explosion hazard
Vapour Pressure (mm Hg)	5.498 (70% solution)
Vapour Density (Air=1)	2
Density	1.36
Solubility (Water)	Fully miscible with water
Viscosity (mPa.s)	0.75 (Dynamic at 25 °C)

9.2 Other information

No further information



10. STABILITY AND REACTIVITY

Reactivity

Chemical stability

Thermal decomposition / conditions to be avoided:

Stable under normal conditions. Decomposition when heated. Protect from heat and direct sunlight.

Possibility of hazardous reactions

Corrosive action on metals. Reacts with strong alkali. Reacts violently with: Reducing substance.

Combustible substance. Reacts with alcohols. Reacts with reducing agents.

Conditions to avoid

High temperature and heat. Direct sunlight.

Incompatible materials: Metals. Bases. Organic substances. Reducing agents.

Hazardous decomposition products: Nitrogen oxides (NO_x)

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Nitric Acid 60%

Inhalative LC50/4 h 1562.5 mg/m³ (rat)

Primary irritant effect:

On the skin: Strong caustic effect on skin and mucous membranes.

On the eye: Strong caustic effect. Risk of serious damage to eye.

Ingestion: Could cause chemical burns in mouth, oesophagus and stomach. Danger of very serious irreversible effects if swallowed.

Inhalation: Corrosive.

Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version: Corrosive

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of oesophagus and stomach.

12. ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity

EC50/24 h 8609 mg/l (Daphnia magna)

LC50/96h 8226 mg/l (Trout)

Persistence and degradability

Not applicable, since inorganic substance

Bio accumulative potential

Not considered to be bioaccumulating.

Mobility in soil

No further relevant information available.

Results of PBT and vPvB assessment

Not classified as PBT or vPvB

Additional ecological information

General notes

Water hazard class 1 (German Regulation): slightly hazardous for water. Do not allow product to reach ground water, water course or sewage system. Lowers pH. Discharge of large quantities may harm aquatic life.

Other adverse effects

No further relevant information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation

Neutralise with lime or alkali. Dispose of in accordance with Local Authority requirements.


Uncleaned packaging

Recommendation

Disposal must be made according to official regulations.

Recommended cleansing agents: Water, if necessary together with cleansing agents.



14. TRANSPORT INFORMATION	
14.1 UN Number	2031
14.2 Proper Shipping Name	NITRIC ACID
14.3 Transport hazard class	 8 Corrosive substances
14.4 Packing group	II
14.5 Environmental hazards	Not classed as a Marine Pollutant
14.6 Special precautions for users	Warning: Corrosive substances
Kemler code	80
EmS No.	F-A, S-B
Tunnel restriction code	E
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	
Not applicable	
Additional information	
ADR	
Limited quantities (LQ)	1L
Excepted quantities (EQ)	Code: E2
Maximum net quantity per inner packaging:	30 ml
Maximum net quantity per outer packaging:	500 ml
Transport category	2
Tunnel restriction code	E
IMDG	
Excepted quantities (EQ) Code:	E2
Maximum net quantity per inner packaging:	30 ml
Maximum net quantity per outer packaging:	500 ml
UN 'Model Regulation'	
UN2013, NITRIC ACID, 8, II	
15. REGULATORY INFORMATION	
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	
No further information	
15.2 Chemical safety assessment	
A Chemical Safety Assessment has not been carried out	
16. OTHER INFORMATION	
Relevant phrases	
H272 May intensify fire; oxidiser	
H290 May be corrosive to metals	
H314 Causes severe skin burns and eye damage.	
Abbreviations and acronyms	
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)	
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)	
IMDG: International Maritime Code for Dangerous Goods	
IATA: International Air Transport Association	
ICAO: International Civil Aviation Organization	
GHS: Globally Harmonized System of Classification and Labelling of Chemicals	
LC50: Lethal concentration, 50 percent	
LD50: Lethal dose, 50 percent	
Source of key data used to compile the data sheet	
Supplier information	
Modifications from last revision	
The Safety Data Sheet has been updated in accordance with current data.	
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