

NITRIC ACID 98%

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

1.1. Product identifier

Product name: Nitric Acid 98%
Index Number: 007-004-00-1
REACH Registration Number: 01-2119487297-23-0039

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

Intermediate for chemical syntheses.
Intermediate in manufacture of inorganic and organic chemicals incl. fertilizers.
Formulation of mixtures (fertilizer, metal surface treatment product, cleaning product, detergent and maintenance product).
Processing aid in industry, including laboratory applications, such as pH regulator, neutralisation agent, oxidising agent.
Reactive agent in inorganic and organic synthesis.
Regeneration of ion exchange resins.
pH control.
Laboratory agent.
Surface treatment product.
In cleaning products.

1.3 Details of the supplier of the safety data sheet

Company name: East Harbour Group Ltd
20 Clough Road, Severalls Industrial Park
Colchester, Essex, CO4 9QS
United Kingdom

Telephone: +44 (0) 333 242 0100
Email: info@eastharbourgroup.com

1.4 Emergency telephone number

Emergency telephone: 0800 246 1274

Section 2: Hazardous identification

2.1 Classification of the substance or mixture

According to Regulation (EC) No 1272/2008:

Ox. Liq.2, H272
Skin Corr.1A, H314
Acute Tox.1, H330
Met. Corr.1, H290
Full text of H-phrases: see section 16.

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2.2 Label elements



Signal Word:

Hazard Statements:

Danger

May intensify fire; oxidiser. (H272)

Causes severe skin burns and eye damage. (H314)

Fatal if inhaled. (H330)

May be corrosive to metals. (H290)

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

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

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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

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

Immediately call a POISON CENTER/doctor. (P310)

Keep away from clothing and other combustible materials. (P220)

Additional Information: Corrosive to the respiratory tract. (EUH071)

(P301+P330+P331)

2.3 Other Hazards

Contact with combustible organic material (wood, wood pulp, cotton) may cause fire. Combustible materials saturated with nitric acid tend to auto-ignition. In contact with metals may form nitrogen oxides. Exothermic reaction with water releasing corrosive mixture and oxides of nitrogen. Possibility of violent chemical reactions particularly in case of heating. The substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XII.

Section 3: Composition/information on ingredients

3.1 Substances

Chemical Name		
Index Number	Content [wt.%]	Classification according to Regulation (EC) 1272/2008
Nitric acid (C>70%)		
007-004-00-1	min. 98,5	Ox. Liq.2, H272
7697-37-2		Skin Corr.1A, H314
231-714-2		Acute Tox.1, H330
01-2119487297-23-0039		Met. Corr.1, H290

Nitric acid (C > 70 %) - specific concentration limits:

Ox. Liq. 2, H272: C \geq 99 %; Ox. Liq. 3, H272: 70 % \leq C < 99 %

The full text of H-phrases, hazard class and hazard category code is given in section 16.

3.2 Mixtures

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Section 4: First aid measures

4.1 Description of first aid measures

In all cases keep the victim at physical and mental rest and warm. Always get medical advice.

4.1.1 Inhalation

Break the exposure, transfer the victim to the fresh air, apply artificial respiration, if the victim is not breathing.

4.1.2 Skin Contact

Flush the affected area with plenty of water (preferably lukewarm), carefully remove the contaminated clothing as soon as possible and continue washing the affected skin. After the rinsing cover the affected area with a clean cloth and seek medical advice.

4.1.3 Eye Contact

Rinse with plenty of water for at least 15 minutes. Never neutralize! Move to the physician while continue rinsing.

4.1.4 Ingestion

Rinse out mouth with clean water, give 0,2 to 0,5 l water to drink, do not induce vomiting (risk of perforation!). Immediately call-in physician.

4.2 Most Important Symptoms and Effects, both Acute and Delayed

Burns of eyes, skin, and mucous membrane. Symptoms of poisoning may appear after several hours. Extensive inhalation may cause lung edema with latent time till 2 days.

4.3 Indication of any Immediate Medical Attention and Special Treatment Needed

Keep under medical supervision for at least 48 hours. First aider needs to protect himself. Control of circulatory system, in case of need shock therapy.

Section 5: Fire-fighting measures

5.1 Extinguishing Media

5.1.1 Suitable Extinguishing Media

The product is non-flammable. Use any suitable extinguishing media in adaption to materials stored in the immediate neighbourhood.

5.1.2 Unsuitable Extinguishing Media

Powders, chemical extinguishers, foam.

5.2 Special Hazards Arising from the Substance / Mixture

Contributing to the combustion.

If in contact with combustible material, especially with wood, cellulose, cotton and others, it brings about an immediate fire.

Ambient fire may liberate hazardous vapours.

Possibility of violent chemical reactions, especially when heated. The reaction releases oxygen to support combustion.

On contact with ordinary metals (steel, galvanized, aluminum) corrosion may occur and generate highly flammable hydrogen gas.

May explode in contact with a powerful reducing agent.

5.3 Advice for Firefighters

In the event of fire, wear self-contained breathing apparatus (EN 137) and clothing protective against chemicals.

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5.4 Other Information

In case of fire, cool the tanks containing the product with a water jet from a safe distance. Suppress (knock down) gases/vapours/mists with a water spray jet. Do not allow contaminated extinguishing water to enter the surface waters or ground water.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For Non-emergency Personnel Evacuate area in the case of large leakage. Prevent the entry of unauthorized persons. Avoid contact with eyes, skin and clothing. Avoid breathing of fumes. Eliminate all sources of ignition. No smoking. Keep away from open flame.

6.1.2 For Emergency Responders Use personal protective equipment (acid-resistant suit). In case of a major escape, to warn, eventually to evacuate adjacent dwelling and industrial areas, located in immediate vicinity of emergency (be careful to observe the direction of wind blowing).

6.2 Environmental precautions

Stop the leak if possible.

Do not empty into drains.

Do not allow to enter waters or soil.

6.3. Methods and material for containment and cleaning up

Absorb spill using an absorbent, such as earth, sand or vermiculite, then collect and dispose as a dangerous waste.

Suitable material for overlap and neutralization is ground limestone.

Do not use combustible materials such as sawdust.

6.4 Reference to Other Sections

Using of personal protective equipment - see section 8. Disposal - see section 13.

Section 7: Handling and storage

7.1 Precautions for safe handling

Avoid breathing vapours/spray.

Avoid contact with skin, eyes and clothing.

Use personal protective equipment (see section 8).

Ensure effective ventilation.

Keep containers tightly closed.

When using, do not eat, drink or smoke. Wash hands with warm water and soap before breaks and after work. Never add water to this product.

7.2 Conditions for safe storage, including any incompatibilities

Store in original tightly closed packing in dry and well-ventilated areas. Protect from direct weather conditions and from light.

Store separate from organic materials (wood, paper, organic chemicals), easy inflammable materials, combustible materials and inorganic oxidizing agents. Unsuitable packaging material: steel, nickel, copper. Suitable packing material: stainless steel, glass.

7.3 Specific End Use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated. See exposure scenario (annex to the safety data sheet).

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Section 8: Exposure controls/personal protection

8.1 Control parameters

Exposure Limit Values:

Exposure Limits for Workplace [Nitric acid (C > 70 %)] (CAS: 7697-37-2)				
Country	Long-term		Short-term	
EU	mg/m ³	ppm	mg/m ³	ppm
			2,6	1

DNEL:

HNO₃ 98 %:

Workers, inhalation, acute-local effects - 2.6 mg/m³

Workers, inhalation, long-term local effects - 2.6 mg/m³

Consumers, inhalation, acute-local effects - 1.3 mg/m³

Consumers, inhalation, long-term local effects - 1.3 mg/m³

PNEC:

Dependent on pH - safe for pH 6 to 9.

8.2 Exposure controls

8.2.1 Appropriate Engineering Controls

Technical measures to minimize the possibility of exposure.

Use a closed system if possible.

Where exposure cannot be prevented by other means the use of individual protection measures, such as personal protection equipment is necessary.

Ensure adequate ventilation/exhaustion of the workplace.

Regularly measure the concentration of this agent in the workplace atmosphere.

Workers in the risky process/areas identified should be trained.

Ensure fresh water for first aid at the workplace (emergency eye wash fountain, safety shower).

8.2.2 Individual Protection Measures, Personal Protective Equipment

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.

The chemical resistance of the protective equipment should be enquired at the respective supplier.

All used personal protective equipment must be in accordance with Directive 89/686/EEC.

Respiratory Protection: in case of vapours/fumes release or insufficient ventilation, protective mask with filter - recommended EN 149 type FF P3, EN 14387 type B or type E model P3, EN 1827 class FMP3 (non-exhaustive list)

Hand Protection: impervious chemical resistant protective gloves (complying with EN 374), material - butyl rubber, PVC, PTFE fluoro elastomer

Eye / Face Protection: chemical safety goggles (EN 166) or full-face mask (EN 402)

Skin Protection: acid-resistant protective clothing, rubber boots, rubber apron, cap

8.2.3 Environmental Exposure Controls

Avoid release of substance/mixture to the environment. Avoid uncontrolled release of acid solution to wastewater treatment plant or in surface waters. Regular control of the pH value during introduction into open waters is required (pH to be between 6 and 9). Draining of acid solution at pH 6 to 9.

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Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	colourless to slightly yellow, clear liquid
Odour:	pungent
Odour Threshold Value:	0,75 - 2,5 mg/m ³
pH:	< 1
Melting Point / Freezing Point:	-41 °C (1013 hPa)
Boiling Point (Range):	83 °C (1013 hPa)
Flash Point:	not applicable, inorganic substance
Evaporation Rate:	not available
Flammability (Solid, Gas):	non-flammable substance supporting burning
Upper Flammability / Explosive Limits:	non explosive
Lower Flammability / Explosive Limits:	non explosive
Vapour Pressure:	6 380 Pa (20 °C)
Vapour Density:	2
Relative Density:	1,513 g/cm ³ (HNO ₃ 100%, 20 °C) 1,501 g/cm ³ (HNO ₃ 98%, 20 °C)
Water Solubility:	> 0,5 kg/l
Partition Coefficient n-Octanol/Water:	not applicable, inorganic substance
Autoignition Temperature:	non-flammable
Decomposition Temperature:	83 °C (1013 hPa)
Viscosity:	0,75 mPa.s (25 °C)
Explosive Properties:	non explosive
Oxidising Properties:	yes

9.2 Other Information

No information available

Section 10: Stability and Reactivity

10.1 Reactivity

Vigorous reaction with hydrated oxide
Vigorous reaction with reductants.

10.2 Chemical Stability

Stable under recommended storage and handling conditions (see section 7). Decomposes when in contact with air, light or organic matter.

10.3 Possibility of hazardous reactions

Contact with combustible organic material (wood, wood pulp, cotton) may cause fire.
Combustible materials saturated with nitric acid tend to auto-ignition. Exothermic reaction with water.

10.4 Conditions to avoid

Direct sunshine. Sources of heating and ignition.
Contact with water.

10.5 Incompatible materials

Reducing agents. Alkalies and caustic products. Metallic powders. Hydrogen sulphide. Chlorates. Alcohols.

10.6 Hazardous decomposition products

Nitrogen oxides.

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Section 11: Toxicological Information

11.1 Information on Toxicological Effect

Acute Toxicity:

LD50 Oral, Rat (mg/kg): not applicable, corrosive substance
 LD50 Skin, Rat or Rabbit (mg/kg): not applicable, corrosive substance
 LC50 Inhalation, Rat (gas and vapour) (mg/m3): > 2 650 (4 h)

Skin Corrosion / Irritation:

Causes severe skin burns.

Serious Eye Damage / Irritation:

Causes severe eye damage.

Respiratory or Skin Sensitisation:

not applicable, the substance is a strong acid (pH < 2,0)

Germ Cell Mutagenicity:

Negative.

Carcinogenicity:

Inconclusive data.

Reproductive Toxicity:

NOAEL (oral, rat): 1500 mg/kg bw/day (OECD Test Guideline 422, potassium nitrate)

STOT – Single Exposure:

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

STOT – Repeated Exposure:

NOAEL (oral, rat): 1500 mg/kg bw/day (OECD Test Guideline 422, potassium nitrate)

NOAEC (inhalation, rat): 2,15 ppm (OECD Test Guideline 413, NO2)

Aspiration Hazard:

no data available

Potential Adverse Health Effects / Symptoms Ingestion:

After swallowing - strong pain, vomiting, shock.

Eye Contact:

Effects at eyes may lead to the blindness.

Skin Contact:

Causes burns.

Inhalation:

Cause effects on the respiratory tract and teeth. Extensive inhalation may cause lung edema with latent time till 2 days.

Section 12: Ecological Information

12.1 Toxicity

12.1.1 Acute Aquatic Toxicity

LC50 96 h, Fish (mg/l):

50 median lethal pH (96 h) 3 - 3.5 (Lepomis macrochirus)

median lethal pH (96h) cca 3,7 (Oncorhynchus mykiss)

8 609 (24 h, Daphnia magna, NaNO₃)

no data available

EC50 48 h, Crustacea (mg/l):

NOEC (3 mo, Amphiprion ocellaris, NaNO₃): 97,8 mg/l

EC50 72 h, Algae (mg/l):

no data available

12.1.2 Chronic Aquatic Toxicity

12.1.3 Toxicity for Other Environment

12.2 Persistence and Degradability

12.3 Bioaccumulative Potential

not applicable, inorganic substance

not applicable, inorganic substance miscible with water

12.4 Mobility in Soil

no data available

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12.5 Results of PBT and vPvB Assessment

not applicable, inorganic substance

12.6 Other Adverse Effects

Harmful effect due to pH shift.

Section 13: Disposal considerations

13.1 Waste Treatment Methods

13.1.1 Disposal Methods of the Substance / Mixture

Dilute in water, neutralize with soda ash and dispose at licensed installation.

Product residue and cleaning water must not be released into the environment without neutralization in accordance with applicable regulations.

Draining acid effluents to sewerage system or water courses is allowed only after they have been neutralised under conditions stipulated by water managing authorities.

13.1.2 Disposal Methods of the Contaminated

Packaging Clean with water and then neutralize.

Section 14: Transport Information

Land Transport ADR/RID:

Class / Classification Code / Packing Group:	8 / CO1 / I
UN Number:	2031
Proper Shipping Name:	NITRIC ACID
Environmental Hazard:	no
Hazard Label:	8 + 5.1

Sea Transport IMDG:

Class / Packing Group:	8 / I
UN Number:	2031
Proper Shipping Name:	NITRIC ACID
Marine Pollutant:	no
Other Data:	EmS: F-A, S-Q
Hazard Label:	8 + 5.1

Air transport ICAO/IATA:

Class / Packing Group:	8 / I
UN Number:	2031
Proper Shipping Name:	NITRIC ACID
Hazard Label:	Corrosive + Oxidizer

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

Section 15: Regulatory Information

15.1 Safety, Health and Environmental Regulations / Legislation Specific for the Substance or Mixture

Regulation (EC) No. 1272/2008

Regulation (EC) No. 1907/2006

Water hazard class (Germany): WGK 1 - low hazard to waters.

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This product is subject to regulation (EU) 2019/1148 on the marketing and use of explosives precursors. The making available, introduction, possession, or use of this explosive's precursor by members of the general public is subject to a restriction.

15.2 Chemical Safety Assessment

Chemical safety assessment has been carried out for this substance.

Section 16: Other Information

Reason for Alteration:

Section 2, 3 - change of classification and labelling (according to Commission delegated regulation (EU) 2020/1182).

Section 15 - information on explosives precursors.

List of Abbreviations:

CAS - Chemical Abstracts Service

EC number - EINECS (European Inventory of Existing Commercial Chemical Substance), ELINCS (European List of Notified Chemical Substances) or NLP (No-Longer-Polymers)

LD50 - lethal dose, 50%

LC50 - lethal concentration, 50%

EC50 - effective concentration, 50%

IC50 - inhibitory concentration, 50%

PBT - persistent, bioaccumulative and toxic

vPvB - very persistent and very bioaccumulative

BCF - bioconcentration factor

COD - chemical oxygen demand

BOD - biochemical oxygen demand

DNEL - derived no-effect level

PNEC - predicted no-effect concentration

NOAEL - no observed adverse effect level

NOAEC - no observed adverse effect concentration

NOEC - no observed effect concentration

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road

RID - Regulations concerning the International Carriage of Dangerous Goods by Rail

IMDG - International Maritime Dangerous Goods

ICAO - International Civil Aviation Organisation

IATA - International Air Transport Association

Sources of Key Data Used to Compile the Safety Data Sheet:

Legislation, chemical databases, and tables. Tests.

Relevant Information for Classification and Labelling of the Product:

List of harmonised classification and labelling of hazardous substances.

Full Text of H-phrases from Section 2 and 3:

Ox. Liq.2, H272 Oxidising Liquids, Category 2

Skin Corr.1A, H314 Skin corrosion/irritation, Category 1A

Acute Tox.1, H330 Acute toxicity (inhalation), Category 1

Met. Corr.1, H290 Corrosive to metals, Category 1

H272 May intensify fire; oxidiser.

H314 Causes severe skin burns and eye damage.

H330 Fatal if inhaled.

H290 May be corrosive to metals.

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EUH071 Corrosive to the respiratory tract.

Training Advice:

Obtain special instructions before use. Instructions in writing regarding the substance handling must be available at workplace and have to be approved by the authority responsible for public healthcare protection.

The above information corresponds to the current level of our knowledge and experience.

The data merely describe the product with respect to safety and cannot be construed as guaranteed parameters. The user is responsible for handling in compliance with the existing laws and regulations