MATERIAL SAFETY DATA SHEET

Nitric Acid 65%

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

1.1 Product identifier

Product name:	Nitric Acid 65%
CAS Number:	7697-37-2
EC Number:	231-714-2

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

Identified use:

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.3, H272
Skin Corr.1A, H314
Acute Tox.3, H331
Met. Corr.1, H290

Full text of H-phrases: see section 16.

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2.2 Label elements

Signal Word:
Danger
Hazard Statements:
May intensify fire; oxidiser. (H272)
Causes severe skin burns and eye damage. (H314)
Toxic if inhaled. (H331)
May be corrosive to metals. (H290)

Precautionary Statements:
Do not breathe dust/fume/gas/mist/vapours/spray. (P260)
Wear protective gloves/protective clothing/eye protection/face protection. (P280)
IF exposed or concerned:
Call a POISON CENTER/doctor. (P308+P311)
IF SWALLOWED: rinse mouth. Do NOT induce vomiting. (P301+P330+P331)
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/ shower. (P303+P361+P353)
Keep/Store away from combustible materials. (P220)
Additional Information: Corrosive to the respiratory tract. (EUH071)

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

3.2 Mixtures

CAS #	Content (W/W)	Ingredients
231-714-2	Ca 65%	Nitric Acid

Chemical name: Nitric Acid 65%
Common name / synonyms: -
Nitric acid - specific concentration limits: Skin Corr. 1A: C ≥ 20 %; Skin Corr. 1B: 5 % ≤ C < 20 %; Ox. Liq. 3: 65 % ≤ C < 99 %

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Section 4: First aid measures

4.1 Description of first aid measures
In case of 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.
In case of eye contact: Rinse with plenty of water for at least 15 minutes. Never neutralize! Move to the physician while continue rinsing.
If swallowed: 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.
If inhaled: Break the exposure, transfer the victim to the fresh air, apply artificial respiration, if the victim is not breathing.

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 Fire Fighting Media and Instructions:
Suitable extinguishing media: The product is non-flammable. Use any suitable extinguishing media in adaption to materials stored in the immediate neighbourhood.
Unsuitable extinguishing media: no data available

5.2 Special hazards arising from the substance or 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.

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

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.

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Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
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.
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 no 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.

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.

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Section 8: Exposure controls/personal protection

8.1 Control parameters

Nitric Acid

Country	Long-term		Short-term	
	Mg/m^3	ppm	Mg/m^3	Ppm
CZ	1		2.5	
EU			2.6	1
DE			2.6	1
PL	5		10	

Nitrogen Oxides (NOX)

Country	Long-term		Short-term	
	Mg/m^3	ppm	Mg/m^3	Ppm
CZ	10		20	
DE		0.5		1.0
PL	5		10	

DNEL:
HNO 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

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

8.3 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.

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

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

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

Respiratory protection: in case of vapors/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)

8.4 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.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Colourless to slightly yellow
Physical State	Liquid
Odor	Pungent
Odor Threshold	0.75-2.5 mg/m3
pH	1
Melting Point/Range	-41C (HNO3 100%, 1013 hPa) -29C (HNO3 65% 1013 hPa)
Boiling Point/Range	83C (HNO3 100% 1013 hPa) 122C (HNO3 100% 1013 hPa)
Flash Point	Not applicable – inorganic substance
Evaporation Rate	No data available
Flammability (solid, gas)	Non flammable substance supporting burning
Explosion Limits	Non explosive
Vapor Pressure	6 380 Pa 20C
Vapor Density	No information available
Relative Density	1513 g/cm3 (HNO3 100%, 20 C) 1391 g/cm3 (HNO3 65%, 20 C)
Water Solubility	>0.5 kg/l
Solubility in other solvents	No data available
Partition Coefficient: n-Octanol/Water	Not applicable, inorganic substance
Auto-ignition temperature	Non flammable
Decomposition temperature	No data available

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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. Alkalis and caustic products. Metallic powders. Hydrogen sulphide. Chlorates. Alcohols
10.6 Hazardous decomposition products	Nitrogen oxides

Section 11: Toxicological Information

Product Inform
11.1 Toxicological effects:

Acute Toxicity:
LD , Oral, Rat (mg/kg): 50 not applicable, corrosive substance
LD , Skin, Rat or Rabbit (mg/kg): 50 not applicable, corrosive substance
LC , Inhalation, Rat (gas and vapour) (mg/m): 50 3 > 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.

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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, NO)

Aspiration Hazard:
no data available

11.2 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
Ecotoxicity effects

Acute Aquatic Toxicity
LC , 96 h, Fish (mg/l): 50 median lethal pH (96 h) 3 - 3.5 (Lepomis macrochirus)

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

EC , 48 h, Crustacea (mg/l): 50 8 609 (24 h, Daphnia magna, NaNO) 3 IC , 72 h, Algae (mg/l): 50 no data available

Chronic Aquatic Toxicity: NOEC (3 mo, Amphiprion ocellaris, NaNO): 97,8 mg/l
Toxicity for Other Environment: no data available
Persistence and Degradability: not applicable, inorganic substance
Bioaccumulative Potential: not applicable, inorganic substance miscible with water

Mobility in Soil: no data available
Results of PBT and vPvB Assessment: not applicable, inorganic substance
Other Adverse Effects: Harmful effect due to pH shift.

Section 13: Disposal considerations

13.1 Waste treatment methods

Waste disposal of substance:
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.

Container disposal:
Clean with water and then neutralize.

Section 14: Transport Information

Land Transport ADR/RID:
Class / Classification Code / Packing Group: 8 / CO1 / II
UN Number: 2031
Proper Shipping Name: NITRIC ACID
Environmental Hazard: no
Hazard Label: 8 + 5.1

Sea Transport IMDG:
Class / Packing Group: 8 / II
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 / II
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.

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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.

15.2 Chemical Safety Assessment
Chemical safety assessment has been carried out for this substance.

Section 16: Other Information

Abbreviations:
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 - biological 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

Full Text of H-phrases from Section 2 and 3:
Ox. Liq.3, H272 Oxidising Liquids, Category 3
Skin Corr.1A, H314 Skin corrosion/irritation, Category 1A
Acute Tox.3, H331 Acute toxicity (inhalation), Category 3
Met. Corr.1, H290 Corrosive to metals, Category 1
Ox. Liq.2, H272 Oxidising Liquids, Category 2
H272 May intensify fire; oxidiser.
H314 Causes severe skin burns and eye damage.
H331 Toxic if inhaled.
H290 May be corrosive to metals.
EUH071 Corrosive to the respiratory tract

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