

Nitric acid

30709-2.5L

Version 2.7

Revision Date 19.01.2024

Supersedes 1

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

1.1. Product identifier

Product name : Nitric acid
SDS-number : 000000021241
Type of product : Mixture
Remarks : SDS according to Art. 31 of Regulation (EC) 1907/2006.

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

Use of the Substance/Mixture : Laboratory chemicals
Uses advised against : none

1.3. Details of the supplier of the safety data sheet

Company : Honeywell International Inc. Honeywell International, Inc.
115 Tabor Road 115 Tabor Road
07950-2546 Morris Plains Morris Plains, NJ 07950-2546
USA USA
Telephone :
For further information, please contact: : SafetyDataSheet@Honeywell.com

1.4. Emergency telephone number

Emergency telephone number : +1-703-527-3887 (ChemTrec-Transport)
+1-303-389-1414 (Medical)
: Poison Control Center:
United Kingdom: (+44) 844 892 0111

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

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Oxidizing liquids Category 3
H272 May intensify fire; oxidizer.
Corrosive to metals Category 1
H290 May be corrosive to metals.
Acute toxicity Category 3 - Inhalation
H331 Toxic if inhaled.
Skin corrosion Category 1A
H314 Causes severe skin burns and eye damage.

2.2. Label elements

REGULATION (EC) No 1272/2008

Hazard pictograms



Signal word

: Danger

Hazard statements

: H272 May intensify fire; oxidizer.
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H331 Toxic if inhaled.
EUH071 Corrosive to the respiratory tract.

Precautionary statements

: P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P234 Keep only in original container.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P284 Wear respiratory 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 person to fresh air and keep 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.

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P308 + P313

IF exposed or concerned: Get medical advice/ attention.

Hazardous components : nitric acid
which must be listed on the
label

2.3. Other hazards

Risk of serious damage to the lungs (by inhalation). The product discolours the skin. Results of PBT and vPvB assessment, see chapter 12.5. The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical name	CAS-No. Index-No. REACH Registration Number EC-No.	Classification 1272/2008	Concentration	Remarks
nitric acid	7697-37-2 007-030-00-3 231-714-2	Ox. Liq. 3; H272 Acute Tox. 3; H331; Inhalation Met. Corr. 1; H290 Skin Corr. 1A; H314 EUH071	>= 65 % - <= 70 %	ATE (inhalative vapour): 2,65 mg/l Ox. Liq. 3; H272: >= 65 % Skin Corr. 1A; H314: >= 20 % Skin Corr. 1B; H314: 5 - < 20 %

Remaining components of this product are non-hazardous and/or are present at concentrations below reportable limits.

Occupational Exposure Limit(s), if available, are listed in Section 8.

For the full text of the H-Statements mentioned in this Section, see Section 16.

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SECTION 4: First aid measures

4.1 Description of first aid measures

General advice:

First aider needs to protect himself. Move out of dangerous area. Immediately take off contaminated clothing and rinse body with plenty of water.

Inhalation:

Remove to fresh air. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician immediately.

Skin contact:

Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician immediately.

Eye contact:

Protect unharmed eye. Irrigate eyes for at least 15 minutes with copious quantities of water, keeping eyelids apart and away from eyeballs during irrigation. Call a physician immediately.

Ingestion:

Gently wipe or rinse the inside of the mouth with water. Do NOT induce vomiting. Call a physician immediately.

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

Inhalation may provoke the following symptoms:, Breathing difficulties, Headache, Skin contact may provoke the following symptoms:, Erythema, Blistering, Necrosis
Respiratory symptoms, including pulmonary edema, may be delayed.

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

Health injuries may be delayed. Medical supervision for minimum 48 hours.

See Section 11 for more detailed information on health effects and symptoms.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray

Foam

Carbon dioxide (CO₂)

Dry powder

Extinguishing media which shall not be used for safety reasons:

Dry sodium carbonate

High volume water jet

5.2. Special hazards arising from the substance or mixture

Some risk may be expected of corrosive and toxic decomposition products.

Fire may cause evolution of:

Nitrogen oxides (NO_x)

Cool closed containers exposed to fire with water spray.

In fires, the product supports combustion.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

No unprotected exposed skin areas.

Use extinguishing measures that are appropriate to local circumstances and the surrounding

environment. The product itself does not burn. Collect contaminated fire extinguishing water separately.

This must not be discharged into drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protective equipment. Unprotected persons must be kept away. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Provide adequate ventilation.

6.2. Environmental precautions

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Prevent further leakage or spillage if safe to do so. Discharge into the environment must be avoided. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

6.3. Methods and materials for containment and cleaning up

Dilute with plenty of water.

Use chemical neutralising agents

Neutralise with the following product(s):

lime

Never neutralise with the following products:

soda ash

Soak up with inert absorbent material.

Do not pick up with the help of saw-dust or other combustible substances.

Pick for disposal in tightly closed containers

Personal protection through wearing a tightly closed chemical protection suit and a self-contained breathing apparatus.

6.4. Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:

Exhaust ventilation at the object is necessary. Use only acid resistant equipment. Keep limited supplies at workplace. Always have on hand a first-aid kit, together with proper instructions. Wear suitable protective clothing and gloves.

Advice on protection against fire and explosion:

Keep away from combustible material. The product itself does not burn.

Hygiene measures:

Separate rooms are required for washing, showering and changing clothes. Contaminated work clothing should not be allowed out of the workplace. Take off all contaminated clothing immediately. Remove and wash contaminated clothing before re-use. When using do not eat or drink. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

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Further information on storage conditions:

Store in original container. Keep in a dry, cool and well-ventilated place. Do not leave vessels/containers open. Avoid product residues in/on containers. Store in a place accessible by authorized persons only.

Advice on common storage:

Do not store with combustible materials.

7.3. Specific end use(s)

no additional data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits:

Components	Basis / Value type	Value / Form of exposure	Exceeding Factor	Remarks
nitric acid	EU ELV STEL	2,6 mg/m ³ 1 ppm		Indicative
nitric acid	EH40 WEL STEL	2,6 mg/m ³ 1 ppm	15 minutes	

EU ELV - EU. Indicative Occupational Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU, as amended

STEL - Short term exposure limit

DNEL/ PNEC-Values

Component	End-use/impact	Exposure duration	Value	Exposure routes	Remarks
nitric acid	Workers / Long-term local effects		2,6 mg/m ³	Inhalation	
nitric acid	Workers / Acute local effects		2,6 mg/m ³	Inhalation	

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nitric acid	Consumers / Long-term local effects		1,3 mg/m3	Inhalation	
nitric acid	Consumers / Acute local effects		1,3 mg/m3	Inhalation	

No PNEC data available.

8.2. Exposure controls

Occupational exposure controls

The Personal Protective Equipment must be in accordance with EN standards:respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, 511; safety shoes EN-ISO 20345.

Do not breathe vapours or spray mist.

Engineering measures

Use with local exhaust ventilation.
acid resisting floor
Emergency sprinkling nozzle

Personal protective equipment

Respiratory protection:

In the case of vapour formation use a respirator with an approved filter.

ABEK-filter

Full mask

Equipment should conform to EN 14387

Hand protection:

Glove material: Viton®

Break through time: > 60 min

Glove thickness: 0,7 mm

Vitoject® 890

Gloves must be inspected prior to use.

Replace when worn.

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Remarks: Supplementary note: The specifications are based on information and tests from similar substances by analogy.
Due to varying conditions (e.g.temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.
Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer recommends to use the chemical protective glove in practice not longer than 50% of the recommended permeation time.
Manufacturer's directions for use should be observed because of great diversity of types .
Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

Eye protection:

Safety goggles

Skin and body protection:

Wear suitable protective equipment.

Wear as appropriate:

Complete suit protecting against chemicals

Environmental exposure controls

Handle in accordance with local environmental regulations and good industrial practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- | | | |
|----------------------------------|---|------------------------|
| (a) Physical state | : | liquid |
| (b) Colour | : | colourless |
| (c) Odour | : | weak |
| (d) Melting point/freezing point | : | -31 °C |
| (e) Boiling point/boiling range | : | 122 °C
at 1.013 hPa |
| (f) Flammability | : | Not applicable |

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- (g) Lower and upper explosion limit : Lower explosion limit
Not applicable
- : Upper explosion limit
Not applicable
- (h) Flash point : Not applicable
- (i) Auto-ignition temperature : Not applicable
not auto-flammable
- (j) Decomposition temperature : No decomposition if used as directed.
Fire or intense heat may cause violent rupture of packages.
- (k) pH : < 1
- (l) Viscosity, kinematic : No data available
- (m) Solubility(ies) : Water solubility:
completely miscible
- (n) Partition coefficient: n-octanol/water : No data available
- (o) Vapour pressure : 50 hPa
at 50 °C
- (p) Density and / or relative density : 1,400 - 1,480 g/cm³
at 20 °C
- (q) Bulk density : Not applicable
- (q) Relative vapour density : No data available
- (r) Particle characteristics : No data available

9.2 Other Information

Corrosive to metals : Corrosive to metals

Evaporation rate : No data available

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Viscosity, dynamic : No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Oxidizer. Contact with other material may cause fire.

10.2. Chemical stability

No decomposition if used as directed.
Fire or intense heat may cause violent rupture of packages.

10.3. Possibility of hazardous reactions

Gives off hydrogen by reaction with metals.
Hazardous polymerisation does not occur.
Reactions with organic substances.
Corrosive in contact with metals

10.4. Conditions to avoid

Keep away from heat.
Keep away from combustible material.
Keep away from reducing agents.
Protect from moisture.

10.5. Incompatible materials

As oxidising agent, attacks organic substances such as wood, paper, fats.
Corrosive in contact with metals
Gives off hydrogen by reaction with metals.
Reactions with organic substances.
Flammable materials
Incompatible with bases.
Reactions with amines.
Reactions with alkali metals.

10.6. Hazardous decomposition products

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Nitrogen oxides (NO_x)

SECTION 11: Toxicological information

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

(a) Acute toxicity

Acute oral toxicity:

No data available

Toxicity is determined by the corrosivity of the product.

Acute dermal toxicity:

No data available

Toxicity is determined by the corrosivity of the product.

Acute inhalation toxicity:

Acute toxicity estimate

Value: 4,08 mg/l

Exposure time: 4 h

Method: Calculation method

Acute toxicity (other routes of administration):

No data available

(b) Skin corrosion/irritation:

Classification based on Annex VI of regulation 1272/2008/EC.

(c) Serious eye damage/eye irritation:

Result: Risk of serious damage to eyes.

(d) Respiratory or skin sensitisation:

No data available

(e) Germ cell mutagenicity:

Note: Not classified due to data which are conclusive although insufficient for classification.

(f) Carcinogenicity:

Species: not specified

Note: Not classified due to data which are conclusive although insufficient for classification.

(g) Reproductive toxicity:

Species: not specified

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Remarks: Not classified due to data which are conclusive although insufficient for classification.

(h) STOT-single exposure:

No data available

(i) STOT - repeated exposure:

Note: Not classified due to data which are conclusive although insufficient for classification.

(j) Aspiration hazard:

No data available

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Other information:

Risk of serious damage to the lungs (by inhalation).

Symptoms of poisoning may appear several hours later.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish:

No data available

Toxicity to aquatic plants:

No data available

Toxicity to aquatic invertebrates:

No data available

12.2. Persistence and degradability

Biodegradability:

Not applicable The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

No data available

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12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

Not applicable

12.6. Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7. Other adverse effects

Neutralisation will reduce ecotoxic effects.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product:

Dispose according to legal requirements.

Packaging:

Legal requirements are to be considered in regard of reuse or disposal of used packaging materials

Further information:

Provisions relating to waste:

EC Directive 2006/12/EC; 2008/98/EEC

Regulation No. 1013/2006

For personal protection see section 8.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID:2031

IMDG:2031

IATA:2031

14.2 UN proper shipping name

ADR/RID:NITRIC ACID

IMDG:NITRIC ACID

IATA:Nitric acid

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14.3 Transport hazard class(es)

ADR/RID:8 (5.1)

IMDG: 8 (5.1)

IATA: 8 (5.1)

14.4 Packaging group

ADR/RID:II

IMDG: II

IATA: II

14.5 Environmental hazards

ADR/RID:no

Marine pollutant: no

14.6 Special precautions for user

IMDG Code segregation group (SGG1) – ACIDS,

14.7 Maritime transport in bulk according to IMO instruments

No data available

SECTION 15: Regulatory information

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

Basis	Value	Remarks
Directive 2012/18/EC		Not applicable
Substances of very high concern (SVHC)		This product does not contain substances of very high concern according to Regulation (EC) No Article 57 above the respective regulatory 1907/2006 (REACH), concentration limit of $\geq 0.1\%$ (w/w).
Regulation (EU) 2019/1148 on the marketing and use of explosives precursors		Contains components listed in

Other inventory information

US. Toxic Substances Control Act
On TSCA Inventory

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Australia. Inventory of Industrial Chemicals (AIIC), as amended
On the inventory, or in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)
All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List
On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI)
On the inventory, or in compliance with the inventory

Philippines. Inventory of Chemicals and Chemical Substances (PICCS)
On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC)
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand
On the inventory, or in compliance with the inventory

Taiwan Chemical Substance Inventory (TCSI)
On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Text of H-statements referred to under heading 3

nitric acid : H272 May intensify fire; oxidizer.
H331 Toxic if inhaled.
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
EUH071 Corrosive to the respiratory tract.

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Further information

All directives and regulations refer to amended versions.
Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

Abbreviations:

EC European Community
CAS Chemical Abstracts Service
DNEL Derived no effect level
PNEC Predicted no effect level
vPvB Very persistent and very bioaccumulative substance
PBT Persistent, bioaccumulative und toxic substance

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user.

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