

Nitric acid 60%

Version: II

Date of compilation: 18.01.2011

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Safety Data Sheet

legal basis:

Comission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

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

1.1. Product identifier

Trade name: Nitric acid 60%
REACH registration number: 01-2119487297-23-XXXX
Composition for label/Other name(s): Nitric acid (V). Aqueous solution.,

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

Identified uses

Industrial uses:

PC7 base metals and alloys, PC12 fertilizers, PC14 metal surface treatment products, including galvanic and electroplating products, PC15 non-metal-surface treatment products, PC19 intermediate, PC20 products such as pH-regulators, flocculants, precipitants, neutralization agents, PC21 laboratory chemicals, PC33 semiconductors, PC35 washing and cleaning products (including solvent based products), PC37 water treatment chemicals

Professional uses:

PC12 fertilizers, PC14 metal surface treatment products, including galvanic and electroplating products, PC15 non-metal-surface treatment products, PC20 products such as pH-regulators, flocculants, precipitants, neutralization agents, PC21 laboratory chemicals, PC35 washing and cleaning products (including solvent based products)

Uses advised against:

other than named above

1.3. Details of the supplier of the safety data sheet

Name and address: Service Chimie
5, Place de l'Eglise St Thibault des Vignes
77400 Marne la Vallée - France
Phone number: +33 (0)1 64 30 89 22
Fax number: +33 (0)1 64 30 87 49
e-mail address for a competent person: HSE@service-chimie.fr

1.4. Emergency telephone number

numéro ORFILA (INRS) : + 33 (0)1 45 42 59 59

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

General hazards

This product is classified as hazardous according to current regulations

Health hazards

Acute Tox. 3	Acute toxicity (inhalation), Category 3	H331 Toxic if inhaled
Skin Corr. 1A	Skin corrosion, Category 1A	H314 Causes severe skin burns and eye damage

Physical hazards

Met. Corr. 1	Substance or mixture corrosive to metals, Category 1	H290 May be corrosive to metals
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Environmental hazards

not applicable

2.2. Label elements

Hazard pictograms:





Nitric acid 60%

Signal Word:

Danger

Hazard statements:

H290 May be corrosive to metals
 H314 Causes severe skin burns and eye damage
 H331 Toxic if inhaled

EUH Phrases

EUH071 Corrosive to the respiratory tract

Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking
 P220 Keep/Store away from clothing/.../combustible materials.
 P221 Take any precaution to avoid mixing with combustibles...
 P260 Do not breathe dust/fume/gas/mist/vapours/ spray.
 P264a Wash hands thoroughly after handling
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P310 Immediately call a POISON CENTER/doctor/...
 P363 Wash contaminated clothing before reuse.
 P390 Absorb spillage to prevent material damage
 P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 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.
 P404 Store in a closed container.
 P406 Store in corrosive resistant/... container with a resistant inner liner.

2.3.Other hazards

The criteria described in Annex XIII (PBT and vPvB properties) do not apply to inorganic substances
 May cause change of pH in aqueous systems and thus be hazardous to aquatic organisms.
 Gives off hydrogen by reaction with metals.

SECTION 3:Composition/information on ingredients

3.1.Substances

Concentration value	Substance	CAS	WE	Index number	REACH registration number	Hazard class
60 %	Nitric acid	7697-37-2	231-714-2	007-004-00-1	01-2119487297-23-XXXX	Skin Corr. 1A, H314, Acute Tox. 3, H331, Ox. Liq. 2, H272, Met. Corr. 1, H290

See Section 16 for the full text of the H statements

SECTION 4:First aid measures

4.1.Description of first aid measures

Inhalation

Move the victim to fresh air. Keep warm and in a quiet place. Lie the victim down in the position comfortable for breathing. Call a physician immediately. In case of shortness of breath, give oxygen by trained personnel. If breathing is stopped, administer artificial respiration. No artificial respiration, mouth-to-mouth or mouth to nose. Use suitable instruments/apparatus.

Skin contact

Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water. Ensure doctor's assistance. Burns must be treated by a physician.

Eye contact

Wash off immediately with plenty of water for at least 15 minutes. Do not use strong water jet because of the risk of corneal damage, Rinse thoroughly with plenty of water, also under the eyelids. Immediately ensure a physician aid.

Ingestion

Do NOT induce vomiting. If conscious, give the victim plenty of water to drink. Immediately ensure a physician aid. Do not give neutralizing agents.

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

Symptoms and effects of exposure

Inhalation

cough, stinging, throat, dyspnoea, upper respiratory tract irritation, burns

Skin contact

burns, pain, blisters

Eye contact

serious eyes damage, pain, lacrimation, reddening

Ingestion

burns of mouth and throat, perforation of the esophagus and stomach

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

Treat symptomatically. Symptoms of exposure may appear several hours later. Following severe exposure the patient should be kept under medical review for at least 48 hours.

SECTION 5:Firefighting measures

5.1.Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media



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foam, extinguishing powder.

5.2.Special hazards arising from the substance or mixture

Not flammable product. During thermal decomposition may be released: nitrogen oxides, Risk of bursting of packagings in case of increase of pressure upon heating. Reacts violently with water. Gives off hydrogen by reaction with metals.

5.3.Advice for firefighters

Keep containers and surroundings cool with water spray. Containers exposed to fire or high temperature cool by spraying water from a safe distance. Prevent fire extinguishing water from contaminating surface water or the ground water system. Wear self-contained breathing apparatus and full protective clothing.

SECTION 6:Accidental release measures

6.1.Personal precautions, protective equipment and emergency procedures

Actions that can create risk for somebody should not be undertaken by anyone but adequately trained employees. Do not touch or walk through spilled material. Use personal protective equipment. Required respiratory protection. Do not breathe in fumes.

6.2.Environmental precautions

Prevent from entering the sewerage system, ditches or rivers by using sand, soil or other suitable barriers. Protect drains. In case of environment contamination, inform appropriate services.

6.3.Methods and material for containment and cleaning up

Seal the spillage. Place damaged packages in a protective container. Large spillage: Limit spillage by containment with sand or earth. Remove liquid by pumping. Small spillage: Dilute with plenty of water. Neutralize with lime milk or soda and flush with plenty of water. Soak up with inert absorbent material.

6.4.Reference to other sections

More information about suitable personal protective equipment is given in section 8 . Dispose of in accordance with the recommendations given in Section 13.

SECTION 7:Handling and storage

7.1.Precautions for safe handling

Avoid eyes, skin and clothing contamination. Do not breathe vapours/mist/aerosol. Ensure suitable ventilation. Use personal protective equipment, Dilute by slowly adding acid to the water and stir thoroughly. Smoking, eating and drinking should be prohibited in the application area. Wash hands before every break and after work. Remove contaminated clothing and protective equipment before entering eating areas.

7.2.Conditions for safe storage, including any incompatibilities

Keep in tightly closed containers. Keep in a cool, well-ventilated place. Protect from direct sunlight. Protect from heat. Keep in an area equipped with acid resistant flooring. Store away from incompatible materials (see section 10 of MSDS). Keep in tanks on storage trays. Suitable Materials and Coatings: Stainless steel. Plastics. PCV

7.3.Specific end use(s)

See exposure scenarios.

SECTION 8:Exposure controls/personal protection

8.1.Control parameters

DNEL value

Nitric acid	DNEL	workers	inhalation	Short-term exposure	Local effects	2,6 mg/m ³
	DNEL	workers	inhalation	Long-term exposure	Local effects	1,3 mg/m ³
	DNEL	general population	inhalation	Short-term exposure	Local effects	1,3 mg/m ³
	DNEL	general population	inhalation	Long-term exposure	Local effects	0,65 mg/m ³

PNEC value

Comments

For this product PNEC value has not been calculated, Product is present in the environment as ions, which implies that it will not adsorb on particle matter, and it is not considered useful to derive a PNEC value

Occupational exposure limits

Nitric acid	NDS	1,4 mg/m ³
	NDSCH	2,6 mg/m ³
	STEL	2,6 mg/m ³

Comments

Poland. OELs - Regulation of the Minister of Labour and Social Policy, of 6 June 2014; Journal of Laws 2014, item 817

Biological limit values comments

not applicable

Recommended monitoring procedures

Regulation of the Minister of Health on tests and measurements applicable for hazardous substances and other adverse factors which are present in the workplace, of 2 February 2011 (Journal of Laws No33, item 166).

8.2.Exposure controls

Appropriate engineering controls



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General ventilation in closed areas.
Local exhaust ventilation.
Ensure that eye flushing systems and safety showers are located close to the working place.

Individual protection measures

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. Recommended Filter type:E

Eye /face protection

Safety goggles in accordance with CEN standard EN 166

Skin and hand protection

Safety gloves

Glove material butyl-rubber PVC Teflon (R)
in accordance with standard EN 374.

Other protection equipment

acid-resistant protective clothing

Reference to regulations

The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific working environment. Individual protection measures should satisfy the requirements specified in the Regulation of the Minister of Economy on basic requirements for personal protection controls, of 21 December 2005 (Journal of Laws No 259, item 2173).

General advice

Do not eat, drink or smoke when using this product. Wash hands before breaks and at the end of workday.

Environ. exposure controls

Prevent entry into drains, waterways, sewers and soil.

SECTION 9:Physical and chemical properties

9.1.Information on basic physical and chemical properties

	Physical state	Colour
Appearance:	liquid	colorless
Odour:	pungent suffocating characteristic	
Odour threshold:	0,29 ppm	
pH:	< 1	
Melting point/freezing point:	-41 °C	
Initial boiling point and boiling range:	82 °C	
Flash point:	Not applicable.	
Evaporation rate:	no data available	
Flammability (solid, gas):	not applicable for liquid	
Upper flammability or explosive limits:	Not applicable.	
Lower flammability or explosive limits:	Not applicable.	
Vapour pressure:	6,1 kPa	20 °C data for 100% substance
Vapour density:	no data available	
Relative density:	1,366	20/20 °C
Solubility:	Water.	completely soluble
Partition coefficient: n-octanol/water:	Not applicable.	
Auto-ignition temperature:	Not applicable.	
Decomposition temperature:	Not applicable.	
Viscosity:	Dynamic viscosity.	0,75 mPa.s 25 °C
Explosive properties:	no explosive property	



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Oxidising properties:	Oxidising.
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9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

This product is reactive. Contact with incompatible materials may cause violent or explosive reactions. Corrodes base metals. Causes passivation of some metals (eg iron, aluminum, chromium).

10.2. Chemical stability

Stable under normal conditions. Decomposes under the influence of light and heating.

10.3. Possibility of hazardous reactions

Reacts violently with: Reducing agents. Strong bases. Chlorides. Metals. Organic materials. Gives off hydrogen by reaction with metals. Reacts with many metals with the release of toxic oxides of nitrogen.

10.4. Conditions to avoid

Exposure to sunlight. High temperature. Impurities.

10.5. Incompatible materials

flammable substances. Organic materials. Metals. Reducing agents. Bases. Powdered metals. Alcohols. Chlorates. Chromic acid. Amines. Cellulose.

10.6. Hazardous decomposition products

Nitrogen oxides (NOx).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

Acute toxicity test is not required for substances classified as skin corrosive.

Acute dermal toxicity

Acute toxicity test is not required for substances classified as skin corrosive.

Acute inhalation toxicity

Nitric acid	LC50	1 562,5 mg/m ³
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Acute toxicity - other exposure routes

No data available.

Skin corrosion/irritation

very corrosive, causes burns

Serious eye damage/irritation

very corrosive, Causes serious eye damage

Respiratory sensitisation

No sensitizing effect known.

Skin sensitisation

No sensitizing effect known.

Germ cell mutagenicity

Summary

Not known to cause heritable genetic damage

Carcinogenicity

Nitric acid	NOAEC	>= 49 mg/m ³	Rat	male	inhalation
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Summary

Base on available data product is not classified

Reproductive toxicity

Nitric acid	NOAEL	1 500 mg/kg bw/day	28 days	Rat	OECD Test Guideline 422	Effects on fertility
	NOAEL	1 500 mg/kg bw/day	28 days	Rat	OECD Test Guideline 422	Developmental Toxicity oral

Summary

Base on available data product is not classified

STOT-single exposure

Summary

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

STOT-repeated exposure



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Summary

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

Aspiration hazard

Base on available data product is not classified

Information on likely routes of exposure**Symptoms related to the physical, chemical and toxicological characteristics**

Inhalation.

cough

scorching

dyspnoea

lung oedema

Skin contact.

pain

scorching

blisters

Eye contact.

pain

tearing

scorching

reddening

Ingestion.

burns of mouth and throat

perforation of the esophagus and stomach

burns

Delayed and immediate effects as well as chronic effects from short and long-term exposure

burns

serious eyes damage

Respiratory irritation.

breathing difficulties

SECTION 12:Ecological information**12.1.Toxicity**

Nitric acid	Acute toxicity to fish	median lethal pH	3 - 3,5	96 h	Lepomis macrochirus (Bluegill sunfish)
	Acute toxicity to fish	median lethal pH	ca. 3,7	96 h	Oncorhynchus mykiss (rainbow trout)

12.2.Persistence and degradability**Summary**

Product completely dissociates in water. The methods for determining biodegradability are not applicable to inorganic substances.

12.3.Bioaccumulative potential**Summary**

Accumulation in organisms is not expected.

12.4.Mobility in soil**Summary**

This product is soluble in water. After release, disperses into the water.

12.5.Results of PBT and vPvB assessment

The PBT and vPvB criteria of Annex XIII do not apply to inorganic substances.

12.6.Other adverse effects

Causes acidification of surface water and soil

SECTION 13:Disposal considerations**13.1.Waste treatment methods**

Comply with below named regulations: Waste Disposal Law, of 14 December 2012 (Journal of Laws 2013, item 21), with further amendments. Law on packages and spent packages, of 13 June 2013 (Journal of Laws 2013, item 888).

Dispose of in accordance with current legislation concerning Waste disposal. Do not discharge to sewage systems, to soil or to water reservoirs. Send to a licensed Waste management company.

Waste code: 06 01 05* Nitric acid and nitrous acid.

SECTION 14:Transport information**14.1.UN number**

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Transport type	UN Number
ADR	2031
RID	2031
IMDG	2031
ICAO	2031
ADN	2031

14.2.UN proper shipping name

Transport type	UN proper shipping name
ADR	2031 Nitric acid
RID	2031 Nitric acid
IMDG	2031 Nitric acid
ICAO	2031 Nitric acid
ADN	2031 Nitric acid

14.3.Transport hazard class(es)

Transport type	Transport hazard class:	Classification code:	Hazard identification number:	Tunnel restriction code:	Labels numbers:
ADR	8	C1	80	E	8
RID	8				8
IMDG	8				8
ICAO	8				8
ADN	8				8



14.4.Packing group

Transport type	Packing group:
ADR	II
RID	II
IMDG	II
ICAO	II
ADN	II

14.5.Environmental hazards

The product does not pose a hazard to the environment in accordance with the criteria of the UN Model Regulations.

14.6.Special precautions for user

not available

14.7.Transport in bulk according to Annex II of Marpol and the IBC Code

not available

SECTION 15:Regulatory information

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

Law on chemical substances and mixtures thereof, of 25 February 2011 (Journal of Laws № 63, item 322), with further amendments Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (OJ L 353, 31.12.2008, p. 1). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR)

15.2.Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16:Other information

Changes of previous version

General revision

Key or legend to abbreviations and acronyms used in the safety data sheet

Ox. Gas - Oxidising gas

Press. Gas - Gases under pressure



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Flam. Liq. - Flammable liquid
Flam. Sol. - Flammable solid
Self-react. - Self-reactive substance or mixture
Pyr. Liq. - Pyrophoric liquid
Pyr. Sol. - Pyrophoric solid
Self-heat. - Self-heating substance or mixture
Water-react. - Substance or mixture which in contact with water emits flammable gas
Ox. Liq. - Oxidising liquid
Ox. Sol. - Oxidising solid
Org. Perox. - Organic peroxide
Met. Corr. - Substance or mixture corrosive to metals
Acute Tox. - Acute toxicity
Skin Corr. - Skin corrosion
Skin Irrit. - Skin irritation
Resp. Sens. - Respiratory sensitization
Skin Sens. - Skin sensitization
Muta. - Germ cell mutagenicity
Carc. - Carcinogenicity
Repr. - Reproductive toxicity, Category 1A
STOT SE - Specific target organ toxicity — single exposure
STOT RE - Specific target organ toxicity — repeated exposure
Asp. Tox. - Aspiration hazard
Aquatic Acute - Hazardous to the aquatic environment - Acute
Aquatic Chronic - Hazardous to the aquatic environment - Chronic
Ozone - Hazardous for the ozone layer
Lact. - Effects on or via lactation
NDS - Maximum permissible exposure level/concentration
NDSCH - Maximum short-term exposure level/concentration
NDSP - Maximum permissible ceiling exposure level/concentration
vPvB (Substance) very persistent and very bioaccumulating
PBT (Substance) persistent, bioaccumulating and toxic
PNEC - Predicted No Effect Concentration
DNEL - Derived No Effect Level
LD50 - Lethal dose 50; dose/amount of a substance which kills 50 % of the test population
LC50 - Lethal concentration; concentration of a substance which kills 50 % of the test population
LOEC - Lowest Observed Effect Concentration
NOEL - No Observed Effect Level
NOEC - No Observed Effect Concentration
ECX - Effective concentration; concentration of a substance which produces X % effect response
ADR - Agreement Concerning the International Carriage of Dangerous Goods by Road
ADN - Agreement Concerning the International Carriage of Dangerous Goods by Inland Waters
RID - Regulations Concerning the International Carriage of Dangerous Goods by Rail
Flam. Aerosol - Flammable aerosol
Flam. Gas - Flammable gas
Expl. - Explosive
UVCB - Substances of Unknown or Variable composition, Complex reaction products or Biological materials
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
IMDG - International Maritime Dangerous Goods Code

Key literature references and sources for data

This safety data sheet has been prepared based on the MSDS provided by the manufacturer or / and internet databases and current regulations.

Advice on any training appropriate for workers to ensure protection of human health and the environment

People involved in the handling of the product should be trained in the handling, safety and hygiene. The staff / drivers should be trained and obtain proper certification in accordance with the requirements of ADR.

List of relevant hazard statements and/or precautionary statements

EUH071 Corrosive to the respiratory tract
H272 May intensify fire; oxidiser.
H290 May be corrosive to metals
H314 Causes severe skin burns and eye damage
H331 Toxic if inhaled
P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking
P220 Keep/Store away from clothing/.../combustible materials.
P221 Take any precaution to avoid mixing with combustibles...
P260 Do not breathe dust/fume/gas/mist/vapours/ spray.
P264a Wash hands thoroughly after handling
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
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.
P310 Immediately call a POISON CENTER/doctor/...



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P363 Wash contaminated clothing before reuse.

P390 Absorb spillage to prevent material damage

P404 Store in a closed container.

P406 Store in corrosive resistant/... container with a resistant inner liner.

Other Information

Appropriate warnings and safe-handling procedures should be provided to handlers and users.

It is the user's responsibility to insure proper health, safety and other necessary information

Conditions of use and suitability of the product for specific applications remain under user control

The information contained in this safety data sheet refer to the product in the form in which it is delivered

These data can not be considered in any case describe the product (as product specification).

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product in terms of safety requirements.