

Antox 73 E Plus

Version: 3.0

Revision Date 02.08.2016

Print Date 24.11.2017

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

1.1 Product identifier

Trade name : Antox 73 E Plus

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

Use of the Sub- : Treatment of metal surfaces.
stance/Mixture

Recommended restrictions : None known.
on use

1.3 Details of the supplier of the safety data sheet

Company : Chemetall GmbH
Aarauerstrasse 51
CH-5200 Brugg

Contact person : franz.braun@chemetall.com
Telephone : ++41(0)56 616 90 30
Telefax : ++41(0)56 616 90 40

Contact person product safety
Telephone : +49(0)6971653381
E-mail address : msds.de@chemetall.com

1.4 Emergency telephone number

Schweiz / Suisse / Switzer- : Tox Info Suisse
land TEL. ++41(0) 44 251 51 51
TEL. 145 (24 H)
www.toxinfo.ch info@toxinfo.ch

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

| | |
|---------------------------------|--|
| Corrosive to metals, Category 1 | H290: May be corrosive to metals. |
| Acute toxicity, Category 3 | H301: Toxic if swallowed. |
| Acute toxicity, Category 3 | H331: Toxic if inhaled. |
| Acute toxicity, Category 2 | H310: Fatal in contact with skin. |
| Skin corrosion, Category 1A | H314: Causes severe skin burns and eye damage. |

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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements : H290 May be corrosive to metals.
H301 + H331 Toxic if swallowed or if inhaled
H310 Fatal in contact with skin.
H314 Causes severe skin burns and eye damage.

: EUH071 Corrosive to the respiratory tract.

Precautionary statements : **Prevention:**
P260 Do not breathe mist or vapours.
P262 Do not get in eyes, on skin, or on clothing.
P280 Wear protective gloves/ protective clothing/
eye protection/ face protection.

Response:

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 or doctor/ physician.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

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Hazardous components which must be listed on the label:

- 7697-37-2 Nitric Acid
- 7664-39-3 Hydrofluoric Acid

2.3 Other hazards

Symptoms of poisoning may appear several hours later.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical nature : Aqueous solution
inorganic acids

Hazardous components

| Chemical Name | CAS-No. EC-No. Registration number | Classification (REGULATION (EC) No 1272/2008) | Concentration [%] |
|--------------------|--|---|-------------------|
| Nitric Acid | 7697-37-2 231-714-2 01-2119487297-23 | Ox. Liq. 3; H272 Skin Corr. 1A; H314 Eye Dam. 1; H318 Met. Corr. 1; H290 Note B | >= 20 - < 25 |
| Magnesium fluoride | 7783-40-6 231-995-1 | Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 | >= 5 - < 10 |
| Hydrofluoric Acid | 7664-39-3 231-634-8 01-2119458860-33 | Acute Tox. 2; H330 Acute Tox. 1; H310 | >= 5 - < 7 |

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| | | | |
|--|--|---------------------|--|
| | | Acute Tox. 2; H300 | |
| | | Skin Corr. 1A; H314 | |
| | | Note B | |

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

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Take off contaminated clothing and shoes immediately.
First Aid responders should pay attention to self-protection and use the recommended protective clothing
Symptoms of poisoning may appear several hours later.
Keep warm and in a quiet place.
For effective first-aid, special training / education is needed.
Medical supervision for minimum 48 hours.
- If inhaled : Move out of dangerous area.
Ensure adequate ventilation.
Call a physician immediately.
- In case of skin contact : Take off all contaminated clothing immediately.
Wash off immediately with plenty of water for at least 15 minutes.
First treatment with calcium gluconate paste.
Immediately drink calcium solution (calcium tablets dissolved in water).
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
Take victim immediately to hospital.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Protect unharmed eye.
Call a physician immediately.
- If swallowed : Do NOT induce vomiting.
Rinse mouth with water.
Immediately drink calcium solution (calcium tablets dissolved in water).

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Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Risks : Toxic if swallowed or if inhaled
Fatal in contact with skin.
Extremely corrosive and destructive to tissue.
Poisoning by resorption through skin possible.
Watch victim for several hours because of possible delayed signs of poisoning.
If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.
Corrosive to the respiratory tract.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Immediately drink calcium solution (calcium tablets dissolved in water).
First treatment with calcium gluconate paste.
For specialist advice physicians should contact the Poisons Information Service.

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 : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Heating or fire can release toxic gas.
Hydrogen fluoride
Nitrogen oxides (NO_x)

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Special protective equipment for firefighters

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Use water spray to cool unopened containers.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Wear personal protective equipment.
Keep people away from and upwind of spill/leak.
Evacuate personnel to safe areas.

6.2 Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system.
Avoid subsoil penetration.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : Use neutralizing agents.
Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).
Dispose of as special waste in compliance with local and national regulations.
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

6.4 Reference to other sections

See chapter 8 and 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapours, aerosols.
Wear personal protective equipment.
Provide sufficient air exchange and/or exhaust in work rooms.
Avoid contact with skin and eyes.
Avoid formation of aerosol.
Ensure that eye flushing systems and safety showers are located close to the working place.
To avoid risks to man and the environment, comply with the instructions for use.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities

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Requirements for storage areas and containers : Store in a place accessible by authorized persons only.
Store in original container.
Keep containers tightly closed in a cool, well-ventilated place.
To maintain product quality, do not store in heat or direct sunlight.

Further information on storage conditions : Avoid contact with metals.
Protect from frost.

Advice on common storage : Incompatible with bases.

Storage temperature : 0 - 40 °C

7.3 Specific end use(s)

Specific use(s) : Treatment of metal surfaces.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Occupational Exposure Limits**

| Components | CAS-No. | Value | Control parameters | Update | Basis |
|---------------------|--------------------------|-------|-----------------------------------|------------|------------|
| Nitric Acid | 7697-37-2 | STEL | 1 ppm 2.6 mg/m ³ | 2009-12-19 | 2006/15/EC |
| Further information | : Indicative | | | | |
| | | STEL | 1 ppm 2.6 mg/m ³ | 2007-08-01 | GB EH40 |
| Magnesium fluoride | 7783-40-6 | TWA | 2.5 mg/m ³ Fluorine | 2000-06-16 | 2000/39/EC |
| Further information | : Indicative Fluorine | | | | |
| | | TWA | 2.5 mg/m ³ Fluorine | 2007-08-01 | GB EH40 |

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| | | | | | |
|---------------------|---|--|------|--|--------------------------|
| Further information | : | 2: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used | | | |
| | | Fluorine | | | |
| Hydrofluoric Acid | | 7664-39-3 | TWA | 1.8 ppm 1.5 mg/m ³ | 2009-12-19 2000/39/EC |
| Further information | : | Indicative | | | |
| | | | STEL | 3 ppm 2.5 mg/m ³ | 2009-12-19 2000/39/EC |
| Further information | : | Indicative | | | |
| | | | TWA | 1.8 ppm Fluorine 1.5 mg/m ³ Fluorine | 2005-04-06 GB EH40 |
| Further information | : | Fluorine | | | |
| | | | STEL | 3 ppm Fluorine 2.5 mg/m ³ Fluorine | 2005-04-06 GB EH40 |
| Further information | : | Fluorine | | | |

DNEL/DMEL

Nitric Acid

: End Use: Workers DNEL
Exposure routes: Inhalation
Potential health effects: Long-term local effects
Value: 1.3 mg/m³

End Use: Workers DNEL
Exposure routes: Inhalation
Potential health effects: Acute local effects
Value: 2.6 mg/m³

Hydrofluoric Acid

: End Use: Workers DNEL
Exposure routes: Inhalation
Potential health effects: Long-term systemic effects

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Value: 1.5 mg/m³

End Use: Workers DNEL

Exposure routes: Inhalation

Potential health effects: Long-term local effects

Value: 0.0015 mg/m³

8.2 Exposure controls

Engineering measures

Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Respiratory protection : For short-time or low exposures in well ventilated areas, use a half mask in combination with a filter.

B NO

: When working in narrow, closed and low-oxygen areas (e.g. containers) use self-contained breathing apparatus (EN 133).

Hand protection

: Protective gloves complying with EN 374.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

: Fluorinated rubber

Break through time: 480 min

Glove thickness: 0.4 mm

: Nitrile rubber

Break through time: 480 min

Glove thickness: 0.35 mm

: butyl-rubber

Break through time: 480 min

Glove thickness: 0.5 mm

: Natural Rubber

Break through time: 480 min

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| | |
|--|---|
| | Glove thickness: 0.5 mm |
| | : PVC Break through time: 480 min Glove thickness: 0.5 mm |
| | : Polychloroprene Break through time: 480 min Glove thickness: 0.5 mm |
| Eye protection | : Tightly fitting safety goggles Eye protection (EN 166) |
| Skin and body protection | : Chemical resistant protective clothing according to DIN EN 13034 (Type 6) |
| Hygiene measures | : Do not breathe spray, vapour. Take off contaminated clothing and shoes immediately. Avoid contact with skin and eyes. Keep away from food, drink and animal feedingstuffs. Wash hands before breaks and immediately after handling the product. |
| Protective measures | : Avoid formation of aerosol. Always have on hand a first-aid kit, together with proper instructions. Handle in accordance with good industrial hygiene and safety practice. Ensure that eye flushing systems and safety showers are located close to the working place. |
| Environmental exposure controls | |
| General advice | : Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. |

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|------------|--------------|
| Appearance | : viscous |
| Colour | : colourless |

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| | |
|-----------------------------|--------------------------------------|
| Odour | : stinging |
| Flash point | : Not applicable |
| Auto-ignition temperature | : not auto-flammable |
| pH | : < 2 at 20 °C (undiluted) |
| Melting point/range | : not determined |
| Boiling point/boiling range | : No data available |
| Vapour pressure | : 4 hPa at 20 °C |
| Density | : 1.21 g/cm ³ at 20 °C |
| Water solubility | : completely miscible |
| Viscosity, dynamic | : not determined |

9.2 Other information

| | |
|---|---|
| Corrosion | : Corrosive to metals |
| Explosivity | : Gives off hydrogen by reaction with metals. |
| Directive 1999/13/EC on the limitation of emissions of volatile organic compounds | : Value: 0 % |

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SECTION 10: Stability and reactivity

10.1 Reactivity

Contact with light-metals liberates hydrogen.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Gives off hydrogen by reaction with metals.

10.4 Conditions to avoid

Conditions to avoid : Protect from frost, heat and sunlight.

10.5 Incompatible materials

Materials to avoid : glass
Attacks silicate containing materials.
Metals
Incompatible with bases.

10.6 Hazardous decomposition products

Risk of decomposition. : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity : Acute toxicity estimate: 74.63 mg/kg
Method: Calculation method

Acute oral toxicity
Hydrofluoric Acid : Acute toxicity estimate: 5 mg/kg
Method: Converted acute toxicity point estimate

Acute inhalation toxicity : Acute toxicity estimate: 7.46 mg/l
vapour
Exposure time: 4 h
Method: Calculation method

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Acute dermal toxicity : Acute toxicity estimate: 74.63 mg/kg
Method: Calculation method

Acute dermal toxicity
Hydrofluoric Acid : Acute toxicity estimate: 5 mg/kg
Method: Converted acute toxicity point estimate

Skin corrosion/irritation

Skin irritation : Causes severe burns.

Serious eye damage/eye irritation

Eye irritation : Causes serious eye damage.

Respiratory or skin sensitisation

Sensitisation : No data available

Human experience : Causes very severe, deep burns which generally heal badly.,
Poisoning by resorption through skin possible.

Toxicology Assessment

Acute effects : Toxic if swallowed or if inhaled, Fatal in contact with skin.,
Corrosive to the respiratory tract., If ingested, severe burns of
the mouth and throat, as well as a danger of perforation of the
oesophagus and the stomach.

SECTION 12: Ecological information

12.1 Toxicity

Ecotoxicology studies for the product are not available.

12.2 Persistence and degradability

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Biodegradability : No data available

12.3 Bioaccumulative potential

Bioaccumulation : Bioaccumulation is unlikely.

12.4 Mobility in soil

Mobility : No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Additional ecological information : water endangering
: Do not flush into surface water or sanitary sewer system.
Avoid subsoil penetration.
Even leakage of small amounts in the subsoil can contaminate drinking water.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : In accordance with local and national regulations.
Contaminated packaging : Dispose of as unused product.
Waste Code : Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

SECTION 14: Transport information

ADR

UN number : 2922
UN proper shipping name : CORROSIVE LIQUID, TOXIC, N.O.S. (Hydrofluoric Acid, Nitric Acid)
Transport hazard class(es) : 8
Packing group : II
Classification Code : CT1

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Hazard Identification Number : 86
Limited Quantity (LQ) Inner : 1.00 L
Packaging
Maximum quantity : 30.00 KG
Labels : 8 (6.1)
Tunnel restriction code : (E)
Environmentally hazardous : no

IATA

UN number : 2922
Description of the goods : Corrosive liquid, toxic, n.o.s. (Hydrofluoric Acid, Nitric Acid)
Class : 8
Packing group : II
Labels : 8 (6.1)

IATA_C

Packing instruction (cargo aircraft) : 855
Packing instruction (LQ) : Y840
Maximum quantity : 30.00 L
Environmentally hazardous : no

IATA_P

Packing instruction (passenger aircraft) : 851
Packing instruction (LQ) : Y840
Maximum quantity : 1.00 L
Environmentally hazardous : no

IMDG

UN number : 2922
Description of the goods : CORROSIVE LIQUID, TOXIC, N.O.S. (Hydrofluoric Acid, Nitric Acid)
Class : 8
Packing group : II
Labels : 8 (6.1)
EmS Number 1 : F-A
EmS Number 2 : S-B
Limited Quantity (LQ) Inner : 1.00 L
Packaging
Marine pollutant : no

Acids
Clear of living quarters.

Acids
Clear of living quarters.

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RID

UN number : 2922
Description of the goods : CORROSIVE LIQUID, TOXIC, N.O.S. (Hydrofluoric Acid, Nitric Acid)
Transport hazard class(es) : 8
Packing group : II
Classification Code : CT1
Hazard Identification Number : 86
Labels : 8 (6.1)
Limited Quantity (LQ) Inner : 1.00 L
Packaging
Maximum quantity : 30.00 KG

Environmentally hazardous : no

SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Neither banned nor restricted

Water contaminating class (Germany) : WGK 2 water endangering
VWVWS A4

Other regulations : The product is classified and labelled in accordance with EC directives or respective national laws.
Regional or national implementations of GHS may not implement all hazard classes and categories.

15.2 Chemical Safety Assessment

For a mixture it is not mandatory to include an exposure scenario in the material safety data sheet.
The necessary safety - related information is stated in the first 16 sections.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

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| | |
|-------------|--|
| EUH071 | Corrosive to the respiratory tract. |
| H272 | May intensify fire; oxidizer. |
| H290 | May be corrosive to metals. |
| H300 | Fatal if swallowed. |
| H301 | Toxic if swallowed. |
| H301 + H331 | Toxic if swallowed or if inhaled |
| H310 | Fatal in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H330 | Fatal if inhaled. |
| H331 | Toxic if inhaled. |
| H335 | May cause respiratory irritation. |

Full text of Notas referred to under section 3

Note B Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations. In Part 3 entries with Note B have a general designation of the following type: "nitric acid .?.%". In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.

Further information

The information provided is based on our current knowledge and experience and apply to the product as delivered. Regarding the product properties, these are not guaranteed. The delivery of this safety datasheet does not free the recipient of the product from his own responsibility to follow the relevant rules and regulations concerning this product.