

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 01/27/2011

Reviewed on 01/27/2011

## 1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** Antox 71 E plus
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation** Metal surface treatment
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Chemetall GmbH  
Zweigniederlassung Schweiz  
Silostrasse 7  
CH-5606 Dintikon  
Tel. ++41(0)56 616 90 30  
Fax ++41(0)56 616 90 40
- **Information department:**  
Chemetall AG  
Produktsicherheit  
Email : franz.braun@chemetall.com
- **Emergency telephone number:**  
Schweiz / Suisse / Switzerland  
Schweiz. Toxikologisches Informationszentrum Zürich (STIZ)  
Tel. ++41(0) 44 251 51 51  
Tel. 145 (24 h)  
www.toxi.ch

## 2 Hazards identification

- **Classification of the substance or mixture**



GHS06 Skull and crossbones

H310 Fatal in contact with skin.

H331 Toxic if inhaled.



GHS05 Corrosion

H314 Causes severe skin burns and eye damage.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Toxic

Toxic by inhalation, in contact with skin and if swallowed.



Corrosive

Causes severe burns.



Irritant

Irritating to respiratory system.

- **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of international guidelines.

- **Classification system:**

The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

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- **Label elements**
- **Labelling according to EU guidelines:**
- **Code letter and hazard designation of product:**  
T Toxic  
C Corrosive
- **Hazard-determining components of labelling:**  
hydrofluoric acid  
nitric acid
- **Risk phrases:**  
Toxic by inhalation, in contact with skin and if swallowed.  
Causes severe burns.  
Irritating to respiratory system.
- **Safety phrases:**  
Keep away from living quarters.  
Keep container tightly closed and in a well-ventilated place.  
When using do not eat or drink.  
Do not breathe fumes/aerosol.  
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
Wear suitable protective clothing, gloves and eye/face protection.  
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
This material and its container must be disposed of as hazardous waste.
- **Hazard description:**
- **WHMIS-symbols:**  
D1A - Very toxic material causing immediate and serious toxic effects  
D2B - Toxic material causing other toxic effects  
E - Corrosive material



- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Void

- **HMIS-ratings (scale 0 - 4)**



- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

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## Dangerous components:

7697-37-2	nitric acid	 H272;  H314	10-25%
7664-39-3	hydrofluoric acid	 H300; H310; H330;  H314	2.5-10%

Additional information: For the wording of the listed risk phrases refer to section 16.

## 4 First aid measures

### Description of first aid measures

#### General information:

Immediately remove any clothing soiled by the product.  
Remove breathing apparatus only after contaminated clothing have been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.

#### After inhalation:

Supply fresh air or oxygen; call for doctor.  
In case of unconsciousness place patient stably in side position for transportation.

#### After skin contact:

Immediately rinse with water.  
Call a doctor immediately.  
Rub in Ca-gluconate solution or Ca-gluconate gel immediately.

#### After eye contact:

Rinse opened eye for several minutes under running water. Then consult a doctor.  
Call a doctor immediately.

#### After swallowing:

Do not induce vomiting; immediately call for medical help.  
Drink copious amounts of water and provide fresh air. Immediately call a doctor.

#### Information for doctor:

#### Most important symptoms and effects, both acute and delayed

No further relevant information available.

#### Indication of any immediate medical attention and special treatment needed

No further relevant information available.

## 5 Firefighting measures

### Extinguishing media

#### Suitable extinguishing agents:

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

#### Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.

#### Advice for firefighters

#### Protective equipment:

Mouth respiratory protective device.  
Do not inhale explosion gases or combustion gases.

## 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Not required.  
Wear protective equipment. Keep unprotected persons away.

#### Environmental precautions:

Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.

#### Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

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- Use neutralizing agent.
- Dispose contaminated material as waste according to item 13.
- Ensure adequate ventilation.
- **Reference to other sections**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
  - Ensure good ventilation/exhaustion at the workplace.
  - Open and handle receptacle with care.
  - Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
  - Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
  - **Requirements to be met by storerooms and receptacles:** Provide acid-resistant floor.
  - **Information about storage in one common storage facility:** Not required.
  - **Further information about storage conditions:** Keep receptacle tightly sealed.
  - **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

### • Components with limit values that require monitoring at the workplace:

#### 7697-37-2 nitric acid

EL	Short-term value: 4 ppm Long-term value: 2 ppm
EV	Short-term value: 10 mg/m <sup>3</sup> , 4 ppm Long-term value: 5 mg/m <sup>3</sup> , 2 ppm

#### 7664-39-3 hydrofluoric acid

EL	Short-term value: C 2 ppm
EV	0.5 ppm as F

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
  - Keep away from foodstuffs, beverages and feed.
  - Immediately remove all soiled and contaminated clothing.
  - Wash hands before breaks and at the end of work.
  - Store protective clothing separately.
  - Do not inhale gases / fumes / aerosols.
  - Avoid contact with the eyes and skin.
- **Breathing equipment:**
  - Use suitable respiratory protective device in case of insufficient ventilation.
  - Use suitable respiratory protective device only when aerosol or mist is formed.

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## Protection of hands:

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation



Protective gloves

Neoprene gloves

Acid resistant gloves

Only use chemical-protective gloves with CE-labelling of category III.

## Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

## Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

## Eye protection:



Tightly sealed goggles

## Body protection: Protective work clothing

## 9 Physical and chemical properties

### Information on basic physical and chemical properties

#### General Information

#### Appearance:

Form:	Pasty
Color:	Colorless
Odor:	Pungent
Odour threshold:	Not determined.

pH-value at 20°C: < 2

#### Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.

Flash point: Not applicable.

#### Ignition temperature:

Decomposition temperature: Not determined.

Auto igniting: Product is not selfigniting.

Danger of explosion: Product does not present an explosion hazard.

#### Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

Vapor pressure at 20°C: 23 hPa

Density at 20°C: 1.25 g/cm<sup>3</sup>

Relative density: Not determined.

Vapour density: Not determined.

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· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible.
· <b>Segregation coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** Reacts with metals to form nitrous fumes and hydrogen.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** Corrosive gases/vapors

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

### 7697-37-2 nitric acid

Inhalative	LC50/4 h	67 mg/l (rat)
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### 7664-39-3 hydrofluoric acid

Oral	LD50	1276 mg/kg (rat)
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- **Primary irritant effect:**
- **on the skin:** Strong caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Toxic  
Corrosive  
Irritant  
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

## 12 Ecological information

- **Toxicity**
- **Acquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.

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- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
 Water hazard class 2 (Self-assessment): hazardous for water  
 Do not allow product to reach ground water, water course or sewage system.  
 Must not reach bodies of water or drainage ditch undiluted or unneutralized.  
 Danger to drinking water if even small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
 Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Packaging can be reused or recycled after cleaning.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- **DOT regulations:**



- **Hazard class:** 8
- **Identification number:** UN2922
- **Packing group:** II
- **Proper shipping name (technical name):** LIQUIDE CORROSIF TOXIQUE, N.S.A. (ACIDE FLUORHYDRIQUE, ACIDE NITRIQUE)
- **Label** 8+6.1

- **TDG (Transport dangerous goods):**



- **TDG class:** 8 Corrosive substances
- **Danger code (Kemler):** 86
- **UN-Number:** 2922
- **Packaging group:** II
- **UN proper shipping name:** 2922 CORROSIVE LIQUID, TOXIC, N.O.S. (HYDROFLUORIC ACID, NITRIC ACID)

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## Maritime transport IMDG:



- **IMDG Class:** 8
- **UN Number:** 2922
- **Label** 8+6.1
- **Packaging group:** II
- **EMS Number:** F-A,S-B
- **Marine pollutant:** No
- **Segregation groups** Acids
- **Propper shipping name:** CORROSIVE LIQUID, TOXIC, N.O.S.  
(HYDROFLUORIC ACID, NITRIC ACID)

## Air transport ICAO-TI and IATA-DGR:



- **ICAO/IATA Class:** 8
- **UN/ID Number:** 2922
- **Label** 8+6.1
- **Packaging group:** II
- **Propper shipping name:** CORROSIVE LIQUID, TOXIC, N.O.S.  
(HYDROFLUORIC ACID, NITRIC ACID)

- **UN "Model Regulation":** UN2922, CORROSIVE LIQUID, TOXIC, N.O.S., 8 (6.1), II
- **Special precautions for user** Warning: Corrosive substances
- **Transport/Additional information:** Not dangerous according to the above specifications.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

## 15 Regulatory information

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

### Section 313 (Specific toxic chemical listings):

7697-37-2 nitric acid

7664-39-3 hydrofluoric acid

### TSCA (Toxic Substances Control Act):

All ingredients are listed.

### Proposition 65

#### Chemicals known to cause cancer:

None of the ingredients is listed.

#### Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

#### Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

#### Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

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- **Cancerogenity categories**

- **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

- **Product related hazard informations:**

- **Hazard symbols:**

T Toxic

C Corrosive

- **Hazard-determining components of labelling:**

hydrofluoric acid

nitric acid

- **Risk phrases:**

Toxic by inhalation, in contact with skin and if swallowed.

Causes severe burns.

Irritating to respiratory system.

- **Safety phrases:**

Keep away from living quarters.

Keep container tightly closed and in a well-ventilated place.

When using do not eat or drink.

Do not breathe fumes/aerosol.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Wear suitable protective clothing, gloves and eye/face protection.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

This material and its container must be disposed of as hazardous waste.

- **National regulations:**

- **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

ACGIH: American Conference of Governmental Industrial Hygienists

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

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WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

. \* **Data compared to the previous version altered.**

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