



SOLUTION DE HF À 5% DANS L'EAU DISTILLEE - 17271 -17272

SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 2015/830)

SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name : SOLUTION DE HF À 5% DANS L'EAU DISTILLEE

Product code : 17271 -17272.

5% HF SOLUTION IN DISTILLED WATER / 5% HF-LÖSUNG IN DESTILLIERTEN WASSER / SOLUTIE 5% HF IN APA DISTILATA

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

Etching reagent

1.3. Details of the supplier of the safety data sheet

Registered company name : PRESI S.A.S.

Address : 11 Rue du vercors.38320.EYBENS.France.

Telephone : +33 (0)4.76.72.00.21. Fax : +33 (0)4.76.72.05.84.

presi@presi.com

www.presi.com

1.4. Emergency telephone number : +33 (0)1.45.42.59.59.

Association/Organisation : INRS / ORFILA <http://www.centres-antipoison.net>.

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

Acute oral toxicity, Category 3 (Acute Tox. 3, H301).

Acute dermal toxicity, Category 2 (Acute Tox. 2, H310).

Acute inhalation toxicity, Category 3 (Acute Tox. 3, H331).

Skin corrosion, Category 1A (Skin Corr. 1A, H314).

Serious eye damage, Category 1 (Eye Dam. 1, H318).

This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

2.2. Label elements

In compliance with EC regulation No. 1272/2008 and its amendments.

Hazard pictograms :



GHS05



GHS06

Signal Word :

DANGER

Product identifiers :

EC 231-634-8 HYDROFLUORIC ACID 8.0

Hazard statements :

H301 + H331

Toxic if swallowed or if inhaled.

H310

Fatal in contact with skin.

H314

Causes severe skin burns and eye damage.

Precautionary statements - Prevention :

P260

Do not breathe dust/fume/gas/mist/vapours/spray.

P262

Do not get in eyes, on skin, or on clothing.



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| | |
|---------------------------------------|--|
| P264 | Wash ... thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| Precautionary statements - Response : | |
| P301 + P310 | IF SWALLOWED: Immediately call a POISON CENTER/doctor/... |
| P301 + P330 + P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| P302 + P352 | IF ON SKIN: Wash with plenty of water/... |
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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. |
| P311 | Call a POISON CENTER/doctor/... |
| P321 | Specific treatment (see ... on this label). |
| P361 + P364 | Take off immediately all contaminated clothing and wash it before reuse. |
| P363 | Wash contaminated clothing before reuse. |
| Precautionary statements - Storage : | |
| P405 | Store locked up. |
| Precautionary statements - Disposal : | |
| P501 | Dispose of contents/container to ... |

2.3. Other hazards

The mixture does not contain substances classified as 'Substances of Very High Concern' (SVHC) $\geq 0.1\%$ published by the European Chemicals Agency (ECHA) under article 57 of REACH: <http://echa.europa.eu/fr/candidate-list-table>

The mixture fulfils neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Composition :

| Identification | (EC) 1272/2008 | Note | % |
|--|--|----------|---------------------|
| CAS: 7664-39-3 EC: 231-634-8 HYDROFLUORIC ACID | GHS06, GHS05 Dgr Acute Tox. 2, H300 Acute Tox. 1, H310 Skin Corr. 1A, H314 Acute Tox. 2, H330 | B [1] | 2.5 \leq x % < 10 |

(Full text of H-phrases: see section 16)

Information on ingredients :

[1] Substance for which maximum workplace exposure limits are available.

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

4.1. Description of first aid measures

In the event of exposure by inhalation :

In the event of massive inhalation, remove the person exposed to fresh air. Keep warm and at rest.

If the person is unconscious, place in recovery position. Notify a doctor in all events, to ascertain whether observation and supportive hospital care will be necessary.

If breathing is irregular or has stopped, effect mouth-to-mouth resuscitation and call a doctor.

Do not proceed with mouth-to-mouth or mouth-to-nose resuscitation. Use the appropriate equipment.



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In the event of splashes or contact with eyes :

Wash thoroughly with fresh, clean water for 15 minutes holding the eyelids open.
Regardless of the initial state, refer the patient to an ophthalmologist and show him the label.

In the event of splashes or contact with skin :

Remove any soiled or splashed clothing immediately.
Watch out for any remaining product between skin and clothing, watches, shoes, etc.
If the contaminated area is widespread and/or there is damage to the skin, a doctor must be consulted or the patient transferred to hospital.

In the event of swallowing :

Do not give the patient anything orally.
In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water, administer activated medical charcoal and consult a doctor.
Keep the person exposed at rest. Do not force vomiting.
Seek medical attention immediately, showing the label.
If swallowed accidentally, call a doctor to ascertain whether observation and hospital care will be necessary. Show the label.
If swallowed accidentally, do not allow to drink, do not induce vomiting and transfer to hospital immediately by ambulance. Show the label to the doctor.

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

No data available.

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

No data available.

SECTION 5 : FIREFIGHTING MEASURES

Non-flammable.

5.1. Extinguishing media

Suitable methods of extinction

In the event of a fire, use :
- sprayed water or water mist
- foam
- carbon dioxide (CO₂)
- powder

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO₂)
- fluorine (F₂)

5.3. Advice for firefighters

Due to the toxicity of the gas emitted on thermal decomposition of the products, fire-fighting personnel are to be equipped with autonomous insulating breathing apparatus.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For non first aid worker

Avoid inhaling the vapors.
Avoid any contact with the skin and eyes.
If a large quantity has been spilt, evacuate all personnel and only allow intervention by trained operators equipped with safety apparatus.



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For first aid worker

First aid workers will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up

Neutralise with an alkaline decontaminant, such as an aqueous solution of sodium carbonate or similar.

If the ground is contaminated, once the product has been recovered by sponging with an inert and non-combustible absorbent material, wash the contaminated area in plenty of water.

Clean preferably with a detergent, do not use solvents.

6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the mixture is handled.

7.1. Precautions for safe handling

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

Ensure that there is adequate ventilation, especially in confined areas.

Emergency showers and eye wash stations will be required in facilities where the mixture is handled constantly.

Fire prevention :

Handle in well-ventilated areas.

Prevent access by unauthorised personnel.

Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Do not inhale vapours.

Avoid inhaling vapors. Carry out any industrial operation which may give rise to this in a sealed apparatus.

Provide vapor extraction at the emission source and also general ventilation of the premises.

Also provide breathing apparatus for certain short tasks of an exceptional nature and for emergency interventions.

In all cases, recover emissions at source.

Avoid exposure - obtain special instructions before use.

Packages which have been opened must be reclosed carefully and stored in an upright position.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the mixture is used.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

Storage

Keep the container tightly closed in a dry, well-ventilated place.

Keep away from food and drink, including those for animals.

The floor must be impermeable and form a collecting basin so that, in the event of an accidental spillage, the liquid cannot spread beyond this area.

Packaging

Always keep in packaging made of an identical material to the original.

Suitable packaging materials :

- Polyethylene

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7.3. Specific end use(s)

No data available.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits :

- European Union (2017/2398, 2017/164, 2009/161, 2006/15/CE, 2000/39/CE, 98/24/CE) :

| CAS | VME-mg/m ³ | VME-ppm | VLE-mg/m ³ | VLE-ppm | Notes |
|-----------|-----------------------|---------|-----------------------|---------|-------|
| 7664-39-3 | 1.5 | 1.8 | 2.5 | 3 | - |

- ACGIH TLV (American Conference of Governmental Industrial Hygienists, Threshold Limit Values, 2010) :

| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : |
|-----------|---------|--------|-----------|--------------|------------|
| 7664-39-3 | 0,5 ppm | | 2 ppm | Skin; BEI | |

- Germany - AGW (BAuA - TRGS 900, 29/01/2018) :

| CAS | VME : | VME : | Excess | Notes |
|-----------|-------|---------------------------------|--------|-------|
| 7664-39-3 | | 1 ppm 0,83 mg/m ³ | | 2(I) |

- Canada / Ontario (Control of exposure to biological or chemical agents, regulation 491/2009) :

| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : |
|-----------|-------|--------|-----------|--------------|------------|
| 7664-39-3 | - | - | 3 ppm | - | - |

- Canada / Quebec (Regulations on occupational health and safety) :

| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : |
|-----------|-------|--------|--------------------|--------------|------------|
| 7664-39-3 | | | 3 ppm 2,6 mgm/3 | RP | |

- France (INRS - ED984 :2016) :

| CAS | VME-ppm | VME-mg/m ³ | VLE-ppm | VLE-mg/m ³ | Notes | TMP No : |
|-----------|---------|-----------------------|---------|-----------------------|-------|----------|
| 7664-39-3 | 1.8 | 1.5 | 3 | 2.5 | - | 32 |

- Japan (JSOH, 11/05/2017) :

| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : |
|-----------|-------|--------|-------------------------------|--------------|------------|
| 7664-39-3 | | | 3 ppm 2,5 mgm ³ | | |

- Switzerland (SUVAPRO 2017) :

| CAS | VME | VLE | Valeur plafond | Notations |
|-----------|---------------------------------|---------------------------------|----------------|-----------|
| 7664-39-3 | 1 ppm 0,83 mg/m ³ | 2 ppm 1,66 mg/m ³ | | B SSC |

- USA / NIOSH IDLH (National Institute for Occupational Safety and Health, Immediately Dangerous to Life or Health Concentrations) :

| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : |
|-----------|--------------------------------|--------|------------------|--------------|------------|
| 7664-39-3 | 3 ppm 2,5 mg/m ³ | | 6 ppm 5 mgm/3 | 15 minute | |

- UK / WEL (Workplace exposure limits, EH40/2005, 2011) :

| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : |
|-----------|----------------------------------|--------------------------------|-----------|--------------|------------|
| 7664-39-3 | 1,8 ppm 1,5 mg/m ³ | 3 ppm 2,5 mg/m ³ | | | |

Derived no effect level (DNEL) or derived minimum effect level (DMEL):

HYDROFLUORIC ACID ...% (CAS: 7664-39-3)

Final use:

Exposure method:
Potential health effects:
DNEL :

Exposure method:
Potential health effects:

Workers.

Inhalation.
Long term systemic effects.
1.5 mg of substance/m³

Inhalation.
Short term systemic effects.

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| | |
|---------------------------|---|
| DNEL : | 2.5 mg of substance/m ³ |
| Exposure method: | Inhalation. |
| Potential health effects: | Short term local effects. |
| DNEL : | 2.5 mg of substance/m ³ |
| Final use: | Man exposed via the environment. |
| Exposure method: | Ingestion. |
| Potential health effects: | Long term systemic effects. |
| DNEL : | 0.01 mg/kg body weight/day |
| Exposure method: | Ingestion. |
| Potential health effects: | Short term systemic effects. |
| DNEL : | 0.01 mg/kg body weight/day |
| Exposure method: | Inhalation. |
| Potential health effects: | Long term systemic effects. |
| DNEL : | 0.03 mg of substance/m ³ |
| Exposure method: | Inhalation. |
| Potential health effects: | Short term systemic effects. |
| DNEL : | 0.03 mg of substance/m ³ |
| Exposure method: | Inhalation. |
| Potential health effects: | Long term systemic effects. |
| DNEL : | 0.2 mg of substance/m ³ |
| Exposure method: | Inhalation. |
| Potential health effects: | Short term systemic effects. |
| DNEL : | 1.25 mg of substance/m ³ |

Predicted no effect concentration (PNEC):

HYDROFLUORIC ACID ...% (CAS: 7664-39-3)

| | |
|----------------------------|------------------------------|
| Environmental compartment: | Soil. |
| PNEC : | 11 mg/kg |
| Environmental compartment: | Fresh water. |
| PNEC : | 0.9 mg/l |
| Environmental compartment: | Sea water. |
| PNEC : | 0.9 mg/l |
| Environmental compartment: | Waste water treatment plant. |
| PNEC : | 51 mg/l |

8.2. Exposure controls

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :



Use personal protective equipment that is clean and has been properly maintained.



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Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.

Use eye protectors designed to protect against liquid splashes

Before handling, wear safety goggles with protective sides accordance with standard EN166.

In the event of high danger, protect the face with a face shield.

Prescription glasses are not considered as protection.

Individuals wearing contact lenses should wear prescription glasses during work where they may be exposed to irritant vapours.

Provide eyewash stations in facilities where the product is handled constantly.

- Hand protection

Wear suitable protective gloves in the event of prolonged or repeated skin contact.

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.

Gloves must be selected according to the application and duration of use at the workstation.

Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.

Type of gloves recommended :

- Nitrile rubber (butadiene-acrylonitrile copolymer rubber (NBR))

- PVC (polyvinyl chloride)

- Butyl Rubber (Isobutylene-isoprene copolymer)

Recommended properties :

- Impervious gloves in accordance with standard EN374

- Body protection

Avoid skin contact.

Wear suitable protective clothing.

Suitable type of protective clothing :

In the event of substantial spatter, wear liquid-tight protective clothing against chemical risks (type 3) in accordance with EN14605 to prevent skin contact.

In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034 to prevent skin contact.

Wear suitable protective clothing, in particular overalls and boots. These items must be kept in good condition and cleaned after use.

Suitable type of protective boots :

In the event of minor spatter, wear protective boots or half-boots against chemical risks in accordance with standard EN13832-2.

In the event of prolonged contact, wear boots or half-boots with liquid-chemical-resistant and waterproof soles and uppers in accordance with standard EN13832-3.

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

- Respiratory protection

Avoid breathing vapours.

If the ventilation is insufficient, wear appropriate breathing apparatus.

When workers are confronted with concentrations that are above occupational exposure limits, they must wear a suitable, approved, respiratory protection device.

Anti-gas and vapour filter(s) (Combined filters) in accordance with standard EN14387 :

- A2 (Brown)

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

General information :

Physical state :

Fluid liquid.



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Important health, safety and environmental information

| | |
|---|---------------------------------|
| pH : | Not stated. Strongly acidic. |
| Boiling point/boiling range : | Not specified. |
| Flash point interval : | Not relevant. |
| Vapour pressure (50°C) : | Not relevant. |
| Density : | 1.02 |
| Water solubility : | Soluble. |
| Melting point/melting range : | Not specified. |
| Self-ignition temperature : | Not specified. |
| Decomposition point/decomposition range : | Not specified. |

9.2. Other information

No data available.

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

This mixture is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

When exposed to high temperatures, the mixture can release hazardous decomposition products, such as carbon monoxide and dioxide, fumes and nitrogen oxide.

10.4. Conditions to avoid

Avoid :

- frost
- heat

10.5. Incompatible materials

Keep away from :

- metals
- strong bases
- alkali metals
- Permanganate
- Phosphorus and its oxides

10.6. Hazardous decomposition products

The thermal decomposition may release/form :

- carbon monoxide (CO)
 - carbon dioxide (CO₂)
-

SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Toxic if swallowed.

Fatal in contact with skin.

Toxic by inhalation.

May cause irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis, following exposure for up to three minutes.

Corrosive reactions are typified by ulcers, bleeding, bloody scabs, and, by the end of observation at 14 days, by discolouration due to blanching of the skin, complete areas of alopecia, and scars.

11.1.1. Substances

No toxicological data available for the substances.

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11.1.2. Mixture

No toxicological data available for the mixture.

SECTION 12 : ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.2. Mixtures

No aquatic toxicity data available for the mixture.

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Other adverse effects

No data available.

German regulations concerning the classification of hazards for water (WGK, AwSV vom 18/04/2017, KBws) :

WGK 2 : Hazardous for water.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

13.1. Waste treatment methods

Do not pour into drains or waterways.

Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

SECTION 14 : TRANSPORT INFORMATION

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2017 - IMDG 2016 - ICAO/IATA 2017).

14.1. UN number

1790

14.2. UN proper shipping name

UN1790=HYDROFLUORIC ACID with more than 85% hydrogen fluoride

14.3. Transport hazard class(es)

- Classification :



8+6.1



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14.4. Packing group

II

14.5. Environmental hazards

-

14.6. Special precautions for user

| ADR/RID | Class | Code | Pack gr. | Label | Ident. | LQ | Provis. | EQ | Cat. | Tunnel |
|---------|-------|------|----------|-------|--------|-----|---------|----|------|--------|
| | 8 | CT1 | II | 8+6.1 | 86 | 1 L | - | E2 | 2 | E |

| IMDG | Class | 2°Label | Pack gr. | LQ | EMS | Provis. | EQ |
|------|-------|---------|----------|-----|---------|---------|----|
| | 8 | 6.1 | II | 1 L | F-A,S-B | - | E2 |

| IATA | Class | 2°Label | Pack gr. | Passager | Passager | Cargo | Cargo | note | EQ |
|------|-------|---------|----------|----------|----------|-------|-------|------|----|
| | 8 | 6.1 | II | 851 | 1 L | 855 | 30 L | - | E2 |
| | 8 | 6.1 | II | Y840 | 0.5 L | - | - | - | E2 |

For limited quantities, see part 2.7 of the OACI/IATA and chapter 3.4 of the ADR and IMDG.

For excepted quantities, see part 2.6 of the OACI/IATA and chapter 3.5 of the ADR and IMDG.

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

No data available.

SECTION 15 : REGULATORY INFORMATION

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

- Classification and labelling information included in section 2:

The following regulations have been used:

- EU Regulation No. 1272/2008 amended by EU Regulation No. 2018/1480 (ATP 13)

- Container information:

No data available.

- Particular provisions :

No data available.

- German regulations concerning the classification of hazards for water (WGK, AwSV vom 18/04/2017, KBws) :

WGK 2 : Hazardous for water.

15.2. Chemical safety assessment

No data available.

SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a guarantee of the properties thereof.

Wording of the phrases mentioned in section 3 :

| | |
|------|--|
| H300 | Fatal if swallowed. |
| H310 | Fatal in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H330 | Fatal if inhaled. |

Abbreviations :

DNEL : Derived No-Effect Level

PNEC : Predicted No-Effect Concentration

ADR : European agreement concerning the international carriage of dangerous goods by Road.

IMDG : International Maritime Dangerous Goods.



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IATA : International Air Transport Association.

ICAO : International Civil Aviation Organisation

RID : Regulations concerning the International carriage of Dangerous goods by rail.

WGK : Wassergefährdungsklasse (Water Hazard Class).

GHS05 : Corrosion

GHS06 : Skull and crossbones

PBT: Persistent, bioaccumulable and toxic.

vPvB : Very persistent, very bioaccumulable.

SVHC : Substances of very high concern.