

Safety Data Sheet

Compliant with Annex II of REACH - Regulation 2015/830

SECTION 1. Identification of the substance/mixture and company/firm

1.1. Product identifier

Code:

ZARA_F2

Name

COMBIBOILER

1.2. Identified uses related to the substance or mixture and recommended uses

Description/Use

DESCALER

| Identified Uses | Industrial | Professional | Consumption |
|--|------------|--------------|-------------|
| Descaling | - | ✓ | - |
| Uses advised against | | | |
| Do not use for uses other than those indicated | | | |

1.3. Information about the supplier of the safety data sheet

Company name

ALI Group S.r.l.

Address

VIA SCHIAPARELLI 15

City and country

31029 VITTORIO VENETO (TV)
ITALY

tel. +39 0438 9110

fax -

email address of the contact person,

In charge of the safety data sheet

lainox@lainox.com

Head of market release:

ALI Group S.r.l.

1.4. Emergency telephone number

For urgent information, please contact

Poison Control Centre Milan (Niguarda Ca' Granda Hospital) (H24) Tel. +39 02 66101029

Poison Control Centre Pavia (IRCCS Maugeri Foundation – Pavia) Tel. +39 0382 24444

Poison Control Centre Bergamo (Riuniti Hospitals - Bergamo) Tel. +39 800 883300

Poison Control Centre Florence (Careggi Hospital - Florence) Tel. +39 055 7947819

Poison Control Centre Rome (Gemelli Polyclinic - Rome) Tel. +39 06 3054343

Poison Control Centre Rome (Umberto I Polyclinic - Rome) Tel. +39 06 49978000

Poison Control Centre Naples (Cardarelli Hospital – Naples) Tel. +39 081 7472870

The list of Poison Centres authorised to access the Dangerous Preparations Archive can be consulted via the link <https://preparatipericolosi.iss.it/cav.aspx>

SECTION 2. Hazard identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions under Regulation (EC) 1272/2008 (CLP) (and successive amendments and repeals). The product, therefore, requires a safety data sheet that complies with the provisions of Regulation (EU) 2015/830. Any additional information regarding the risks for health and/or the environment are outlined in sections 11 and 12 of this data sheet.

Hazard classification and indications:

| | | |
|--|------|--|
| Substance or mixture corrosive to metals, category 1 | H290 | May be corrosive to metals |
| Skin corrosion, category 1A | H314 | Causes severe skin burns and eye damage. |
| Severe eye damage, category 1 | H318 | Causes serious eye damage. |

2.2. Label elements

Hazard labelling pursuant to Regulation (EC) 1272/2008 (CLP) and successive amendments and repeals.

Hazard pictograms:



Cautions: Hazard

Hazard indications:

| | |
|-------------|--|
| H290 | May be corrosive to metals. |
| H314 | Causes severe skin burns and eye damage. |

Precautionary statements:

| | |
|-----------------------|--|
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
| P264 | Wash hands thoroughly after handling. |
| P301+P330+P331 | IF SWALLOWED: rinse mouth. Do NOT induce vomiting |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P303+P361+P353 | IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |

Contains: PHOSPHORIC ACID

2.3. Other hazards

Based on the available data, the product does not contain PBT or vPvB substances in percentages over 0.1%.

SECTION 3. Composition/information about the ingredients

3.1. Substances

Information not applicable

3.2. Mixtures

Contains:

| Identificazione | x = Conc. % | Classificazione 1272/2008 (CLP) |
|--------------------------------|--------------------|---|
| PHOSPHORIC ACID | | |
| CAS 7664-38-2 | $32.5 \leq x < 35$ | Met. Corr. 1 H290, Acute Tox. 4 H302, Skin Corr. 1B H314, Eye Dam. 1 H318, Classification note according to annex VI of Regulation CLP: B |
| EC 231-633-2 | | Skin Corr. 1B; H314: $C \geq 25 \%$ |
| INDEX 015-011-00-6 | | Skin Irrit. 2; H315: $10 \% \leq C < 25 \%$ |
| Reg. No. 01-2119485924-24-0021 | | Eye Irrit. 2; H319: $10 \% \leq C < 25 \%$ |
| CITRIC ACID | | |
| CAS 77-92-9 | $3 \leq x < 3.5$ | Eye Irrit. 2 H319 |
| EC 201-069-1 | | |
| INDEX - | | |
| Reg. No. 01-2119457026-42-0000 | | |
| ETIDRONIC ACID | | |
| CAS 2809-21-4 | $1 \leq x < 1.5$ | Met. Corr. 1 H290, Acute Tox. 4 H302, Eye Dam. 1 H318 |
| EC 220-552-8 | | |
| INDEX - | | |
| Reg. No. 01-2119510391-53 | | |

The complete test of the hazard indications (H) is outlined in section 16 of the data sheet.

SECTION 4. First aid measures

4.1. Description of first aid measures

EYES: Remove any contact lenses. Rinse immediately with plenty of water for at least 30/60 minutes, while holding the eyelids apart. Seek medical advice immediately.

SKIN: Remove any contaminated clothing. Take a shower immediately. Seek medical advice immediately.

INGESTION: Drink as much water as possible. Seek medical advice immediately. Do not induce vomiting unless expressly authorised by medical personnel.

INHALATION: Seek medical advice immediately. Take the patient outside, away from the site of the accident. If the patient stops breathing, administer artificial respiration. Adopt suitable precautions for the responder.

4.2. Main symptoms and effects both acute and delayed

No specific information is known about the symptoms and effects caused by the product.

4.3. Indication of any requirement to immediately seek medical advice and special treatments

Information not available

SECTION 5. Fire prevention measures

5.1. Extinguishing agents

SUITABLE EXTINGUISHING AGENTS

The extinguishing agents are the conventional kind: carbon dioxide, foam, powder and nebulised water.

UNSUITABLE EXTINGUISHING AGENTS

None in particular.

5.2. Special hazards caused by the substance or mixture

HAZARDS DUE TO EXPOSURE IN THE EVENT OF FIRE

Avoid breathing in combustion products.

5.3. Recommendations for fire fighters

GENERAL INFORMATION

Cool the containers with water jets to prevent the decomposition of the product and the development of substances which could be a health hazard. Always wear the full fire prevention protection equipment. Collect the water used to put out the fire which must not be discharged into the drains. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

EQUIPMENT

Normal firefighting clothing, such as an open circuit, compressed air self-contained breathing apparatus (EN 137), firefighting suit (EN469), protective gloves (EN 659) and firefighter boots (HO A29 or A30).

SECTION 6. Measures in the event of accidental spills

6.1. Personal precautions, protection equipment and procedures in the event of an emergency

Stop the leak if there is no hazard.

Wear suitable protective equipment (including the personal protective equipment under section 8 of the safety data sheet) in order to prevent contamination of the skin, eyes and personal clothing. These indications are valid both for processing technicians and for emergency interventions.

6.2. Environmental precautions

Prevent the product from entering the sewage systems, water courses and ground water.

6.3. Methods and material for containment and cleaning up

Suction the leaked product into a suitable container. Assess the compatibility of the container to use with the product, by checking against section 10.

Absorb the remaining product with inert absorbent material.

Ensure adequate ventilation. Disposal of the contaminated material must be carried in compliance with the provisions of point 13.

6.4. Reference to other sections

Any information about individual protection and the disposal are outlined in sections 8 and 13.

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Guarantee suitable earthing for systems and persons, Avoid contact with eyes and skin. Do not inhale dust, vapours or mist. Do not drink, eat or smoke when using. Wash hands after handling. Do not disperse of the product in the environment.

7.2. Conditions for safe storage, including any incompatibilities

Only store in the original container. Keep the containers closed in a well-ventilated place, away from sources of ignition. Keep the containers hermetically sealed Keep the product in clearly marked containers. Avoid overheating. Keep the containers separate from any incompatible materials; check in section 10

Storage class TRGS 510 (Germany).

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7.3. Specific end uses

Information not available

SECTION 8. Exposure control/personal protection

8.1. Control parameters

Legislative references:

| | | |
|-----|----------------|---|
| DEU | Deutschland | TRGS 900 - Seite 1 von 69 (Fassung 29.03.2019)- Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte |
| GRC | Ελλάδα | ΕΦΗΜΕΡΙΔΑ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ - ΤΕΥΧΟΣ ΠΡΩΤΟ Αρ. Φύλλου 152 - 21 Αυγούστου 2018 |
| ITA | Italia | 9 Aprile 2008, n.81 |
| ITA | Italia | Decreto Legislativo 9 Aprile 2008, n.81 |
| GBR | United Kingdom | EH40/2005 Workplace exposure limits (Third edition, published 2018) |
| EU | OEL EU | Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 98/24/EC; Directive 91/322/EEC. |
| | TLV-ACGIH | ACGIH 2020 |

PHOSPHORIC ACID

Threshold limit value

| Type | State | TWA/8h | | STEL/15min | | Notes / Observations |
|-----------|-------|-------------------|-----|-------------------|-----|-------------------------|
| | | mg/m ³ | ppm | mg/m ³ | ppm | |
| AGW | DEU | 2 | | 4 (C) | | INALAB |
| MAK | DEU | 2 | | 4 | | INALAB |
| TLV | GRC | 1 | | 3 | | |
| VLEP | ITA | 1 | | 2 | | |
| WEL | GBR | 1 | | 2 | | |
| OEL | EU | 1 | | 2 | | |
| TLV-ACGIH | | 1 | | 3 | | |

Health - Derived No-Effect Level - DNEL / DMEL

| Exposure pathway | Effects on consumers | | | Effects on workers | | | | |
|------------------|----------------------|----------------|-----------------------|------------------------|-------------|----------------|---------------------|------------------------|
| | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral | | | | 100 µg/kg bw/d | | | | |
| Inhalation | | | 360 µg/m ³ | 4.75 mg/m ³ | | | 1 mg/m ³ | 10.7 mg/m ³ |

CITRIC ACID

Predicted No Effect Concentration - PNEC

| | | |
|---|-------|-------|
| Reference value in freshwater | 0.44 | mg/l |
| Reference value in seawater | 0.044 | mg/l |
| Reference value for sediment in freshwater | 7.52 | mg/kg |
| Reference value for sediment in seawater | 0.752 | mg/kg |
| Reference value for terrestrial compartment | 29.2 | mg/kg |

ETIDRONIC ACID

Predicted No Effect Concentration - PNEC

| | | |
|--|-------|-------|
| Reference value in freshwater | 0,136 | mg/l |
| Reference value in seawater | 0,014 | mg/l |
| Reference value for sediment in freshwater | 59 | mg/kg |
| Reference value for sediment in seawater | 5.9 | mg/kg |
| Reference value for STP microorganisms | 20 | mg/l |
| Reference value for food chain (secondary poisoning) | 12 | g/kg |

Reference value for terrestrial compartment

96

mg/kg

| Health - Derived No-Effect Level - DNEL / DMEL | | | | | | | | |
|--|-------------|----------------|---------------|--------------------|-------------|----------------|---------------|------------------|
| Effects on consumers | | | | Effects on workers | | | | |
| Exposure pathway | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral | | 6.5 mg/kg bw/d | | 6.5 mg/kg bw/d | | | | |

Key:

(C) = CEILING ; INALAB = Inhalable fraction ; RESPIR = Breathable fraction ; TORAC = Thoracic fraction.

VND = hazard identified but no DNEL/PNEC available; NEA = no exposure expected ; NPI = no hazard identified.

8.2. Exposure control

Considering that the use of adequate technical measures should always take priority over personal protection equipment, ensure good ventilation in the workplace through effective local extraction.

When choosing personal protective equipment, ask your chemical substance suppliers for any advice.

Personal protective equipment must bear the CE marking which indicates compliance with the laws in force.

Provide emergency shower facilities with eye baths.

HAND PROTECTION

Protect hands with category III work gloves (ref. standard EN 374 class M).

When choosing the material of the work gloves, you should consider: compatibility, degradation, breakthrough times and permeation rates.

In the case of preparations, resistance of work gloves to chemical agents must be checked before use, as it is unpredictable. Gloves have a deterioration time that depends on the duration and method of use.

SKIN PROTECTION

Wear work clothes with long sleeves and safety footwear for professional use, category I (ref. Directive 89/686/EEC and EN ISO 20344 standard). Wash with soap and water after removing protective clothing.

EYE PROTECTION

It is advisable to wear tightly fitting goggles (ref. standard EN 166).

RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) of the substance or one or more substances present in the product are exceeded, it is advisable to wear a mask with a type A filter. The class (1, 2 or 3) must be chosen in relation to the limit of use of the concentration. (ref. standard EN 14387). If gases or vapours and/or gases of vapours with particles (aerosols, fumes, mist, etc.), combined filters must be provided.

The use of measures to protect the airways is required if the technical measures are not sufficient to limit the exposure of workers to the threshold values taken into account. The protection offered by the mask is, however, limited.

If the substance is considered odourless or its odour threshold is above the one for TLV-TWA and in the event of any emergency, wear an open circuit, compressed air self-contained breathing apparatus (ref. standard EN 137) or a fresh air hose breathing apparatus (ref. standard EN 138). For the correction choice of respiratory protection devices, refer to standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROL

Emissions from production processes, including those from ventilation equipment, should be checked for compliance with environmental protection regulations.

SECTION 9. Physical and chemical properties

9.1. Information about fundamental physical and chemical properties

| | | |
|--------------------------------------|---|---|
| Physical state | liquid | |
| Colour | red | |
| Odour | characteristic | |
| Odour threshold | Not available | Reason for missing data: NOT AVAILABLE |
| pH | 2 | |
| Melting or freezing point | Not available | |
| Initial boiling point | Not available | |
| Boiling range | Not available | |
| Flash point | > 60 °C | |
| Evaporation rate | Not available | Reason for missing data: NOT AVAILABLE |
| Flammability of solids and gases | Not applicable | |
| Lower flammability limit | Not available | |
| Upper flammability limit | Not available | |
| Lower explosive limit | Not available | |
| Upper explosive limit | Not available | |
| Vapour pressure | Not available | |
| Vapour density | Not available | |
| Relative density | 1.19 | |
| Solubility | Soluble in water | |
| partition coefficient: octanol/water | Not available | Reason for missing data: NOT AVAILABLE |
| Auto-ignition temperature | Not available | |
| Decomposition temperature | Not available | Reason for missing data: NOT AVAILABLE |
| Viscosity | Not available | Reason for missing data: NOT APPLICABLE |
| Explosive properties | not classified as explosive, does not contain explosive substances according to Reg. CLP Art. (14 (2)) | |
| Oxidising properties | the product is not an oxidising substance | |

9.2. Other information

VOC (Directive 2010/75/EC): 0

SECTION 10. Stability and reactivity

10.1. Reactivity

There are not particular reaction hazards with other substances under normal conditions of use.

PHOSPHORIC ACID

It decomposes at temperatures above 200°C/392°F.

10.2. Chemical stability

The product is stable under normal conditions of use and storage.

10.3. Possibility of hazardous reactions

No hazardous reactions are foreseen under normal conditions of use and storage.

PHOSPHORIC ACID

Risk of explosion on contact with: nitromethane. It may react dangerously with: alkalis, sodium borohydride.

10.4. Conditions to avoid

None in particular. However, the usual precautions used for chemical products should be respected.

10.5. Incompatible materials

PHOSPHORIC ACID

Incompatible with: metals, strong alkalis, aldehydes, organic sulphides, peroxides.

10.6. Hazardous decomposition products

PHOSPHORIC ACID

May develop: phosphorous oxides.

SECTION 11. Toxicological information

In the absence of experimental toxicological data on the product in question, the possible dangers of the product to the health have been assessed on the basis of the properties of the substances it contains, according to the criteria laid down by the reference legislation for classification.

Therefore, consider the concentration of the individual hazardous substances which may be mentioned in section. 3, when assessing the toxicological effects caused by exposure to the product.

11.1. Information about the toxicological effects

Metabolism, kinetics, mechanism of action and other information

Information not available

Information on probable exposure pathways

Information not available

Immediate or delayed effects and chronic effects due to short or long-term exposure

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation) of the mixture:
Unclassified (no significant component)
ATE (Oral) of the mixture:
>2000 mg/kg
ATE (Skin) of the mixture:
Unclassified (no significant component)

ETIDRONIC ACID

LD50 (Oral) 3130 mg/kg rat

LD50 (Skin) > 10000 mg/kg rabbit

CITRIC ACID

LD50 (Oral) 5400 mg/kg GUIDELINE OECD 401 (MOUSE)

LD50 (Skin) > 2000 mg/kg Guidelines for OECD Test 402 (RAT)

PHOSPHORIC ACID

LD50 (Oral) 1530 mg/kg Rat

LD50 (Skin) 2740 mg/kg Rabbit

LC50 (Inhalation) > 0.85 mg/l/1h Rat

SKIN CORROSION/SKIN IRRITATION

Corrosive for the skin

Classification based on the experimental Ph value

SERIOUS EYE DAMAGE/EYE IRRITATION

Causes serious eye damage

RESPIRATORY OR SKIN SENSITISATION

Does not respond to classification criteria for this hazard class

GERM CELL MUTAGENICITY

Does not respond to classification criteria for this hazard class

CARCINOGENICITY

Does not respond to classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not respond to classification criteria for this hazard class

SPECIFIC TARGET ORGAN TOXICITY (STOT) - SINGLE EXPOSURE

Does not respond to classification criteria for this hazard class

SPECIFIC TARGET ORGAN TOXICITY (STOT) - REPEATED EXPOSURE

Does not respond to classification criteria for this hazard class

ASPIRATION HAZARD

Does not respond to classification criteria for this hazard class

SECTION 12. Ecological information

Use according to good working practice, avoiding dispersion of the product in the environment. Notify the competent authorities if the product reaches water courses or if it has contaminated the soil or vegetation.

12.1. Toxicity

ETIDRONIC ACID

| | |
|---------------------------------------|-------------------|
| LC50 - Fish | 195 mg/l/96h |
| EC50 - Crustaceans | 527 mg/l/48h |
| EC50 - Algae / Aquatic plants | 7.23 mg/l/96h 96h |
| NOEC Chronic toxicity for crustaceans | 6.75 mg/l 28d |

ACIDO CITRICO

| | |
|--|---|
| EC50 - Crustaceans | 440 mg/l/48h Guidelines for OECD Test 203 |
| NOEC Chronic toxicity for algae / aquatic plants | > 425 mg/l EXPOSURE TIME 8 D |

ACIDO FOSFORICO

| | |
|--|-----------------------------------|
| LC50 - Fish | 3.25 mg/l/96h LEPOMIS MACROCHIRUS |
| EC50 - Crustaceans | > 100 mg/l/48h DAPHINIA MAGNA |
| NOEC Chronic toxicity for algae / aquatic plants | 100 mg/l 72 H |

12.2. Persistence and degradability

ETIDRONIC ACID

Rapidly degradable

ACIDO CITRICO

Rapidly degradable

PHOSPHORIC ACID

| | |
|---------------------|---------------|
| Solubility in water | > 850000 mg/l |
| Rapidly degradable | |

12.3. Bioaccumulation potential

CITRIC ACID

| | |
|--|------------------------|
| Partition coefficient: n-octanol/water | -18 CALCULATION METHOD |
|--|------------------------|

12.4. Mobility in soil

ETIDRONIC ACID

| | |
|-----------------------------------|------|
| Partition coefficient: soil/water | 4.22 |
|-----------------------------------|------|

formation not available

12.5. Results of PBT and vPvB assessment

Based on the available data, the product does not contain PBT or vPvB substances in percentages $\geq 0.1\%$.

| | |
|-------------------------|--|
| ALI Group S.r.l. | Revision no. 8 Revision date 09/09/2018 |
| COMBIBOILER | Printed on 09/09/2018 Page no. 13/17 |

12.6. Other adverse effects

Information not available

SECTION 13. Advice for disposal

13.1. Waste treatment methods

Re-use, if possible. Product residue should be treated as special hazardous waste. The hazardous properties of waste that partly contain this product must be assessed according to the laws in force.
Disposal must be carried out by a company authorised for waste management, in compliance with the national and local legislation.
Waste transport may be subject to ADR.
CONTAMINATED PACKAGING
Contaminated packaging must be sent for recovery or disposal in compliance with national laws for waste management.

SECTION 14. Transport information

Included in the field of application of the regulations on the transport of dangerous goods: by road (ADR); by rail (RID); by air (ICAO / IATA); by sea (IMDG).

14.1 UN NUMBER

ADR / RID, IMDG, 1805
IATA:

14.2 UN NAME AND SHIPPING

ADR / RID: PHOSPHOROC ACID, SOLUTION

IMDG: PHOSPHORIC ACID, SOLUTION

IATA: PHOSPHORIC ACID, SOLUTION

14.3 TRANSPORT HAZARD CLASS

ADR / RID: Class: 8 Label: 8

IMDG: Class: 8 Label: 8

IATA: Class: 8 Label: 8



14.4. PACKAGING GROUP

ADR / RID, IMDG, III
IATA:

14.5 ENVIRONMENTAL HAZARDS

ADR / RID: NO

IMDG: NO

IATA: NO

14.6. SPECIAL PRECAUTIONS FOR USERS

ADR / RID: HIN - Kemler: 80

Limited
Quantities: 5
L

Codice di
restrizione in
galleria: (E)

Special provision: -

IMDG: EMS: F-A, S-B

Limited
Quantities: 5
L

IATA: Cargo:

Maximum
quantity: 60 L
Maximum
quantity: 5 L
A3, A803

Istruzioni
Imballo: 856
Istruzioni
Imballo: 852

Pass.:

Special instructions:

14.7 Dry bulk carriers according to MARPOL Annex II and IBC code

Information not relevant

SECTION 15. Information on regulation**15.1. Legislative and regulatory provisions on health, safety and the environment specific to the substance or mixture**

Seveso category - Directive 2012/18/EC: None

Restrictions on the product or substances contained in it according to Annex XVII Regulation (EC) 1907/2006

Product
Point 3

Substances in Candidate List (Art. 59 REACH)

Based on the available data, the product does not contain SVHC substances in percentages $\geq 0.1\%$.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to export notification obligation Reg. (EC) 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Health checks

Workers exposed to this chemical agent which is hazardous to the health must undergo health monitoring carried out according to the provisions of art. 41 of Italian Leg. Decree 81 of 9 April 2008 unless the risk for the health and safety of the worker has been deemed irrelevant, according to the provisions of art. 224 paragraph 2.

Italian Leg. Decree 152/2006 and subsequent modifications

Emissions according to Part V Annex I:

WATER 60.80 %

Water hazard classes in Germany (AwSV, vom 18. April 2017)

WGK 1: low hazard to waters

15.2. Chemical safety assessment

A chemical safety assessment has been produced for the following substances contained in it:

PHOSPHORIC ACID
CITRIC ACID

SECTION 16. Other information

Text of the hazard indications (H) quoted in sections 2-3 of the data sheet:

| | |
|----------------------|--|
| Met. Corr. 1 | Substance or mixture corrosive to metals, category 1 |
| Acute Tox. 4 | Acute toxicity, category 4 |
| Skin Corr. 1B | Skin corrosion, category 1B |
| Eye Dam. 1 | Severe eye damage, category 1 |
| Eye Irrit. 2 | Eye irritation, category 2 |
| H290 | May be corrosive to metals. |
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious irritation. |

KEY:

- ADR: European agreement for the transport of hazardous goods by road
- CAS NUMBER: Chemical Abstract Service Number
- EC50: Concentration that affects 50% of the population subjected to tests
- EC NUMBER: Identification number in ESIS (European archive of existing substances)
- CLP: Regulation EC 1272/2008
- DNEL: Derived No-Effect Level
- EmS: Emergency Schedule
- GHS: Global harmonised system for the classification and labelling of chemical products
- IATA DGR: Regulation for the transportation of hazardous goods of the international association of air transport
- IC50: Immobilisation concentration of 50% of the population subjected to tests
- IMDG: International maritime code for the transportation of hazardous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identification number of Annex VI of the CLP
- LC50: Lethal concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational exposure limit
- PBT: Persistent, bioaccumulative and toxic according to REACH
- PEC: Predicted environmental concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: Regulation EC 1907/2006
- RID: Regulation for international transportation of hazardous goods by train
- TLV: Threshold limit value
- TLV CEILING: Concentration which must not be exceeded at any time during working exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average
- VOC: Volatile organic compound
- vPvB: Very persistent and very bioaccumulative according to REACH
- WGK: Water hazard classes (Germany).

GENERAL BIBLIOGRAPHY:

1. Regulation (EC) 1907/2006 of the European Parliament (REACH)
2. Regulation (EC) 1272/2008 of the European Parliament (CLP)
3. Regulation (EU) 790/2009 of the European Parliament (I Atp. CLP)
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 of the European Parliament (II Atp. CLP)
6. Regulation (EU) 618/2012 of the European Parliament (III Atp. CLP)
7. Regulation (EU) 487/2013 of the European Parliament (IV Atp. CLP)
8. Regulation (EU) 944/2013 of the European Parliament (V Atp. CLP)
9. Regulation (EU) 605/2014 of the European Parliament (VI Atp. CLP)

- 10. Regulation (EU) 2015/1221 of the European Parliament (VII Atp. CLP)
- 11. Regulation (EU) 2016/918 of the European Parliament (VIII Atp. CLP)
- 12. Regulation (EU) 2016/1179 (IX Atp. CLP)
- 13. Regulation (EU) 2017/776 (X Atp. CLP)
- 14. Regulation (EU) 2018/669 (XI Atp. CLP)
- 15. Regulation (EU) 2018/1480 (XIII Atp. CLP)
- 16. Regulation (EU) 2019/521 (XII Atp. CLP)
- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA Agency website
- Database of SDS models for chemical substances - Ministry of Health and Higher Health Institute

Note for user:

The information contained in this data sheet is based on the knowledge available to us on the data of the latest version. The user must check the suitability and completeness of the information in relation to the specific product use.

This document should not be interpreted as a guarantee of any specific property of the product.

Since the use of the product does not fall directly under our control, the user is obliged to observe the laws and provisions, under his own responsibility, in force concerning safety and hygiene. No responsibility is assumed for improper use.

Provide adequate training for staff in charge of using chemical products.

CALCULATION METHODS OF THE CLASSIFICATION

Chemical and physical hazards: The classification of the product was derived from the criteria established by the CLP Regulation Annex I Part 2. The methods for assessing the chemical-physical properties are indicated in section 9.

Health hazards: The classification of the product is based on the calculation methods indicated in Annex 1 of the CLP Part 3, unless otherwise indicated in section 11.

Environmental hazards: The classification of the product is based on the calculation methods indicated in Annex 1 of the CLP Part 4, unless otherwise indicated in section 12.

Changes with respect to the previous revision

Changes have been made to the following sections:

02 / 03 / 07 / 08 / 09 / 11 / 12 / 14 / 15 / 16.