# Safety Data Sheet

According to Annex II to REACH - Regulation 2020/878 and to Annex II to UK REACH

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

**1.1. Product identifier**

| | |
| --- | --- |
| Code: | **411 00 21340-6442** |
| Product name | **STAINLESS STEEL CLEANER** |
| UFI : | **U500-Y009-300S-YAXS** |

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

Intended use **Detergent for internal and external washing of tubs and tanks in stainless steel**

**1.3. Details of the supplier of the safety data sheet**

| | |
| --- | --- |
| Name | **Meccanocar Italia S.r.l.** |
| Full address | **Via San Francesco, 22** |
| District and Country | **56033 Capannoli (PI)**<br>**Italy** |
| | **Tel. +39 0587 609433** |
| | **Fax +39 0587 607145** |
| e-mail address of the competent person | |
| responsible for the Safety Data Sheet | **moreno.meini@meccanocar.it** |
| Supplier: | |

**1.4. Emergency telephone number**

For urgent inquiries refer to **National Poisons Information Service: +44 121 507 4123**

## SECTION 2. Hazards identification

**2.1. Classification of the substance or mixture**

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2020/878.
Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

| | | |
| --- | --- | --- |
| Acute toxicity, category 4 | H302 | Harmful if swallowed. |
| Skin corrosion, category 1A | H314 | Causes severe skin burns and eye damage. |
| Serious eye damage, category 1 | H318 | Causes serious eye damage. |

**2.2. Label elements**

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:

Signal words: Danger

Hazard statements:

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

Precautionary statements:

| | |
| --- | --- |
| **P260** | Do not breathe vapours. |
| **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): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. |
| **P280** | Wear protective gloves/ protective clothing / eye protection / face protection. |
| **P310** | Immediately call a POISON CENTER / doctor. |
| **P264** | Wash hands thoroughly after handling. |
| **P101** | If medical advice is needed, have product container or label at hand. |
| **P102** | Keep out of reach of children. |
| **P234** | Keep only in original packaging. |
| **P301+P330+P331** | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| **P363** | Wash contaminated clothing before reuse. |
| **P390** | Absorb spillage to prevent material damage. |
| **P405** | Store locked up. |
| **P501** | Dispose of contents/container in accordance with local dispositions. |

| | |
| --- | --- |
| **Contains:** | POTASSIUM HYDROXIDE<br>1-HYDROXYETHYLIDENE -1,1-DIPHOSPHONIC ACID |
| **Contains (Reg CE 648/2004)** | < 5% Phosphonates. |

**2.3. Other hazards**

On the basis of available data, the product does not contain any PBT or vPvB in percentage ≥ than 0,1%.

The product does not contain substances with endocrine disrupting properties in concentration >= 0.1%.

## SECTION 3. Composition/information on ingredients

**3.2. Mixtures**

Contains:

| Identification | x = Conc. % | Classification (EC) 1272/2008 (CLP) |
| --- | --- | --- |
| **POTASSIUM HYDROXIDE** | | |
| CAS 1310-58-3 | 18 ≤ x < 20 | Met. Corr. 1 H290, Acute Tox. 4 H302, Skin Corr. 1A H314, Eye Dam. 1 H318 |

| | | |
|---|---|---|
| EC 215-181-3 | | Skin Corr. 1B H314: ≥ 2%, Skin Irrit. 2 H315: ≥ 0,5%, Eye Dam. 1 H318: ≥ 2%, Eye Irrit. 2 H319: ≥ 0,5% |
| INDEX 019-002-00-8 | | LD50 Oral: 333 mg/kg |
| **1-HYDROXYETHYLIDENE -1,1-DIPHOSPHONIC ACID** | | |
| CAS 2809-21-4 | 4,5 ≤ x < 5 | Acute Tox. 4 H302, Eye Dam. 1 H318, Skin Irrit. 2 H315, STOT SE 3 H335 |
| EC 220-552-8 | | STA Oral: 500 mg/kg |
| INDEX - | | |
| **SODIUM HYPOCHLORITE** | | |
| CAS 7681-52-9 | 0,809 ≤ x < 1 | Skin Corr. 1B H314, Eye Dam. 1 H318, Aquatic Acute 1 H400 M=10, Aquatic Chronic 1 H410 M=1, EUH031, Classification note according to Annex VI to the CLP Regulation: B |
| EC 231-668-3 | | EUH031: ≥ 5% |
| INDEX 017-011-00-1 | | |

The full wording of hazard (H) phrases is given in section 16 of the sheet.

## SECTION 4. First aid measures

**4.1. Description of first aid measures**

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.
SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.
INGESTION: Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.
INHALATION: Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

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

Specific information on symptoms and effects caused by the product are unknown.

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

Information not available

## SECTION 5. Firefighting measures

**5.1. Extinguishing media**

SUITABLE EXTINGUISHING EQUIPMENT
The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.
UNSUITABLE EXTINGUISHING EQUIPMENT
None in particular.

**5.2. Special hazards arising from the substance or mixture**

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Do not breathe combustion products.

**5.3. Advice for firefighters**

GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS
Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

## SECTION 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Block the leakage if there is no hazard.
Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

**6.2. Environmental precautions**

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

**6.3. Methods and material for containment and cleaning up**

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.
Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

**6.4. Reference to other sections**

Any information on personal protection and disposal is given in sections 8 and 13.

## SECTION 7. Handling and storage

**7.1. Precautions for safe handling**

Ensure that there is an adequate earthing system for the equipment and personnel. Avoid contact with eyes and skin. Do not breathe powders, vapours or mists. Do not eat, drink or smoke during use. Wash hands after use. Avoid leakage of the product into the environment.

**7.2. Conditions for safe storage, including any incompatibilities**

Store only in the original container. Store in a ventilated and dry place, far away from sources of ignition. Keep containers well sealed. Keep the product in clearly labelled containers. Avoid overheating. Avoid violent blows. Keep containers away from any incompatible materials, see section 10 for details.

**7.3. Specific end use(s)**

Information not available

## SECTION 8. Exposure controls/personal protection

**8.1. Control parameters**

Regulatory References:

| | | |
| --- | --- | --- |
| ESP | España | Límites de exposición profesional para agentes químicos en España 2021 |
| FRA | France | Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS |

| | | |
|---|---|---|
| NOR | Norge | Forskrift om endring i forskrift om tiltaksverdier og grenseverdier for fysiske og kjemiske faktorer i arbeidsmiljøet samt smitterisikogrupper for biologiske faktorer (forskrift om tiltaks- og grenseverdier), 21. august 2018 nr. 1255 |
| GBR | United Kingdom | EH40/2005 Workplace exposure limits (Fourth Edition 2020) |
| | TLV-ACGIH | ACGIH 2020 |

**POTASSIUM HYDROXIDE**

**Threshold Limit Value**

| Type | Country | TWA/8h | | STEL/15min | | Remarks / Observations |
|---|---|---|---|---|---|---|
| | | mg/m3 | ppm | mg/m3 | ppm | |
| VLA | ESP | 1 | | 4 | | RESP |
| VLEP | FRA | | | 2 | | |
| TLV | NOR | 2 | | | | |
| WEL | GBR | | | 2 | | |
| TLV-ACGIH | | | | 2 (C) | | |

**Health - Derived no-effect level - DNEL / DMEL**

| | Effects on consumers | | | | Effects on workers | | | |
|---|---|---|---|---|---|---|---|---|
| Route of exposure | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Inhalation | | | 1 mg/m3 | | | | 1 mg/m3 | |

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

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

**8.2. Exposure controls**

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.
When choosing personal protective equipment, ask your chemical substance supplier for advice.
Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION
Protect hands with category III work gloves (see standard EN 374).
The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.
The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION
Wear category III professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

EYE PROTECTION
Wear a hood visor or protective visor combined with airtight goggles (see standard EN 166).

In the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption.

RESPIRATORY PROTECTION
If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type A filter

whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.
Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.
If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS
The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

## SECTION 9. Physical and chemical properties

**9.1. Information on basic physical and chemical properties**

| Properties | Value | Information |
| --- | --- | --- |
| Appearance | liquid | |
| Colour | yellow | |
| Odour | pungent | |
| Melting point / freezing point | Not available | |
| Initial boiling point | Not available | |
| Flammability | Not available | |
| Lower explosive limit | Not available | |
| Upper explosive limit | Not available | |
| Flash point | Not available | |
| Auto-ignition temperature | Not available | |
| pH | Not available | |
| Kinematic viscosity | Not available | |
| Solubility | soluble in water | |
| Partition coefficient: n-octanol/water | Not available | |
| Vapour pressure | Not available | |
| Density and/or relative density | Not available | |
| Relative vapour density | Not available | |
| Particle characteristics | Not applicable | |

**9.2. Other information**

9.2.1. Information with regard to physical hazard classes

Information not available

9.2.2. Other safety characteristics

Information not available

## SECTION 10. Stability and reactivity

**10.1. Reactivity**

There are no particular risks of reaction with other substances in normal conditions of use.

POTASSIUM HYDROXIDE

May develop: heat.May corrode: metals.

1-HYDROXYETHYLIDENE -1,1-DIPHOSPHONIC ACID

Decomposes at temperatures above 200°C/392°F.

**10.2. Chemical stability**

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

POTASSIUM HYDROXIDE

Stable in normal conditions of use and storage.

**10.3. Possibility of hazardous reactions**

No hazardous reactions are foreseeable in normal conditions of use and storage.

POTASSIUM HYDROXIDE

Develops hydrogen on contact with: metals.Develops heat on contact with: strong acids.Reacts violently with: water.

**10.4. Conditions to avoid**

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

POTASSIUM HYDROXIDE

Avoid exposure to: sources of heat.Keep away from: oxidising agents,acids,flammable substances,halogens,organic substances.Keep away from: lead,aluminium,copper,tin,sulphur,bronze.Absorbs atmospheric CO2.

Unstable on exposure to air. Freezing.

**10.5. Incompatible materials**

1-HYDROXYETHYLIDENE -1,1-DIPHOSPHONIC ACID

Incompatible with: strong oxidants,strong bases.

**10.6. Hazardous decomposition products**

POTASSIUM HYDROXIDE

May develop: flammable gases.

1-HYDROXYETHYLIDENE -1,1-DIPHOSPHONIC ACID

May develop: phosphine,phosphoric acid,phosphoryl oxides.

## SECTION 11. Toxicological information

**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available

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

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

| | |
|---|---|
| ATE (Inhalation) of the mixture: | Not classified (no significant component) |
| ATE (Oral) of the mixture: | 1549,05 mg/kg |
| ATE (Dermal) of the mixture: | Not classified (no significant component) |

POTASSIUM HYDROXIDE

| | |
|---|---|
| LD50 (Oral): | 333 mg/kg Rat |

1-HYDROXYETHYLIDENE -1,1-DIPHOSPHONIC ACID

| | |
|---|---|
| STA (Oral): | 500 mg/kg estimate from table 3.1.2 of Annex I of the CLP<br>(figure used for calculation of the acute toxicity estimate of the mixture) |

SODIUM HYPOCHLORITE

| | |
|---|---|
| LD50 (Oral): | > 5000 mg/kg Rat |
| LD50 (Dermal): | > 10000 mg/kg Rabbit |

SKIN CORROSION / IRRITATION

Corrosive for the skin

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

Respiratory sensitization

Information not available

Skin sensitization

Information not available

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

Adverse effects on sexual function and fertility

Information not available

Adverse effects on development of the offspring

Information not available

Effects on or via lactation

Information not available

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

Target organ

Information not available

Route of exposure

Information not available

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

Target organ

Information not available

Route of exposure

Information not available

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

**11.2. Information on other hazards**

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with human health effects under evaluation.

## SECTION 12. Ecological information

**12.1. Toxicity**

| | |
| --- | --- |
| SODIUM HYPOCHLORITE | |
| LC50 - for Fish | 0,059 mg/l/96h Oncorhynchus mykiss |
| EC50 - for Crustacea | 0,04 mg/l/48h Daphnia magna |
| EC50 - for Algae / Aquatic Plants | 46 mg/l/72h Gracilaria tenuistipitata |
| Chronic NOEC for Algae / Aquatic Plants | 0,364 mg/l Algae fresh water |

**12.2. Persistence and degradability**

| | |
| --- | --- |
| SODIUM HYPOCHLORITE | |
| Solubility in water | 1000 - 10000 mg/l |
| Degradability: information not available | |
| POTASSIUM HYDROXIDE | |
| Solubility in water | > 10000 mg/l |
| Degradability: information not available | |
| 1-HYDROXYETHYLIDENE -1,1-DIPHOSPHONIC ACID | |
| Solubility in water | > 10000 mg/l |
| NOT rapidly degradable | |

**12.3. Bioaccumulative potential**

| | |
| --- | --- |
| SODIUM HYPOCHLORITE | |
| Partition coefficient: n-octanol/water | -3,42 |
| 1-HYDROXYETHYLIDENE -1,1-DIPHOSPHONIC ACID | |
| Partition coefficient: n-octanol/water | -3,5 |

**12.4. Mobility in soil**

| | |
|---|---|
| 1-HYDROXYETHYLIDENE -1,1-DIPHOSPHONIC ACID | |
| Partition coefficient: soil/water | 4,22 |

**12.5. Results of PBT and vPvB assessment**

On the basis of available data, the product does not contain any PBT or vPvB in percentage ≥ than 0,1%.

**12.6. Endocrine disrupting properties**

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under evaluation.

**12.7. Other adverse effects**

Information not available

## SECTION 13. Disposal considerations

**13.1. Waste treatment methods**

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
Waste transportation may be subject to ADR restrictions.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

## SECTION 14. Transport information

**14.1. UN number or ID number**

| | |
|---|---|
| ADR / RID, IMDG, IATA: | 1719 |

**14.2. UN proper shipping name**

| | |
|---|---|
| ADR / RID: | CAUSTIC ALKALI LIQUID, N.O.S. MIXTURE |
| IMDG: | CAUSTIC ALKALI LIQUID, N.O.S. MIXTURE |
| IATA: | CAUSTIC ALKALI LIQUID, N.O.S. MIXTURE |

**14.3. Transport hazard class(es)**

| | | |
|---|---|---|
| ADR / RID: | Class: 8 | Label: 8 |
| IMDG: | Class: 8 | Label: 8 |

| | | |
| --- | --- | --- |
| IATA: | Class: 8 | Label: 8 |

**14.4. Packing group**

| | |
| --- | --- |
| ADR / RID, IMDG, IATA: | III |

**14.5. Environmental hazards**

| | |
| --- | --- |
| ADR / RID: | NO |
| IMDG: | NO |
| IATA: | NO |

**14.6. Special precautions for user**

| | | | |
| --- | --- | --- | --- |
| ADR / RID: | HIN - Kemler: 80 | Limited Quantities: 5 L | Tunnel restriction code: (E) |
| | Special provision: 274 | | |
| IMDG: | EMS: F-A, S-B | Limited Quantities: 5 L | |
| IATA: | Cargo: | Maximum quantity: 60 L | Packaging instructions: 856 |
| | Pass.: | Maximum quantity: 5 L | Packaging instructions: 852 |
| | Special provision: | A3, A803 | |

**14.7. Maritime transport in bulk according to IMO instruments**

Information not relevant

## SECTION 15. Regulatory information

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

Seveso Category - Directive 2012/18/EU: None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

Product

| | |
| --- | --- |
| Point | 3 |

Contained substance

| | |
| --- | --- |
| Point | 75 |

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors

Not applicable

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage ≥ than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

**15.2. Chemical safety assessment**

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

## SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

| | |
| --- | --- |
| **Met. Corr. 1** | Substance or mixture corrosive to metals, category 1 |
| **Acute Tox. 4** | Acute toxicity, category 4 |
| **Skin Corr. 1A** | Skin corrosion, category 1A |
| **Eye Dam. 1** | Serious eye damage, category 1 |
| **STOT SE 3** | Specific target organ toxicity - single exposure, category 3 |
| **Aquatic Acute 1** | Hazardous to the aquatic environment, acute toxicity, category 1 |
| **Aquatic Chronic 1** | Hazardous to the aquatic environment, chronic toxicity, category 1 |
| **H290** | May be corrosive to metals. |
| **H302** | Harmful if swallowed. |
| **H314** | Causes severe skin burns and eye damage. |
| **H318** | Causes serious eye damage. |
| **H335** | May cause respiratory irritation. |
| **H400** | Very toxic to aquatic life. |
| **H410** | Very toxic to aquatic life with long lasting effects. |

**EUH031** Contact with acids liberates toxic gas.

LEGEND:
- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY
1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 2020/878 (II Annex of REACH Regulation)
4. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
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) 2019/521 (XII Atp. CLP)
16. Delegated Regulation (UE) 2018/1480 (XIII Atp. CLP)
17. Regulation (EU) 2019/1148
18. Delegated Regulation (UE) 2020/217 (XIV Atp. CLP)
19. Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)
20. Delegated Regulation (UE) 2021/643 (XVI Atp. CLP)
21. Delegated Regulation (UE) 2021/849 (XVII 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 website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

Note for users:
The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.
This document must not be regarded as a guarantee on any specific product property.
The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.
Provide appointed staff with adequate training on how to use chemical products.
CALCULATION METHODS FOR CLASSIFICATION
Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.
Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.
Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.