

## 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

Product name **ANTIRUGGINE ECOLOGICO**

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

Intended use **Water primer suitable for all ferrous surfaces, protects against corrosion and rust formation. Professional and domestic use.**

Uses advised against **Uses other than those indicated**

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

Name **OIKOS S.P.A. A SOCIO UNICO**  
Full address **Via Cherubini 2**  
District and Country **47043 Gatteo Mare (FC)**  
**Italia**  
Tel. **0547 681412**  
Fax **0547 681430**

e-mail address of the competent person responsible for the Safety Data Sheet **certificazioniprodoti@oikos-group.it**

#### 1.4. Emergency telephone number

For urgent inquiries refer to **NHS National Health Service 111**

**OIKOS S.P.A. a socio unico Company emergency number: 0547 681412**  
**Technical support - Monday to Friday from 8.00-13.00; 13:30 to 16:30**

### SECTION 2. Hazards identification

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

The product is not classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP). However, since the product contains hazardous substances in concentrations such as to be declared in section no. 3, it requires a safety data sheet with appropriate information, compliant to (EU) Regulation 2020/878.

Hazard classification and indication: --

#### 2.2. Label elements

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

Hazard pictograms: --

Signal words: --

Hazard statements:

**EUH210** Safety data sheet available on request.  
**EUH208** Contains: Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1) 1,2-benzisothiazol-3(2H)-one  
May produce an allergic reaction.

Precautionary statements: --

VOC (Directive 2004/42/EC) :  
One - pack performance coatings.

**SECTION 2. Hazards identification** ... / >>

VOC given in g/litre of product in a ready-to-use condition : 95,00  
Limit value: 140,00

**2.3. Other hazards**

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

The product does not contain substances with endocrine disrupting properties in concentration  $\geq$  0.1%.

**SECTION 3. Composition/information on ingredients****3.2. Mixtures**

Contains:

| Identification   | x = Conc. %               | Classification (EC) 1272/2008 (CLP)   |
|--|---------------------------|---|
| <b>TALC</b>  |                           |   |
| INDEX  | $5 \leq x < 7$            | <b>Acute Tox. 4 H332, STOT SE 3 H335</b>  |
| EC   | 238-877-9                 | <b>STA Inhalation mists/powders: 1,5 mg/l</b>   |
| CAS  | 14807-96-6                |   |
| <b>1,2-benzisothiazol-3(2H)-one</b>  |                           |   |
| INDEX  | $0,024 \leq x < 0,03$     | <b>Acute Tox. 2 H330, Acute Tox. 4 H302, Eye Dam. 1 H318, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Acute 1 H400 M=1, Aquatic Chronic 2 H411</b>                                       |
| EC   | 220-120-9                 | <b>Skin Sens. 1 H317: <math>\geq 0,05\%</math></b>  |
| CAS  | 2634-33-5                 | <b>LD50 Oral: &gt;490 mg/kg bw, STA Inhalation mists/powders: 0,051 mg/l, STA Inhalation vapours: 0,501 mg/l</b>  |
| REACH Reg.   | 01-2120761540-60          |   |
| <b>Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)</b> |                           |   |
| INDEX  | $0,00144 \leq x < 0,0015$ | <b>Acute Tox. 1 H330, Acute Tox. 2 H310, Acute Tox. 3 H301, Skin Corr. 1B H314, Eye Dam. 1 H318, Skin Sens. 1 H317, Aquatic Acute 1 H400 M=100, Aquatic Chronic 1 H410 M=100</b>            |
| EC   | 611-341-5                 | <b>Skin Corr. 1C H314: <math>\geq 0,6\%</math>, Skin Irrit. 2 H315: <math>\geq 0,06\%</math>, Skin Sens. 1 H317: <math>\geq 0,0015\%</math>, Eye Irrit. 2 H319: <math>\geq 0,6\%</math></b> |
| CAS  | 55965-84-9                | <b>LD50 Oral: &gt;64 mg/kg bw, STA Dermal: 50,001 mg/kg, STA Inhalation vapours: 0,05 mg/l</b>  |
| REACH Reg.   | 01-2120764691-48          |   |

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

**SECTION 5. Firefighting measures** ... / >>

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**

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

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

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. 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  |
| POL | Polska                      | Rozporządzenie ministra rozwoju, pracy i technologii z dnia 18 lutego 2021 r. Zmieniające rozporządzenie w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy |
| GBR | United Kingdom<br>TLV-ACGIH | EH40/2005 Workplace exposure limits (Fourth Edition 2020)<br>ACGIH 2021   |

#### TALC

##### Threshold Limit Value

| Type      | Country | TWA/8h |     | STEL/15min |     | Remarks / Observations |
|-----------|---------|--------|-----|------------|-----|------------------------|
|           |         | mg/m3  | ppm | mg/m3      | ppm |                        |
| VLA       | ESP     | 2      |     |            |     | RESP                   |
| NDS/NDSch | POL     | 4      |     |            |     | INHAL                  |
| NDS/NDSch | POL     | 1      |     |            |     | RESP                   |
| WEL       | GBR     | 1      |     |            |     | RESP                   |
| TLV-ACGIH |         | 2      |     |            |     | RESP                   |

#### Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)

##### Predicted no-effect concentration - PNEC

|  |      |       |
|--|------|-------|
| Normal value in fresh water            | 3,39 | µg/l  |
| Normal value in marine water           | 3,39 | µg/l  |
| Normal value for fresh water sediment  | 27   | µg/kg |
| Normal value for marine water sediment | 27   | µg/kg |
| Normal value of STP microorganisms     | 230  | µg/l  |

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

| Route of exposure | Effects on consumers |                   |               |                  | Effects on workers |                |               |                  |
|-------------------|----------------------|-------------------|---------------|------------------|--------------------|----------------|---------------|------------------|
|                   | Acute local          | Acute systemic    | Chronic local | Chronic systemic | Acute local        | Acute systemic | Chronic local | Chronic systemic |
| Oral              |                      | 110<br>µg/kg bw/d |               | 90<br>µg/kg bw/d |                    |                |               |                  |
| Inhalation        | 40<br>µg/m3          | NPI               | 20<br>µg/m3   | NPI              | 40<br>µg/m3        | NPI            | 20<br>µg/m3   | NPI              |
| Skin              |                      | NPI               | NPI           | NPI              |                    | NPI            | NPI           | NPI              |

#### 1,2-benzisothiazol-3(2H)-one

##### Predicted no-effect concentration - PNEC

|  |      |       |
|--|------|-------|
| Normal value in fresh water            | 4,03 | µg/l  |
| Normal value in marine water           | 403  | ng/l  |
| Normal value for fresh water sediment  | 49,9 | µg/kg |
| Normal value for marine water sediment | 4,99 | µg/kg |
| Normal value of STP microorganisms     | 1,03 | mg/l  |

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

| Route of exposure | Effects on consumers |                |               |                   | Effects on workers |                |               |                      |
|-------------------|----------------------|----------------|---------------|-------------------|--------------------|----------------|---------------|----------------------|
|                   | Acute local          | Acute systemic | Chronic local | Chronic systemic  | Acute local        | Acute systemic | Chronic local | Chronic systemic     |
| Inhalation        |                      |                |               | 1,2<br>mg/m3      |                    |                |               | 6,81<br>mg/m3        |
| Skin              |                      |                |               | 345<br>µg/kg bw/d |                    |                |               | 966<br>µg/kg<br>bw/d |

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 ; LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

### 8.2. Exposure controls

**SECTION 8. Exposure controls/personal protection ... / >>**

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.

**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 I 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 airtight protective goggles (see standard EN 166).

**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 B 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                             | pasty liquid                      |             |
| Colour                                 | White and the colour chart shades |             |
| Odour                                  | Feeble                            |             |
| Melting point / freezing point         | not available                     |             |
| Initial boiling point                  | > 100 °C                          |             |
| Flammability                           | not flammable                     |             |
| Lower explosive limit                  | not applicable                    |             |
| Upper explosive limit                  | not applicable                    |             |
| Flash point                            | > 60 °C                           |             |
| Auto-ignition temperature              | not applicable                    |             |
| Decomposition temperature              | not available                     |             |
| pH                                     | 8,5-9                             |             |
| Kinematic viscosity                    | not available                     |             |
| Dynamic viscosity                      | 4000 cps                          |             |
| Solubility                             | Mixable in water                  |             |
| Partition coefficient: n-octanol/water | not available                     |             |
| Vapour pressure                        | not available                     |             |
| Density and/or relative density        | 1,25                              |             |
| 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**

VOC (Directive 2004/42/EC) : 1,01 % - 12,66 g/litre

**SECTION 9. Physical and chemical properties** ... / >>

|                       |                |         |
|-----------------------|----------------|---------|
| VOC (volatile carbon) | 0,32 % - 4,04  | g/litre |
| Explosive properties  | not applicable |         |
| Oxidising properties  | not applicable |         |

**SECTION 10. Stability and reactivity****10.1. Reactivity**

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

**10.2. Chemical stability**

The product is 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.

**10.4. Conditions to avoid**

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

**10.5. Incompatible materials**

Information not available

**10.6. Hazardous decomposition products**

Information not available

**SECTION 11. Toxicological information**

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification. It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

**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 - mists / powders) of the mixture: | > 5 mg/l                                  |
| ATE (Oral) of the mixture:                         | Not classified (no significant component) |
| ATE (Dermal) of the mixture:                       | Not classified (no significant component) |

## TALC

STA (Inhalation mists/powders): 1,5 mg/l estimate from table 3.1.2 of Annex I of the CLP  
(figure used for calculation of the acute toxicity estimate of the mixture)

**SECTION 11. Toxicological information ... / >>**

Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one[EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)

LD50 (Dermal): 1008 mg/kg bw (rat)  
 STA (Dermal): 50,001 mg/kg estimate from table 3.1.2 of Annex I of the CLP  
 (figure used for calculation of the acute toxicity estimate of the mixture)

LD50 (Oral): > 64 mg/kg bw 64-561 (rat)  
 LC50 (Inhalation vapours): > 171 mg/m<sup>3</sup> 171-2360 (rat)

1,2-benzisothiazol-3(2H)-one

LD50 (Dermal): 2000 mg/kg bw (rat)  
 LD50 (Oral): > 490 mg/kg bw 490-670 (rat)

SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

RESPIRATORY OR SKIN SENSITISATION

May produce an allergic reaction.

Contains:

Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one[EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)  
 1,2-benzisothiazol-3(2H)-one

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

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

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**

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

**12.1. Toxicity**

Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one[EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)

LC50 - for Fish > 190 µg/l 190-330  
 EC50 - for Crustacea > 7 µg/l 7-160  
 EC50 - for Algae / Aquatic Plants > 6,3 µg/l 6,3-27,3  
 Chronic NOEC for Fish 46,4 µg/l 35 days  
 Chronic NOEC for Crustacea > 111 µg/l 11.1-1050

**SECTION 12. Ecological information** ... / >>

|   |                     |
|---|---------------------|
| 1,2-benzisothiazol-3(2H)-one            |                     |
| LC50 - for Fish                         | > 2,15 mg/l 2,15-22 |
| EC50 - for Crustacea                    | > 2,9 mg/l 2,9-2,94 |
| EC50 - for Algae / Aquatic Plants       | > 70 µg/l 70-150    |
| Chronic NOEC for Algae / Aquatic Plants | > 40,3 µg/l 40-55   |

**12.2. Persistence and degradability**

|                     |            |
|---------------------|------------|
| TALC                |            |
| Solubility in water | < 0,1 mg/l |

Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)  
Rapidly degradable

1,2-benzisothiazol-3(2H)-one  
Rapidly degradable

**12.3. Bioaccumulative potential**

Information not available

**12.4. Mobility in soil**

Information not available

**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  $\geq$  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. Neat product residues should be considered special non-hazardous waste.  
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.  
CONTAMINATED PACKAGING  
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

**SECTION 14. Transport information**

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

**14.1. UN number or ID number**

not applicable

**14.2. UN proper shipping name**

not applicable

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

not applicable





## SECTION 16. Other information ... / &gt;&gt;

|                          |  |
|--------------------------|--|
| <b>Eye Dam. 1</b>        | Serious eye damage, category 1                                     |
| <b>Skin Irrit. 2</b>     | Skin irritation, category 2  |
| <b>STOT SE 3</b>         | Specific target organ toxicity - single exposure, category 3       |
| <b>Skin Sens. 1</b>      | Skin sensitization, category 1                                     |
| <b>Aquatic Acute 1</b>   | Hazardous to the aquatic environment, acute toxicity, category 1   |
| <b>Aquatic Chronic 1</b> | Hazardous to the aquatic environment, chronic toxicity, category 1 |
| <b>Aquatic Chronic 2</b> | Hazardous to the aquatic environment, chronic toxicity, category 2 |
| <b>H330</b>              | Fatal if inhaled.  |
| <b>H310</b>              | Fatal in contact with skin.  |
| <b>H330</b>              | Fatal if inhaled.  |
| <b>H301</b>              | Toxic if swallowed.  |
| <b>H302</b>              | Harmful if swallowed.  |
| <b>H332</b>              | Harmful if inhaled.  |
| <b>H314</b>              | Causes severe skin burns and eye damage.                           |
| <b>H318</b>              | Causes serious eye damage.   |
| <b>H315</b>              | Causes skin irritation.  |
| <b>H335</b>              | May cause respiratory irritation.                                  |
| <b>H317</b>              | May cause an allergic skin reaction.                               |
| <b>H400</b>              | Very toxic to aquatic life.  |
| <b>H410</b>              | Very toxic to aquatic life with long lasting effects.              |
| <b>H411</b>              | Toxic to aquatic life with long lasting effects.                   |
| <b>EUH210</b>            | Safety data sheet available on request.                            |

## 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)

**SECTION 16. Other information** ... / >>

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)
22. Delegated Regulation (UE) 2022/692 (XVIII 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.

**Changes to previous review:**

The following sections were modified:

02 / 03 / 08 / 10 / 11 / 12 / 13 / 15 / 16.