

## Safety Data Sheet

According to Annex II to REACH - Regulation (EU) 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 **Loxeal 83-05**

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

Intended use **Adhesive**

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

Name **LOXEAL S.R.L.**  
Full address **Via Marconato 2**  
District and Country **20811 Cesano Maderno (MB) Italia**  
Tel. **+390362529301**  
Fax **+390362524225**  
e-mail address of the competent person responsible for the Safety Data Sheet **info@loxeal.com**

#### 1.4. Emergency telephone number

For urgent inquiries refer to  
**BELGIUM: 070 245 245**  
**MALTA: Ministry for Health - 2122 4071**  
**IRELAND: 01 809 2566 (24/7) or 01 809 2166 (7 days/week, 8am-10pm)**  
  
**CHEMTREC UK: +(44)-870-8200418**  
**CHEMTREC Ireland: +(353)-19014670**  
**CHEMTREC Australia: +(61)-290372994**  
**CHEMTREC New Zealand: +(64)-98010034**

### 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:

|                                                                    |      |                                                    |
|--------------------------------------------------------------------|------|----------------------------------------------------|
| Serious eye damage, category 1                                     | H318 | Causes serious eye damage.                         |
| Skin irritation, category 2                                        | H315 | Causes skin irritation.                            |
| Specific target organ toxicity - single exposure, category 3       | H335 | May cause respiratory irritation.                  |
| Hazardous to the aquatic environment, chronic toxicity, category 3 | H412 | Harmful to aquatic life with long lasting effects. |

#### 2.2. Label elements

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

Hazard pictograms:



### SECTION 2. Hazards identification ... / >>

Signal words: Danger

Hazard statements:

**H318** Causes serious eye damage.  
**H315** Causes skin irritation.  
**H335** May cause respiratory irritation.  
**H412** Harmful to aquatic life with long lasting effects.

Precautionary statements:

**P273** Avoid release to the environment.  
**P280** Wear protective gloves/ protective clothing / eye protection / face protection.  
**P302+P352** In case of contact with the skin: wash abundantly with soap and water.  
**P305+P351+P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Contains: Acrylic acid

### 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>Acrylic acid</b>              |                  |                                                                                                                                                                                                                                                       |
| INDEX 607-061-00-8               | $3 \leq x < 5$   | Flam. Liq. 3 H226, Acute Tox. 4 H302, Acute Tox. 4 H312, Acute Tox. 4 H332, Skin Corr. 1A H314, Eye Dam. 1 H318, STOT SE 3 H335, Aquatic Acute 1 H400 M=1, Aquatic Chronic 2 H411, Classification note according to Annex VI to the CLP Regulation: D |
| EC 201-177-9                     |                  | STOT SE 3 H335: $\geq 1\%$                                                                                                                                                                                                                            |
| CAS 79-10-7                      |                  | LD50 Oral: 1500 mg/kg, STA Dermal: 1100 mg/kg, STA Inhalation vapours: 11 mg/l                                                                                                                                                                        |
| REACH Reg. 01-2119452449-31      |                  |                                                                                                                                                                                                                                                       |
| <b>ETHANEDIOL</b>                |                  |                                                                                                                                                                                                                                                       |
| INDEX 603-027-00-1               | $0,1 \leq x < 1$ | Acute Tox. 4 H302, STOT RE 2 H373                                                                                                                                                                                                                     |
| EC 203-473-3                     |                  | STA Oral: 500 mg/kg                                                                                                                                                                                                                                   |
| CAS 107-21-1                     |                  |                                                                                                                                                                                                                                                       |
| REACH Reg. 01-2119456816-28-XXXX |                  |                                                                                                                                                                                                                                                       |
| <b>CUMYL HYDROPEROXIDE</b>       |                  |                                                                                                                                                                                                                                                       |
| INDEX 617-002-00-8               | $0,1 \leq x < 1$ | Org. Perox E H242, Acute Tox. 3 H331, Acute Tox. 4 H302, Acute Tox. 4 H312, STOT RE 2 H373, Skin Corr. 1B H314, Eye Dam. 1 H318, STOT SE 3 H335, Aquatic Chronic 2 H411                                                                               |
| EC 201-254-7                     |                  | Skin Corr. 1B H314: $\geq 10\%$ , Skin Irrit. 2 H315: $\geq 3\%$ , Eye Dam. 1 H318: $\geq 3\%$ , Eye Irrit. 2 H319: $\geq 1\%$ , STOT SE 3 H335: $\geq 1\%$                                                                                           |
| CAS 80-15-9                      |                  | LD50 Oral: 382 mg/kg, LD50 Dermal: 1400 mg/kg, STA Inhalation mists/powders: 0,501 mg/l                                                                                                                                                               |
| REACH Reg. 01-2119475796-19-XXXX |                  |                                                                                                                                                                                                                                                       |
| <b>CUMENE</b>                    |                  |                                                                                                                                                                                                                                                       |
| INDEX 601-024-00-X               | $0 \leq x < 0,1$ | Flam. Liq. 3 H226, Carc. 1B H350, Asp. Tox. 1 H304, STOT SE 3 H335, Aquatic Chronic 2 H411                                                                                                                                                            |
| EC 202-704-5                     |                  |                                                                                                                                                                                                                                                       |
| CAS 98-82-8                      |                  |                                                                                                                                                                                                                                                       |
| REACH Reg. 01-2119473983-24-XXXX |                  |                                                                                                                                                                                                                                                       |

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

CUMYL HYDROPEROXIDE  
Specific Conc. Limits H335: C<10%

## SECTION 4. First aid measures

### 4.1. Description of first aid measures

Skin: Wash the skin thoroughly with soap and water. If symptoms arise, request medical assistance

Eyes: Make sure you have removed any contact lenses before rinsing your eyes. Rinse immediately with plenty of water for 15 minutes holding the eyelids open. Consult a doctor if the discomfort continues.

Ingestion: rinse the mouth with water thoroughly. Give plenty of water to drink. Do not cause vomiting. Consult a doctor.

Inhalation: Move the exposed person to fresh air. Consult a doctor in case of serious symptoms or persistent.

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

Contact with the skin: skin irritation. Mild dermatitis, allergic rash.

Contact with eyes: irritating and can cause redness and pain.

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

Note for the doctor no specific recommendation. Symptomatic treatment.

## 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 DUE TO EXPOSURE IN THE EVENT OF FIRE

Avoid breathing combustion products, carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), and nitric oxides (NO<sub>x</sub>).

### 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)

Adhesive

## SECTION 8. Exposure controls/personal protection

### 8.1. Control parameters

Regulatory references:

|     |                 |                                                                                                                                                                                                                                                                                                                                                       |
|-----|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BGR | България        | НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г. ЗА ЗАЩИТА НА РАБОТЕЩИТЕ ОТ РИСКОВЕ, СВЪРЗАНИ С ЕКСПОЗИЦИЯ НА ХИМИЧНИ АГЕНТИ ПРИ РАБОТА (изм. ДВ. бр.5 от 17 Януари 2020г.)                                                                                                                                                                                        |
| CZE | Česká Republika | Nařízení vlády č. 41/2020 Sb. Nařízení vlády, kterým se mění nařízení vlády č. 361/2007 Sb., kterým se stanoví podmínky ochrany zdraví při práci, ve znění pozdějších předpisů                                                                                                                                                                        |
| DEU | Deutschland     | Technischen Regeln für Gefahrstoffe (TRGS 900) - Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte. MAK- und BAT-Werte-Liste 2020, Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe, Mitteilung 56                                                                                                                         |
| DNK | Danmark         | Bekendtgørelse om grænseværdier for stoffer og materialer - BEK nr 1458 af 13/12/2019                                                                                                                                                                                                                                                                 |
| ESP | España          | Límites de exposición profesional para agentes químicos en España 2021                                                                                                                                                                                                                                                                                |
| EST | Eesti           | Ohtlike kemikaalide ja neid sisaldavate materjalide kasutamise tööturvishoiu ja tööohutuse nõuded ning töökeskonna keemiliste ohutegurite piirnormid [RT I, 17.10.2019, 1 - jõust. 17.01.2020]                                                                                                                                                        |
| FRA | France          | Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS                                                                                                                                                                                                                                                            |
| FIN | Suomi           | HTP-VÄRDEN 2020. Koncentrationer som befunnits skadliga. SOCIAL - OCH HÄLSÖVÄRDSMINISTERIETS PUBLIKATIONER 2020:25                                                                                                                                                                                                                                    |
| GRC | Ελλάδα          | Π.Δ. 26/2020 (ΦΕΚ 50/Α' 6.3.2020) Εναρμόνιση της ελληνικής νομοθεσίας προς τις διατάξεις των οδηγιών 2017/2398/ΕΕ, 2019/130/ΕΕ και 2019/983/ΕΕ «για την τροποποίηση της οδηγίας 2004/37/ΕΚ "σχετικά με την προστασία των εργαζομένων από τους κινδύνους που συνδέονται με την έκθεση σε καρκινογόνους ή μεταλλαξιγόνους παράγοντες κατά την εργασία"» |
| HUN | Magyarország    | Az innovációért és technológiáért felelős miniszter 5/2020. (II. 6.) ITM rendelete a kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről                                                                                                                                                                   |
| HRV | Hrvatska        | Pravilnik o izmjenama i dopunama Pravilnika o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 1/2021)                                                                                                                                                        |
| ITA | Italia          | Decreto Legislativo 9 Aprile 2008, n.81                                                                                                                                                                                                                                                                                                               |
| LTU | Lietuva         | Jsakymas dėl lietuvis higienos normos hn 23:2011 „cheminių medžiagų profesinio poveikio ribiniai dydžiai. Matavimo ir poveikio vertinimo bendrieji reikalavimai“ patvirtinimo                                                                                                                                                                         |
| LVA | Latvija         | Grozījumi Ministru kabineta 2007. gada 15. maija noteikumos Nr. 325 "Darba aizsardzības prasības saskarē ar ķīmiskajām vielām darba vietās" (prot. Nr. 32 18. §; prot. Nr. 1 22. §)                                                                                                                                                                   |
| 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                                                                                                             |
| NLD | Nederland       | Arbeidsomstandighedenregeling. Lijst van wettelijke grenswaarden op grond van de artikelen 4.3, eerste lid, en 4.16, eerste lid, van het Arbeidsomstandighedenbesluit                                                                                                                                                                                 |
| PRT | Portugal        | Decreto-Lei n.º 1/2021 de 6 de janeiro, valores-limite de exposição profissional indicativos para os agentes químicos. Decreto-Lei n.º 35/2020 de 13 de julho, proteção dos trabalhadores contra os riscos ligados à exposição durante o trabalho a agentes cancerígenos ou mutagénicos                                                               |
| 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                                                                                                                                   |
| ROU | România         | Hotărârea nr. 53/2021 pentru modificarea hotărârii guvernului nr. 1.218/2006, precum și pentru modificarea și completarea hotărârii guvernului nr. 1.093/2006                                                                                                                                                                                         |
| SWE | Sverige         | Hygieniska gränsvärden, Arbetsmiljöverkets föreskrifter och allmänna råd om hygieniska gränsvärden (AFS 2018:1)                                                                                                                                                                                                                                       |

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

|     |                |                                                                                                                                                                                                                                                                                            |
|-----|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SVK | Slovensko      | NARIADENIE VLÁDY Slovenskej republiky z 12. augusta 2020, ktorým sa mení a dopĺňa nariadenie vlády Slovenskej republiky č. 356/2006 Z. z. o ochrane zdravia zamestnancov pred rizikami súvisiacimi s expozíciou karcinogénnym a mutagénnym faktorom pri práci v znení neskorších predpisov |
| SVN | Slovenija      | Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu (Uradni list RS, št. 100/01, 39/05, 53/07, 102/10, 43/11 – ZVZD-1, 38/15, 78/18 in 78/19)                                                                                                    |
| TUR | Türkiye        | Kimyasal Maddelerle Çalışmalarda Sağlık ve Güvenlik Önlemleri Hakkında Yönetmelik 12.08.2013 / 28733                                                                                                                                                                                       |
| GBR | United Kingdom | EH40/2005 Workplace exposure limits (Fourth Edition 2020)                                                                                                                                                                                                                                  |
| EU  | OEL EU         | Directive (EU) 2022/431; 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 2022                                                                                                                                                                                                                                                                                 |

#### ETHANEDIOL

##### Threshold Limit Value

| Type      | Country | TWA/8h |      | STEL/15min |      | Remarks / Observations |
|-----------|---------|--------|------|------------|------|------------------------|
|           |         | mg/m3  | ppm  | mg/m3      | ppm  |                        |
| TLV       | BGR     | 52     | 20   | 104        | 40   | SKIN                   |
| TLV       | CZE     | 50     | 19,4 | 100        | 38,8 | SKIN                   |
| AGW       | DEU     | 26     | 10   | 52         | 20   | SKIN                   |
| MAK       | DEU     | 26     | 10   | 52         | 20   | SKIN                   |
| TLV       | DNK     | 26     | 10   |            |      | SKIN E                 |
| VLA       | ESP     | 52     | 20   | 104        | 40   | SKIN                   |
| TLV       | EST     | 52     | 20   | 104        | 40   | SKIN                   |
| VLEP      | FRA     | 52     | 20   | 104        | 40   | SKIN                   |
| HTP       | FIN     | 50     | 20   | 100        | 40   | SKIN                   |
| TLV       | GRC     | 125    | 50   | 125        | 50   |                        |
| AK        | HUN     | 52     |      | 104        |      | SKIN                   |
| GVI/KGVI  | HRV     | 52     | 20   | 104        | 40   | SKIN                   |
| VLEP      | ITA     | 52     | 20   | 104        | 40   | SKIN                   |
| RD        | LTU     | 25     | 10   | 50         | 20   | SKIN                   |
| RV        | LVA     | 52     | 20   | 104        | 40   | SKIN                   |
| TLV       | NOR     | 52     | 20   |            |      | SKIN                   |
| TGG       | NLD     | 52     |      | 104        |      | SKIN damp              |
| VLE       | PRT     | 52     | 20   | 104        | 40   | SKIN                   |
| NDS/NDSch | POL     | 15     |      | 50         |      | SKIN                   |
| TLV       | ROU     | 52     | 20   | 104        | 40   | SKIN                   |
| NGV/KGV   | SWE     | 25     | 10   | 104        | 40   | SKIN                   |
| NPEL      | SVK     | 52     | 20   | 104        | 40   | SKIN                   |
| MV        | SVN     | 52     | 20   | 104        | 40   | SKIN                   |
| ESD       | TUR     | 52     | 20   | 104        | 40   | SKIN                   |
| WEL       | GBR     | 52     | 20   | 104        | 40   | SKIN                   |
| OEL       | EU      | 52     | 20   | 104        | 40   | SKIN                   |
| TLV-ACGIH |         |        | 25   |            | 50   |                        |
| TLV-ACGIH |         |        |      | 10         |      | INHAL                  |

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

| Route of exposure | Effects on consumers |                | Chronic local | Chronic systemic | Effects on workers |                |                |                  |
|-------------------|----------------------|----------------|---------------|------------------|--------------------|----------------|----------------|------------------|
|                   | Acute local          | Acute systemic |               |                  | Acute local        | Acute systemic | Chronic local  | Chronic systemic |
| Inhalation        |                      |                | 7 mg/m3       |                  |                    |                | 35 mg/m3       |                  |
| Skin              |                      |                |               | 53 mg/kg bw/d    |                    |                | 106 mg/kg bw/d | 106 mg/kg bw/d   |

**SECTION 8. Exposure controls/personal protection ... / >>**
**Acrylic acid**
**Threshold Limit Value**

| Type      | Country | TWA/8h |       | STEL/15min |        | Remarks / Observations |                |
|-----------|---------|--------|-------|------------|--------|------------------------|----------------|
|           |         | mg/m3  | ppm   | mg/m3      | ppm    |                        |                |
| TLV       | BGR     | 29     | 10    | 59         | 20     |                        | STEL: 1'       |
| TLV       | CZE     | 29     | 9,686 | 59         | 19,706 |                        | NPK-P= 1 min   |
| AGW       | DEU     | 30     | 10    | 30 (C)     | 10 (C) |                        |                |
| MAK       | DEU     | 30     | 10    | 30         | 10     |                        |                |
| TLV       | DNK     |        |       | 5,9        | 2      | SKIN                   | E              |
| TLV       | EST     | 29     | 10    | 45         | 15     |                        |                |
| VLEP      | FRA     | 29     | 10    | 59         | 20     |                        |                |
| HTP       | FIN     | 6      | 2     | 45 (C)     | 15 (C) |                        |                |
| TLV       | GRC     | 29     | 10    | 59         | 20     |                        | STEL: 1'       |
| AK        | HUN     | 29     |       | 59         |        |                        | CK: 1 min      |
| GVI/KGVI  | HRV     | 29     | 10    | 59         | 20     |                        | KGVI: 1 min    |
| VLEP      | ITA     | 29     | 10    | 59         | 20     | SKIN                   | STEL: 1 min    |
| RD        | LTU     | 29     | 10    | 59 (C)     | 20 (C) |                        |                |
| RV        | LVA     | 5      | 1,7   | 59         | 20     |                        | STEL: 1min     |
| TLV       | NOR     | 29     | 10    | 59         | 20     |                        |                |
| TGG       | NLD     | 29     |       | 59         |        |                        | TGG: 1 min     |
| VLE       | PRT     | 29     | 10    | 59         | 20     |                        | STEL: 1 min    |
| NDS/NDSch | POL     | 10     |       | 29,5       |        | SKIN                   |                |
| TLV       | ROU     | 29     | 10    | 59         | 20     |                        | STEL: 1'       |
| NPEL      | SVK     | 29     | 10    | 59         | 20     |                        | NPEL: 1'       |
| WEL       | GBR     | 29     | 10    | 59         | 20     |                        | STEL: 1-minute |
| OEL       | EU      | 29     | 10    | 59         | 20     |                        | STEL: 1'       |
| TLV-ACGIH |         | 6      | 2     |            |        | SKIN                   |                |

**Predicted no-effect concentration - PNEC**

|                                              |         |       |
|----------------------------------------------|---------|-------|
| Normal value in fresh water                  | 0,003   | mg/l  |
| Normal value in marine water                 | 0,0003  | mg/l  |
| Normal value for fresh water sediment        | 0,0236  | mg/kg |
| Normal value for marine water sediment       | 0,00236 | mg/kg |
| Normal value of STP microorganisms           | 0,9     | mg/l  |
| Normal value for the terrestrial compartment | 1       | mg/kg |

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

| Route of exposure | Effects on consumers |          |         |          | Effects on workers |          |         |          |
|-------------------|----------------------|----------|---------|----------|--------------------|----------|---------|----------|
|                   | Acute                | Acute    | Chronic | Chronic  | Acute              | Acute    | Chronic | Chronic  |
|                   | local                | systemic | local   | systemic | local              | systemic | local   | systemic |
| Inhalation        |                      |          |         |          | 30                 |          | 30      |          |
|                   |                      |          |         |          | mg/m3              |          | mg/m3   |          |
| Skin              |                      |          |         |          | 1                  |          | 1       |          |
|                   |                      |          |         |          | mg/cm2             |          | mg/cm2  |          |

**CUMYL HYDROPEROXIDE**
**Predicted no-effect concentration - PNEC**

|                                              |         |       |
|----------------------------------------------|---------|-------|
| Normal value in fresh water                  | 0,0031  | mg/l  |
| Normal value in marine water                 | 0,00031 | mg/l  |
| Normal value for fresh water sediment        | 0,023   | mg/kg |
| Normal value for marine water sediment       | 0,0023  | mg/kg |
| Normal value for water, intermittent release | 0,031   | mg/l  |
| Normal value of STP microorganisms           | 0,35    | mg/l  |
| Normal value for the terrestrial compartment | 0,0029  | mg/kg |

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

| Route of exposure | Effects on consumers |          |         |          | Effects on workers |          |         |          |
|-------------------|----------------------|----------|---------|----------|--------------------|----------|---------|----------|
|                   | Acute                | Acute    | Chronic | Chronic  | Acute              | Acute    | Chronic | Chronic  |
|                   | local                | systemic | local   | systemic | local              | systemic | local   | systemic |
| Inhalation        |                      |          |         |          |                    |          |         | 6        |
|                   |                      |          |         |          |                    |          |         | mg/m3    |

**SECTION 8. Exposure controls/personal protection ... / >>**
**CUMENE**
**Threshold Limit Value**

| Type      | Country | TWA/8h |     | STEL/15min |     | Remarks / Observations |
|-----------|---------|--------|-----|------------|-----|------------------------|
|           |         | mg/m3  | ppm | mg/m3      | ppm |                        |
| TLV       | BGR     | 100    | 20  | 250        | 50  | SKIN                   |
| TLV       | CZE     | 100    | 20  | 250        | 50  | SKIN                   |
| AGW       | DEU     | 50     | 10  | 200        | 40  | SKIN                   |
| TLV       | DNK     | 100    | 20  |            |     | SKIN E                 |
| VLA       | ESP     | 50     | 10  | 250        | 50  | SKIN                   |
| TLV       | EST     | 100    | 20  | 250        | 50  | SKIN                   |
| VLEP      | FRA     | 100    | 20  | 250        | 50  | SKIN                   |
| HTP       | FIN     | 50     | 10  | 250        | 50  | SKIN                   |
| TLV       | GRC     | 245    | 50  | 370        | 75  |                        |
| AK        | HUN     | 50     |     | 250        |     | SKIN                   |
| GVI/KGVI  | HRV     | 50     | 10  | 250        | 50  | SKIN                   |
| VLEP      | ITA     | 100    | 20  | 250        | 50  | SKIN                   |
| RD        | LTU     | 50     | 10  | 170        | 35  | SKIN                   |
| RV        | LVA     | 100    | 20  | 250        | 50  | SKIN                   |
| TLV       | NOR     | 100    | 20  | 250        | 50  | SKIN                   |
| TGG       | NLD     | 100    |     | 250        |     | SKIN                   |
| VLE       | PRT     | 50     | 10  | 250        | 50  | INHAL                  |
| VLE       | PRT     | 50     | 10  | 250        | 50  | SKIN                   |
| NDS/NDSch | POL     | 50     |     | 250        |     | SKIN                   |
| TLV       | ROU     | 50     | 10  | 250        | 50  | SKIN                   |
| NGV/KGV   | SWE     | 50     | 10  | 250        | 50  | SKIN                   |
| NPEL      | SVK     | 50     | 10  | 250        | 50  | SKIN                   |
| MV        | SVN     | 100    | 20  | 250        | 50  | SKIN                   |
| ESD       | TUR     | 100    | 20  | 250        | 50  | SKIN                   |
| WEL       | GBR     | 125    | 25  | 250        | 50  | SKIN                   |
| OEL       | EU      | 50     | 10  | 250        | 50  | SKIN                   |
| TLV-ACGIH |         |        | 5   |            |     |                        |

**Predicted no-effect concentration - PNEC**

|                                              |       |         |
|----------------------------------------------|-------|---------|
| Normal value in fresh water                  | 0,035 | mg/l    |
| Normal value in marine water                 | 0,004 | mg/l    |
| Normal value for fresh water sediment        | 3,22  | mg/kg/d |
| Normal value for marine water sediment       | 0,322 | mg/kg/d |
| Normal value of STP microorganisms           | 200   | mg/l    |
| Normal value for the terrestrial compartment | 0,624 | mg/kg/d |

**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              |                      |                |               | 5<br>mg/kg bw/d   |                    |                |               |                       |
| Inhalation        |                      |                |               | 16,6<br>mg/m3     |                    |                | 250<br>mg/m3  | 100<br>mg/m3          |
| Skin              |                      |                |               | 1,2<br>mg/kg bw/d |                    |                |               | 15,4<br>mg/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**

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.

The following should be considered when choosing work glove material (see standard EN 374): 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**



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

Wear category II 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 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.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

## SECTION 9. Physical and chemical properties

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

| Properties                             | Value          | Information                                                          |
|----------------------------------------|----------------|----------------------------------------------------------------------|
| Appearance                             | liquid         |                                                                      |
| Colour                                 | green          |                                                                      |
| Odour                                  | characteristic |                                                                      |
| 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                            | > 100 °C       |                                                                      |
| Auto-ignition temperature              | not available  |                                                                      |
| Decomposition temperature              | not available  |                                                                      |
| pH                                     | not available  | Reason for missing data: substance/mixture is non-soluble (in water) |
| Kinematic viscosity                    | not available  |                                                                      |
| Dynamic viscosity                      | ~750 mPa.s     | Temperature: 25 °C                                                   |
| Solubility                             | not available  |                                                                      |
| Partition coefficient: n-octanol/water | not available  |                                                                      |
| Vapour pressure                        | not available  |                                                                      |
| Density and/or relative density        | 1,1            |                                                                      |
| 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.

#### ETHANEDIOL

In the air absorbs moisture. Decomposes at temperatures above 200°C/392°F.

#### Acrylic acid

Keep away from: oxidising agents. Maintaining a temperature of less than 13°C/55°F. May polymerise if exposed to: heat.



**SECTION 10. Stability and reactivity** ... / >>**10.2. Chemical stability**

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

**10.3. Possibility of hazardous reactions**

The vapours may also form explosive mixtures with the air.

**ETHANEDIOL**

Risk of explosion on contact with: perchloric acid. May react dangerously with: chlorosulphuric acid, sodium hydroxide, sulphuric acid, phosphorus pentasulphide, chromium (III) oxide, chromyl chloride, potassium perchlorate, potassium dichromate, sodium peroxide, aluminium. Forms explosive mixtures with: air.

**Acrylic acid**

Risk of explosion on contact with: oxidising agents, oxygen, peroxides. May polymerise on contact with: alkaline hydroxides, amines, ammonia, sulphuric acid. Forms explosive mixtures with: hot air.

**10.4. Conditions to avoid**

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

**ETHANEDIOL**

Avoid exposure to: sources of heat, naked flames.

**Acrylic acid**

Avoid exposure to: light, sources of heat, naked flames. Avoid contact with: oxygen.

**10.5. Incompatible materials****Acrylic acid**

Incompatible with: peroxides, oxidising substances, strong acids, strong bases, amines, iron salts, oleum, chlorosulphuric acid.

**10.6. Hazardous decomposition products**

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.

**ETHANEDIOL**

May develop: hydroxyacetaldehyde, glyoxal, acetaldehyde, methane, carbon monoxide, hydrogen.

**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**ETHANEDIOL**

WORKERS: inhalation; contact with the skin.

POPULATION: inhalation of ambient air; contact with the skin of products containing the substance.

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

Ingestion initially stimulates the central nervous system; later replaced by a phase of depression. There may be kidney damage, with anuria and uremia. Over-exposure symptoms are: vomiting, drowsiness, difficulty in breathing, convulsions. The lethal dose for humans is approx. 1.4 ml/kg.

Interactive effects

Information not available

ACUTE TOXICITY

|                                                    |             |
|----------------------------------------------------|-------------|
| ATE (Inhalation - mists / powders) of the mixture: | > 5 mg/l    |
| ATE (Inhalation - vapours) of the mixture:         | > 20 mg/l   |
| ATE (Oral) of the mixture:                         | >2000 mg/kg |
| ATE (Dermal) of the mixture:                       | >2000 mg/kg |

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

|                                  |                                                                                                                                           |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| ETHANEDIOL                       |                                                                                                                                           |
| LD50 (Dermal):                   | 9530 mg/kg Rabbit                                                                                                                         |
| LD50 (Oral):                     | > 2000 mg/kg Rat                                                                                                                          |
| Acrylic acid                     |                                                                                                                                           |
| LD50 (Dermal):                   | > 2000 mg/kg Rabbit                                                                                                                       |
| STA (Dermal):                    | 1100 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) |
| LD50 (Oral):                     | 1500 mg/kg Rat                                                                                                                            |
| LC50 (Inhalation vapours):       | > 5,1 mg/l/4h Rat                                                                                                                         |
| STA (Inhalation vapours):        | 11 mg/l 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)    |
| CUMYL HYDROPEROXIDE              |                                                                                                                                           |
| LD50 (Dermal):                   | 1400 mg/kg                                                                                                                                |
| LD50 (Oral):                     | 382 mg/kg                                                                                                                                 |
| LC50 (Inhalation mists/powders): | 1,37 mg/l/4h                                                                                                                              |
| STA (Inhalation mists/powders):  | 0,501 mg/l 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) |
| CUMENE                           |                                                                                                                                           |
| LD50 (Dermal):                   | > 3160 mg/kg Rabbit                                                                                                                       |
| LD50 (Oral):                     | 1400 mg/kg Rat                                                                                                                            |
| LC50 (Inhalation vapours):       | > 17,6 mg/l/6h Rat                                                                                                                        |

SKIN CORROSION / IRRITATION

Causes skin irritation

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

ETHANEDIOL  
Available studies have shown no carcinogenic potential. In a carcinogenicity study lasting two years, carried out by the US National Toxicology Program (NTP), in which ethylene glycol was administered in the feed, "no evidence of carcinogenic activity" in male and female B6C3F1 mice was observed (NTP, 1993).

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

May cause respiratory irritation

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

This product is dangerous for the environment and the aquatic organisms. In the long term, it have negative effects on aquatic environment.

### 12.1. Toxicity

|                                   |                                              |
|-----------------------------------|----------------------------------------------|
| Acrylic acid                      |                                              |
| LC50 - for Fish                   | 315 mg/l/96h <i>Leuciscus idus melanotus</i> |
| EC50 - for Crustacea              | 765 mg/l/48h <i>Daphnia magna</i>            |
| EC50 - for Algae / Aquatic Plants | 118 mg/l/72h <i>Chlorococcales</i>           |

|                                         |                |
|-----------------------------------------|----------------|
| CUMYL HYDROPEROXIDE                     |                |
| LC50 - for Fish                         | 3,9 mg/l/96h   |
| EC50 - for Crustacea                    | 18,84 mg/l/48h |
| EC50 - for Algae / Aquatic Plants       | 3,1 mg/l/72h   |
| Chronic NOEC for Crustacea              | 9,15 mg/l      |
| Chronic NOEC for Algae / Aquatic Plants | 1 mg/l         |

### 12.2. Persistence and degradability

|                     |                   |
|---------------------|-------------------|
| ETHANEDIOL          |                   |
| Solubility in water | 1000 - 10000 mg/l |
| Rapidly degradable  |                   |

|                     |              |
|---------------------|--------------|
| Acrylic acid        |              |
| Solubility in water | 1000000 mg/l |
| Rapidly degradable  |              |

|                        |  |
|------------------------|--|
| CUMYL HYDROPEROXIDE    |  |
| NOT rapidly degradable |  |

|                     |                |
|---------------------|----------------|
| CUMENE              |                |
| Solubility in water | 0,1 - 100 mg/l |
| Rapidly degradable  |                |

### 12.3. Bioaccumulative potential

|                                        |       |
|----------------------------------------|-------|
| ETHANEDIOL                             |       |
| Partition coefficient: n-octanol/water | -1,36 |

|                                        |       |
|----------------------------------------|-------|
| Acrylic acid                           |       |
| Partition coefficient: n-octanol/water | 0,46  |
| BCF                                    | 0,491 |

|                                        |       |
|----------------------------------------|-------|
| CUMENE                                 |       |
| Partition coefficient: n-octanol/water | 3,55  |
| BCF                                    | 94,69 |

### 12.4. Mobility in soil

|                                   |      |
|-----------------------------------|------|
| Acrylic acid                      |      |
| Partition coefficient: soil/water | 0,78 |

|                                   |       |
|-----------------------------------|-------|
| CUMENE                            |       |
| Partition coefficient: soil/water | 2,946 |

### 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.

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

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

08 04 09\* stickers and sealed sealing, containing organic solvents or other dangerous substances

**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

**14.4. Packing group**

not applicable

**14.5. Environmental hazards**

not applicable

**14.6. Special precautions for user**

not applicable

**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

ProductPoint 3 - 40Contained substancePoint 75

## SECTION 15. Regulatory information ... / >>

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  $\geq$  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.

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)

WGK 1: Low hazard to waters

### 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:

|                          |                                                                    |
|--------------------------|--------------------------------------------------------------------|
| <b>Flam. Liq. 3</b>      | Flammable liquid, category 3                                       |
| <b>Org. Perox E</b>      | Organic peroxide, type E                                           |
| <b>Carc. 1B</b>          | Carcinogenicity, category 1B                                       |
| <b>Acute Tox. 3</b>      | Acute toxicity, category 3                                         |
| <b>Acute Tox. 4</b>      | Acute toxicity, category 4                                         |
| <b>Asp. Tox. 1</b>       | Aspiration hazard, category 1                                      |
| <b>STOT RE 2</b>         | Specific target organ toxicity - repeated exposure, category 2     |
| <b>Skin Corr. 1A</b>     | Skin corrosion, category 1A                                        |
| <b>Skin Corr. 1B</b>     | Skin corrosion, category 1B                                        |
| <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>Aquatic Acute 1</b>   | Hazardous to the aquatic environment, acute toxicity, category 1   |
| <b>Aquatic Chronic 2</b> | Hazardous to the aquatic environment, chronic toxicity, category 2 |
| <b>Aquatic Chronic 3</b> | Hazardous to the aquatic environment, chronic toxicity, category 3 |
| <b>H226</b>              | Flammable liquid and vapour.                                       |
| <b>H242</b>              | Heating may cause a fire.                                          |
| <b>H350</b>              | May cause cancer.                                                  |
| <b>H331</b>              | Toxic if inhaled.                                                  |
| <b>H302</b>              | Harmful if swallowed.                                              |
| <b>H312</b>              | Harmful in contact with skin.                                      |
| <b>H332</b>              | Harmful if inhaled.                                                |
| <b>H304</b>              | May be fatal if swallowed and enters airways.                      |
| <b>H373</b>              | May cause damage to organs through prolonged or repeated exposure. |
| <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>H400</b>              | Very toxic to aquatic life.                                        |
| <b>H411</b>              | Toxic to aquatic life with long lasting effects.                   |
| <b>H412</b>              | Harmful to aquatic life with long lasting effects.                 |

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate

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

- 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)
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

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

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:

03 / 08 / 16.