

# 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

Code: **0720063**  
Product name: **MIKROSANA**  
UFI: **1K81-80Q4-K00A-M8RM**

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

Intended use: **Mixture of colloidal calcium and active silica for consolidating injections**

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

Name: **AZICHEM SRL**  
Full address: **Via G. Gentile 16/A**  
District and Country: **46044 Goito (Mantova) Italia**  
Tel.: **0376604185**  
e-mail address of the competent person responsible for the Safety Data Sheet: **laboratorio@azichem.com**

### 1.4. Emergency telephone number

For urgent inquiries refer to:  
**Osp. Pediatrico Bambino Gesù ROMA: 06 68593726**  
**Az. Osp. Univ. Foggia FOGGIA: 800183459**  
**Az. Osp. "A. Cardarelli" NAPOLI: 081-5453333**  
**Policlinico "Umberto I" ROMA: 06-49978000**  
**Policlinico "A. Gemelli" ROMA: 06-3054343**  
**Az. Osp. "Careggi" U.O. Tossicologia Medica FIRENZE: 055-7947819**  
**Centro Nazionale di Informazione Tossicologica PAVIA: 0382-24444**  
**Osp. Niguarda Ca' Granda MILANO: 02-66101029**  
**Azienda Ospedaliera Papa Giovanni XXII BERGAMO: 800883300**  
**Azienda Ospedaliera Integrata VERONA: 800011858**

## 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:

|                                                              |      |                                          |
|--------------------------------------------------------------|------|------------------------------------------|
| Skin corrosion, category 1                                   | H314 | Causes severe skin burns and eye damage. |
| Serious eye damage, category 1                               | H318 | Causes serious eye damage.               |
| Specific target organ toxicity - single exposure, category 3 | H335 | May cause respiratory irritation.        |
| Skin sensitization, category 1                               | H317 | May cause an allergic skin reaction.     |

### 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:

**H314** Causes severe skin burns and eye damage.  
**H335** May cause respiratory irritation.  
**H317** May cause an allergic skin reaction.

Precautionary statements:

**P260** Do not breathe dust / fume / gas / mist / vapours / spray.  
**P305+P351+P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
**P303+P361+P353** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].  
**P280** Wear protective gloves/ protective clothing / eye protection / face protection.  
**P310** Immediately call a POISON CENTER / doctor / . . .  
**P264** Wash . . . thoroughly after handling.

**Contains:** PORTLAND CEMENT CLINKER  
HYDR.CA LIME NHL 3.5  
FLUE DUST, PORTLAND CEMENT  
PORTLAND CEMENT CLINKER

### 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>HYDR.CA LIME NHL 3.5</b>       |                    |                                                                         |
| INDEX                             | $20 \leq x < 21,5$ | Eye Dam. 1 H318, Skin Irrit. 2 H315, STOT SE 3 H335                     |
| EC 285-561-1                      |                    |                                                                         |
| CAS 85117-09-5                    |                    |                                                                         |
| REACH Reg. 01-2119475523-36-xxxx  |                    |                                                                         |
| <b>QUARTZ (granular)</b>          |                    |                                                                         |
| INDEX                             | $10,5 \leq x < 12$ | Substance with a community workplace exposure limit.                    |
| EC 238-878-4                      |                    |                                                                         |
| CAS 14808-60-7                    |                    |                                                                         |
| <b>PORTLAND CEMENT CLINKER</b>    |                    |                                                                         |
| INDEX                             | $10 \leq x < 11,5$ | Eye Dam. 1 H318, Skin Irrit. 2 H315, STOT SE 3 H335, Skin Sens. 1B H317 |
| EC 266-043-4                      |                    |                                                                         |
| CAS 65997-15-1                    |                    |                                                                         |
| <b>FLUE DUST, PORTLAND CEMENT</b> |                    |                                                                         |
| INDEX                             | $2 \leq x < 2,5$   | Eye Dam. 1 H318, Skin Irrit. 2 H315, STOT SE 3 H335, Skin Sens. 1 H317  |
| EC 270-659-9                      |                    |                                                                         |
| CAS 68475-76-3                    |                    |                                                                         |
| REACH Reg. 01-2119486767-17-xxxx  |                    |                                                                         |
| <b>PORTLAND CEMENT CLINKER</b>    |                    |                                                                         |
| INDEX                             | $1 \leq x < 1,5$   | Eye Dam. 1 H318, Skin Irrit. 2 H315, STOT SE 3 H335, Skin Sens. 1B H317 |
| EC 266-043-4                      |                    |                                                                         |
| CAS 65997-15-1                    |                    |                                                                         |
| <b>CALCIUM OXIDE</b>              |                    |                                                                         |
| INDEX                             | $0 \leq x < 0,05$  | Eye Dam. 1 H318, Skin Irrit. 2 H315, STOT SE 3 H335                     |
| EC 215-138-9                      |                    |                                                                         |
| CAS 1305-78-8                     |                    |                                                                         |
| REACH Reg. 01-2119475325-36-XXXX  |                    |                                                                         |

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

PORTLAND CEMENT CLINKER

**SECTION 3. Composition/information on ingredients ... / >>**

- (\*) The level of water-soluble chromium VI, determined according to the EN 196-10 standard, is less than 0.0002% of the total dry weight of the cement ready for use, a limit imposed by restriction no. 47 - Annex XVII of the REACH Reg.
- (\*\*) Cement clinker is a substance exempted from the registration obligation based on art. 2.7 (b) and Annex V.10 of the REACH Regulation.

**PORTLAND CEMENT CLINKER**

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**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 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

**SKIN:** Remove contaminated clothing. Rinse skin with a shower immediately. Wash contaminated clothing before using it again.

**INHALATION:** Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.

**INGESTION:** Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

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

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

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

Information not available

**SECTION 5. Firefighting measures****5.1. Extinguishing media****SUITABLE EXTINGUISHING EQUIPMENT**

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

**UNSUITABLE EXTINGUISHING EQUIPMENT**

None in particular.

**5.2. Special hazards arising from the substance or mixture****HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE**

Do not breathe combustion products. The product is combustible and, when the powder is released into the air in sufficient concentrations and in the presence of a source of ignition, it can create explosive mixtures with air. Fires may start or get worse by leakage of the solid product from the container, when it reaches high temperatures or through contact with sources of ignition.

**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**

If there are no contraindications, spray powder with water to prevent the formation of dust.

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.

## SECTION 6. Accidental release measures ... / >>

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

Collect the leaked product and place it in containers for recovery or disposal. If there are no contraindications, use jets of water to eliminate product residues.  
Make sure the leakage site is well aired. Evaluate the compatibility of the container to be used, by checking section 10. 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.

#### PORTLAND CEMENT CLINKER

Cement and cement-containing mixtures must be stored in impervious, dry (e.g. with minimal internal condensation), clean and protected from contamination conditions.

Risk of burial: Cement can thicken or stick to the walls of the confined space in which it is stored. Concrete can cave in, collapse or fall unexpectedly.

To prevent burial or suffocation, do not enter confined spaces, such as silos, containers, bulk trucks, or other storage containers or containers that store or contain cement or cement-containing mixtures without taking appropriate safety measures.

Store the mixture away from acids, in special closed containers (storage silos and bags), in a cool, dry place without ventilation and avoid, in any case, the dispersion of dust.

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### 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 2023                                                                                                                                                                                                                  |
| FRA | France   | Valeurs limites d'exposition professionnelle aux agents chimiques en France Décret n° 2021-1849 du 28 décembre 2021                                                                                                                                                                     |
| ITA | Italia   | Decreto Legislativo 9 Aprile 2008, n.81                                                                                                                                                                                                                                                 |
| 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                                                                                                                           |
| 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          |

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

TLV-ACGIH 91/322/EEC.  
ACGIH 2023

### PORTLAND CEMENT CLINKER

#### Threshold Limit Value

| Type      | Country | TWA/8h    | STEL/15min | Remarks / Observations |
|-----------|---------|-----------|------------|------------------------|
|           |         | mg/m3 ppm | mg/m3 ppm  |                        |
| TLV-ACGIH |         | 1         |            | RESP NOTA e            |

### QUARTZ (granular)

#### Threshold Limit Value

| Type      | Country | TWA/8h    | STEL/15min | Remarks / Observations |
|-----------|---------|-----------|------------|------------------------|
|           |         | mg/m3 ppm | mg/m3 ppm  |                        |
| VLA       | ESP     |           | 0,05       | RESP                   |
| VLEP      | FRA     | 0,1       |            | RESP                   |
| VLEP      | ITA     | 0,1       |            | RESP                   |
| VLE       | PRT     | 0,025     |            | RESP                   |
| NDS/NDSch | POL     | 0,1       |            | RESP                   |
| TLV       | ROU     | 0,1       |            | RESP                   |
| OEL       | EU      | 0,1       |            | RESP                   |
| TLV-ACGIH |         | 0,025     |            | RESP                   |

### HYDR.CA LIME NHL 3.5

#### Threshold Limit Value

| Type | Country | TWA/8h    | STEL/15min | Remarks / Observations |
|------|---------|-----------|------------|------------------------|
|      |         | mg/m3 ppm | mg/m3 ppm  |                        |
| OEL  | EU      | 1         | 4          | RESP                   |

#### Predicted no-effect concentration - PNEC

|                                              |        |       |
|----------------------------------------------|--------|-------|
| Normal value in fresh water                  | 0,574  | mg/l  |
| Normal value in marine water                 | 374    | mg/l  |
| Normal value for fresh water sediment        | VND    |       |
| Normal value for marine water sediment       | VND    |       |
| Normal value of STP microorganisms           | 3,511  | mg/l  |
| Normal value for the terrestrial compartment | 1262,3 | mg/kg |

#### 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              |                      | NPI            |               | NPI              |                    | NPI            |               | NPI              |
| Inhalation        | 4                    | NPI            | 1             | NPI              | 4                  | NPI            | 1             | NPI              |
|                   | mg/m3                |                | mg/m3         |                  | mg/m3              |                | mg/m3         |                  |
| Skin              | LOW                  | NPI            | LOW           | NPI              | LOW                | NPI            | LOW           | LOW              |

### CALCIUM OXIDE

#### Threshold Limit Value

| Type      | Country | TWA/8h    | STEL/15min | Remarks / Observations |
|-----------|---------|-----------|------------|------------------------|
|           |         | mg/m3 ppm | mg/m3 ppm  |                        |
| VLEP      | ITA     | 1         | 4          | RESP                   |
| OEL       | EU      | 1         | 4          | RESP                   |
| TLV-ACGIH |         | 2         |            |                        |

#### Predicted no-effect concentration - PNEC

|                                              |       |         |
|----------------------------------------------|-------|---------|
| Normal value in fresh water                  | 0,37  | mg/l    |
| Normal value in marine water                 | 0,24  | mg/l    |
| Normal value of STP microorganisms           | 2,27  | mg/l    |
| Normal value for the terrestrial compartment | 817,4 | 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 |
| Inhalation        | 4                    |                | 1             |                  | 4                  |                | 1             |                  |
|                   | mg/m3                |                | mg/m3         |                  | mg/m3              |                | mg/m3         |                  |
| Skin              | LOW                  |                | LOW           |                  | LOW                |                | LOW           |                  |

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

### PORTLAND CEMENT CLINKER

#### Threshold Limit Value

| Type      | Country | TWA/8h | STEL/15min | Remarks / Observations |
|-----------|---------|--------|------------|------------------------|
|           |         | mg/m3  | ppm        |                        |
| TLV-ACGIH |         | 1      |            | RESP                   |

NOTA e

### FLUE DUST, PORTLAND CEMENT

#### Predicted no-effect concentration - PNEC

|                                              |       |         |
|----------------------------------------------|-------|---------|
| Normal value in fresh water                  | 282   | µg/L    |
| Normal value in marine water                 | 28    | µg/L    |
| Normal value for fresh water sediment        | 0,875 | mg/kg/d |
| Normal value for marine water sediment       | 0,088 | mg/kg/d |
| Normal value of STP microorganisms           | 6     | mg/l    |
| Normal value for the terrestrial compartment | 5     | mg/kg/d |

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

| Route of exposure | Effects on consumers |          | Effects on workers |          |             |          |         |
|-------------------|----------------------|----------|--------------------|----------|-------------|----------|---------|
|                   | Acute                | Acute    | Chronic            | Chronic  | Acute local | Acute    | Chronic |
|                   | local                | systemic | local              | systemic |             | systemic | local   |
| Inhalation        | 4                    |          | 0,84               |          | 4           |          | 0,84    |
|                   | mg/m3                |          | mg/m3              |          | mg/m3       |          | mg/m3   |
| Skin              | LOW                  | LOW      | LOW                | LOW      | LOW         | LOW      | LOW     |

#### 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.

During the risk assessment process, it is essential to take into consideration the ACGIH occupational exposure levels for particulate not otherwise classified (PNOC respirable fraction: 3 mg/m3; PNOC inhalable fraction: 10 mg/m3). For values above these limits, use a P type filter, whose class (1, 2 or 3) must be chosen according to the outcome of risk assessment. The above values are not TLVs, but guide values, to be used for particles that do not have their own TLV and that are insoluble or poorly soluble in water and have low toxicity.

## 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

In the case of prolonged contact with the product, protect the hands with penetration-resistant work gloves (see standard EN 374).

Work glove material must be chosen according to the use process and the products that may form. Latex gloves may cause sensitivity reactions.

#### SKIN PROTECTION

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

#### EYE PROTECTION

Wear a hood visor or protective visor combined with airtight goggles (see standard EN ISO 16321).

#### RESPIRATORY PROTECTION

Use a type P filtering facemask, whose class (1, 2 or 3) and effective need, must be defined according to the outcome of risk assessment (see standard EN 149).

#### 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                     | powder        |             |
| Colour                         | beige         |             |
| Odour                          | not available |             |
| Melting point / freezing point | not available |             |
| Initial boiling point          | not available |             |
| Flammability                   | not available |             |

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

|                                        |               |       |
|----------------------------------------|---------------|-------|
| Lower explosive limit                  | not available |       |
| Upper explosive limit                  | not available |       |
| Flash point                            | not available |       |
| Auto-ignition temperature              | not available |       |
| Decomposition temperature              | not available |       |
| pH                                     | 12 - 13       |       |
| Kinematic viscosity                    | not available |       |
| Solubility                             | not available |       |
| Partition coefficient: n-octanol/water | not available |       |
| Vapour pressure                        | not available |       |
| Density and/or relative density        | 1,2 - 1,5     | g/cm3 |
| Relative vapour density                | not available |       |
| Particle characteristics               | not available |       |

### 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.

#### QUARTZ (granular)

Stable in normal conditions of use and storage.

#### CALCIUM OXIDE

It reacts exothermically on contact with water, forming calcium dihydroxide.

It reacts exothermically on contact with acids, forming calcium salts.

### 10.2. Chemical stability

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

#### PORTLAND CEMENT CLINKER

Wet cement is alkaline and incompatible with acids, ammonium salts, aluminum and other non-noble metals. Cement in contact with hydrofluoric acid decomposes producing corrosive silicon tetrafluoride gas. Cement reacts with water and forms silicates and calcium hydroxide. Silicates in cement react with powerful oxidants such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride and difluoride.  
oxygen.

#### QUARTZ (granular)

Stable in normal conditions of use and storage.

#### PORTLAND CEMENT CLINKER

Wet cement is alkaline and incompatible with acids, ammonium salts, aluminum and other non-noble metals. Cement in contact with hydrofluoric acid decomposes producing corrosive silicon tetrafluoride gas. Cement reacts with water and forms silicates and calcium hydroxide. Silicates in cement react with powerful oxidants such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride and difluoride.  
oxygen.

### 10.3. Possibility of hazardous reactions

The powders are potentially explosive when mixed with air.

#### CALCIUM OXIDE

Gives rise to exothermic reactions with water and acids (see 10.1)

### 10.4. Conditions to avoid

Avoid environmental dust build-up.

#### PORTLAND CEMENT CLINKER

Avoid humid conditions and contact with incompatible materials.

**SECTION 10. Stability and reactivity ... / >>****CALCIUM OXIDE**

Minimize exposure to air and moisture to avoid degradation.

**PORTLAND CEMENT CLINKER**

Avoid humid conditions and contact with incompatible materials.

**10.5. Incompatible materials****PORTLAND CEMENT CLINKER**

Cement and mixtures containing wet cement are alkaline and incompatible with acids, ammonium salts, aluminum and other non-noble metals. In contact with aluminum dust, cement and mixtures containing wet cement cause the formation of hydrogen.

**CALCIUM OXIDE**

Water, acids, aluminum and brass in the presence of humidity.

**PORTLAND CEMENT CLINKER**

Cement and mixtures containing wet cement are alkaline and incompatible with acids, ammonium salts, aluminum and other non-noble metals. In contact with aluminum dust, cement and mixtures containing wet cement cause the formation of hydrogen.

**10.6. Hazardous decomposition products****CALCIUM OXIDE**

Nobody.

**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**PORTLAND CEMENT CLINKER**

In professional environments the main routes of exposure are inhalation and skin or eye contact.

**PORTLAND CEMENT CLINKER**

In professional environments the main routes of exposure are inhalation and skin or eye contact.

Delayed and immediate effects as well as chronic effects from short and long-term exposure**PORTLAND CEMENT CLINKER**

Inhaling cement can aggravate existing respiratory system diseases and/or clinical conditions such as emphysema or asthma and/or existing skin and eye conditions.

**PORTLAND CEMENT CLINKER**

Inhaling cement can aggravate existing respiratory system diseases and/or clinical conditions such as emphysema or asthma and/or existing skin and eye conditions.

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation) of the mixture:

Not classified (no significant component)

ATE (Oral) of the mixture:

Not classified (no significant component)

ATE (Dermal) of the mixture:

Not classified (no significant component)

QUARTZ (granular)

LD50 (Dermal):

> 2000 mg/kg Rat

LD50 (Oral):

> 2000 mg/kg Rat

**SECTION 11. Toxicological information ... / >>****HYDR.CA LIME NHL 3.5**LD50 (Oral): > 2000 mg/kg OECD 425 sostanza test Ca(OH)<sub>2</sub>, ratto**CALCIUM OXIDE**

LD50 (Dermal): &gt; 2000 mg/kg

LD50 (Oral): &gt; 2000 mg/kg

LC50 (Inhalation mists/powders): &gt; 6,04 mg/l/4h

**FLUE DUST, PORTLAND CEMENT**

LD50 (Dermal): &gt; 2000 mg/kg Rat (OECD 402)

LD50 (Oral): &gt; 1848 mg/kg Rat (OECD 422)

LC50 (Inhalation mists/powders): &gt; 6,04 mg/l/4h Rat (OECD 436)

**PORTLAND CEMENT CLINKER**

Based on the weight of evidence of available data determined by expert judgment, the substance is not classified for the acute toxicity hazard class.

**CALCIUM OXIDE**

Method: OECD 425

Reliability (Klimisch score): 1

Species: Rat (Wista; female)

Routes of exposure: oral

Results LD50: &gt; 2,000 mg/kg

Method: OECD 436

Reliability (Klimisch score): 1

Species: rat (Wistar; male/female)

Routes of exposure: inhalation (dust)

LC50 results: &gt; 6.04 mg/l/4h

Method: OECD 402

Reliability (Klimisch score): 1

Species: rat (Wistar; male/female)

Routes of exposure: dermal

Results LD50: &gt; 2,000 mg/kg.

**PORTLAND CEMENT CLINKER**

Based on the weight of evidence of available data determined by expert judgment, the substance is not classified for the acute toxicity hazard class.

**FLUE DUST, PORTLAND CEMENT**

Method: OECD 422

Reliability (Klimisch score): 1

Species: Rat (Wistar; male/female)

Routes of exposure: oral

Results: LD50 &gt; 1848 mg/kg body weight

Method: OECD 436

Reliability (Klimisch score): 1

Species: Rat (Wistar; male/female)

Routes of exposure: inhalation (dust)

Results: LC50 &gt; 6.04 mg/L/4h

Method: OECD 402

Reliability (Klimisch score): 1

Species: Rat (Wistar; male/female)

Routes of exposure: dermal

Results: LD50 &gt;= 2000 mg/kg body weight

**SKIN CORROSION / IRRITATION**

Corrosive for the skin

Classification according to the experimental Ph value

**PORTLAND CEMENT CLINKER**

Cement in contact with moist skin can cause thickening, cracking and splitting of the skin. Prolonged contact in combination with existing abrasions can cause severe burns. (Data based on experiences - man)

Bibliographic source: "Observations on the effects of skin irritation caused by cement, Kietzman et al, Dermatosen, 47, 5, 184-189 (1999)."

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

Method: OECD 404

Reliability (Klimisch score): 2

Species: rabbit (Himalayan)

Results: irritating

**PORTLAND CEMENT CLINKER**

Cement in contact with moist skin can cause thickening, cracking and splitting of the skin. Prolonged contact in combination with existing abrasions can cause severe burns. (Data based on experiences - man)

Bibliographic source: "Observations on the effects of skin irritation caused by cement, Kietzman et al, Dermatosen, 47, 5, 184-189 (1999)."

**FLUE DUST, PORTLAND CEMENT**

Method: OECD 431 - in vitro test

Reliability (Klimisch score): 1

Species: Human skin model

Results: irritating

**SERIOUS EYE DAMAGE / IRRITATION**

Causes serious eye damage

**PORTLAND CEMENT CLINKER**

The clinker causes a set of heterogeneous effects on the cornea and the calculated irritation index was equal to 128. Direct contact with the cement can cause corneal lesions due to mechanical stress, immediate or delayed irritation or inflammation. Direct contact with large quantities of dry concrete or splashes of wet concrete can cause effects ranging from moderate eye irritation (e.g. conjunctivitis or blepharitis) to chemical burns and blindness.

Bibliographic source: "TNO report V8815/09, Evaluation of eye irritation potential of cement clinker G in vitro using the isolated chicken eye test, April 2010)"

**CALCIUM OXIDE**

Method: OECD 405

Reliability (Klimisch score): 2

Species: rabbit (New Zealand White)

Results: Causes serious eye damage

**PORTLAND CEMENT CLINKER**

The clinker causes a set of heterogeneous effects on the cornea and the calculated irritation index was equal to 128. Direct contact with the cement can cause corneal lesions due to mechanical stress, immediate or delayed irritation or inflammation. Direct contact with large quantities of dry concrete or splashes of wet concrete can cause effects ranging from moderate eye irritation (e.g. conjunctivitis or blepharitis) to chemical burns and blindness.

Bibliographic source: "TNO report V8815/09, Evaluation of eye irritation potential of cement clinker G in vitro using the isolated chicken eye test, April 2010)"

**FLUE DUST, PORTLAND CEMENT**

Method: OECD 438 - in vitro test

Reliability (Klimisch score): 1

Species: Chicken eyes

Results: Causes serious eye damage

**RESPIRATORY OR SKIN SENSITISATION**

Sensitising for the skin

**PORTLAND CEMENT CLINKER**

Based on the weight of evidence of available data determined by expert judgment, the substance is classified as a skin sensitizer.

**PORTLAND CEMENT CLINKER**

Based on the weight of evidence of available data determined by expert judgment, the substance is classified as a skin sensitizer.

**FLUE DUST, PORTLAND CEMENT**

Based on the weight of evidence of available data determined by expert judgment, the substance is classified as a skin sensitizer.

**Respiratory sensitization****CALCIUM OXIDE**

Date not available.

**Skin sensitization**

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

Method: OECD 429

Reliability (Klimisch score): 1

Species: mouse (CBA/Ca (CBA/CaOlaHsd); female)

Results: non-sensitizing.

**GERM CELL MUTAGENICITY**

Does not meet the classification criteria for this hazard class

**PORTLAND CEMENT CLINKER**

Based on available data, the substance does not exhibit mutagenic effects and is not classified under the CLP hazard class of germ cell mutagenicity.

**CALCIUM OXIDE**

Method: OECD 471 - In vitro test

Reliability (Klimisch score): 1

Species: S. typhimurium; E. coli

Results: negative

**PORTLAND CEMENT CLINKER**

Based on available data, the substance does not exhibit mutagenic effects and is not classified under the CLP hazard class of germ cell mutagenicity.

**FLUE DUST, PORTLAND CEMENT**

Method: In vitro test (2010 study)

Reliability (Klimisch score): 1

Species: Human epithelial cells

Results: negative

Method: OECD 489 - in vivo test

Reliability (Klimisch score): 1

Species: Rat (male)

Routes of exposure: inhalation (dust)

Results: negative.

**CARCINOGENICITY**

Does not meet the classification criteria for this hazard class

**PORTLAND CEMENT CLINKER**

No association between exposure to Portland cement and cancer.

The epidemiological literature does not support the identification of Portland cement as a suspected human carcinogen.

Portland cement is not classifiable as a human carcinogen (according to ACGIH A4: Agents that cause concern about being carcinogenic to humans but cannot be definitively assessed due to lack of data. In vitro studies or on animals do not provide indications of carcinogenicity that are sufficient to classify the agent with one of the other notations).

**CALCIUM OXIDE**

Bibliographic reference: Long-term toxicity/carcinogenicity study of calcium lactate in F344 rats (Fd Chem. Toxic. Vol. 29, No. 9: 589-594 (1991))

Reliability (Klimisch score): 2

Species: rat (Fischer 344; male/female)

Routes of exposure: oral

Results: negative. NOAEL (carcinogenicity/male) = 2 150 mg/kg body weight/day; NOAEL (carcinogenicity/female) = 2 280 mg/kg body weight/day; i NOAEL (carcinogenicity calculated as Ca<sup>2+</sup>/male) = 279.5 mg/ kg body weight/day; NOAEL (carcinogenicity calculated as Ca<sup>2+</sup>/female) = 294.4 mg/kg body weight/day.

**PORTLAND CEMENT CLINKER**

No association between exposure to Portland cement and cancer.

The epidemiological literature does not support the identification of Portland cement as a suspected human carcinogen.

Portland cement is not classifiable as a human carcinogen (according to ACGIH A4: Agents that cause concern about being carcinogenic to humans but cannot be definitively assessed due to lack of data. In vitro studies or on animals do not provide indications of carcinogenicity that are sufficient to classify the agent with one of the other notations).

**FLUE DUST, PORTLAND CEMENT**

Based on available data, the substance does not have carcinogenic effects and is not classified under the CLP hazard class of carcinogenicity.

**REPRODUCTIVE TOXICITY**

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

Does not meet the classification criteria for this hazard class

**PORTLAND CEMENT CLINKER**

Based on available data, the substance does not present reproductive toxicity effects and is not classified under the relevant CLP hazard class.

**PORTLAND CEMENT CLINKER**

Based on available data, the substance does not present reproductive toxicity effects and is not classified under the relevant CLP hazard class.

Adverse effects on sexual function and fertility**CALCIUM OXIDE**

Method: OECD 422

Reliability (Klimisch score): 1

Species: rat (Wistar; male/female)

Routes of exposure: oral

Results: negative. NOAEL (P0) = 1000 mg/kg body weight/day.

**FLUE DUST, PORTLAND CEMENT**

Method: OECD 422

Reliability (Klimisch score): 1

Species: Rat (Wistar; male/female)

Routes of exposure: oral

Results: negative. NOAEC = 1010 mg/kg body weight/day

Adverse effects on development of the offspring**CALCIUM OXIDE**

Method: equivalent or similar to OECD 414

Reliability (Klimisch score): 2

Species: mouse (CD-1)

Routes of exposure: oral

Results: negative. NOAEL (maternal) > 440 mg/kg body weight/day; NOAEL (developmental) > 440 mg/kg body weight/day.

**FLUE DUST, PORTLAND CEMENT**

Method: OECD 422

Reliability (Klimisch score): 1

Species: Rat (Wistar)

Routes of exposure: oral

Results: negative. NOAEL >= 1010 - <= 1216 mg/kg body weight/day

STOT - SINGLE EXPOSURE

May cause respiratory irritation

**PORTLAND CEMENT CLINKER**

Cement dust can irritate the throat and respiratory system. Coughing, sneezing and shortness of breath may occur following exposures above the occupational exposure limits. Overall, the evidence collected clearly indicates that occupational exposure to cement dust has produced respiratory function deficits. However, the available evidence is currently insufficient to establish with certainty the dose-response relationship for these effects.

Bibliographic source: "Portland Cement Dust - Hazard assessment document EH75/7, UK Health and Safety Executive, 2006)"

**CALCIUM OXIDE**

Based on available data, the substance exhibits specific target organ toxicity effects for single exposure and is classified under the relevant CLP hazard class.

**PORTLAND CEMENT CLINKER**

Cement dust can irritate the throat and respiratory system. Coughing, sneezing and shortness of breath may occur following exposures above the occupational exposure limits. Overall, the evidence collected clearly indicates that occupational exposure to cement dust has produced respiratory function deficits. However, the available evidence is currently insufficient to establish with certainty the dose-response relationship for these effects.

Bibliographic source: "Portland Cement Dust - Hazard assessment document EH75/7, UK Health and Safety Executive, 2006)"

**FLUE DUST, PORTLAND CEMENT**

Based on available data, the substance may irritate the respiratory tract.

Target organs

## SECTION 11. Toxicological information ... / >>

CALCIUM OXIDE

Respiratory tract.

FLUE DUST, PORTLAND CEMENT

Lung, bronchi, trachea

### Route of exposure

CALCIUM OXIDE

Inhalation.

FLUE DUST, PORTLAND CEMENT

Inhalation

### STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

PORTLAND CEMENT CLINKER

Based on available data, the substance does not present specific target organ toxicity effects upon repeated exposure and is not classified under the relevant CLP hazard class.

CALCIUM OXIDE

Method: OECD 422

Reliability (Klimisch score): 1

Species: rat (Wistar; male/female)

Routes of exposure: oral

Results: negative. NOAEL = 1000 mg/kg body weight/day

Method: OECD 412

Reliability (Klimisch score): 1

Species: rat (Wistar; male/female)

Routes of exposure: inhalation (dust)

Results: negative. NOAEC = 0.107 mg/l

PORTLAND CEMENT CLINKER

Based on available data, the substance does not present specific target organ toxicity effects upon repeated exposure and is not classified under the relevant CLP hazard class.

FLUE DUST, PORTLAND CEMENT

Based on available data, the substance does not present specific target organ toxicity effects upon repeated exposure and is not classified under the relevant CLP hazard class.

### ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

PORTLAND CEMENT CLINKER

There are no data available on the danger in case of aspiration.

CALCIUM OXIDE

There are no data available on the danger in case of aspiration.

PORTLAND CEMENT CLINKER

There are no data available on the danger in case of aspiration.

FLUE DUST, PORTLAND CEMENT

There are no data available on the danger in case of aspiration.

## 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

## SECTION 12. Ecological information ... / >>

### PORTLAND CEMENT CLINKER

Cement is not dangerous for the environment. No sedimentary phase toxicity data are available.

Adding large quantities of cement to water can, however, cause an increase in pH and can, therefore, be toxic to aquatic life in certain circumstances.

Bibliographic source: "U.S. EPA, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, 3rd ed. EPA/600/7-91/002, Environmental Monitoring and Support Laboratory, U.S. EPA, Cincinnati, OH (1994a) and 4th ed. EPA-821-R-02-013, US EPA, office of water, Washington D.C. (2002)."

### PORTLAND CEMENT CLINKER

Cement is not dangerous for the environment. No sedimentary phase toxicity data are available.

Adding large quantities of cement to water can, however, cause an increase in pH and can, therefore, be toxic to aquatic life in certain circumstances.

Bibliographic source: "U.S. EPA, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, 3rd ed. EPA/600/7-91/002, Environmental Monitoring and Support Laboratory, U.S. EPA, Cincinnati, OH (1994a) and 4th ed. EPA-821-R-02-013, US EPA, office of water, Washington D.C. (2002)."

### FLUE DUST, PORTLAND CEMENT

NOEC - Fish 11.1 mg/l/96h, Danio rerio (OECD 203)

NOEC - Crustaceans 100 mg/l/48h; Daphnia magna (OECD 202)

EL10 - Crustaceans 68.2 mg/l/21 days; Daphnia magna (OECD 211)

### CALCIUM OXIDE

LC50 - for Fish

50,6 mg/l/96h Oncorhynchus mykiss (OECD 203)

EC50 - for Crustacea

49,1 mg/l/48h Daphnia magna (OECD 202)

EC50 - for Algae / Aquatic Plants

184,57 mg/l/72h Pesudokirchneriella subcapitata (OECD 201)

EC10 for Algae / Aquatic Plants

79,22 mg/l/72h Pesudokirchneriella subcapitata (OECD 201)

Chronic NOEC for Crustacea

32 mg/l/14 giorni Crangon septemspinosa (Aquatic Invasions (2009) Volume 4, Issue 1: 221-236)

Chronic NOEC for Algae / Aquatic Plants

48 mg/l Pesudokirchneriella subcapitata (OECD 201)

### FLUE DUST, PORTLAND CEMENT

EC50 - for Algae / Aquatic Plants

22,4 mg/l/72h Desmodesmus subspicatus (OECD 201)

## 12.2. Persistence and degradability

### PORTLAND CEMENT CLINKER

The substance is inorganic; therefore biodegradability tests are not applicable.

### PORTLAND CEMENT CLINKER

The substance is inorganic; therefore biodegradability tests are not applicable.

### CALCIUM OXIDE

Degradability: information not available

Sostanza inorganica - colonna 2, allegato VII REACH

## 12.3. Bioaccumulative potential

### PORTLAND CEMENT CLINKER

The substance is inorganic; therefore tests relating to bioaccumulation are not applicable.

### PORTLAND CEMENT CLINKER

The substance is inorganic; therefore tests relating to bioaccumulation are not applicable.

## 12.4. Mobility in soil

### PORTLAND CEMENT CLINKER

Dry cement is chemically stable and non-volatile. May spread during handling in the form of dust.

### PORTLAND CEMENT CLINKER

Dry cement is chemically stable and non-volatile. May spread during handling in the form of dust.

## 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

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

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

**12.7. Other adverse effects**

Information not available

**SECTION 13. Disposal considerations****13.1. Waste treatment methods**

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

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

**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

Contained substance

Point

75

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

not applicable

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

### 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.

## 15.2. Chemical safety assessment

A chemical safety assessment has been performed for the following contained substances  
CALCIUM OXIDE

## SECTION 16. Other information

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

|                      |                                                              |
|----------------------|--------------------------------------------------------------|
| <b>Skin Corr. 1</b>  | Skin corrosion, category 1                                   |
| <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>Skin Sens. 1B</b> | Skin sensitization, category 1B                              |
| <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.                         |

### 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
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PMT: Persistent, mobile and toxic
- 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

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

- vPvB: Very persistent and very bioaccumulative
- vPvM: Very persistent and very mobile
- 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
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13. Regulation (EU) 2017/776 (X Atp. CLP)
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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)
23. Delegated Regulation (UE) 2023/707

- 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:

01 / 03.