**Safety Data Sheet**

Conforms to Regulation (EC) No. 1907/2006 (REACH), Article 31, Annex II, as amended by Commission Regulation (EU) 2020/878

**KERAREP (A)**

Date of first edition: 4/18/2021

Safety Data Sheet dated 30/06/2026 version 8

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

### 1.1. Product identifier

Mixture identification:

Trade name: KERAREP (A)

Trade code: 12112020

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

Recommended use: Adhesives, sealants

Uses advised against: All uses other than recommended ones

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

Company: KERAKOLL S.p.A.

Via dell'Artigianato, 9

41049 Sassuolo (MODENA) - ITALY

Tel.+39 0536 816511 Fax. +39 0536816581

safety@kerakoll.com

### 1.4. Emergency telephone number

European emergency phone number 112

Ireland Emergency medical information: (seven days) contact National Poisons Information Centre,
Beaumont Hospital, Dublin 9 DOV2NO, Ireland.

Members of the public Number (8 am-10 pm): +353 (0)1 809 2166

Healthcare professional telephone Number (24hrs): +353 (0)1 809 2566

Malta In case of emergency call: +356 2395 2000 (24h)

## SECTION 2: Hazards identification



### 2.1. Classification of the substance or mixture

**Regulation (EC) n. 1272/2008 (CLP)**

| | |
|---|---|
| Flam. Liq. 3 | Flammable liquid and vapour. |
| Skin Irrit. 2 | Causes skin irritation. |
| Eye Irrit. 2 | Causes serious eye irritation. |
| Skin Sens. 1A | May cause an allergic skin reaction. |
| Repr. 2 | Suspected of damaging fertility or the unborn child if inhaled and in contact with skin. |
| STOT RE 1 | Causes damage to organs (hearing organs) through prolonged or repeated exposure if inhaled. |

Adverse physicochemical, human health and environmental effects:

No other hazards

### 2.2. Label elements

**Regulation (EC) No 1272/2008 (CLP):**

**Hazard pictograms and Signal Word**



Danger

**Hazard statements**

| | |
|---|---|
| H226 | Flammable liquid and vapour. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H361 | Suspected of damaging fertility or the unborn child if inhaled and in contact with skin. |

| | |
|---|---|
| H372 | Causes damage to organs (hearing organs) through prolonged or repeated exposure if inhaled. |

**Precautionary statements**

| | |
|---|---|
| P102 | Keep out of reach of children. |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P260 | Do not breathe vapours. |
| P280 | Wear protective gloves/clothing and eye/face protection. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P370+P378 | In case of fire, use a CO2 fire extinguisher to extinguish. |

**Special Provisions:**

| | |
|---|---|
| EUH208 | Contains Reaction mass of 2,2'-[(4-methylphenyl)imino]bisethanol and Ethanol 2-[[2-(2-hydroxyethoxy)ethyl](4-methylphenyl)amino]-. May produce an allergic reaction. |
| EUH208 | Contains Fatty acids, C14-18 and C16-18-unsatd., maleated. May produce an allergic reaction. |

**Contains**

styrene

maleic anhydride

**Special provisions according to Annex XVII of REACH and subsequent amendments:**

None.

### 2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration >= 0.1%

Other Hazards: No other hazards

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

N.A.

### 3.2. Mixtures

Mixture identification: KERAREP (A)

**Hazardous components within the meaning of the CLP regulation and related classification:**

| Qty | Name | Ident. Numb. | Classification | Registration Number |
|---|---|---|---|---|
| ≥10-<20 % | styrene | CAS:100-42-5<br>EC:202-851-5<br>Index:601-026-00-0 | Flam. Liq. 3, H226; Repr. 2, H361; Acute Tox. 4, H332; STOT RE 1, H372; Asp. Tox. 1, H304; Eye Irrit. 2, H319; Skin Irrit. 2, H315; STOT SE 3, H335; Aquatic Chronic 3, H412 | |
| ≥0.3-<0.5 % | Fatty acids, C14-18 and C16-18-unsatd., maleated | CAS:85711-46-2<br>EC:288-306-2 | Skin Irrit. 2, H315; Skin Sens. 1, H317 | 01-2119976378-19 |
| ≥0.20-<0.25 % | xylene | CAS:1330-20-7<br>EC:215-535-7<br>Index:601-022-00-9 | Flam. Liq. 3, H226; Acute Tox. 4, H332; Acute Tox. 4, H312; Skin Irrit. 2, H315; STOT SE 3, H335; STOT RE 2, H373; Asp. Tox. 1, H304; Aquatic Chronic 3, H412; Eye Irrit. 2, H319, M-Chronic:1 | 01-2119488216-32 |
| ≥0.20-<0.25 % | Reaction mass of 2,2'-[(4-methylphenyl)imino]bisethanol and Ethanol 2-[[2-(2-hydroxyethoxy)ethyl](4-methylphenyl)amino]- | EC:911-490-9 | Aquatic Chronic 3, H412; Skin Sens. 1, H317; Eye Dam. 1, H318; Skin Irrit. 2, H315; Acute Tox. 4, H302 | 01-2119979579-10 |
| ≥0.05-<0.1 % | maleic anhydride | CAS:108-31-6<br>EC:203-571-6<br>Index:607-096-00-9 | Acute Tox. 4, H302; STOT RE 1, H372; Skin Corr. 1B, H314; Eye Dam. 1, H318; Resp. Sens. 1, H334; Skin Sens. 1A, H317, EUH071<br><br>Specific Concentration Limits:<br>C ≥ 0.001%: Skin Sens. 1A H317 | |

## SECTION 4: First aid measures

**4.1. Description of first aid measures**

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediatley and dispose off safely.

After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an opthalmologist immediately.

Protect uninjured eye.

In case of Ingestion:

Do not induce vomiting, get medical attention showing the SDS and label hazardous.

In case of Inhalation:

If breathing is irregular or stopped, administer artificial respiration.

In case of inhalation, consult a doctor immediately and show him packing or label.

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

Eye irritation

Eye damages

Skin Irritation

Erythema

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

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## SECTION 5: Firefighting measures

**5.1. Extinguishing media**

Suitable extinguishing media:

CO2 or Dry chemical fire extinguisher.

Extinguishing media which must not be used for safety reasons:

Water.

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

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

**5.3. Advice for firefighters**

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

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## SECTION 6: Accidental release measures

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

**For non emergency personnel:**

Wear personal protection equipment.

Remove all sources of ignition.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Provide adequate ventilation.

Use appropriate respiratory protection.

See protective measures under point 7 and 8.

**For emergency responders:**

Wear personal protection equipment.

**6.2. Environmental precautions**

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Suitable material for taking up: absorbing material, organic, sand

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

Suitable material for taking up: absorbing material, organic, sand

Wash with plenty of water.

**6.4. Reference to other sections**

See also section 8 and 13

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## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.

Use localized ventilation system.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

Contamined clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

**Advice on general occupational hygiene:**

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

Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.

Incompatible materials:

Instructions as regards storage premises:

Cool and adequately ventilated.

### 7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

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## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

**Community Occupational Exposure Limits (OEL)**

styrene

| | | |
|---|---|---|
| CAS: 100-42-5 | ACGIH | Long Term: 10 ppm (8h); Short Term: 20 ppm<br>Notes: OTO, A3, BEI - CNS and hearing impair, URT irr, peripheral neuropathy, visual disorders |
| | NATION AUSTRIA AL | Long Term: 85 mg/m3 - 20 ppm; Short Term: 340 mg/m3 - 80 ppm<br>Notes: 15(Miw), 4x, MAK, d<br>Source: BGBl. II Nr. 156/2021 |
| | NATION BELGIUM AL | Long Term: 108 mg/m3 - 25 ppm; Short Term: 216 mg/m3 - 50 ppm<br>Notes: D<br>Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1 |
| | NATION BULGARIA AL | Long Term: 85 mg/m3; Short Term: 215 mg/m3<br>Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г. |
| | NATION CZECHIA AL | Long Term: 100 mg/m3; Short Term: Ceiling - 400 mg/m3<br>Notes: B, I, P<br>Source: Nařízení vlády č. 361-2007 Sb |
| | NATION GERMANY AL | Long Term: 86 mg/m3 - 20 ppm<br>Notes: DFG, Y, 2(II)<br>Source: TRGS 900 |
| | NATION DENMARK AL | Short Term: Ceiling - 105 mg/m3 - 25 ppm<br>Notes: LHK<br>Source: BEK nr 2203 af 29/11/2021 |
| | NATION SPAIN AL | Long Term: 86 mg/m3 - 20 ppm; Short Term: 172 mg/m3 - 40 ppm<br>Notes: VLB®, ae<br>Source: LEP 2022 |
| | NATION ESTONIA AL | Long Term: 90 mg/m3 - 20 ppm; Short Term: 200 mg/m3 - 50 ppm<br>Notes: A<br>Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105 |
| | NATION FINLAND AL | Long Term: 86 mg/m3 - 20 ppm; Short Term: 430 mg/m3 - 100 ppm<br>Notes: melu<br>Source: HTP-ARVOT 2020 |
| | NATION FRANCE AL | Long Term: 100 mg/m3 - 23.3 ppm; Short Term: 200 mg/m3 - 46.6 ppm<br>Notes: Toxique pour la reproduction de catégorie 2, Risque de pénétration percutanée<br>Source: INRS outil65, article R. 4412-149 du Code du travail |
| | NATION GREECE AL | Long Term: 425 mg/m3 - 100 ppm; Short Term: 1050 mg/m3 - 250 ppm<br>Source: ΦΕΚ 94/Α` 13.5.1999 |

| | | | |
|---|---|---|---|
| | NATIONAL | CROATIA | Long Term: 430 mg/m3 - 100 ppm; Short Term: 1080 mg/m3 - 250 ppm<br>Notes: koža<br>Source: NN 1/2021 |
| | NATIONAL | HUNGARY | Long Term: 86 mg/m3; Short Term: 172 mg/m3<br>Notes: i, BEM, R+T<br>Source: 5/2020. (II. 6.) ITM rendelet |
| | NATIONAL | IRELAND | Long Term: 85 mg/m3 - 20 ppm; Short Term: 170 mg/m3 - 40 ppm<br>Source: 2021 Code of Practice |
| | NATIONAL | LITHUANIA | Long Term: 90 mg/m3 - 20 ppm; Short Term: 200 mg/m3 - 50 ppm<br>Notes: O, Projektuojant naujus objektus ar keičiant senus, reikia stengtis užtikrinti, kad stireno poveikis per darbo dieną būtų priimtinas laikantis IPRD 10 ppm koncentracijos.<br>Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389 |
| | NATIONAL | LATVIA | Long Term: 10 mg/m3; Short Term: 30 mg/m3<br>Notes: Ietekme uz dzirdi<br>Source: KN325P1 |
| | NATIONAL | NORWAY | Long Term: 105 mg/m3 - 25 ppm<br>Notes: M<br>Source: FOR-2021-06-28-2248 |
| | NATIONAL | POLAND | Long Term: 50 mg/m3; Short Term: 100 mg/m3<br>Source: Dz.U. 2018 poz. 1286 |
| | NATIONAL | SLOVAKIA | Long Term: 90 mg/m3 - 20 ppm; Short Term: 200 mg/m3 - 50 ppm<br>Notes: 1)<br>Source: 355 NARIADENIE VLÁDY z 10. mája 2006 |
| | NATIONAL | SLOVENIA | Long Term: 86 mg/m3 - 20 ppm; Short Term: 172 mg/m3 - 40 ppm<br>Notes: Y, BAT, RD2<br>Source: UL št. 72, 11. 5. 2021 |
| | NATIONAL | SWEDEN | Long Term: 43 mg/m3 - 10 ppm; Short Term: 86 mg/m3 - 20 ppm<br>Notes: B, H, V<br>Source: AFS 2021:3 |
| | WEL-EH40 | UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND | Long Term: 430 mg/m3 - 100 ppm; Short Term: 1080 mg/m3 - 250 ppm<br>Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020) |
| | SUVA | SWITZERLAND | Long Term: 85 mg/m3 - 20 ppm; Short Term: 170 mg/m3 - 40 ppm<br>Notes: SSC, OB, B, VRS Yeux SN / OAW Auge NS, HSE NIOSH DFG OSHA<br>Source: suva.ch/valeurs-limites |

xylene

| | | | |
|---|---|---|---|
| CAS: 1330-20-7 | ACGIH | | Long Term: 20 ppm (8h)<br>Notes: A4, BEI - URT and eye irr; hematologic eff; CNS impair |
| | EU | | Long Term: 221 mg/m3 - 50 ppm (8h); Short Term: 442 mg/m3 - 100 ppm<br>Notes: Skin |
| | NATIONAL | AUSTRIA | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: 15(Miw), 4x, MAK<br>Source: BGBl. II Nr. 156/2021 |
| | NATIONAL | BELGIUM | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: D<br>Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1 |
| | NATIONAL | BULGARIA | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: Кожа<br>Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г. |
| | NATIONAL | CYPRUS | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: δέρμα<br>Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021 |
| | NATIONAL | CZECHIA | Long Term: 200 mg/m3; Short Term: Ceiling - 400 mg/m3<br>Notes: B, D, I<br>Source: Nařízení vlády č. 361-2007 Sb |

| | | |
|---|---|---|
| NATIONAL | GERMANY | Long Term: 220 mg/m3 - 50 ppm<br>Notes: DFG, EU, H, 2(II)<br>Source: TRGS 900 |
| NATIONAL | DENMARK | Long Term: 109 mg/m3 - 25 ppm<br>Notes: EH<br>Source: BEK nr 2203 af 29/11/2021 |
| NATIONAL | SPAIN | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: vía dérmica, VLB®, VLI<br>Source: LEP 2022 |
| NATIONAL | ESTONIA | Long Term: 200 mg/m3 - 50 ppm; Short Term: 450 mg/m3 - 100 ppm<br>Notes: A<br>Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105 |
| NATIONAL | FINLAND | Long Term: 220 mg/m3 - 50 ppm; Short Term: 440 mg/m3 - 100 ppm<br>Notes: iho<br>Source: HTP-ARVOT 2020 |
| NATIONAL | FRANCE | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: Risque de pénétration percutanée<br>Source: INRS outil65, article R. 4412-149 du Code du travail |
| NATIONAL | GREECE | Long Term: 435 mg/m3 - 100 ppm; Short Term: 650 mg/m3 - 150 ppm<br>Notes: Δ<br>Source: ΦΕΚ 94/Α` 13.5.1999 |
| NATIONAL | CROATIA | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: koža<br>Source: 2000/39/EZ |
| NATIONAL | HUNGARY | Long Term: 221 mg/m3; Short Term: 442 mg/m3<br>Notes: b, BEM, EU1, R<br>Source: 5/2020. (II. 6.) ITM rendelet |
| NATIONAL | IRELAND | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: Sk, IOELV<br>Source: 2021 Code of Practice |
| NATIONAL | ITALY | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: Cute<br>Source: D.lgs. 81/2008, Allegato XXXVIII |
| NATIONAL | LITHUANIA | Long Term: 200 mg/m3 - 50 ppm; Short Term: 450 mg/m3 - 100 ppm<br>Notes: O<br>Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389 |
| NATIONAL | LUXEMBOURG | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: Peau<br>Source: Mémorial A n.226 du 22 mars 2021 |
| NATIONAL | LATVIA | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: Āda<br>Source: KN325P1 |
| NATIONAL | MALTA | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: skin<br>Source: S.L.424.24 |
| NATIONAL | NETHERLANDS | Long Term: 210 mg/m3; Short Term: 442 mg/m3<br>Notes: H<br>Source: Arbeidsomstandighedenregeling - Lijst A |
| NATIONAL | NORWAY | Long Term: 108 mg/m3 - 25 ppm<br>Notes: H E<br>Source: FOR-2021-06-28-2248 |
| NATIONAL | POLAND | Long Term: 100 mg/m3; Short Term: 200 mg/m3<br>Notes: skóra<br>Source: Dz.U. 2018 poz. 1286 |
| NATIONAL | PORTUGAL | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: Cutânea<br>Source: Decreto-Lei n.º 1/2021 |
| NATIONAL | ROMANIA | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: P, Dir. 2000/39<br>Source: Republicarea 1 - nr. 743 din 29 iulie 2021 |

| | | | |
|---|---|---|---|
| | NATIONAL | SLOVAKIA | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: K, 7)<br>Source: 355 NARIADENIE VLÁDY z 10. mája 2006 |
| | NATIONAL | SLOVENIA | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: K, BAT, EU1<br>Source: UL št. 72, 11. 5. 2021 |
| | NATIONAL | SWEDEN | Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm<br>Notes: H<br>Source: AFS 2021:3 |
| | WEL-EH40 | UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND | Long Term: 220 mg/m3 - 50 ppm; Short Term: 441 mg/m3 - 100 ppm<br>Notes: Sk, BMGV<br>Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020) |
| | SUVA | SWITZERLAND | Long Term: 220 mg/m3 - 50 ppm; Short Term: 440 mg/m3 - 100 ppm<br>Notes: R/H, B, SNC / ZNS, NIOSH INRS<br>Source: suva.ch/valeurs-limites |

maleic anhydride

| | | | |
|---|---|---|---|
| CAS: 108-31-6 | ACGIH | | Long Term: 0.01 mg/m3 (8h)<br>Notes: IFV, DSEN, RSEN, A4 - Resp sens |
| | NATIONAL | AUSTRIA | Long Term: 0.4 mg/m3 - 0.1 ppm; Short Term: Ceiling - 0.8 mg/m3 - 0.2 ppm<br>Notes: 5(Mow), 8x, MAK, Sah<br>Source: BGBl. II Nr. 156/2021 |
| | NATIONAL | BELGIUM | Long Term: 0.01 mg/m3 - 0.003 ppm<br>Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1 |
| | NATIONAL | BULGARIA | Long Term: 1 mg/m3<br>Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г. |
| | NATIONAL | CZECHIA | Long Term: 1 mg/m3; Short Term: Ceiling - 2 mg/m3<br>Notes: I, S<br>Source: Nařízení vlády č. 361-2007 Sb |
| | NATIONAL | GERMANY | Long Term: 0.081 mg/m3 - 0.02 ppm<br>Notes: DFG, Sah, Y, 11, 1;=2, 5=(I)<br>Source: TRGS 900 |
| | NATIONAL | DENMARK | Long Term: 0.4 mg/m3 - 0.1 ppm<br>Source: BEK nr 2203 af 29/11/2021 |
| | NATIONAL | SPAIN | Long Term: 0.4 mg/m3 - 0.1 ppm<br>Notes: FIV, Sen<br>Source: LEP 2022 |
| | NATIONAL | ESTONIA | Long Term: 1.2 mg/m3 - 0.3 ppm; Short Term: 2.5 mg/m3 - 0.6 ppm<br>Notes: S<br>Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105 |
| | NATIONAL | FINLAND | Long Term: 0.41 mg/m3 - 0.1 ppm; Short Term: Ceiling - 0.81 mg/m3 - 0.2 ppm<br>Notes: kattoarvo<br>Source: HTP-ARVOT 2020 |
| | NATIONAL | FRANCE | Short Term: 1 mg/m3<br>Notes: Risque d'allergie<br>Source: INRS outil65 |
| | NATIONAL | GREECE | Long Term: 1 mg/m3 - 0.25 ppm<br>Source: ΦΕΚ 94/Α` 13.5.1999 |
| | NATIONAL | CROATIA | Long Term: 0.41 mg/m3 - 0.1 ppm; Short Term: 0.8 mg/m3 - 0.2 ppm<br>Notes: alergen (koža i udisanje)<br>Source: NN 1/2021 |
| | NATIONAL | HUNGARY | Long Term: 0.08 mg/m3; Short Term: 0.08 mg/m3<br>Notes: m, sz, R+T<br>Source: 5/2020. (II. 6.) ITM rendelet |
| | NATIONAL | IRELAND | Long Term: 0.01 ppm<br>Notes: Sens., IFV<br>Source: 2021 Code of Practice |

| | | |
|---|---|---|
| NATIONAL | LITHUANIA | Long Term: 1.2 mg/m3 - 0.3 ppm; Short Term: 2.5 mg/m3 - 0.6 ppm<br>Notes: J<br>Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389 |
| NATIONAL | LATVIA | Long Term: 1 mg/m3<br>Source: KN325P1 |
| NATIONAL | NORWAY | Long Term: 0.8 mg/m3 - 0.2 ppm<br>Notes: A<br>Source: FOR-2021-06-28-2248 |
| NATIONAL | POLAND | Long Term: 0.5 mg/m3; Short Term: 1 mg/m3<br>Notes: skóra<br>Source: Dz.U. 2018 poz. 1286 |
| NATIONAL | ROMANIA | Long Term: 1 mg/m3 - 0.25 ppm; Short Term: 3 mg/m3 - 0.75 ppm<br>Source: Republicarea 1 - nr. 743 din 29 iulie 2021 |
| NATIONAL | SLOVAKIA | Long Term: 0.41 mg/m3 - 0.1 ppm<br>Notes: S<br>Source: 355 NARIADENIE VLÁDY z 10. mája 2006 |
| NATIONAL | SLOVENIA | Long Term: 0.41 mg/m3 - 0.1 ppm; Short Term: 0.41 mg/m3 - 0.1 ppm<br>Notes: Y<br>Source: UL št. 72, 11. 5. 2021 |
| NATIONAL | SWEDEN | Long Term: 0.2 mg/m3 - 0.05 ppm; Short Term: 0.4 mg/m3 - 0.1 ppm<br>Notes: M, S<br>Source: AFS 2021:3 |
| WEL-EH40 | UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND | Long Term: 1 mg/m3; Short Term: 3 mg/m3<br>Notes: Sen<br>Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020) |
| SUVA | SWITZERLAND | Long Term: 0.4 mg/m3 - 0.1 ppm; Short Term: 0.4 mg/m3 - 0.1 ppm<br>Notes: S, SSC, VR / AW, NIOSH OSHA, La substance peut être présente sous forme de vapeur et d'aérosol en même temps / Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen<br>Source: suva.ch/valeurs-limites |

**Biological limit values**

styrene

CAS: 100-42-5 Biological Indicator: Mandelic acid in urine and fenilgliossilico; Sampling Period: End of turn
Value: 600 mg/g; Medium: Urine

xylene

CAS: 1330-20-7 Biological Indicator: Methyl hippuric acid in urine; Sampling Period: End of turn
Value: 2000 mg/L; Medium: Urine

**Predicted No Effect Concentration (PNEC) values**

styrene

CAS: 100-42-5
Exposure Route: Fresh Water; PNEC Limit: 34 mg/m3
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 40 mg/m3
Exposure Route: Marine water; PNEC Limit: 27 mg/m3
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 5 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 516 µg/kg
Exposure Route: Marine water sediments; PNEC Limit: 362.5 µg/kg
Exposure Route: Soil; PNEC Limit: 173 µg/kg

xylene

CAS: 1330-20-7
Exposure Route: Fresh Water; PNEC Limit: 327 mg/m3
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 327 mg/m3
Exposure Route: Marine water; PNEC Limit: 327 mg/m3
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 6.58 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 12.46 mg/kg
Exposure Route: Marine water sediments; PNEC Limit: 12.46 mg/kg
Exposure Route: Soil; PNEC Limit: 2.31 mg/kg

maleic anhydride

CAS: 108-31-6 Exposure Route: Fresh Water; PNEC Limit: 87.5 mg/m3

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 589.5 mg/m3

Exposure Route: Marine water; PNEC Limit: 8.75 mg/m3

Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 24.53 mg/l

Exposure Route: Freshwater sediments; PNEC Limit: 197 µg/kg

Exposure Route: Marine water sediments; PNEC Limit: 19.7 µg/kg

Exposure Route: Soil; PNEC Limit: 25.75 µg/kg

Exposure Route: Secondary poisoning; PNEC Limit: 6.67 mg/kg

**Derived No Effect Level (DNEL) values**

styrene

CAS: 100-42-5 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 85 mg/kg/day; Consumer: 1 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 100 mg/kg/day; Consumer: 10 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 100 mg/kg/day; Consumer: 1 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
Worker Professional: 100 mg/kg/day; Consumer: 10 mg/kg/day

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 406 mg/kg; Consumer: 343 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 7.7 µg/kg

xylene

CAS: 1330-20-7 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 221 mg/kg/day; Consumer: 65.3 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 442 mg/kg/day; Consumer: 260 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 221 mg/kg/day; Consumer: 65.3 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
Worker Professional: 442 mg/kg/day; Consumer: 260 mg/kg/day

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 212 mg/kg; Consumer: 125 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 12.5 mg/kg

maleic anhydride

CAS: 108-31-6 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 190 µg/m³; Consumer: 50 µg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 800 µg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 320 µg/m³; Consumer: 80 µg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 200 µg/kg; Consumer: 100 µg/kg

Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects
Worker Professional: 200 µg/kg; Consumer: 100 µg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 60 µg/kg

Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects
Consumer: 100 µg/kg

**8.2. Exposure controls**

Eye protection:

Eye glasses with side protection.(EN166)

Protection for skin:

Chemical protection clothing. Safety shoes.

Protection for hands:

Protection for hands:

Suitable materials for safety gloves; EN 374:

Nitrile rubber - NBR: thickness ≥0,35mm; breakthrough time ≥480min.

Respiratory protection:

Gas filter type A .

Thermal Hazards:

Not expected if used as intended

Environmental exposure controls:

Prevent the product from entering sewers or surface and underground water.

## SECTION 9: Physical and chemical properties

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

| | |
|---|---|
| Physical state: | Liquid |
| Colour: | Grey |
| Odour: | Like: Styrene |
| pH: | Not Relevant<br>Notes: Not applicable, non-aqueous mixture |
| Kinematic viscosity: | > 20,5 mm2/s (40 °C) |
| Melting point/freezing point: | -31 °C (-24 °F) |
| Boiling point or initial boiling point and boiling range: | 145 °C (293 °F) |
| Flash point: | 32 °C (90 °F) |
| Lower and upper explosion limit: | N.A. |
| Relative vapour density: | 3.6 |
| Vapour pressure: | 6.67 (kPa 50°C). hPa |
| Density and/or relative density: | 1.67 g/cm3 |
| Solubility in water: | Insoluble |
| Solubility in oil: | Not Relevant<br>Notes: Not determined, as it is not required for CLP classification |
| Partition coefficient n-octanol/water (log value): | Not Relevant<br>Notes: Not applicable to mixtures |
| Auto-ignition temperature: | 490.00 °C |
| Decomposition temperature: | Not Relevant<br>Notes: Not applicable, as the mixture is not self-reactive |
| Flammability: | Not Relevant<br>Notes: Not applicable as the mixture is not flammable |
| Volatile Organic compounds - VOCs = | 20.15%; 336.49g/L |

**Particle characteristics:**

| | |
|---|---|
| Particle size: | N.A. |

### 9.2. Other information

No other relevant information

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Stable under normal conditions

**10.2. Chemical stability**

Data not available.

**10.3. Possibility of hazardous reactions**

None.

**10.4. Conditions to avoid**

Stable under normal conditions.

**10.5. Incompatible materials**

Avoid contact with oxidizing materials. The product could catch fire.

**10.6. Hazardous decomposition products**

Carbon monoxide and carbon dioxide. Hydrocarbons

---

## SECTION 11: Toxicological information

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

**Toxicological Information of the Preparation**

| | |
|---|---|
| a) acute toxicity | Not classified |
| | Based on available data, the classification criteria are not met |
| b) skin corrosion/irritation | The product is classified: Skin Irrit. 2(H315) |
| c) serious eye damage/irritation | The product is classified: Eye Irrit. 2(H319) |
| d) respiratory or skin sensitisation | The product is classified: Skin Sens. 1A(H317) |
| e) germ cell mutagenicity | Not classified |
| | Based on available data, the classification criteria are not met |
| f) carcinogenicity | Not classified |
| | Based on available data, the classification criteria are not met |
| g) reproductive toxicity | The product is classified: Repr. 2(H361) |
| h) STOT-single exposure | Not classified |
| | Based on available data, the classification criteria are not met |
| i) STOT-repeated exposure | The product is classified: STOT RE 1(H372) |
| j) aspiration hazard | Not classified |
| | Based on available data, the classification criteria are not met |

**Toxicological information on main components of the mixture:**

styrene

| | | |
|---|---|---|
| CAS: 100-42-5 | a) acute toxicity | LD50 Oral Rat = 5000 mg/kg |
| | | LC50 Inhalation Vapour Rat = 11.8 mg/l 4h |
| | | LD50 Skin Rat > 2000 mg/kg 24h |
| | b) skin corrosion/irritation | Skin Irritant Rabbit Positive |
| | c) serious eye damage/irritation | Eye Irritant Rabbit Yes |
| | d) respiratory or skin sensitisation | Skin Sensitization Guineapig Negative |
| | f) carcinogenicity | Genotoxicity Negative |
| | g) reproductive toxicity | No Observed Adverse Effect Level Inhalation Rat = 0.64 |

xylene

| | | |
|---|---|---|
| CAS: 1330-20-7 | a) acute toxicity | LD50 Oral Rat = 3523 ml/Kg |
| | | LC50 Inhalation Vapour Rat = 29000 mg/m3 4h |
| | | LD50 Skin Rabbit = 12126 mg/kg 24h |
| | b) skin corrosion/irritation | Skin Corrosive Rabbit Negative 4h |
| | c) serious eye damage/irritation | Eye Irritant Rabbit Yes 1h |
| | f) carcinogenicity | Genotoxicity Negative |
| | g) reproductive toxicity | No Observed Adverse Effect Level Inhalation Rat = 2171 mg/kg |

maleic anhydride

| | | |
|---|---|---|
| CAS: 108-31-6 | a) acute toxicity | LD50 Oral Rat = 1090 mg/kg |
| | | LC50 Inhalation Rat > 4.35 mg/l 1h |
| | | LD50 Skin Rabbit = 2620 mg/kg |

| | |
|---|---|
| b) skin corrosion/irritation | Skin Corrosive Rabbit Positive 4h |
| c) serious eye damage/irritation | Eye Corrosive Rabbit Positive |
| d) respiratory or skin sensitisation | Skin Sensitization Positive |
| | Respiratory Sensitization Rat Positive |
| f) carcinogenicity | Genotoxicity Rat Negative 6h |
| | Carcinogenicity Negative |
| g) reproductive toxicity | No Observed Adverse Effect Level Oral Rat = 55 mg/kg |

**11.2. Information on other hazards**

**Endocrine disrupting properties:**

No endocrine disruptor substances present in concentration >= 0.1%

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## SECTION 12: Ecological information

**12.1. Toxicity**

Adopt good working practices, so that the product is not released into the environment.

Eco-Toxicological Information:

**List of Eco-Toxicological properties of the product**

Not classified for environmental hazards.

No data available for the product

**List of Eco-Toxicological properties of the components**

styrene

| | |
|---|---|
| CAS: 100-42-5 | a) Aquatic acute toxicity: LC50 Fish Pimephales promelas = 4.02 mg/L 96h |
| | a) Aquatic acute toxicity: LC50 Daphnia Daphnia magna = 4.7 mg/L 48h |
| | b) Aquatic chronic toxicity: NOEC Daphnia Daphnia magna = 1.01 mg/L |
| | a) Aquatic acute toxicity: EC50 Algae = 4.9 mg/L 72h |
| | a) Aquatic acute toxicity: EC50 Sludge activated sludge = 500 mg/L |

xylene

| | |
|---|---|
| CAS: 1330-20-7 | a) Aquatic acute toxicity: LC50 Fish freshwater fish = 2.6 mg/L 96h |
| | b) Aquatic chronic toxicity: NOEC Fish freshwater fish = 1.3 mg/L |
| | a) Aquatic acute toxicity: LC50 Daphnia Daphnia magna = 1 mg/L 24h |
| | b) Aquatic chronic toxicity: NOEC Daphnia Ceriodaphnia dubia = 0.96 mg/L |
| | a) Aquatic acute toxicity: EC50 Algae freshwater algae = 1.3 mg/L 48h |
| | a) Aquatic acute toxicity: EC50 microorganisms = 96 mg/L |
| | d) Terrestrial toxicity: NOEC Worm earthworms = 16 mg/kg |
| | e) Plant toxicity: LC50 terrestrial plants = 1 mg/kg |

maleic anhydride

| | |
|---|---|
| CAS: 108-31-6 | a) Aquatic acute toxicity: LC50 Fish rainbow trout = 75 mg/L 96h |
| | a) Aquatic acute toxicity: LC50 Daphnia Daphnia magna = 42.81 mg/L 48h |
| | b) Aquatic chronic toxicity: NOEC Daphnia Daphnia magna = 10 mg/L |
| | a) Aquatic acute toxicity: EC50 Algae Pseudokirchneriella subcapitata = 74.32 mg/L |
| | a) Aquatic acute toxicity: NOEC Sludge activated sludge = 44.6 mg/L |

**12.2. Persistence and degradability**

styrene

| | | |
|---|---|---|
| CAS: 100-42-5 | Readily biodegradable | Test: Biochemical oxigen demand; Value: 80<br>Notes: 28days |

xylene

| | | |
|---|---|---|
| CAS: 1330-20-7 | Readily biodegradable | |

maleic anhydride

| | | |
|---|---|---|
| CAS: 108-31-6 | Readily biodegradable | Value: 90<br>Notes: 28days |

**12.3. Bioaccumulative potential**

xylene

CAS: 1330-20-7 Bioaccumulative Test: BCF - Bioconcentrantion factor; Value: 25.9

**12.4. Mobility in soil**

N.A.

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

No PBT or vPvB substances present in concentration >= 0.1%

**12.6. Endocrine disrupting properties**

No endocrine disruptor substances present in concentration >= 0.1%

**12.7. Other adverse effects**

N.A.

## SECTION 13: Disposal considerations

**13.1. Waste treatment methods**

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

The product disposed of as such, pursuant to Regulation (EU) 1357/2014, must be classified as hazardous waste

A waste code according to the European List of Wastes (LoW) cannot be specified, due to dependence on the usage. Contact an authorized waste disposal service.

**Properties of waste which render it hazardous (Annex III, Directive 2008/98/EC):**

N.A.

## SECTION 14: Transport information

**14.1. UN number or ID number**

3269

**14.2. UN proper shipping name**

ADR-Shipping Name: POLYESTER RESIN KIT

IATA-Shipping Name: POLYESTER RESIN KIT liquid base material

IMDG-Shipping Name: POLYESTER RESIN KIT, liquid base material

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

ADR-Class: 3

IATA-Class: 3

IMDG-Class: 3

**14.4. Packing group**

ADR-Packing Group: III

IATA-Packing group: III

IMDG-Packing group: III

**14.5. Environmental hazards**

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: F-E, S-D

**14.6. Special precautions for user**

Road and Rail (ADR-RID):

ADR-Label: 3

ADR - Hazard identification number: -

ADR-Special Provisions: 236 340

ADR-Transport category (Tunnel restriction code): 3 (E)

ADR Limited Quantities: 5 L

ADR Excepted Quantities: See SP 340

Air (IATA):

IATA-Passenger Aircraft: 370

IATA-Cargo Aircraft: 370

IATA-Label: 3

IATA-Subsidiary hazards: -

IATA-Erg: 3L

IATA-Special Provisions: A66 A163

Sea (IMDG):

IMDG-Stowage and handling: Category A

IMDG-Segregation: -

IMDG-Subsidiary hazards: -

IMDG-Special Provisions: 236 340

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

N.A.

## SECTION 15: Regulatory information

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

Dir. 98/24/EC (Risks related to chemical agents at work)

Dir. 2000/39/EC (Occupational exposure limit values)

Regulation (EC) n. 1907/2006 (REACH)

Regulation (EU) n. 2020/878

| | |
|---|---|
| Regulation (EC) n. 1272/2008 (CLP) | Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013 |
| Regulation (EU) n. 286/2011 (ATP 2 CLP) | Regulation (EU) n. 618/2012 (ATP 3 CLP) |
| Regulation (EU) n. 487/2013 (ATP 4 CLP) | Regulation (EU) n. 944/2013 (ATP 5 CLP) |
| Regulation (EU) n. 605/2014 (ATP 6 CLP) | Regulation (EU) n. 2015/1221 (ATP 7 CLP) |
| Regulation (EU) n. 2016/918 (ATP 8 CLP) | Regulation (EU) n. 2016/1179 (ATP 9 CLP) |
| Regulation (EU) n. 2017/776 (ATP 10 CLP) | Regulation (EU) n. 2018/669 (ATP 11 CLP) |
| Regulation (EU) n. 2018/1480 (ATP 13 CLP) | Regulation (EU) n. 2019/521 (ATP 12 CLP) |
| Regulation (EU) n. 2020/217 (ATP 14 CLP) | Regulation (EU) n. 2020/1182 (ATP 15 CLP) |
| Regulation (EU) n. 2021/643 (ATP 16 CLP) | Regulation (EU) n. 2021/849 (ATP 17 CLP) |
| Regulation (EU) n. 2022/692 (ATP 18 CLP) | Regulation (EU) n. 2023/707 |
| Regulation (EU) n. 2023/1434 (ATP 19 CLP) | Regulation (EU) n. 2023/1435 (ATP 20 CLP) |
| Regulation (EU) n. 2024/197 (ATP 21 CLP) | Regulation (EU) n. 2024/2564 (ATP 22 CLP) |
| Regulation (EU) n. 2024/2865 | Regulation (EU) n. 2025/1222 (ATP 23 CLP) |

Regulation (EC) nr 648/2004 (Detergents).

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product: 3, 40

Restrictions related to the substances contained: 75

**Provisions related to directive EU 2012/18 (Seveso III):**

| Seveso III category according to Annex 1, part 1 | Lower-tier threshold (tonnes) | Upper-tier threshold (tonnes) |
|---|---|---|
| Product belongs to category: P5c | 5000 | 50000 |

**Explosives precursors – Regulation 2019/1148**

No substances listed

**Regulation (EU) No 649/2012 (PIC regulation)**

No substances listed

**German Water Hazard Class.**

NWG: Not hazardous for water

**German Lagerklasse according to TRGS 510:**

LGK 3

SVHC Substances:

No SVHC substances present in concentration >= 0.1%

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for the mixture.

## SECTION 16: Other information

| Code | Description |
|---|---|
| EUH071 | Corrosive to the respiratory tract. |
| H226 | Flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H304 | May be fatal if swallowed and enters airways. |
| H312 | Harmful in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |

| | |
|---|---|
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335 | May cause respiratory irritation. |
| H361 | Suspected of damaging fertility or the unborn child. |
| H361 | Suspected of damaging fertility or the unborn child if inhaled and in contact with skin. |
| H372 | Causes damage to organs through prolonged or repeated exposure. |
| H372 | Causes damage to organs through prolonged or repeated exposure if inhaled. |
| H372 | Causes damage to organs (hearing organs) through prolonged or repeated exposure if inhaled. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H412 | Harmful to aquatic life with long lasting effects. |

| Code | Hazard class and hazard category | Description |
|---|---|---|
| 2.6/3 | Flam. Liq. 3 | Flammable liquid, Category 3 |
| 3.1/4/Dermal | Acute Tox. 4 | Acute toxicity (dermal), Category 4 |
| 3.1/4/Inhal | Acute Tox. 4 | Acute toxicity (inhalation), Category 4 |
| 3.1/4/Oral | Acute Tox. 4 | Acute toxicity (oral), Category 4 |
| 3.10/1 | Asp. Tox. 1 | Aspiration hazard, Category 1 |
| 3.2/1B | Skin Corr. 1B | Skin corrosion, Category 1B |
| 3.2/2 | Skin Irrit. 2 | Skin irritation, Category 2 |
| 3.3/1 | Eye Dam. 1 | Serious eye damage, Category 1 |
| 3.3/2 | Eye Irrit. 2 | Eye irritation, Category 2 |
| 3.4.1/1 | Resp. Sens. 1 | Respiratory Sensitisation, Category 1 |
| 3.4.2/1 | Skin Sens. 1 | Skin Sensitisation, Category 1 |
| 3.4.2/1A | Skin Sens. 1A | Skin Sensitisation, Category 1A |
| 3.7/2 | Repr. 2 | Reproductive toxicity, Category 2 |
| 3.8/3 | STOT SE 3 | Specific target organ toxicity — single exposure, Category 3 |
| 3.9/1 | STOT RE 1 | Specific target organ toxicity — repeated exposure, Category 1 |
| 3.9/2 | STOT RE 2 | Specific target organ toxicity — repeated exposure, Category 2 |
| 4.1/C3 | Aquatic Chronic 3 | Chronic (long term) aquatic hazard, category 3 |

**Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:**

| Classification according to Regulation (EC) Nr. 1272/2008 | Classification procedure |
|---|---|
| Flam. Liq. 3, H226 | On basis of test data |
| Skin Irrit. 2, H315 | Calculation method |
| Eye Irrit. 2, H319 | Calculation method |
| Skin Sens. 1A, H317 | Calculation method |
| Repr. 2, H361 | Calculation method |
| STOT RE 1, H372 | Calculation method |

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

Legend to abbreviations and acronyms used in the safety data sheet:

ACGIH: American Conference of Governmental Industrial Hygienists

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

AND: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand
CAS: Chemical Abstracts Service (division of the American Chemical Society).
CAV: Poison Center
CE: European Community
CLP: Classification, Labeling, Packaging.
CMR: Carcinogenic, Mutagenic and Reprotoxic
COD: Chemical Oxygen Demand
COV: Volatile Organic Compound
CSA: Chemical Safety Assessment
CSR: Chemical Safety Report
DMEL: Derived Minimal Effect Level
DNEL: Derived No Effect Level.
DPD: Dangerous Preparations Directive
DSD: Dangerous Substances Directive
EC50: Half Maximal Effective Concentration
ECHA: European Chemicals Agency
EINECS: European Inventory of Existing Commercial Chemical Substances.
ES: Exposure Scenario
GefStoffVO: Ordinance on Hazardous Substances, Germany.
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association.
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
IC50: half maximal inhibitory concentration
ICAO: International Civil Aviation Organization.
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG: International Maritime Code for Dangerous Goods.
INCI: International Nomenclature of Cosmetic Ingredients.
IRCCS: Scientific Institute for Research, Hospitalization and Health Care
KAFH: Keep Away From Heat
KSt: Explosion coefficient.
LC50: Lethal concentration, for 50 percent of test population.
LD50: Lethal dose, for 50 percent of test population.
LDLo: Leathal Dose Low
N.A.: Not Applicable
N/A: Not Applicable
N/D: Not defined/ Not available
NA: Not available
NIOSH: National Institute for Occupational Safety and Health
NOAEL: No Observed Adverse Effect Level
OSHA: Occupational Safety and Health Administration
PBT: Persistent, Bioaccumulative and Toxic
PGK: Packaging Instruction
PNEC: Predicted No Effect Concentration.
PSG: Passengers
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.
TLV: Threshold Limiting Value.
TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
vPvB: Very Persistent, Very Bioaccumulative.
WGK: German Water Hazard Class.

**Paragraphs modified from the previous revision:**

- Safety Data Sheet
- SECTION 1: Identification of the substance/mixture and of the company/undertaking
- SECTION 2: Hazards identification
- SECTION 3: Composition/information on ingredients
- SECTION 8: Exposure controls/personal protection
- SECTION 9: Physical and chemical properties
- SECTION 11: Toxicological information
- SECTION 12: Ecological information
- SECTION 15: Regulatory information

- SECTION 16: Other information

**Safety Data Sheet**

Conforms to Regulation (EC) No. 1907/2006 (REACH), Article 31, Annex II, as amended by Commission Regulation (EU) 2020/878

**KERAREP (B)**

Date of first edition: 5/19/2021

Safety Data Sheet dated 30/06/2026 version 8

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

### 1.1. Product identifier

Mixture identification:

Trade name: KERAREP (B)

Trade code: 27062018

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

Recommended use: hardener

Uses advised against: All uses other than recommended ones

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

Company: KERAKOLL S.p.A.

Via dell'Artigianato, 9

41049 Sassuolo (MODENA) - ITALY

Tel.+39 0536 816511 Fax. +39 0536816581

safety@kerakoll.com

### 1.4. Emergency telephone number

European emergency phone number 112

Ireland Emergency medical information: (seven days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 DOV2NO, Ireland.

Members of the public Number (8 am-10 pm): +353 (0)1 809 2166

Healthcare professional telephone Number (24hrs): +353 (0)1 809 2566

Malta In case of emergency call: +356 2395 2000 (24h)

## SECTION 2: Hazards identification



### 2.1. Classification of the substance or mixture

**Regulation (EC) n. 1272/2008 (CLP)**

| | |
|---|---|
| Org. Perox. F | Heating may cause a fire. |
| Eye Irrit. 2 | Causes serious eye irritation. |
| Skin Sens. 1 | May cause an allergic skin reaction. |
| Aquatic Acute 1 | Very toxic to aquatic life. |
| Aquatic Chronic 1 | Very toxic to aquatic life with long lasting effects. |

Adverse physicochemical, human health and environmental effects:

No other hazards

### 2.2. Label elements

**Regulation (EC) No 1272/2008 (CLP):**

**Hazard pictograms and Signal Word**



Warning

**Hazard statements**

| | |
|---|---|
| H242 | Heating may cause a fire. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H410 | Very toxic to aquatic life with long lasting effects. |

**Precautionary statements**

| | |
|---|---|
| P102 | Keep out of reach of children. |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P280 | Wear protective gloves and eye protection. |
| P302+P352 | IF ON SKIN: Wash with plenty of 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. |
| P403+P235 | Store in a well-ventilated place. Keep cool. |
| P501 | Dispose of contents/container in accordance with applicable regulations. |

**Contains**

Dibenzoyl peroxide

**Special provisions according to Annex XVII of REACH and subsequent amendments:**

None.

**2.3. Other hazards**

No PBT, vPvB or endocrine disruptor substances present in concentration >= 0.1%

Other Hazards: No other hazards

## SECTION 3: Composition/information on ingredients

**3.1. Substances**

N.A.

**3.2. Mixtures**

Mixture identification: KERAREP (B)

**Hazardous components within the meaning of the CLP regulation and related classification:**

| Qty | Name | Ident. Numb. | Classification | Registration Number |
|---|---|---|---|---|
| ≥50-<70 % | Dibenzoyl peroxide | CAS:94-36-0<br>EC:202-327-6<br>Index:617-008-00-0 | Org. Perox. B, H241; Eye Irrit. 2, H319; Skin Sens. 1, H317; Aquatic Acute 1, H400; Aquatic Chronic 1, H410, M-Chronic:10, M-Acute:10 | 01-2119511472-50 |
| ≥5-<10 % | ethanediol; ethylene glycol | CAS:107-21-1<br>EC:203-473-3<br>Index:603-027-00-1 | Acute Tox. 4, H302; STOT RE 2, H373 | 01-2119456816-28 |

## SECTION 4: First aid measures

**4.1. Description of first aid measures**

In case of skin contact:

Immediately take off all contaminated clothing.

Remove contaminated clothing immediatley and dispose off safely.

After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an opthalmologist immediately.

Protect uninjured eye.

In case of Ingestion:

Do not induce vomiting, get medical attention showing the SDS and label hazardous.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

Eye irritation

Eye damages

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

## SECTION 5: Firefighting measures

**5.1. Extinguishing media**

Suitable extinguishing media:

Water.

Carbon dioxide (CO2).

CO2 or Dry chemical fire extinguisher.

Extinguishing media which must not be used for safety reasons:

None in particular.

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

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

**5.3. Advice for firefighters**

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

## SECTION 6: Accidental release measures

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

**For non emergency personnel:**

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

**For emergency responders:**

Wear personal protection equipment.

**6.2. Environmental precautions**

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Suitable material for taking up: absorbing material, organic, sand

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

Suitable material for taking up: absorbing material, organic, sand

Wash with plenty of water.

**6.4. Reference to other sections**

See also section 8 and 13

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling**

Avoid contact with skin and eyes, inhalation of vapours and mists.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

Contamined clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

**Advice on general occupational hygiene:**

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

Always keep in a well ventilated place.

Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.

Incompatible materials:

Instructions as regards storage premises:

Cool and adequately ventilated.

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

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

## SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**

**Community Occupational Exposure Limits (OEL)**

Dibenzoyl peroxide

| | | |
|---|---|---|
| CAS: 94-36-0 | ACGIH | Long Term: 5 mg/m3 (8h)<br>Notes: A4 - URT and skin irr |
| | NATION AUSTRIA AL | Long Term: 5 mg/m3; Short Term: Ceiling - 10 mg/m3<br>Notes: 5(Mow), 8x, MAK, Sh, E<br>Source: GKV, BGBl. II Nr. 156/2021 |

| | | |
|---|---|---|
| NATIONAL | BELGIUM | Long Term: 5 mg/m3<br>Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1 |
| NATIONAL | CZECHIA | Long Term: 5 mg/m3; Short Term: Ceiling - 10 mg/m3<br>Notes: I, S<br>Source: Nařízení vlády č. 361-2007 Sb |
| NATIONAL | GERMANY | Long Term: 5 mg/m3<br>Notes: DFG, E, 1(I)<br>Source: TRGS 900 |
| NATIONAL | DENMARK | Long Term: 5 mg/m3<br>Source: BEK nr 2203 af 29/11/2021 |
| NATIONAL | SPAIN | Long Term: 5 mg/m3<br>Notes: Sen<br>Source: LEP 2022 |
| NATIONAL | ESTONIA | Long Term: 5 mg/m3<br>Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105 |
| NATIONAL | FINLAND | Long Term: 5 mg/m3; Short Term: 10 mg/m3<br>Source: HTP-ARVOT 2020 |
| NATIONAL | FRANCE | Long Term: 5 mg/m3<br>Source: INRS outil65 |
| NATIONAL | GREECE | Long Term: 5 mg/m3<br>Source: ΦΕΚ 94/Α` 13.5.1999 |
| NATIONAL | CROATIA | Long Term: 5 mg/m3<br>Notes: alergen koža<br>Source: NN 1/2021 |
| NATIONAL | HUNGARY | Long Term: 5 mg/m3; Short Term: 5 mg/m3<br>Notes: b, i, sz, N<br>Source: 5/2020. (II. 6.) ITM rendelet |
| NATIONAL | IRELAND | Long Term: 5 mg/m3<br>Notes: Sens.<br>Source: 2021 Code of Practice |
| NATIONAL | NORWAY | Long Term: 5 mg/m3<br>Notes: A<br>Source: FOR-2021-06-28-2248 |
| NATIONAL | POLAND | Long Term: 5 mg/m3; Short Term: 10 mg/m3<br>Source: Dz.U. 2018 poz. 1286 |
| NATIONAL | SLOVAKIA | Long Term: 5 mg/m3<br>Source: 355 NARIADENIE VLÁDY z 10. mája 2006 |
| NATIONAL | SLOVENIA | Long Term: 5 mg/m3; Short Term: 5 mg/m3<br>Notes: (I)<br>Source: UL št. 72, 11. 5. 2021 |
| WEL-EH40 | UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND | Long Term: 5 mg/m3<br>Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020) |
| SUVA | SWITZERLAND | Long Term: 5 mg/m3; Short Term: 5 mg/m3<br>Notes: TWA mg/m3: (i), VRS Peau / OAW Haut, NIOSH<br>Source: suva.ch/valeurs-limites |

ethanediol; ethylene glycol

| | | |
|---|---|---|
| CAS: 107-21-1 | ACGIH | Short Term: 10 mg/m3<br>Notes: I, H, A4 - URT irr |
| | EU | Long Term: 52 mg/m3 - 20 ppm (8h); Short Term: 104 mg/m3 - 40 ppm<br>Notes: Skin |
| NATIONAL | AUSTRIA | Long Term: 26 mg/m3 - 10 ppm; Short Term: Ceiling - 52 mg/m3 - 20 ppm<br>Notes: 5(Mow), 8x, MAK, H<br>Source: BGBl. II Nr. 156/2021 |

| | | |
|---|---|---|
| NATIONAL | BELGIUM | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: D, M<br>Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1 |
| NATIONAL | BULGARIA | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: Кожа<br>Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г. |
| NATIONAL | CYPRUS | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: δέρμα<br>Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021 |
| NATIONAL | CZECHIA | Long Term: 50 mg/m3; Short Term: Ceiling - 100 mg/m3<br>Notes: D<br>Source: Nařízení vlády č. 361-2007 Sb |
| NATIONAL | GERMANY | Long Term: 26 mg/m3 - 10 ppm<br>Notes: DFG, EU, H, Y, 11, 2(I)<br>Source: TRGS 900 |
| NATIONAL | DENMARK | Long Term: 26 mg/m3 - 10 ppm<br>Notes: EH<br>Source: BEK nr 2203 af 29/11/2021<br><br>Long Term: 10 mg/m3<br>Source: BEK nr 2203 af 29/11/2021 |
| NATIONAL | SPAIN | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: vía dérmica, VLI<br>Source: LEP 2022 |
| NATIONAL | ESTONIA | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: A, 18<br>Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105 |
| NATIONAL | FINLAND | Long Term: 50 mg/m3 - 20 ppm; Short Term: 100 mg/m3 - 40 ppm<br>Notes: iho<br>Source: HTP-ARVOT 2020 |
| NATIONAL | FRANCE | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: Risque de pénétration percutanée<br>Source: INRS outil65, arrêté du 30-06-2004 modifié |
| NATIONAL | GREECE | Long Term: 125 mg/m3 - 50 ppm; Short Term: 125 mg/m3 - 50 ppm<br>Source: ΦΕΚ 94/Α` 13.5.1999 |
| NATIONAL | HUNGARY | Long Term: 52 mg/m3; Short Term: 104 mg/m3<br>Notes: b, i, EU1, N<br>Source: 5/2020. (II. 6.) ITM rendelet |
| NATIONAL | IRELAND | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: Sk, IOELV<br>Source: 2021 Code of Practice |
| NATIONAL | ITALY | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: Cute<br>Source: D.lgs. 81/2008, Allegato XXXVIII |
| NATIONAL | LITHUANIA | Long Term: 25 mg/m3 - 10 ppm; Short Term: 50 mg/m3 - 20 ppm<br>Notes: O, Šis RD taikomas bendrai garų ir aerozolio koncentracijai.<br>Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389 |
| NATIONAL | LUXEMBOURG | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: Peau<br>Source: Mémorial A n.226 du 22 mars 2021 |
| NATIONAL | LATVIA | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: Āda<br>Source: KN325P1 |
| NATIONAL | MALTA | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: skin<br>Source: S.L.424.24 |
| NATIONAL | NETHERLANDS | Long Term: 52 mg/m3; Short Term: 104 mg/m3<br>Notes: H<br>Source: Arbeidsomstandighedenregeling - Lijst A<br><br>Long Term: 10 mg/m3; Short Term: 104 mg/m3 |

| | | |
|---|---|---|
| | | Notes: H<br>Source: Arbeidsomstandighedenregeling - Lijst A |
| NATIONAL | NORWAY | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: H E 5 S<br>Source: FOR-2021-06-28-2248 |
| NATIONAL | POLAND | Long Term: 15 mg/m3; Short Term: 50 mg/m3<br>Notes: skóra<br>Source: Dz.U. 2018 poz. 1286 |
| NATIONAL | PORTUGAL | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: Cutânea<br>Source: Decreto-Lei n.º 1/2021 |
| NATIONAL | ROMANIA | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: P, Dir. 2000/39<br>Source: Republicarea 1 - nr. 743 din 29 iulie 2021 |
| NATIONAL | SLOVAKIA | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: K<br>Source: 355 NARIADENIE VLÁDY z 10. mája 2006 |
| NATIONAL | SLOVENIA | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: K, Y, EU1<br>Source: UL št. 72, 11. 5. 2021 |
| NATIONAL | SWEDEN | Long Term: 25 mg/m3 - 10 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: H, 26<br>Source: AFS 2021:3 |
| WEL-EH40 | UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND | Long Term: 10 mg/m3<br>Notes: Sk<br>Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020) |
| | | Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm<br>Notes: Sk<br>Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020) |
| SUVA | SWITZERLAND | Long Term: 26 mg/m3 - 10 ppm; Short Term: 52 mg/m3 - 20 ppm<br>Notes: R/H, SSC, VRS Yeux / OAW Auge, La substance peut être présente sous forme de vapeur et d'aérosol en même temps / Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen<br>Source: suva.ch/valeurs-limites |

**Predicted No Effect Concentration (PNEC) values**

ethanediol; ethylene glycol

CAS: 107-21-1 Exposure Route: Fresh Water; PNEC Limit: 10 mg/l

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 10 mg/l

Exposure Route: Marine water; PNEC Limit: 1 mg/l

Exposure Route: Intermittent releases (marine water); PNEC Limit: 10 mg/l

Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 199.5 mg/l

Exposure Route: Freshwater sediments; PNEC Limit: 37 mg/kg

Exposure Route: Marine water sediments; PNEC Limit: 3.7 mg/kg

Exposure Route: Soil; PNEC Limit: 1.53 mg/kg

**Derived No Effect Level (DNEL) values**

ethanediol; ethylene glycol

CAS: 107-21-1 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 35 mg/kg/day; Consumer: 7 mg/kg/day

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 106 mg/kg; Consumer: 53 mg/kg

**8.2. Exposure controls**

Eye protection:

Eye glasses with side protection.(EN166)

Protection for skin:

Chemical protection clothing. Safety shoes.

Protection for hands:

Protection for hands:

Suitable materials for safety gloves; EN 374:

Nitrile rubber - NBR: thickness ≥0,35mm; breakthrough time ≥480min.

Respiratory protection:

Gas filter type A .

Thermal Hazards:

Not expected if used as intended

Environmental exposure controls:

Prevent the product from entering sewers or surface and underground water.

## SECTION 9: Physical and chemical properties

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

| | |
|---|---|
| Physical state: | Solid |
| Colour: | Red |
| Odour: | Characteristic |
| pH: | Not Relevant<br>Notes: Not applicable, non-aqueous mixture |
| Kinematic viscosity: | N.A. |
| Melting point/freezing point: | 0 °C (32 °F) |
| Boiling point or initial boiling point and boiling range: | N.A. |
| Flash point: | 195 °C (383 °F) |
| Lower and upper explosion limit: | N.A. |
| Relative vapour density: | N.A. |
| Vapour pressure: | N.A. |
| Density and/or relative density: | 1.20 g/cm3 |
| Solubility in water: | Insoluble |
| Solubility in oil: | N.A. |
| Partition coefficient n-octanol/water (log value): | N.A. |
| Auto-ignition temperature: | N.A. |
| Decomposition temperature: | 50.00 °C |
| Flammability: | N.A. |
| Volatile Organic compounds - VOCs = | 9.90%; 118.80g/L |
| **Particle characteristics:** | |
| Particle size: | N.A. |

### 9.2. Other information

| | |
|---|---|
| Explosive properties: | SADT 50°C |

No other relevant information

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Stable under normal conditions

### 10.2. Chemical stability

Data not available.

### 10.3. Possibility of hazardous reactions

Exothermic reaction with bases

### 10.4. Conditions to avoid

Stable under normal conditions.

**10.5. Incompatible materials**

Amines; Alkali; Acids

**10.6. Hazardous decomposition products**

None.

## SECTION 11: Toxicological information

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

**Toxicological Information of the Preparation**

| | |
|---|---|
| a) acute toxicity | Not classified |
| | Based on available data, the classification criteria are not met |
| b) skin corrosion/irritation | Not classified |
| | Based on available data, the classification criteria are not met |
| c) serious eye damage/irritation | The product is classified: Eye Irrit. 2(H319) |
| d) respiratory or skin sensitisation | The product is classified: Skin Sens. 1(H317) |
| e) germ cell mutagenicity | Not classified |
| | Based on available data, the classification criteria are not met |
| f) carcinogenicity | Not classified |
| | Based on available data, the classification criteria are not met |
| g) reproductive toxicity | Not classified |
| | Based on available data, the classification criteria are not met |
| h) STOT-single exposure | Not classified |
| | Based on available data, the classification criteria are not met |
| i) STOT-repeated exposure | Not classified |
| | Based on available data, the classification criteria are not met |
| j) aspiration hazard | Not classified |
| | Based on available data, the classification criteria are not met |

**Toxicological information on main components of the mixture:**

ethanediol; ethylene glycol

| | | |
|---|---|---|
| CAS: 107-21-1 | a) acute toxicity | LD50 Oral Rat = 7712 mg/kg |
| | | LC50 Inhalation of aerosol Rat > 2.5 mg/l 6h |
| | | LD50 Skin Mouse > 3500 mg/kg |
| | b) skin corrosion/irritation | Skin Irritant Rabbit Negative |
| | c) serious eye damage/irritation | Eye Irritant Rabbit No 24h |
| | d) respiratory or skin sensitisation | Skin Sensitization Guineapig Negative |
| | f) carcinogenicity | Genotoxicity Rat Negative |
| | | Carcinogenicity Negative |
| | g) reproductive toxicity | No Observed Adverse Effect Level Oral Rat > 1000 mg/kg |

**11.2. Information on other hazards**

**Endocrine disrupting properties:**

No endocrine disruptor substances present in concentration >= 0.1%

## SECTION 12: Ecological information

**12.1. Toxicity**

Adopt good working practices, so that the product is not released into the environment.

Eco-Toxicological Information:

Very toxic to aquatic organisms.

Very toxic to aquatic life with long lasting effects.

**List of Eco-Toxicological properties of the product**

The product is classified: Aquatic Acute 1(H400), Aquatic Chronic 1(H410)

**List of Eco-Toxicological properties of the components**

ethanediol; ethylene glycol

CAS: 107-21-1 a) Aquatic acute toxicity: LC50 Fish Pimephales promelas = 72860 mg/L 96h

b) Aquatic chronic toxicity: NOEC Fish = 15380 mg/L

b) Aquatic chronic toxicity: NOEC Ceriodaphnia dubia = 8590 mg/L

a) Aquatic acute toxicity: NOEC Algae Pseudokirchnerella subcapitata = 100 mg/L 72h

**12.2. Persistence and degradability**

ethanediol; ethylene glycol

| | | |
|---|---|---|
| CAS: 107-21-1 | Readily biodegradable | Test: Dissolved organic carbon; Value: 90<br>Notes: 10days |

**12.3. Bioaccumulative potential**

N.A.

**12.4. Mobility in soil**

N.A.

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

No PBT or vPvB substances present in concentration >= 0.1%

**12.6. Endocrine disrupting properties**

No endocrine disruptor substances present in concentration >= 0.1%

**12.7. Other adverse effects**

N.A.

## SECTION 13: Disposal considerations

**13.1. Waste treatment methods**

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

The product disposed of as such, pursuant to Regulation (EU) 1357/2014, must be classified as hazardous waste

A waste code according to the European List of Wastes (LoW) cannot be specified, due to dependence on the usage. Contact an authorized waste disposal service.

**Properties of waste which render it hazardous (Annex III, Directive 2008/98/EC):**

N.A.

## SECTION 14: Transport information

**14.1. UN number or ID number**

3108

**14.2. UN proper shipping name**

ADR-Shipping Name: ORGANIC PEROXIDE TYPE E, SOLID

IATA-Shipping Name: ORGANIC PEROXIDE TYPE E, SOLID

IMDG-Shipping Name: ORGANIC PEROXIDE TYPE E, SOLID

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

ADR-Class: 5.2

IATA-Class: 5.2

IMDG-Class: 5.2

**14.4. Packing group**

ADR-Packing Group: -

IATA-Packing group: -

IMDG-Packing group: -

**14.5. Environmental hazards**

Most important toxic component: Dibenzoyl peroxide

Marine pollutant: Yes

Environmental Pollutant: Yes

IMDG-EMS: F-J, S-R

**14.6. Special precautions for user**

Road and Rail (ADR-RID):

ADR-Label: 5.2

ADR - Hazard identification number: -

ADR-Special Provisions: 122 274

ADR-Transport category (Tunnel restriction code): 2 (D)

ADR Limited Quantities: 500 g

ADR Excepted Quantities: E0

Air (IATA):

IATA-Passenger Aircraft: 570

IATA-Cargo Aircraft: 570
IATA-Label: 5.2 + KAFH
IATA-Subsidiary hazards: -
IATA-Erg: 5L
IATA-Special Provisions: A20 A802

Sea (IMDG):

IMDG-Stowage and handling: Category D SW1
IMDG-Segregation: SG35 SG36 SG72
IMDG-Subsidiary hazards: -
IMDG-Special Provisions: 122 274

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

N.A.

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## SECTION 15: Regulatory information

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

Dir. 98/24/EC (Risks related to chemical agents at work)
Dir. 2000/39/EC (Occupational exposure limit values)
Regulation (EC) n. 1907/2006 (REACH)
Regulation (EU) n. 2020/878

| | |
|---|---|
| Regulation (EC) n. 1272/2008 (CLP) | Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013 |
| Regulation (EU) n. 286/2011 (ATP 2 CLP) | Regulation (EU) n. 618/2012 (ATP 3 CLP) |
| Regulation (EU) n. 487/2013 (ATP 4 CLP) | Regulation (EU) n. 944/2013 (ATP 5 CLP) |
| Regulation (EU) n. 605/2014 (ATP 6 CLP) | Regulation (EU) n. 2015/1221 (ATP 7 CLP) |
| Regulation (EU) n. 2016/918 (ATP 8 CLP) | Regulation (EU) n. 2016/1179 (ATP 9 CLP) |
| Regulation (EU) n. 2017/776 (ATP 10 CLP) | Regulation (EU) n. 2018/669 (ATP 11 CLP) |
| Regulation (EU) n. 2018/1480 (ATP 13 CLP) | Regulation (EU) n. 2019/521 (ATP 12 CLP) |
| Regulation (EU) n. 2020/217 (ATP 14 CLP) | Regulation (EU) n. 2020/1182 (ATP 15 CLP) |
| Regulation (EU) n. 2021/643 (ATP 16 CLP) | Regulation (EU) n. 2021/849 (ATP 17 CLP) |
| Regulation (EU) n. 2022/692 (ATP 18 CLP) | Regulation (EU) n. 2023/707 |
| Regulation (EU) n. 2023/1434 (ATP 19 CLP) | Regulation (EU) n. 2023/1435 (ATP 20 CLP) |
| Regulation (EU) n. 2024/197 (ATP 21 CLP) | Regulation (EU) n. 2024/2564 (ATP 22 CLP) |
| Regulation (EU) n. 2024/2865 | Regulation (EU) n. 2025/1222 (ATP 23 CLP) |

Regulation (EC) nr 648/2004 (Detergents).

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product: None.

Restrictions related to the substances contained: 75

**Provisions related to directive EU 2012/18 (Seveso III):**

| Seveso III category according to Annex 1, part 1 | Lower-tier threshold (tonnes) | Upper-tier threshold (tonnes) |
|---|---|---|
| Product belongs to category: P6b | 50 | 200 |
| Product belongs to category: E1 | 100 | 200 |

**Explosives precursors – Regulation 2019/1148**

No substances listed

**Regulation (EU) No 649/2012 (PIC regulation)**

No substances listed

**German Water Hazard Class.**

Class 3: extremely hazardous.

**German Lagerklasse according to TRGS 510:**

LGK 5.2

SVHC Substances:

No SVHC substances present in concentration >= 0.1%

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for the mixture.

**Substances for which a Chemical Safety Assessment has been carried out:**

ethanediol; ethylene glycol

## SECTION 16: Other information

| Code | Description |
|---|---|
| H241 | Heating may cause a fire or explosion. |
| H242 | Heating may cause a fire. |
| H302 | Harmful if swallowed. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |

| Code | Hazard class and hazard category | Description |
|---|---|---|
| 2.15/B | Org. Perox. B | Organic peroxide, Type B |
| 2.15/F | Org. Perox. F | Organic peroxide, Type F |
| 3.1/4/Oral | Acute Tox. 4 | Acute toxicity (oral), Category 4 |
| 3.3/2 | Eye Irrit. 2 | Eye irritation, Category 2 |
| 3.4.2/1 | Skin Sens. 1 | Skin Sensitisation, Category 1 |
| 3.9/2 | STOT RE 2 | Specific target organ toxicity — repeated exposure, Category 2 |
| 4.1/A1 | Aquatic Acute 1 | Acute aquatic hazard, category 1 |
| 4.1/C1 | Aquatic Chronic 1 | Chronic (long term) aquatic hazard, category 1 |

**Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:**

| Classification according to Regulation (EC) Nr. 1272/2008 | Classification procedure |
|---|---|
| Org. Perox. F, H242 | On basis of test data |
| Eye Irrit. 2, H319 | Calculation method |
| Skin Sens. 1, H317 | Calculation method |
| Aquatic Acute 1, H400 | Calculation method |
| Aquatic Chronic 1, H410 | Calculation method |

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

Legend to abbreviations and acronyms used in the safety data sheet:

ACGIH: American Conference of Governmental Industrial Hygienists

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

AND: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

CAS: Chemical Abstracts Service (division of the American Chemical Society).

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging.

CMR: Carcinogenic, Mutagenic and Reprotoxic

COD: Chemical Oxygen Demand

COV: Volatile Organic Compound

CSA: Chemical Safety Assessment

CSR: Chemical Safety Report

DMEL: Derived Minimal Effect Level

DNEL: Derived No Effect Level.

DPD: Dangerous Preparations Directive
DSD: Dangerous Substances Directive
EC50: Half Maximal Effective Concentration
ECHA: European Chemicals Agency
EINECS: European Inventory of Existing Commercial Chemical Substances.
ES: Exposure Scenario
GefStoffVO: Ordinance on Hazardous Substances, Germany.
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association.
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
IC50: half maximal inhibitory concentration
ICAO: International Civil Aviation Organization.
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG: International Maritime Code for Dangerous Goods.
INCI: International Nomenclature of Cosmetic Ingredients.
IRCCS: Scientific Institute for Research, Hospitalization and Health Care
KAFH: Keep Away From Heat
KSt: Explosion coefficient.
LC50: Lethal concentration, for 50 percent of test population.
LD50: Lethal dose, for 50 percent of test population.
LDLo: Leathal Dose Low
N.A.: Not Applicable
N/A: Not Applicable
N/D: Not defined/ Not available
NA: Not available
NIOSH: National Institute for Occupational Safety and Health
NOAEL: No Observed Adverse Effect Level
OSHA: Occupational Safety and Health Administration
PBT: Persistent, Bioaccumulative and Toxic
PGK: Packaging Instruction
PNEC: Predicted No Effect Concentration.
PSG: Passengers
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.
TLV: Threshold Limiting Value.
TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
vPvB: Very Persistent, Very Bioaccumulative.
WGK: German Water Hazard Class.

**Paragraphs modified from the previous revision:**

- Safety Data Sheet
- SECTION 1: Identification of the substance/mixture and of the company/undertaking
- SECTION 2: Hazards identification
- SECTION 3: Composition/information on ingredients
- SECTION 8: Exposure controls/personal protection
- SECTION 9: Physical and chemical properties
- SECTION 10: Stability and reactivity
- SECTION 11: Toxicological information
- SECTION 12: Ecological information
- SECTION 15: Regulatory information
- SECTION 16: Other information

# Exposure Scenario
## Ethane-1,2-diol

## Exposure Scenario, 09/08/2021

| Substance identity | |
|---|---|
| | Ethane-1,2-diol |
| **CAS No.** | 107-21-1 |
| **INDEX No.** | 603-027-00-1 |
| **EINECS No.** | 203-473-3 |
| **Registration number** | 01-2119456816-28 |

## Table of contents

1. **ES 1** Widespread use by professional workers; Various products (PC9a, PC9b)

# 1. ES 1 Widespread use by professional workers; Various products (PC9a, PC9b)

## 1.1 TITLE SECTION

| | |
|---|---|
| **Exposure Scenario name** | Use in coatings - Use in rigid foams, coatings, adhesives and sealants |
| **Date - Version** | 09/08/2021 - 1.0 |
| **Life Cycle Stage** | Widespread use by professional workers |
| **Main user group** | Professional uses |
| **Sector(s) of use** | Professional uses (SU22) |
| **Product Categories** | Coatings and paints, thinners, paint removers (PC9a) - Fillers, putties, plasters, modelling clay (PC9b) |

| **Environment Contributing Scenario** | |
|---|---|
| **CS1** | ERC8d |

| **Worker Contributing Scenario** | |
|---|---|
| **CS2 Material transfers** | PROC8a |
| **CS3 Rolling, Brushing** | PROC10 |
| **CS4 Roller, spreader, flow application** | PROC11 |
| **CS5 Handling and dilution of concentrates** | PROC19 |

## 1.2 Conditions of use affecting exposure

### 1.2. CS1: Environment Contributing Scenario (ERC8d)

| | |
|---|---|
| **Environmental release categories** | Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d) |

#### *Product (article) characteristics*

**Physical form of product:**
Liquid

**Concentration of substance in product:**
Covers percentage substance in the product up to 1 %.

#### *Amount used, frequency and duration of use (or from service life)*

**Amounts used:**
Daily amount per site = 5479 kg

**Release type:** Continuous release

**Emission days:** 365 days per year

#### *Technical and organisational conditions and measures*

**Control measures to prevent releases**

| | |
|---|---|
| Municipal sewage treatment plant is assumed. | Air - minimum efficiency of: = 95 %<br>Water - minimum efficiency of: = 87 % |

#### *Conditions and measures related to treatment of waste (including article waste)*

**Waste treatment**
Contain and dispose of waste according to local regulations.

#### *Other conditions affecting environmental exposure*

**Local marine water dilution factor:** 100
**Local freshwater dilution factor:** 10

## 1.2. CS2: Worker Contributing Scenario: Material transfers (PROC8a)

| | |
|---|---|
| **Process Categories** | Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a) |

### *Product (article) characteristics*

**Physical form of product:**
Liquid

**Concentration of substance in product:**
Covers percentage substance in the product up to 1 %.

### *Amount used, frequency and duration of use/exposure*

**Duration:**
Exposure duration < 8 h

**Frequency:**
Use frequency < 240 days per year

### *Technical and organisational conditions and measures*

**Technical and organisational measures**

| | |
|---|---|
| Provide extract ventilation to points where emissions occur.<br>Ensure operatives are trained to minimise exposures.<br>Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. | Inhalation - minimum efficiency of: 80 % |

### *Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**
Wear suitable respiratory protection.

### *Other conditions affecting worker exposure*

Indoor use
Professional use
**Temperature:** Assumes use at not more than 20 °C above ambient temperature.
**Body parts exposed:**
Assumes that potential dermal contact is limited to hands.

## 1.2. CS3: Worker Contributing Scenario: Rolling, Brushing (PROC10)

| | |
|---|---|
| **Process Categories** | Roller application or brushing (PROC10) |

### *Product (article) characteristics*

**Physical form of product:**
Liquid

**Concentration of substance in product:**
Covers percentage substance in the product up to 1 %.

### *Amount used, frequency and duration of use/exposure*

**Duration:**
Exposure duration < 8 h

**Frequency:**
Use frequency < 240 days per year

### *Technical and organisational conditions and measures*

**Technical and organisational measures**

| | |
|---|---|
| Provide extract ventilation to points where emissions occur.<br>Ensure operatives are trained to minimise exposures.<br>Supervision in place to check that the risk management measures in place are being used correctly and | Inhalation - minimum efficiency of: 80 % |

| | |
|---|---|
| operation conditions followed. | |

### *Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

| | |
|---|---|
| Wear suitable respiratory protection.<br>Wear chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training. | Dermal - minimum efficiency of: 90 % |

### *Other conditions affecting worker exposure*

Indoor use
Professional use
**Temperature:** Assumes use at not more than 20 °C above ambient temperature.
**Body parts exposed:**
Assumes that potential dermal contact is limited to hands.

## 1.2. CS4: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)

| | |
|---|---|
| **Process Categories** | Non industrial spraying (PROC11) |

### *Product (article) characteristics*

**Physical form of product:**
Liquid

**Concentration of substance in product:**
Covers percentage substance in the product up to 1 %.

### *Amount used, frequency and duration of use/exposure*

**Amounts used:**
Application rate 0.05 L/min

**Duration:**
Exposure duration < 150 min

**Frequency:**
Use frequency < 5 days per week

### *Technical and organisational conditions and measures*

**Technical and organisational measures**
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Ensure operatives are trained to minimise exposures.
Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed.

### *Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

| | |
|---|---|
| Wear suitable respiratory protection.<br>Wear chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training.<br>Wear suitable coveralls to prevent exposure to the skin. | Dermal - minimum efficiency of: 80 %<br>Inhalation - minimum efficiency of: 40 % |

### *Other conditions affecting worker exposure*

Indoor use
Professional use
**Room size:** Covers use in room size of < 1000 m³
**Temperature:** Assumes use at not more than 20 °C above ambient temperature.
**Body parts exposed:**
Assumes that potential dermal contact is limited to hands and forearms.

## 1.2. CS5: Worker Contributing Scenario: Handling and dilution of concentrates (PROC19)

| | |
|---|---|
| **Process Categories** | Manual activities involving hand contact (PROC19) |

### *Product (article) characteristics*

**Physical form of product:**

Liquid

**Concentration of substance in product:**

Covers percentage substance in the product up to 1 %.

### *Amount used, frequency and duration of use/exposure*

**Duration:**

Exposure duration < 15 min

**Frequency:**

Use frequency < 240 days per year

### *Technical and organisational conditions and measures*

**Technical and organisational measures**

| | |
|---|---|
| Provide extract ventilation to points where emissions occur.<br>Ensure operatives are trained to minimise exposures.<br>Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. | Inhalation - minimum efficiency of: 80 % |

### *Conditions and measures related to personal protection, hygiene and health evaluation*

**Personal protection**

| | |
|---|---|
| Wear suitable respiratory protection.<br>Wear chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training. | Dermal - minimum efficiency of: 90 % |

### *Other conditions affecting worker exposure*

Indoor use

Professional use

**Temperature:** Assumes use at not more than 20 °C above ambient temperature.

**Body parts exposed:**

Assumes that potential dermal contact is limited to hands.

## 1.3 Exposure estimation and reference to its source

### 1.3. CS2: Worker Contributing Scenario: Material transfers (PROC8a)

| Exposure route, Health effect, Exposure indicator | Exposure level | Calculation method | Risk Characterization Ratio (RCR) |
|---|---|---|---|
| inhalative, long-term | = 12.94 mg/m³ | ECETOC TRA worker v2.0 | = 0.37 |
| dermal, systemic, long-term | = 13.71 mg/kg bw/day | ECETOC TRA worker v2.0 | = 0.01 |

### 1.3. CS3: Worker Contributing Scenario: Rolling, Brushing (PROC10)

| Exposure route, Health effect, Exposure indicator | Exposure level | Calculation method | Risk Characterization Ratio (RCR) |
|---|---|---|---|
| inhalative, long-term | = 12.94 mg/m³ | ECETOC TRA worker v2.0 | = 0.37 |
| dermal, systemic, long-term | = 2.74 mg/kg bw/day | ECETOC TRA worker v2.0 | = 0.03 |

### 1.3. CS4: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)

| Exposure route, Health effect, Exposure indicator | Exposure level | Calculation method | Risk Characterization Ratio (RCR) |
|---|---|---|---|
| inhalative, long-term | = 14.05 mg/m³ | ECETOC TRA worker v2.0 | = 0.4 |
| dermal, systemic, long-term | = 53.75 mg/kg bw/day | ECETOC TRA worker v2.0 | = 0.51 |

### 1.3. CS5: Worker Contributing Scenario: Handling and dilution of concentrates (PROC19)

| Exposure route, Health effect, Exposure indicator | Exposure level | Calculation method | Risk Characterization Ratio (RCR) |
|---|---|---|---|
| inhalative, long-term | = 6.47 mg/m³ | ECETOC TRA worker v2.0 | = 0.18 |
| dermal, systemic, long-term | = 14.14 mg/kg bw/day | ECETOC TRA worker v2.0 | = 0.13 |

## 1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**Guidance to check compliance with the exposure scenario:**

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.