

Safety Data Sheet

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

MICRORESINA XTREME INVISIBLE (A)

Date of first edition: 11/24/2020

Safety Data Sheet dated 06/05/2026

version 4

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

1.1. Product identifier

Mixture identification:

Trade name: MICRORESINA XTREME INVISIBLE (A)

Trade code: 001059021

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

Recommended use: Paints/coatings - Protective and functional

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)

The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP).

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

The product is not classified as dangerous according to Regulation EC 1272/2008 (CLP).

Special Provisions:

EUH208 Contains 1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one. May produce an allergic reaction.

EUH208 Contains reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1). May produce an allergic reaction.

EUH210 Safety data sheet available on request.

Dir. 2004/42/EC (VOC directive)

Two-pack reactive performance coatings for specific end use such as floors

EU limit value for this product (cat. A/j): 140 g/l

This product contains max 83.54 g/l VOC.

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 \geq 0.1%

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: MICRORESINA XTREME INVISIBLE (A)

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

Qty	Name	Ident. Numb.	Classification	Registration Number
<0.036 %	1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one	CAS:2634-33-5 EC:220-120-9 Index:613-088-00-6	Acute Tox. 2, H330; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Dam. 1, H318; Skin Sens. 1A, H317; Aquatic Acute 1, H400; Aquatic Chronic 1, H410, M-Chronic:1, M-Acute:1	
			Specific Concentration Limits: C ≥ 0.036%: Skin Sens. 1A H317	
<0.0015 %	reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	CAS:55965-84-9 Index:613-167-00-5	Acute Tox. 2, H330; Acute Tox. 2, H310; Acute Tox. 3, H301; Skin Corr. 1C, H314; Eye Dam. 1, H318; Skin Sens. 1A, H317; Aquatic Acute 1, H400; Aquatic Chronic 1, H410, M-Chronic:100, M-Acute:100, EUH071	
			Specific Concentration Limits: C ≥ 0.6%: Skin Corr. 1C H314 0.06% ≤ C < 0.6%: Skin Irrit. 2 H315 C ≥ 0.6%: Eye Dam. 1 H318 0.06% ≤ C < 0.6%: Eye Irrit. 2 H319 C ≥ 0.0015%: Skin Sens. 1A H317	

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Wash with plenty of water and soap.

In case of eyes contact:

Wash immediately with water.

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

N.A.

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

N.A.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO₂).

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
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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.
- 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

- Avoid direct sunlight. Protect from freezing

Incompatible materials:

- None in particular.

Instructions as regards storage premises:

- Adequately ventilated premises.

7.3. Specific end use(s)

Recommendation(s)

- This product contains microplastics: do not release the product into the environment during use or disposal. Do not clean tools under running water. Do not pour product residues, water, or other washing solutions into household drains or sewers.

- 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)

	OEL Type	Country	Occupational Exposure Limit
2-(2-ethoxyethoxy)ethanol CAS: 111-90-0	NATIONAL	GERMANY	Long Term: 35 mg/m ³ - 6 ppm AGS, Y, 11, 2(I) Source: TRGS 900
	NATIONAL	SLOVENIA	Long Term: 35 mg/m ³ - 6 ppm; Short Term: 70 mg/m ³ - 12 ppm Y Source: UL št. 72, 11. 5. 2021
	NATIONAL	AUSTRIA	Long Term: 35 mg/m ³ - 6 ppm; Short Term: 140 mg/m ³ - 24 ppm 15(Miw), 4x, MAK Source: GKV, BGBl. II Nr. 156/2021
	NATIONAL	SWEDEN	Long Term: 80 mg/m ³ - 15 ppm; Short Term: 170 mg/m ³ - 30 ppm H, V Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 50 mg/m ³ ; Short Term: 100 mg/m ³ TWA mg/m ³ : (i), SSC, VRS / OAW, La substance peut être présente sous forme de vapeur et d'aérosol en même temps / Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen Source: suva.ch/valeurs-limites

silicon dioxide, chemically prepared CAS: 7631-86-9	NATIONAL	BELGIUM	Long Term: 10 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	IRELAND	Long Term: 6 mg/m3 Inhalable fraction Source: 2021 Code of Practice
	NATIONAL	IRELAND	Long Term: 2.4 mg/m3 Respirable fraction Source: 2021 Code of Practice
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 6 mg/m3 Inhalable aerosol Source: EH40/2005 Workplace exposure limits
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 2.4 mg/m3 Respirable aerosol Source: EH40/2005 Workplace exposure limits
	NATIONAL	GERMANY	Long Term: 4 mg/m3 DFG, 2, Y, E Source: TRGS 900
	NATIONAL	SLOVENIA	Long Term: 4 mg/m3 Y, (I) Source: UL št. 72, 11. 5. 2021
	NATIONAL	AUSTRIA	MAK Source: BGBl. II Nr. 156/2021
	NATIONAL	ESTONIA	Long Term: 2 mg/m3 1 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	LATVIA	Long Term: 1 mg/m3 Source: KN325P1
triethylamine CAS: 121-44-8	SUVA	SWITZERLAND	SSC, Fibpulm / Lungenfibrose, Des VMEs se trouvent sous les substances associées / MAK-Werte finden sich unter den zugeordneten Stoffen Source: suva.ch/valeurs-limites
	SUVA	SWITZERLAND	Long Term: 4 mg/m3 TWA mg/m3: (i), SSC, Fibpulm / Lungenfibrose Source: suva.ch/valeurs-limites
	ACGIH		Long Term: 0.5 ppm (8h); Short Term: 1 ppm Skin, A4 - Visual impair, URT irr
	NATIONAL	AUSTRIA	Long Term: 8.4 mg/m3 - 2 ppm; Short Term: 12.6 mg/m3 - 3 ppm 15(Miw), 4x, MAK, Reaktion mit nitro- sierenden Agentien kann zur Bildung des kanzerogenen N- Nitrosomethylanilins führen. Source: BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 8.4 mg/m3 - 2 ppm; Short Term: 12.6 mg/m3 - 3 ppm Кожа Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 8 mg/m3; Short Term: Ceiling - 12 mg/m3 D, I Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Long Term: 4.1 mg/m3 - 1 ppm EH Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 8.4 mg/m3 - 2 ppm; Short Term: 12.6 mg/m3 - 3 ppm A, S Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Short Term: 4.2 mg/m3 - 1 ppm iho Source: HTP-ARVOT 2020

NATIONAL	FRANCE	Long Term: 4.2 mg/m ³ - 1 ppm; Short Term: 12.6 mg/m ³ - 3 ppm Risque de pénétration percutanée Source: INRS outil65, article R. 4412-149 du Code du travail
NATIONAL	GREECE	Long Term: 40 mg/m ³ - 10 ppm; Short Term: 60 mg/m ³ - 15 ppm Δ Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	HUNGARY	Long Term: 8.4 mg/m ³ ; Short Term: 12.6 mg/m ³ b, i, m, EU1, R+T Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	LITHUANIA	Long Term: 8.4 mg/m ³ - 2 ppm; Short Term: 12.6 mg/m ³ - 3 ppm O Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NETHERLANDS	Long Term: 4.2 mg/m ³ ; Short Term: 12.6 mg/m ³ H Source: Arbeidsomstandighedenregeling - Lijst A
NATIONAL	NORWAY	Long Term: 8 mg/m ³ - 2 ppm H E Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 3 mg/m ³ ; Short Term: 9 mg/m ³ skóra Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 8.4 mg/m ³ - 2 ppm; Short Term: 12.6 mg/m ³ - 3 ppm K Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 4.2 mg/m ³ - 1 ppm; Short Term: 12.6 mg/m ³ - 3 ppm H Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 4.2 mg/m ³ - 1 ppm; Short Term: 8.4 mg/m ³ - 2 ppm D Cornée / Cornea, NIOSH, En présence d'agents nitrosants, il peut se former de la N-Nitrosodiméthylamine cancérigène. / Reaktion mit nitrosierenden Agentien kann zur Bildung des kanzerogenen N-Nitrosodimethylamins führen Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 8 mg/m ³ - 2 ppm; Short Term: 17 mg/m ³ - 4 ppm Sk Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
NATIONAL	BELGIUM	Long Term: 2.07 mg/m ³ - 0.5 ppm; Short Term: 4.14 mg/m ³ - 1 ppm D Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 8.4 mg/m ³ - 2 ppm; Short Term: 12.6 mg/m ³ - 3 ppm koža Source: 2000/39/EZ
NATIONAL	CYPRUS	Long Term: 8.4 mg/m ³ - 2 ppm; Short Term: 12.6 mg/m ³ - 3 ppm δέρμα Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
NATIONAL	GERMANY	Long Term: 4.2 mg/m ³ - 1 ppm DFG, EU, H, 6, 2(I) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 8.4 mg/m ³ - 2 ppm; Short Term: 12.6 mg/m ³ - 3 ppm Sk, IOELV Source: 2021 Code of Practice
NATIONAL	ITALY	Long Term: 8.4 mg/m ³ - 2 ppm; Short Term: 12.6 mg/m ³ - 3 ppm Cute Source: D.lgs. 81/2008, Allegato XXXVIII
NATIONAL	LATVIA	Long Term: 8.4 mg/m ³ - 2 ppm; Short Term: 12.6 mg/m ³ - 3 ppm Source: KN325P1
NATIONAL	LUXEMBOURG	Long Term: 8.4 mg/m ³ - 2 ppm; Short Term: 12.6 mg/m ³ - 3 ppm Peau Source: Mémorial A n.226 du 22 mars 2021

(2-methoxymethylethoxy)
propanol
CAS: 34590-94-8

NATIONAL	MALTA	Long Term: 8.4 mg/m3 - 2 ppm; Short Term: 12.6 mg/m3 - 3 ppm skin Source: S.L.424.24
NATIONAL	PORTUGAL	Long Term: 8.4 mg/m3 - 2 ppm; Short Term: 12.6 mg/m3 - 3 ppm Cutânea Source: Decreto-Lei n.º 1/2021
NATIONAL	ROMANIA	Long Term: 8.4 mg/m3 - 2 ppm; Short Term: 12.6 mg/m3 - 3 ppm P, Dir. 2000/39 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SLOVENIA	Long Term: 8.4 mg/m3 - 2 ppm; Short Term: 12.6 mg/m3 - 3 ppm K, EU1 Source: UL št. 72, 11. 5. 2021
NATIONAL	SPAIN	Long Term: 8.4 mg/m3 - 2 ppm; Short Term: 12.6 mg/m3 - 3 ppm vía dérmica, f, VLI Source: LEP 2022
EU		Long Term: 8.4 mg/m3 - 2 ppm (8h); Short Term: 12.6 mg/m3 - 3 ppm Skin
ACGIH		Long Term: 50 ppm (8h) Liver & CNS eff
NATIONAL	BELGIUM	Long Term: 308 mg/m3 - 50 ppm D Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 308 mg/m3 - 50 ppm koža Source: 2000/39/EZ
NATIONAL	CYPRUS	Long Term: 308 mg/m3 - 50 ppm δέρμα Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
NATIONAL	GERMANY	Long Term: 310 mg/m3 - 50 ppm DFG, EU, 11, 1(I) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 308 mg/m3 - 50 ppm Sk, IOELV Source: 2021 Code of Practice
NATIONAL	ITALY	Long Term: 308 mg/m3 - 50 ppm Cute Source: D.lgs. 81/2008, Allegato XXXVIII
NATIONAL	LATVIA	Long Term: 308 mg/m3 - 50 ppm Āda Source: KN325P1
NATIONAL	LUXEMBOUR G	Long Term: 308 mg/m3 - 50 ppm Peau Source: Mémorial A n.226 du 22 mars 2021
NATIONAL	MALTA	Long Term: 308 mg/m3 - 50 ppm skin Source: S.L.424.24
NATIONAL	PORTUGAL	Long Term: 308 mg/m3 - 50 ppm Cutânea Source: Decreto-Lei n.º 1/2021
NATIONAL	ROMANIA	Long Term: 308 mg/m3 - 50 ppm P, Dir. 2000/39 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SLOVENIA	Long Term: 308 mg/m3 - 50 ppm; Short Term: 308 mg/m3 - 50 ppm K, EU1 Source: UL št. 72, 11. 5. 2021
NATIONAL	SPAIN	Long Term: 308 mg/m3 - 50 ppm vía dérmica, VLI Source: LEP 2022

NATIONAL	AUSTRIA	Long Term: 307 mg/m ³ - 50 ppm; Short Term: Ceiling - 614 mg/m ³ - 100 ppm 5(Mow), 8x, MAK, H Source: GKV, BGBl. II Nr. 156/2021
NATIONAL	BULGARIA	Long Term: 308 mg/m ³ - 50 ppm Кожа Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
NATIONAL	CZECHIA	Long Term: 270 mg/m ³ ; Short Term: Ceiling - 550 mg/m ³ D Source: Nařízení vlády č. 361-2007 Sb
NATIONAL	DENMARK	Long Term: 309 mg/m ³ - 50 ppm EH Source: BEK nr 2203 af 29/11/2021
NATIONAL	ESTONIA	Long Term: 308 mg/m ³ - 50 ppm A Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FINLAND	Long Term: 310 mg/m ³ - 50 ppm iho Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 308 mg/m ³ - 50 ppm Risque de pénétration percutanée Source: INRS outil65, article R. 4412-149 du Code du travail
NATIONAL	GREECE	Long Term: 600 mg/m ³ - 100 ppm; Short Term: 900 mg/m ³ - 150 ppm Δ Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	HUNGARY	Long Term: 308 mg/m ³ EU1, R Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	LITHUANIA	Long Term: 300 mg/m ³ - 50 ppm; Short Term: 450 mg/m ³ - 75 ppm O Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NETHERLAND S	Long Term: 300 mg/m ³ Source: Arbeidsomstandighedenregeling - Lijst A
NATIONAL	NORWAY	Long Term: 300 mg/m ³ - 50 ppm H E Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 240 mg/m ³ ; Short Term: 480 mg/m ³ skóra Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 308 mg/m ³ - 50 ppm K Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 300 mg/m ³ - 50 ppm; Short Term: 450 mg/m ³ - 75 ppm H, V Source: AFS 2021:3
SUVA	SWITZERLAND D	Long Term: 300 mg/m ³ - 50 ppm; Short Term: 300 mg/m ³ - 50 ppm VR Yeux Nez / AW Auge Nase, NIOSH, La substance peut être présente sous forme de vapeur et d'aérosol en même temps / Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 308 mg/m ³ - 50 ppm Sk Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
EU		Long Term: 308 mg/m ³ - 50 ppm (8h) Skin
2-(2-butoxyethoxy)ethanol; diethylene glycol monobutyl ether CAS: 112-34-5	ACGIH	Long Term: 10 ppm (8h) IFV - Hematologic, liver and kidney eff

NATIONAL	AUSTRIA	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 15 ppm 15(Miw), 4x, MAK Source: GKV, BGBl. II Nr. 156/2021
NATIONAL	BULGARIA	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 15 ppm Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
NATIONAL	CZECHIA	Long Term: 70 mg/m ³ ; Short Term: Ceiling - 100 mg/m ³ I Source: Nařízení vlády č. 361-2007 Sb
NATIONAL	DENMARK	Long Term: 68 mg/m ³ - 10 ppm E Source: BEK nr 2203 af 29/11/2021
NATIONAL	FINLAND	Long Term: 68 mg/m ³ - 10 ppm Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 15 ppm Source: INRS outil65, arrêté du 30-06-2004 modifié
NATIONAL	HUNGARY	Long Term: 67.5 mg/m ³ ; Short Term: 101.2 mg/m ³ EU2, T Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	LITHUANIA	Long Term: 100 mg/m ³ - 15 ppm; Short Term: 200 mg/m ³ - 30 ppm Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NETHERLAND S	Long Term: 50 mg/m ³ ; Short Term: 100 mg/m ³ H Source: Arbeidsomstandighedenregeling - Lijst A
NATIONAL	NORWAY	Long Term: 68 mg/m ³ - 10 ppm E Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 67 mg/m ³ ; Short Term: 100 mg/m ³ Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 15 ppm Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 68 mg/m ³ - 10 ppm; Short Term: 101 mg/m ³ - 15 ppm Source: AFS 2021:3
SUVA	SWITZERLAN D	Long Term: 67 mg/m ³ - 10 ppm; Short Term: 101 mg/m ³ - 15 ppm SSC, Rein Sang Foie / Niere Blut Leber, La substance peut être présente sous forme de vapeur et d'aérosol en même temps / Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen Source: suva.ch/valeurs-limites
NATIONAL	BELGIUM	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 15 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 15 ppm Source: 2006/15/EZ
NATIONAL	CYPRUS	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 15 ppm Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
NATIONAL	GERMANY	Long Term: 67 mg/m ³ - 10 ppm EU, DFG, Y, 11, 1, 5 (I) Source: TRGS 900
NATIONAL	GREECE	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 15 ppm Source: ΦΕΚ 202/Α` 23.8.2007
NATIONAL	IRELAND	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 12 ppm IOELV Source: 2021 Code of Practice
NATIONAL	ITALY	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 15 ppm Source: D.lgs. 81/2008, Allegato XXXVIII
NATIONAL	LATVIA	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 15 ppm Source: KN325P1
NATIONAL	LUXEMBOUR G	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 15 ppm Source: Mémorial A n.226 du 22 mars 2021

formaldehyde
CAS: 50-00-0

NATIONAL	MALTA	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 15 ppm Source: S.L.424.24
NATIONAL	PORTUGAL	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 15 ppm Source: Decreto-Lei n.º 1/2021
NATIONAL	ROMANIA	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 15 ppm Dir. 2006/15 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SLOVENIA	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 15 ppm Y, EU2 Source: UL št. 72, 11. 5. 2021
NATIONAL	SPAIN	Long Term: 67.5 mg/m ³ - 10 ppm; Short Term: 101.2 mg/m ³ - 15 ppm VLI, r Source: LEP 2022
EU		Long Term: 67.5 mg/m ³ - 10 ppm (8h); Short Term: 101.2 mg/m ³ - 15 ppm
ACGIH		Long Term: 0.1 ppm (8h); Short Term: 0.3 ppm DSEN, RSEN, A1 - URT and eye irr, URT cancer
NATIONAL	AUSTRIA	Long Term: 0.37 mg/m ³ - 0.3 ppm; Short Term: Ceiling - 0.74 mg/m ³ - 0.6 ppm Mow, MAK, III A2, Sh Source: BGBl. II Nr. 156/2021
NATIONAL	CZECHIA	Long Term: 0.37 mg/m ³ ; Short Term: Ceiling - 0.74 mg/m ³ I, K, S Source: Nařízení vlády č. 361-2007 Sb
NATIONAL	CZECHIA	Long Term: 0.5 mg/m ³ ; Short Term: Ceiling - 0.74 mg/m ³ I, K, S Source: Nařízení vlády č. 361-2007 Sb
NATIONAL	DENMARK	Short Term: Ceiling - 0.37 mg/m ³ - 0.28 ppm LEK. Hudsensibiliserende Source: BEK nr 2203 af 29/11/2021
NATIONAL	ESTONIA	Long Term: 0.37 mg/m ³ - 0.3 ppm; Short Term: 0.74 mg/m ³ - 0.6 ppm C, S, Tervishoiu-, matuse- ja palsameerimise sektoris Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	ESTONIA	Long Term: 0.62 mg/m ³ - 0.5 ppm C, S, Tervishoiu-, matuse- ja palsameerimise sektoris Kehtiv kuni 10.07.2024 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FINLAND	Long Term: 0.37 mg/m ³ - 0.3 ppm; Short Term: 0.74 mg/m ³ - 0.6 ppm liite 3 Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 0.37 mg/m ³ - 0.3 ppm; Short Term: 0.74 mg/m ³ - 0.6 ppm Cancérogène de catégorie 1B, Mutagène de catégorie 2. La substance peut provoquer une sensibilisation cutanée. Source: INRS outil65, article R. 4412-149 du Code du travail
NATIONAL	HUNGARY	Long Term: 0.37 mg/m ³ ; Short Term: 0.74 mg/m ³ k(1B), b, m, sz, EU8, T Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	LITHUANIA	Long Term: 0.6 mg/m ³ - 0.5 ppm; Short Term: Ceiling - 1.2 mg/m ³ - 1 ppm Ū J K Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NETHERLAND S	Long Term: 0.15 mg/m ³ ; Short Term: 0.5 mg/m ³ TGG 8 uur mg/m ³ (4) Source: Arbeidsomstandighedenregeling - Lijst B1
NATIONAL	NORWAY	Long Term: 0.37 mg/m ³ - 0.3 ppm A K G Source: FOR-2021-06-28-2248
NATIONAL	NORWAY	Short Term: 0.74 mg/m ³ - 0.6 ppm S Source: FOR-2021-06-28-2248
NATIONAL	NORWAY	Short Term: Ceiling - 1.2 mg/m ³ - 1 ppm T Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 0.37 mg/m ³ ; Short Term: 0.74 mg/m ³

skóra 22)
Source: Dz.U. 2018 poz. 1286

NATIONAL	SWEDEN	Long Term: 0.37 mg/m ³ - 0.3 ppm; Short Term: 0.74 mg/m ³ - 0.6 ppm C, H, S Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 0.37 mg/m ³ - 0.3 ppm; Short Term: 0.74 mg/m ³ - 0.6 ppm S, C1#B, SSC, Yeux / Auge, HSE NIOSH DFG OSHA, Pas de risque accru de cancer si la VME est respectée / Kein erhöhtes Krebsrisiko bei Einhalten des MAK-Werts Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 2.5 mg/m ³ - 2 ppm; Short Term: 2.5 mg/m ³ - 2 ppm Carc Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
NATIONAL	BELGIUM	Short Term: 0.38 mg/m ³ - 0.3 ppm C, M Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	BULGARIA	Long Term: 0.37 mg/m ³ - 0.3 ppm; Short Term: 0.74 mg/m ³ - 0.6 ppm Кожна сензибилизация (13) (В сила от 11.07.2021 г., а за секторите на здравеопазването, погребалните услуги и балсамирането - от 11.07.2027 г.) Source: НАРЕДБА № 10 ОТ 26 СЕПТЕМВРИ 2003
NATIONAL	CROATIA	Long Term: 0.37 mg/m ³ - 0.3 ppm; Short Term: 0.74 mg/m ³ - 0.6 ppm Alergen koža (8), Karc 1 B. Granična vrijednost 0, 62 mg/m ³ ili 0, 5 ppm za zdravstveni i pogrebni sektor te sektor balzimiranje do 11. srpnja 2024. Source: 2019/983
NATIONAL	GERMANY	Long Term: 0.37 mg/m ³ - 0.3 ppm AGS, Sh, Y, X, 2(I) Source: TRGS 900
NATIONAL	GREECE	Long Term: 0.37 mg/m ³ ; Short Term: 0.74 mg/m ³ ευαισθητοποίηση του δέρματος (13) Οριακή τιμή 0, 62 mg/m ³ ή 0, 5 ppm για τους τομείς υγειονομικής περίθαλψης, κηδειών και ταρίχευσης έως τις 11 Ιουλίου 2024. Source: Π.Δ. 26/2020 (ΦΕΚ 50/Α` 6.3.2020)
NATIONAL	IRELAND	Long Term: 0.37 mg/m ³ - 0.3 ppm; Short Term: 0.738 mg/m ³ - 0.6 ppm BOELV, Carc 1B, Sens, Limit value 0.5ppm/0.62mg/m ³ for the healthcare, funeral and embalming sectors until 11 July 2024, see footnote 21 Source: 2021 Code of Practice
NATIONAL	ITALY	Long Term: 0.37 mg/m ³ - 0.3 ppm; Short Term: 0.6 mg/m ³ - 0.74 ppm Sensibilizzazione cutanea. Source: D.lgs. 81/2008, Allegato XLIII
NATIONAL	LATVIA	Long Term: 0.37 mg/m ³ - 0.3 ppm; Short Term: 0.74 mg/m ³ - 0.6 ppm Viela var izraisīt ādas sensibilizāciju Source: KN325P1
NATIONAL	PORTUGAL	Long Term: 0.37 mg/m ³ - 0.3 ppm; Short Term: 0.74 mg/m ³ - 0.6 ppm sensibilização cutânea (14). Valor -limite de 0, 62 mg/m ³ ou de 0, 5 ppm (3) para os setores dos cuidados de saúde, funerário e de embalsamamento até 11 de julho de 2024. Source: Decreto-Lei n.º 102-A/2020
NATIONAL	ROMANIA	Long Term: 0.37 mg/m ³ - 0.3 ppm; Short Term: 0.74 mg/m ³ - 0.6 ppm P, C2, (15), Dir. 2019/983, Valoare-limită de 0, 62 mg/mc sau 0, 5 ppm pentru sectorul asistenței medicale, sectorul serviciilor funerare și de îmbalsămare până la 11 iulie 2024 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SLOVENIA	Long Term: 0.37 mg/m ³ - 0.3 ppm; Short Term: 0.74 mg/m ³ - 0.6 ppm EU, K, SK, R1B, M2, MV 0, 62 mg/mi ali 0, 5 ppm za dejavnost zdravstvene oskrbe, pogrebno dejavnosti in dejavnost balzimiranja se uporabljata do 11.7.2024 Source: UL št. 89, 1. 7. 2022
NATIONAL	SPAIN	Long Term: 0.37 mg/m ³ - 0.3 ppm; Short Term: 0.74 mg/m ³ - 0.6 ppm C1B, Sen, s Source: LEP 2022
EU		Long Term: 0.37 mg/m ³ - 0.3 ppm (8h); Short Term: 0.74 mg/m ³ - 0.6 ppm Dermal sensitisation
2,6-di-tert-butyl-p-cresol CAS: 128-37-0	ACGIH	Long Term: 2 mg/m ³ (8h) IFV, A4 - URT irr

	NATIONAL	BELGIUM	Long Term: 2 mg/m ³ Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	CROATIA	Long Term: 10 mg/m ³ Source: NN 1/2021
	NATIONAL	GERMANY	Long Term: 10 mg/m ³ DFG, Y, 11, E, 4 (II) Source: TRGS 900
	NATIONAL	IRELAND	Long Term: 2 mg/m ³ Source: 2021 Code of Practice
	NATIONAL	SLOVENIA	Long Term: 10 mg/m ³ ; Short Term: 40 mg/m ³ Y, (I) Source: UL št. 72, 11. 5. 2021
	NATIONAL	SPAIN	Long Term: 10 mg/m ³ Source: LEP 2022
	NATIONAL	AUSTRIA	Long Term: 10 mg/m ³ MAK Source: GKV, BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 10 mg/m ³ ; Short Term: 50 mg/m ³ Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	DENMARK	Long Term: 10 mg/m ³ Source: BEK nr 2203 af 29/11/2021
	NATIONAL	FINLAND	Long Term: 10 mg/m ³ ; Short Term: 20 mg/m ³ Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Long Term: 10 mg/m ³ Source: INRS outil65
	NATIONAL	GREECE	Long Term: 10 mg/m ³ Source: ΦΕΚ 94/Α` 13.5.1999
	SUVA	SWITZERLAND	Long Term: 10 mg/m ³ ; Short Term: 40 mg/m ³ TWA mg/m ³ : (i), C1#B, SSC, Foie / Leber, Pas de risque accru de cancer si la VME est respectée. La substance peut être présente sous forme de vapeur et d'aérosol en même temps / Kein erhöhtes Krebsrisiko bei Einhalten des MAK-Werts. Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen. Source: suva.ch/valeurs-limites
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m ³ Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1) CAS: 55965-84-9	NATIONAL	GERMANY	Long Term: 0.2 mg/m ³ ; Short Term: 0.4 mg/m ³ DFG; Long term and short term: inhalable fraction Source: TRGS900
	NATIONAL	AUSTRIA	Long Term: 0.05 mg/m ³ MAK, Sh Source: GKV, BGBl. II Nr. 156/2021
	SUVA	SWITZERLAND	Long Term: 0.2 mg/m ³ ; Short Term: 0.4 mg/m ³ TWA mg/m ³ : (i), S, SSC, VRS Peau Yeux / OAW Haut Auge Source: suva.ch/valeurs-limites
octamethylcyclotetrasiloxane CAS: 556-67-2	NATIONAL	AUSTRIA	f Source: BGBl. II Nr. 156/2021
Pyridine-2-thiol 1-oxide, sodium salt CAS: 3811-73-2	NATIONAL	GERMANY	Long Term: 0.2 mg/m ³ DFG, H, Y, E, 2(II) Source: TRGS 900
	NATIONAL	SLOVENIA	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ K, (I) Source: UL št. 72, 11. 5. 2021
	NATIONAL	AUSTRIA	Long Term: 1 mg/m ³ ; Short Term: 4 mg/m ³ 15(Miw), 4x, MAK, H

Source: BGBl. II Nr. 156/2021

NATIONAL DENMARK Long Term: 1 mg/m³
H
Source: BEK nr 2203 af 29/11/2021

SUVA SWITZERLAND Long Term: 0.2 mg/m³; Short Term: 0.4 mg/m³
D TWA mg/m³: (i), R/H, SSC, SNP / PNS
Source: suva.ch/valeurs-limites

Predicted No Effect Concentration (PNEC) values

1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one
CAS: 2634-33-5
Exposure Route: Fresh Water; PNEC Limit: 4.03 µg/l

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 1.1 µg/l
Exposure Route: Marine water; PNEC Limit: 403 ng/L
Exposure Route: Intermittent releases (marine water); PNEC Limit: 110 ng/L
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 1.03 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 49.9 µg/kg
Exposure Route: Marine water sediments; PNEC Limit: 4.99 µg/kg
Exposure Route: Soil; PNEC Limit: 3 mg/kg
Exposure Route: Fresh Water; PNEC Limit: 3.39 µg/l

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)
CAS: 55965-84-9

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 3.39 µg/l
Exposure Route: Marine water; PNEC Limit: 3.39 µg/l
Exposure Route: Intermittent releases (marine water); PNEC Limit: 3.39 µg/l
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 230 µg/l
Exposure Route: Freshwater sediments; PNEC Limit: 27 µg/l
Exposure Route: Marine water sediments; PNEC Limit: 27 µg/l
Exposure Route: Soil; PNEC Limit: 10 µg/l

Derived No Effect Level (DNEL) values

1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one
CAS: 2634-33-5
Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 6.81 mg/m³; Consumer: 1.2 mg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 966 µg/kg; Consumer: 345 µg/kg

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)
CAS: 55965-84-9

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 20 µg/m³; Consumer: 20 µg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
Worker Professional: 40 µg/m³; Consumer: 20 µg/m³

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 90 µg/kg

Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects
Consumer: 110 µg/kg

8.2. Exposure controls

Eye protection:

Not needed for normal use. Anyway, operate according good working practices.

Protection for skin:

No special precaution must be adopted for normal use.

Protection for hands:

Not needed for normal use.

Respiratory protection:

N.A.

Thermal Hazards:

N.A.

Environmental exposure controls:

This product contains microplastics: do not release the product into the environment during use or disposal. Do not clean tools under running water. Do not pour product residues, water, or other washing solutions into household drains or sewers.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Colour: Whitish

Odour: Pungent

Odour threshold: N.A. (Data not available)

pH: =8.10 (OECD 122)

Kinematic viscosity: N.A. (Not determined, as it is not required for CLP classification)

Melting point/freezing point: N.A.

Boiling point or initial boiling point and boiling range: N.A.

Flash point: 93 °C (199 °F) (ISO 3679)

Lower and upper explosion limit: N.A.

Relative vapour density: N.A.

Vapour pressure: N.A.

Density and/or relative density: 1.04 g/cm³ (ISO 2811)

Solubility in water: Miscible

Solubility in oil: N.A. (Not determined, as it is not required for CLP classification)

Partition coefficient n-octanol/water (log value): N.A. (Not applicable to mixtures)

Auto-ignition temperature: N.A. (Not applicable as the mixture is not flammable)

Decomposition temperature: N.A. (Not applicable, as the mixture is not self-reactive)

Flammability: ; Not applicable as the mixture is not flammable

Volatile Organic compounds - VOCs = 5.71 % ; 59.33 g/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

None in particular.

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	Not classified Based on available data, the classification criteria are not met
d) respiratory or skin sensitisation	Not classified Based on available data, the classification criteria are not met

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:

1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one	a) acute toxicity	LD50 Oral Rat = 670 mg/kg	
		LD50 Skin Rat > 2000 mg/kg	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative	
	c) serious eye damage/irritation	Eye Corrosive Positive	irreversible damage
	d) respiratory or skin sensitisation	Skin Sensitization Guinea pig Positive	
	f) carcinogenicity	Genotoxicity Rat Negative	Oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 112 mg/kg	
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	a) acute toxicity	LD50 Oral Rat = 69 mg/kg	
		LD50 Skin Rabbit = 141 mg/kg	
		LC50 Inhalation Rat = 0.33 mg/l 4h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive	
	c) serious eye damage/irritation	Eye Corrosive Rabbit Positive	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	
	f) carcinogenicity	Genotoxicity Negative Carcinogenicity Skin Negative	
g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 22.7 mg/kg		

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration $\geq 0.1\%$

SECTION 12: Ecological information

12.1. Toxicity

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

Eco-Toxicological Information:

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

Component	Ident. Numb.	Ecotox Data
1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one	CAS: 2634-33-5 - EINECS: 220-120-9 - INDEX: 613-088-00-6	a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss = 2.15 mg/L 96h OECD Guideline 203 a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 2.9 mg/L 48h OECD Guideline 202 a) Aquatic acute toxicity : EC50 Algae green alga Selenastrum capricornutum freshwater algae = 110 µg/L OECD Guideline 201 d) Terrestrial toxicity : EC50 Worm Eisenia fetida > 410.6 mg/kg OECD Guideline 207 - Duration 14d d) Terrestrial toxicity : EC10 soil microorganisms = 263.7 mg/kg - long term a) Aquatic acute toxicity : NOEC Sludge activated sludge 10.3 mg/L 3h OECD Guideline 209 e) Plant toxicity : LC50 Triticum aestivum = 200 mg/kg OECD Guideline 208
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	CAS: 55965-84-9 - INDEX: 613-167-00-5	a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss = 0.19 mg/L 96h EPA OPP 72-1 (Fish Acute Toxicity Test) b) Aquatic chronic toxicity : NOEC Fish Danio rerio = 0.02 mg/L ,,OECD Guideline 210 (Fish, Early-Life Stage Toxicity Test) - 35days a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 0.16 mg/L 48h EPA OPP 72-2 (Aquatic Invertebrate Acute Toxicity Test) b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 0.1 mg/L EPA OPP 72-4 (Fish Early Life-Stage and Aquatic Invertebrate Life-Cycle Studies) - 21days a) Aquatic acute toxicity : EC50 Algae Skeletonema costatum = 0 mg/L 96h ,,OECD Guideline 201 (Alga, Growth Inhibition Test) a) Aquatic acute toxicity : EC50 Sludge activated sludge = 4.5 mg/L 3h ,,OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) d) Terrestrial toxicity : LC50 Worm Eisenia fetida = 613 mg/kg ,,OECD Guideline 207 (Earthworm, Acute Toxicity Tests) - 14days e) Plant toxicity : NOEC Trifolium pratense, Oryza sativa, Brassica napus = 1000 mg/L OECD Guideline 208 (Terrestrial Plants Test: Seedling Emergence and Seedling Growth Test) - 21days

12.2. Persistence and degradability

Component	Persistence/Degradability:	Test	Notes:
1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one	Non-readily biodegradable	CO2 production	OECD Guideline 301C
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	Non-readily biodegradable		

12.3. Bioaccumulative potential

Component	Bioaccumulation	Test	Value	Notes:
1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one	Bioaccumulative	BCF - Bioconcentration factor	6.620	
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	Bioaccumulative	BCF - Bioconcentration factor	54.000	≤ 54

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

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force. Disposal through discharge into wastewater is not permitted

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

Not classified as dangerous in the meaning of transport regulations.

14.1. UN number or ID number

N/A

14.2. UN proper shipping name

ADR-Shipping Name: N/A

IATA-Shipping Name: N/A

IMDG-Shipping Name: N/A

14.3. Transport hazard class(es)

ADR-Class: N/A

IATA-Class: N/A

IMDG-Class: N/A

14.4. Packing group

ADR-Packing Group: N/A

IATA-Packing group: N/A

IMDG-Packing group: N/A

14.5. Environmental hazards

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: N/A

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: N/A

ADR - Hazard identification number: N/A

ADR-Special Provisions: N/A

ADR-Transport category (Tunnel restriction code): N/A

ADR Limited Quantities: N/A

ADR Excepted Quantities: N/A

Air (IATA):

IATA-Passenger Aircraft: N/A

IATA-Cargo Aircraft: N/A

IATA-Label: N/A

IATA-Subsidiary hazards: N/A

IATA-Erg: N/A

IATA-Special Provisions: N/A

Sea (IMDG):

IMDG-Stowage and handling: N/A

IMDG-Segregation: N/A

IMDG-Subsidiary hazards: N/A

IMDG-Special Provisions: N/A

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 (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. 2020/878

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: 28, 40, 55, 70, 72, 75, 77

The supplied synthetic polymer microparticles are subject to the conditions of Annex XVII, entry 78, of Regulation (EC) No 1907/2006 of the European Parliament and of the Council. See section 7,8 for the instructions for use and disposal.

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

None

Explosives precursors – Regulation 2019/1148

No substances listed

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

No substances listed

German Water Hazard Class.

3: Severe hazard to waters

German Lagerklasse according to TRGS 510:

LGK 10

SVHC Substances:

No SVHC substances present in concentration $\geq 0.1\%$

Dir. 2004/42/EC (VOC directive)

(ready to use)

Volatile Organic compounds - VOCs = 7.92 %

Volatile Organic compounds - VOCs = 83.54 g/L

MICRORESINA XTREME INVISIBLE (A) (not ready to use)

Volatile Organic compounds - VOCs = 5.71 %

Volatile Organic compounds - VOCs = 59.33 g/L

15.2. Chemical safety assessment

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

SECTION 16: Other information

Code	Description
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.

H330	Fatal if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
3.1/2/Inhal	Acute Tox. 2	Acute toxicity (inhalation), Category 2
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/1	Eye Dam. 1	Serious eye damage, Category 1
3.4.2/1A	Skin Sens. 1A	Skin Sensitisation, Category 1A
4.1/A1	Aquatic Acute 1	Acute aquatic hazard, category 1
4.1/C1	Aquatic Chronic 1	Chronic (long term) aquatic hazard, category 1

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:

- SECTION 2: Hazards identification
- SECTION 3: Composition/information on ingredients
- SECTION 7: Handling and storage
- SECTION 8: Exposure controls/personal protection
- SECTION 9: Physical and chemical properties
- SECTION 11: Toxicological information
- SECTION 12: Ecological information
- SECTION 13: Disposal considerations
- SECTION 14: Transport 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

MICRORESINA XTREME INVISIBLE (B)

Date of first edition: 11/24/2020

Safety Data Sheet dated 29/04/2026

version 4

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

1.1. Product identifier

Mixture identification:

Trade name: MICRORESINA XTREME INVISIBLE (B)

Trade code: 001059022

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

Recommended use: Paints/coatings - Protective and functional

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)

Acute Tox. 4

Harmful if inhaled.

Skin Sens. 1B

May cause an allergic skin reaction.

STOT SE 3

May cause respiratory irritation.

Aquatic Chronic 3

Harmful 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

H317

May cause an allergic skin reaction.

H332

Harmful if inhaled.

H335

May cause respiratory irritation.

H412

Harmful to aquatic life with long lasting effects.

Precautionary statements

P260

Do not breathe vapours.

P273	Avoid release to the environment.
P280	Wear protective gloves and eye protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P501	Dispose of contents/container in accordance with applicable regulations.

Contains

Blocked Polyisocyanate Based on Hexamethylene Diisocyanate (HDI)

Hexamethylene diisocyanate, oligomers

Copolymer of hexane-1,6-diisocyanate, methanol and oxirane

Cyclohexyldimethylamine

Dir. 2004/42/EC (VOC directive)

Two-pack reactive performance coatings for specific end use such as floors

EU limit value for this product (cat. A/j): 140 g/l

This product contains max 83.29 g/l VOC.

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

As from 24 August 2023 adequate training is required before industrial or professional use.

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration $\geq 0.1\%$

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: MICRORESINA XTREME INVISIBLE (B)

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

Qty	Name	Ident. Numb.	Classification	Registration Number
≥ 20 - < 50 %	Blocked Polyisocyanate Based on Hexamethylene Diisocyanate (HDI)	CAS:666723-27-9	Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335; Aquatic Chronic 3, H412, M-Chronic:1	
≥ 20 - < 50 %	Hexamethylene diisocyanate, oligomers	CAS:28182-81-2 EC:500-060-2	Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	01-2119485796-17
≥ 10 - < 20 %	Copolymer of hexane-1,6-diisocyanate, methanol and oxirane	CAS:160994-68-3 EC:679-501-7	Acute Tox. 4, H332; Skin Sens. 1B, H317; STOT SE 3, H335; Aquatic Chronic 3, H412	
≥ 0.3 - < 0.5 %	Cyclohexyldimethylamine	CAS:98-94-2 EC:202-715-5	Flam. Liq. 3, H226; Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Skin Corr. 1B, H314; Eye Dam. 1, H318; Aquatic Chronic 2, H411, M-Chronic:1	01-2119533030-60
< 0.05 %	Hexamethylene Diisocyanate	CAS:822-06-0 EC:212-485-8	Acute Tox. 1, H330; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Resp. Sens. 1, H334; Skin Sens. 1, H317; STOT SE 3, H335	01-2119457571-37

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 immediately and dispose off safely.

In case of eyes contact:

Wash immediately with water.

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

N.A.

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).

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.

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

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.

Contaminated 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

Avoid direct sunlight. Protect from freezing

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

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)

	OEL Type	Country	Occupational Exposure Limit
Cyclohexyldimethylamine CAS: 98-94-2	NATIONAL	CZECHIA	Long Term: 5 mg/m ³ ; Short Term: Ceiling - 10 mg/m ³ D, I Source: Nařízení vlády č. 361-2007 Sb
Hexamethylene Diisocyanate CAS: 822-06-0	NATIONAL	ITALY	Long Term: 1 mg/m ³ (8h) Source: D.Lgs81/2008
	ACGIH		Long Term: 0.005 ppm (8h) URT irr, resp sens
	NATIONAL	AUSTRIA	Long Term: 0.035 mg/m ³ - 0.005 ppm; Short Term: Ceiling - 0.035 mg/m ³ - 0.005 ppm Mow, MAK, Sah Source: BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 0.1 mg/m ³ Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 0.035 mg/m ³ ; Short Term: Ceiling - 0.07 mg/m ³ I, S Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Long Term: 0.035 mg/m ³ - 0.005 ppm Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 0.03 mg/m ³ - 0.005 ppm; Short Term: 0.07 mg/m ³ - 0.01 ppm S, * Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FRANCE	Long Term: 0.075 mg/m ³ - 0.01 ppm; Short Term: 0.15 mg/m ³ - 0.02 ppm Risques d'allergie respiratoire. La VLEP CT est définie sur une période de référence de 5 minute. Source: INRS outil65
	NATIONAL	HUNGARY	Long Term: 0.035 mg/m ³ ; Short Term: 0.035 mg/m ³ i, sz, T Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL	LATVIA	Long Term: 0.05 mg/m ³ Source: KN325P1
	NATIONAL	LITHUANIA	Long Term: 0.03 mg/m ³ - 0.005 ppm; Short Term: Ceiling - 0.07 mg/m ³ - 0.01 ppm Ū J, Nustatytas 5 min. poveikio trukmės NRD. Tas pats RD, išreikštas ppm, taikomas izocianatams, kurių RD nenustatytas. Ši nuostata taikoma ir dulkių ar lašelių (aerozolių) pavidalo izocianatams, įskaitant prepolimerizuotus izocianatus (aduktus). Tačiau skirtingų medžiagų RD, išreikšti mg/m ³ , yra skirtingi. Source: 2011 m. rugšėjo 1 d. Nr. V-824/A1-389
	NATIONAL	NORWAY	Long Term: 0.035 mg/m ³ - 0.005 ppm A 4 Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 0.04 mg/m ³ ; Short Term: 0.08 mg/m ³ skóra Source: Dz.U. 2018 poz. 1286
	NATIONAL	SLOVAKIA	Long Term: 0.035 mg/m ³ - 0.005 ppm S Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	NATIONAL	SWEDEN	Long Term: 0.02 mg/m ³ - 0.002 ppm; Short Term: 0.03 mg/m ³ - 0.005 ppm M, S, 2 Source: AFS 2021:3
	SUVA	SWITZERLAND	B, La substance peut être présente sous forme de vapeur et d'aérosol en même temps / Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen Source: suva.ch/valeurs-limites

NATIONAL	BELGIUM	Long Term: 0.034 mg/m ³ - 0.005 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	GERMANY	Long Term: 0.035 mg/m ³ - 0.005 ppm DFG, 11, 12, Sa, 1;=2=(I) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 0.005 ppm Sens. Source: 2021 Code of Practice
NATIONAL	ROMANIA	Long Term: 0.05 mg/m ³ - 0.007 ppm; Short Term: 1 mg/m ³ - 0.14 ppm Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SLOVENIA	Long Term: 0.035 mg/m ³ - 0.005 ppm; Short Term: 0.035 mg/m ³ - 0.005 ppm BAT Source: UL št. 72, 11. 5. 2021
NATIONAL	SPAIN	Long Term: 0.035 mg/m ³ - 0.005 ppm Sen Source: LEP 2022
EU		Long Term: 0.006 mg/m ³ (8h); Short Term: 0.012 mg/m ³ Skin; Dermal and respiratory sensitisation

Predicted No Effect Concentration (PNEC) values

Cyclohexyldimethylamine Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 20.6 mg/l
CAS: 98-94-2

Exposure Route: Fresh Water; PNEC Limit: 2 µg/l

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 20 µg/l

Exposure Route: Marine water; PNEC Limit: 200 ng/L

Exposure Route: Freshwater sediments; PNEC Limit: 21.1 µg/kg

Exposure Route: Marine water sediments; PNEC Limit: 2.11 µg/kg

Exposure Route: Soil; PNEC Limit: 3.05 µg/kg

Hexamethylene
Diisocyanate
CAS: 822-06-0

Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 8.42 mg/l

Exposure Route: Marine water; PNEC Limit: 7.74 µg/l

Exposure Route: Fresh Water; PNEC Limit: 77.4 µg/l

Exposure Route: Marine water sediments; PNEC Limit: 1.334 µg/kg

Exposure Route: Freshwater sediments; PNEC Limit: 13.34 µg/kg

Exposure Route: Soil; PNEC Limit: 2.6 µg/kg

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0.774 mg/l

Derived No Effect Level (DNEL) values

Cyclohexyldimethylamine Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
CAS: 98-94-2
Worker Professional: 530 µg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 8.3 mg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
Worker Professional: 8.3 mg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 600 µg/kg

Hexamethylene
Diisocyanate
CAS: 822-06-0

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 35 µg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 35 µg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
Worker Professional: 70 µg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 70 µg/m³

8.2. Exposure controls

Eye protection:

Use close fitting safety goggles, don't use contact lenses.

Protection for skin:

Chemical protection clothing. Safety shoes.

Protection for hands:

Suitable materials for safety gloves (EN 374, EN 16523-1:2015+A1:2018: Level 6):

Nitrile rubber - NBR: thickness $\geq 0,4\text{mm}$; breakthrough time $\geq 480\text{min}$.

Butyl rubber - IIR: thickness $\geq 0,4\text{mm}$; breakthrough time $\geq 480\text{min}$.

Respiratory protection:

Particle filter P2 .

Thermal Hazards:

Not expected if used as intended

Environmental exposure controls:

N.A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Colour: Colourless

Odour: Odourless

Odour threshold: N.A. (Data not available)

pH: =7.00 (OECD 122)

Kinematic viscosity: N.A.

Melting point/freezing point: N.A.

Boiling point or initial boiling point and boiling range: N.A.

Flash point: 65 °C (149 °F) (ISO 3679)

Lower and upper explosion limit: N.A. (Not applicable as the mixture is not flammable)

Relative vapour density: N.A.

Vapour pressure: N.A.

Density and/or relative density: 1.08 g/cm³ (ISO 2811)

Solubility in water: N.A.

Solubility in oil: N.A. (Not determined, as it is not required for CLP classification)

Partition coefficient n-octanol/water (log value): N.A. (Not applicable to mixtures)

Auto-ignition temperature: N.A. (Not applicable as the mixture is not flammable)

Decomposition temperature: N.A. (Not applicable, as the mixture is not self-reactive)

Flammability: ; Not applicable as the mixture is not flammable

Volatile Organic compounds - VOCs = 30 % ; 322.5 g/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

None in particular.

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

The product is classified: Acute Tox. 4(H332)

b) skin corrosion/irritation	Not classified Based on available data, the classification criteria are not met
c) serious eye damage/irritation	Not classified Based on available data, the classification criteria are not met
d) respiratory or skin sensitisation	The product is classified: Skin Sens. 1B(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	The product is classified: STOT SE 3(H335)
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:

Copolymer of hexane-1, 6-diisocyanate, methanol and oxirane	a) acute toxicity	LD50 Oral Rat > 2000 mg/kg LC50 Inhalation of aerosol Rat = 1.5 mg/l 4h	
	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 Positive	
Cyclohexyldimethylamine	a) acute toxicity	LD50 Oral Rat = 272 mg/kg LD50 Skin Rat = 380 mg/kg LC50 Inhalation Rat > 1700 mg/m3	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Negative	Mouse
	f) carcinogenicity	Genotoxicity Rat Negative Carcinogenicity Oral Rat Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 100 mg/kg	
Hexamethylene Diisocyanate	a) acute toxicity	LD50 Oral Rat = 959 mg/kg LC50 Inhalation Vapour Rat = 124 mg/m3 4h LD50 Skin Rat > 7000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive	
	c) serious eye damage/irritation	Eye Corrosive Rabbit Positive	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Positive Respiratory Sensitization Guineapig Positive	
	f) carcinogenicity	Genotoxicity Negative Carcinogenicity Inhalation Rat = 1.15 mg/m3	Mouse NOAEC
	g) reproductive toxicity	No Observed Effect Level Rat = 0.3 Ppm	

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration $\geq 0.1\%$

SECTION 12: Ecological information

12.1. Toxicity

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

Eco-Toxicological Information:

Harmful to aquatic life with long lasting effects.

List of Eco-Toxicological properties of the product

The product is classified: Aquatic Chronic 3(H412)

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
Cyclohexyldimethylamine	CAS: 98-94-2 - EINECS: 202- 715-5	a) Aquatic acute toxicity : LC50 Fish Leuciscus idus L., Golden variety = 28 mg/L 96h OECD 203
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 75 mg/L 48h OECD 203
		a) Aquatic acute toxicity : EC50 Algae freshwater algae = 2 mg/L 72h German Standard DIN 38412
		a) Aquatic acute toxicity : EC10 Algae freshwater algae = 0.078 mg/L 72h German Standard DIN 38412
Hexamethylene Diisocynate	CAS: 822-06-0 - EINECS: 212- 485-8	c) Bacteria toxicity : EC50 Pseudomonas putida = 206 mg/L - 17h
		c) Bacteria toxicity : EC10 Pseudomonas putida 137.4 mg/L - 17h
		a) Aquatic acute toxicity : LC0 Fish Brachydanio rerio = 82.8 mg/L 96h
		a) Aquatic acute toxicity : EC0 Daphnia Daphnia magna ≥ 89.1 mg/L 48h
		c) Bacteria toxicity : EC50 = 842 mg/L
		a) Aquatic acute toxicity : EC50 Algae Desmodesmus subspicatus = 77.4 mg/L 72h
		a) Aquatic acute toxicity : EC10 Algae freshwater algae = 48 mg/L 72h
		c) Bacteria toxicity : EC50 Sludge activated sludge = 842 mg/L 3h

12.2. Persistence and degradability

Component	Persistence/Degradability:	Test	Value	Notes:
Cyclohexyldimethylamine	Readily biodegradable		95.000	%
Hexamethylene Diisocynate	Non-readily biodegradable	Oxygen consumption		OECD Guideline 302 C

12.3. Bioaccumulative potential

Component	Bioaccumulation	Test	Value	Notes:
Cyclohexyldimethylamine	Bioaccumulative	BCF - Bioconcentration factor	19.840	Based on a measured log Pow of 2.01. from the equation $\log BCF = 0.76 * \log Pow - 0.23$
	Bioaccumulative	BCF - Bioconcentration factor	35.660	Based on a measured log Pow of 2.01. from the equation $\log BCF = 2.791 - 0.564 \log S$
Hexamethylene Diisocynate	Bioaccumulative	BCF - Bioconcentration factor	57.630	

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

No PBT or vPvB substances present in concentration $\geq 0.1\%$

12.6. Endocrine disrupting properties

No endocrine disruptor substances present in concentration $\geq 0.1\%$

12.7. Other adverse effects

N.A.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force. Disposal through discharge into wastewater is not permitted

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

Not classified as dangerous in the meaning of transport regulations.

14.1. UN number or ID number

N/A

14.2. UN proper shipping name

ADR-Shipping Name: N/A

IATA-Shipping Name: N/A

IMDG-Shipping Name: N/A

14.3. Transport hazard class(es)

ADR-Class: N/A

IATA-Class: N/A

IMDG-Class: N/A

14.4. Packing group

ADR-Packing Group: N/A

IATA-Packing group: N/A

IMDG-Packing group: N/A

14.5. Environmental hazards

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: N/A

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: N/A

ADR - Hazard identification number: N/A

ADR-Special Provisions: N/A

ADR-Transport category (Tunnel restriction code): N/A

ADR Limited Quantities: N/A

ADR Excepted Quantities: N/A

Air (IATA):

IATA-Passenger Aircraft: N/A

IATA-Cargo Aircraft: N/A

IATA-Label: N/A

IATA-Subsidiary hazards: N/A

IATA-Erg: N/A

IATA-Special Provisions: N/A

Sea (IMDG):

IMDG-Stowage and handling: N/A

IMDG-Segregation: N/A

IMDG-Subsidiary hazards: N/A

IMDG-Special Provisions: N/A

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 (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. 2020/878
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

Restrictions related to the substances contained: 40, 74

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

None

Explosives precursors – Regulation 2019/1148

No substances listed

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

No substances listed

German Water Hazard Class.

3: Severe hazard to waters

German Lagerklasse according to TRGS 510:

LGK 10

SVHC Substances:

No SVHC substances present in concentration $\geq 0.1\%$

Dir. 2004/42/EC (VOC directive)

(ready to use)

Volatile Organic compounds - VOCs = 7.89 %

Volatile Organic compounds - VOCs = 83.29 g/L

MICRORESINA XTREME INVISIBLE (B) (not ready to use)

Volatile Organic compounds - VOCs = 30.00 %

Volatile Organic compounds - VOCs = 322.50 g/L

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:

Hexamethylene diisocyanate, oligomers

Cyclohexyldimethylamine

SECTION 16: Other information

Code	Description
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.

H302	Harmful if swallowed.
H311	Toxic 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.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.
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
3.1/1/Inhal	Acute Tox. 1	Acute toxicity (inhalation), Category 1
3.1/3/Dermal	Acute Tox. 3	Acute toxicity (dermal), Category 3
3.1/3/Inhal	Acute Tox. 3	Acute toxicity (inhalation), Category 3
3.1/3/Oral	Acute Tox. 3	Acute toxicity (oral), Category 3
3.1/4/Inhal	Acute Tox. 4	Acute toxicity (inhalation), Category 4
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/1B	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
3.4.2/1B	Skin Sens. 1B	Skin Sensitisation, Category 1B
3.8/3	STOT SE 3	Specific target organ toxicity — single exposure, Category 3
4.1/C2	Aquatic Chronic 2	Chronic (long term) aquatic hazard, 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

Acute Tox. 4, H332	Calculation method
Skin Sens. 1B, H317	Calculation method
STOT SE 3, H335	Calculation method
Aquatic Chronic 3, H412	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:

- SECTION 2: Hazards identification
- SECTION 3: Composition/information on ingredients
- SECTION 7: Handling and storage
- SECTION 8: Exposure controls/personal protection
- SECTION 9: Physical and chemical properties
- SECTION 11: Toxicological information
- SECTION 12: Ecological information
- SECTION 13: Disposal considerations
- SECTION 14: Transport information

- SECTION 15: Regulatory information
- SECTION 16: Other information



Exposure Scenario

Hexamethylene diisocyanate, oligomers

Exposure Scenario, 08/06/2021

Substance identity	
	Hexamethylene diisocyanate, oligomers
CAS No.	28182-81-2
EINECS No.	500-060-2
Registration number	01-2119485796-17

Table of contents

1. **ES 1** Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a)

1. ES 1 Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a)

1.1 TITLE SECTION

Exposure Scenario name	Dye - Professional application of coatings and inks by brush or roller - Professional application of coatings and inks
Date - Version	08/06/2021 - 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)
Article Category(ies)	Stone, plaster, cement, glass and ceramic articles: Large surface area articles (AC4a) - Other articles made of stone, plaster, cement, glass or ceramic (AC4g)

Environment Contributing Scenario

CS1	ERC8c - ERC8f
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Worker Contributing Scenario

CS2 Mixing operations - Material transfers	PROC8a
CS3 Surfaces - Rolling, Brushing	PROC10
CS4 Surfaces - Roller, spreader, flow application	PROC11

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8c, ERC8f)

Environmental release categories	Widespread use leading to inclusion into/onto article (indoor) - Widespread use leading to inclusion into/onto article (outdoor) (ERC8c, ERC8f)
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Product (article) characteristics

Physical form of product:
Liquid, vapour pressure < 0,5 kPa at STP

Vapour pressure:
= 0.00246 Pa

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

Amounts used:
Daily amount per site 50 tonnes/day

Release type: Intermittent release

Technical and organisational conditions and measures

Control measures to prevent releases
No discharge of substance into waste water

Conditions and measures related to sewage treatment plant

STP type:
Municipal Sewage Treatment Plant
Water - minimum efficiency of: = 100 %

STP effluent (m³/day): 2000

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

Waste treatment
External treatment and disposal of waste should comply with applicable local and/or national regulations.

Other conditions affecting environmental exposure

Receiving surface water flow: 18000 m³/day

1.2. CS2: Worker Contributing Scenario: Mixing operations - Material transfers (PROC8a)

Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)
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Product (article) characteristics

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Vapour pressure:

Vapour pressure < 0.01 Pa at standard temperature and pressure = 0.00246 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Ensure operatives are trained to minimise exposures.

Use of an integrated local exhaust ventilation is required.

Provide a basic standard of general ventilation (1 to 3 air changes per hour).

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

Personal protection

Wear suitable gloves tested to EN374.

Wear suitable respiratory protection.

Inhalation - minimum efficiency of: = 90 %

Other conditions affecting worker exposure

Indoor use

Professional use

Room size: = 300 m³

Temperature: Covers use at ambient temperatures. 40°C

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

Process Categories	Roller application or brushing (PROC10)
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Product (article) characteristics

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Vapour pressure:

Vapour pressure < 0.01 Pa at standard temperature and pressure = 0.00246 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Ensure operatives are trained to minimise exposures.

Use of an integrated local exhaust ventilation is required.

Provide a basic standard of general ventilation (1 to 3 air changes per hour).

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

Personal protection

Wear suitable gloves tested to EN374.
Wear suitable respiratory protection.

Inhalation - minimum efficiency of: = 90 %

Other conditions affecting worker exposure

Indoor use

Professional use

Room size: = 300 m³

Temperature: Covers use at ambient temperatures. 40°C

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

Process Categories

Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Vapour pressure:

Vapour pressure < 0.01 Pa at standard temperature and pressure = 0.00246 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Ensure operatives are trained to minimise exposures.

Use of an integrated local exhaust ventilation is required.

Provide a basic standard of general ventilation (1 to 3 air changes per hour).

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

Personal protection

Wear suitable gloves tested to EN374.
Wear suitable respiratory protection.
Wear a full face respirator conforming to EN136.

Inhalation - minimum efficiency of: = 98 %

Other conditions affecting worker exposure

Covers indoor and outdoor use

Professional use

Room size: < 300 m³

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

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:

Ensure that direction of application is only horizontal or downward.

1.3 Exposure estimation and reference to its source

1.3. CS2: Worker Contributing Scenario: Mixing operations - Material transfers (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, local, short-term	= 0.07 mg/m ³	ECETOC TRA worker v3	= 0.07

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, local, short-term	= 0.18 mg/m ³	ECETOC TRA worker v3	= 0.18

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, local, short-term	= 0.4 mg/m ³	ECETOC TRA worker v3	= 0.4

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.



Exposure Scenario

Cyclohexyldimethylamine

Exposure Scenario, 20/05/2021

Substance identity	
	Cyclohexyldimethylamine
CAS No.	98-94-2
EINECS No.	202-715-5
Registration number	01-2119533030-60

Table of contents

1. **ES 1** Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a); Various sectors (SU13, SU19)

1. ES 1

Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a); Various sectors (SU13, SU19)

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks by brush or roller
Date - Version	20/05/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Formulation [mixing] of preparations and/or re-packaging (SU10) - Professional uses (SU22) - Manufacture of other non-metallic mineral products, e.g. plasters, cement (SU13) - Building and construction work (SU19)
Product Categories	Coatings and paints, thinners, paint removers (PC9a)

Environment Contributing Scenario

CS1 Low environmental release	ERC8c
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Worker Contributing Scenario

CS2 Bulk transfers - Mixing operations - Additive premixing - Preparation of material for application	PROC5 - PROC8b
CS3 Surfaces - Large surfaces - Rolling, Brushing - no spraying	PROC10

1.2 Conditions of use affecting exposure**1.2. CS1: Environment Contributing Scenario: Low environmental release (ERC8c)**

Environmental release categories	Widespread use leading to inclusion into/onto article (indoor) (ERC8c)
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Product (article) characteristics**Physical form of product:**

Liquid, vapour pressure < 10 Pa (Standard Temperature and Pressure)

Vapour pressure:

Vapour pressure < 0.01 Pa at standard temperature and pressure < 0.003 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use (or from service life)**Additional conditions environment**

Product applied to a substrate to form a solid matrix.

Technical and organisational conditions and measures**Control measures to prevent releases**

Prevent discharge of undissolved substance to or recover from onsite wastewater.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.**Additional Good Practice Advice:**

Wear suitable respiratory protection. Use long handled brushes and rollers. Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Prevent leaks and prevent soil / water pollution caused by leaks. Ensure no splashing occurs during transfer. Clear spills immediately.

1.2. CS2: Worker Contributing Scenario: Bulk transfers - Mixing operations - Additive premixing - Preparation of material for application (PROC5, PROC8b)

Process Categories	Mixing or blending in batch processes - Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC5, PROC8b)
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Product (article) characteristics**Physical form of product:**

Liquid, vapour pressure < 10 Pa (Standard Temperature and Pressure)

Vapour pressure:

Vapour pressure < 0.01 Pa at standard temperature and pressure < 0.003 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 1 %.

*Amount used, frequency and duration of use/exposure***Amounts used:**

Amount per use > 1 L/day

Duration:

Covers daily exposures up to 8 hours < 8 h

Frequency:

Use frequency < 8 h/event

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

Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Use long handled brushes and rollers.

Inhalation - minimum efficiency of: = 80 %

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

Wear respiratory protection when its use is identified for certain contributing scenarios.
Wear chemically resistant gloves (tested to EN374) in combination with "basic" employee training.

Inhalation - minimum efficiency of: = 80 %

Other conditions affecting worker exposure

Indoor use

Professional use

Temperature: Covers use at ambient temperatures.

*Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.***Additional Good Practice Advice:**

Open doors and windows. Wear suitable respiratory protection. Ensure no splashing occurs during transfer. Clear spills immediately.

1.2. CS3: Worker Contributing Scenario: Surfaces - Large surfaces - Rolling, Brushing - no spraying (PROC10)**Process Categories**

Roller application or brushing (PROC10)

*Product (article) characteristics***Physical form of product:**

Liquid, vapour pressure < 10 Pa (Standard Temperature and Pressure)

Vapour pressure:

Vapour pressure < 0.01 Pa at standard temperature and pressure < 0.003 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 1 %.

*Amount used, frequency and duration of use/exposure***Amounts used:**

Amount per use > 1 L/day

Duration:

Covers daily exposures up to 8 hours < 8 h

Frequency:

Use frequency < 8 h/event

Technical and organisational conditions and measures

Technical and organisational measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Inhalation - minimum efficiency of: = 80 %

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

Personal protection

Wear chemically resistant gloves (tested to EN374) in combination with "basic" employee training.
Wear respiratory protection when its use is identified for certain contributing scenarios.

Inhalation - minimum efficiency of: = 80 %

Other conditions affecting worker exposure

Indoor use
Professional use

Temperature: Covers use at ambient temperatures.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:

Open doors and windows. Wear suitable respiratory protection. Use long handled tools. Use long handled brushes and rollers.

1.3 Exposure estimation and reference to its source

1.3. CS2: Worker Contributing Scenario: Bulk transfers - Mixing operations - Additive premixing - Preparation of material for application (PROC5, PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, local, long-term	= 0.456 mg/m ³	ECETOC TRA worker v3	= 0.912
inhalative, systemic, long-term	= 0.456 mg/m ³	ECETOC TRA worker v3	= 0.456

1.3. CS3: Worker Contributing Scenario: Surfaces - Large surfaces - Rolling, Brushing - no spraying (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, local, long-term	= 0.18 mg/m ³	ECETOC TRA worker v3	= 0.36
inhalative, systemic, long-term	= 0.18 mg/m ³	ECETOC TRA worker v3	= 0.18

Additional information on exposure estimation:

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374.

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.