Safety Data Sheet

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

KERAKOVER KOMPACT

Date of first edition: 6/28/2021

Safety Data Sheet dated 25/07/2025

version 9

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

1.1. Product identifier

Mixture identification:

Trade name: KERAKOVER KOMPACT

Trade code: 001029014-5 .050C

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

Recommended use: Paints/coatings - Decorative

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)

Skin Sens. 1A May cause an allergic skin reaction.

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.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P272 Contaminated work clothing must not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves and eye protection.

P302+P352 IF ON SKIN: Wash with plenty of water.

P321	Specific treatment (see ... On this label).
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P501	Dispose of contents/container in accordance with applicable regulations.

Contains

2-octyl-2H-isothiazol-3-one

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

2-methylisothiazol-3(2H)-one

4,5-dichloro-2-octyl-2H-isothiazol-3-one (DCOIT)

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

Dir. 2004/42/EC (VOC directive)

Exterior walls of mineral substrate

EU limit value for this product (cat. A/c): 40 g/l

This product contains max 4.98 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 >= 0.1%

Other Hazards: Contains biocidal product: C(M)IT/MIT (3:1); IPBC; Pyrithione zinc; OIT; Terbutryn; The product is identified as an article treated pursuant to art. 58 of Regulation (EU) no. 528/2012 and subsequent amendments. Possible skin exposure must be avoided. Protective gloves and work clothes are required. Avoid releasing product into the environment. When washing work equipment, water must not be dispersed in the soil or on surface water

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: KERAKOVER KOMPACT

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

Qty	Name	Ident. Numb.	Classification	Registration Number
≥1-<3 %	Titanium dioxide	CAS:13463-67-7 EC:236-675-5	Not classified as hazardous	
≥0.5-<1 %	1-isopropyl-2,2-dimethyltrimethylene diisobutyrate	CAS:6846-50-0 EC:229-934-9	Repr. 2, H361; Aquatic Chronic 3, H412	
≥0.15-<0.20 %	Quartz	CAS:14808-60-7 EC:238-878-4	STOT RE 1, H372	
<0.036 %	3-iodo-2-propynyl butylcarbamate; 3-iodoprop-2-yn-1-yl butylcarbamate	CAS:55406-53-6 EC:259-627-5 Index:616-212-00-7	Acute Tox. 2, H330; Acute Tox. 4, H302; STOT RE 1, H372; Eye Dam. 1, H318; Skin Sens. 1, H317; Aquatic Acute 1, H400; Aquatic Chronic 1, H410, M-Chronic:10, M-Acute:10 Acute Toxicity Estimate : ATE - Inhalation (Dust/mist) : 0.17 mg/l	
<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	01-2120761540-60

<0.01 %	2-octyl-2H-isothiazol-3-one	CAS:26530-20-1 EC:247-761-7 Index:613-112-00-5	Acute Tox. 2, H330; Acute Tox. 3, H311; Acute Tox. 3, H301; Skin Corr. 1, H314; Eye Dam. 1, H318; Skin Sens. 1A, H317; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Corrosive to the respiratory tract., M-Chronic:100, M-Acute:100 Specific Concentration Limits: C ≥ 0.0015%: Skin Sens. 1A H317 Acute Toxicity Estimate: ATE - Oral: 125mg/kg bw ATE - Dermal: 311mg/kg bw	
<0.01 %	Terbutryn	CAS:886-50-0 EC:212-950-5	Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Sens. 1B, H317; Acute Tox. 4, H302, M-Chronic:100, M-Acute:100 Specific Concentration Limits: C ≥ 3%: Skin Sens. 1B H317	
<0.01 %	2-methylisothiazol-3(2H)-one	CAS:2682-20-4 EC:220-239-6 Index:613-326-00-9	Acute Tox. 2, H330; Acute Tox. 3, H301; Acute Tox. 3, H311; Skin Corr. 1B, H314; Eye Dam. 1, H318; Skin Sens. 1A, H317; Aquatic Acute 1, H400; Aquatic Chronic 1, H410, M-Chronic:1, M-Acute:10, EUH071 Specific Concentration Limits: C ≥ 0.0015%: Skin Sens. 1A H317	01-2120764690-50
<0.01 %	4,5-dichloro-2-octyl-2H-isothiazol-3-one (DCOIT)	CAS:64359-81-5 EC:264-843-8 Index:613-335-00-8	Acute Tox. 2, H330; Acute Tox. 4, H302; Skin Corr. 1, 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: 0.025% ≤ C < 5%: Skin Irrit. 2 H315 0.025% ≤ C < 3%: Eye Irrit. 2 H319 C ≥ 0.0015%: Skin Sens. 1A H317 Acute Toxicity Estimate: ATE - Oral: 567mg/kg bw ATE - Inhalation (Dust/mist): 0.16mg/l	
<0.01 %	bronopol (INN); 2-bromo-2-nitropropane-1,3-diol	CAS:52-51-7 EC:200-143-0 Index:603-085-00-8	STOT SE 3, H335; Skin Irrit. 2, H315; Eye Dam. 1, H318; Aquatic Acute 1, H400; Acute Tox. 4, H312; Aquatic Chronic 1, H410; Acute Tox. 3, H301; Acute Tox. 3, H331, M-Chronic:10, M-Acute:100	
<0.0015 %	ethanediol; ethylene glycol	CAS:107-21-1 EC:203-473-3	Acute Tox. 4, H302; STOT RE 2, H373	01-2119456816-28
<0.0015 %	Pyrithione zinc	CAS:13463-41-7 EC:236-671-3 Index:613-333-00-7	Acute Tox. 2, H330; Acute Tox. 3, H301; STOT RE 1, H372; Eye Dam. 1, H318; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Repr. 1B, H360, M-Chronic:10, M-Acute:1000 Acute Toxicity Estimate : ATE - Oral : 221 mg/kg bw	

<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

This mixture contains >= 1% titanium dioxide (CAS 13463-67-7). The Annex VI classification of titanium dioxide does not apply to this mixture according to its Note 10.

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Remove contaminated clothing immediatley and dispose off safely.

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

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 (CO_2).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

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

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non emergency personnel:

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

For emergency responders:

Wear personal protection equipment.

6.2. Environmental precautions

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

Retain contaminated washing water and dispose it.

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

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

6.3. Methods and material for containment and cleaning up

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

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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

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

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

Contamined clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

7.2. Conditions for safe storage, including any incompatibilities

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
Calcium carbonate CAS: 471-34-1	NATIONAL	HUNGARY	Long Term: 10 mg/m3 inhalable aerosol Source: 5/2020. (II. 6.) ITM
	NATIONAL	IRELAND	Long Term: 10 mg/m3 Inhalable fraction Source: 2021 Code of Practice
	NATIONAL	IRELAND	Long Term: 4 mg/m3 Respirable fraction Source: 2021 Code of Practice
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m3 inhalable aerosol Source: EH40/2005 Workplace exposure limits
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 4 mg/m3 respirable aerosol Source: EH40/2005 Workplace exposure limits
	NATIONAL	CROATIA	Long Term: 10 mg/m3 U Source: NN 1/2021
	NATIONAL	CROATIA	Long Term: 4 mg/m3 R Source: NN 1/2021
	NATIONAL	FRANCE	Long Term: 10 mg/m3 Source: INRS outil65

	NATIONAL	LATVIA	Long Term: 6 mg/m3 Source: KN325P1
	NATIONAL	POLAND	Long Term: 10 mg/m3 4) Source: Dz.U. 2018 poz. 1286
	SUVA	SWITZERLAND	Long Term: 3 mg/m3 TWA mg/m3: (a), Formel / Formal, NIOSH Source: suva.ch/valeurs-limites
Quartz CAS: 14808-60-7	ACGIH		Long Term: 0.025 mg/m3 (8h) R, A2 - Pulm fibrosis, lung cancer
	NATIONAL	HUNGARY	Long Term: 0.1 mg/m3 Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL	IRELAND	Long Term: 0.1 mg/m3 Respirable fraction Source: 2021 Code of Practice
	NATIONAL	ITALY	Long Term: 0.1 mg/m3 Polvere di silice cristallina respirabile (frazione inalabile). Rif:D.Lgs 81/2008 Source: D.lgs. 81/2008, Allegato XLIII
	NATIONAL	SPAIN	Long Term: 0.3 mg/m3 Respirable fraction Source: LEP 2022
	NATIONAL	BELGIUM	Long Term: 0.1 mg/m3 C Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	DENMARK	Long Term: 0.3 mg/m3 alveolijae, liite 3 Source: BEK nr 2203 af 29/11/2021
	NATIONAL	DENMARK	Long Term: 0.1 mg/m3 EK Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 0.1 mg/m3 1, C Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Long Term: 0.05 mg/m3 alveolijae, liite 3 Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Long Term: 0.1 mg/m3 La VLEP s'applique à la fraction alvéolaire. Forme de silice cristalline. Source: INRS outil65, article R. 4412-149 du Code du travail
	NATIONAL	LITHUANIA	Long Term: 0.1 mg/m3 Žiūrėti 1 priedo 3 punktą. Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	NETHERLANDS	Long Term: 0.075 mg/m3 (2) Source: Arbeidsomstandighedenregeling - Lijst B1
	NATIONAL	NORWAY	Long Term: 0.3 mg/m3 K 7 Source: FOR-2021-06-28-2248
	NATIONAL	NORWAY	Long Term: 0.05 mg/m3 K G 7 21 Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 0.1 mg/m3 6) Source: Dz.U. 2018 poz. 1286
	NATIONAL	SWEDEN	Long Term: 0.1 mg/m3 C, M, 3 Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 0.15 mg/m3 TWA mg/m3: (a), C1A, SSC, P, Cancpulm Silicose / Lugenkrebs Silikose, HSE NIOSH OSHA

			Source: suva.ch/valeurs-limites
Barium sulfate CAS: 7727-43-7	ACGIH		Long Term: 5 mg/m3 (8h) I, E - Pneumoconiosis
	NATIONAL	BELGIUM	Long Term: 5 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	CROATIA	Long Term: 10 mg/m3 U Source: NN 1/2021
	NATIONAL	CROATIA	Long Term: 4 mg/m3 R Source: NN 1/2021
	NATIONAL	IRELAND	Long Term: 5 mg/m3 Source: 2021 Code of Practice
	NATIONAL	SPAIN	Long Term: 10 mg/m3 e Source: LEP 2022
	NATIONAL	BULGARIA	Long Term: 10 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	SLOVAKIA	Long Term: 4 mg/m3 10) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	NATIONAL	SLOVAKIA	Long Term: 1.5 mg/m3 11) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	SUVA	SWITZERLAND	Long Term: 3 mg/m3 TWA mg/m3: (a), Formel / Formal Source: suva.ch/valeurs-limites
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 4 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
Titanium dioxide CAS: 13463-67-7	ACGIH		Long Term: 2.5 mg/m3 (8h) Finescale particles; R ; A3 - LRT irr, pneumoconiosis
	NATIONAL	GERMANY	Long Term: 0.3 mg/m3; Short Term: 2.4 mg/m3 DFG; Long term and short term: excluding ultrafine particles; respirable fraction; multiplied by the material density; Source: TRGS900
	NATIONAL	BELGIUM	Long Term: 10 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	CROATIA	Long Term: 10 mg/m3 U Source: NN 1/2021
	NATIONAL	CROATIA	Long Term: 4 mg/m3 R Source: NN 1/2021
	NATIONAL	IRELAND	Long Term: 10 mg/m3 Source: 2021 Code of Practice
	NATIONAL	IRELAND	Long Term: 4 mg/m3 Source: 2021 Code of Practice
	NATIONAL	ROMANIA	Long Term: 10 mg/m3; Short Term: 15 mg/m3 Source: Republicarea 1 - nr. 743 din 29 iulie 2021

	NATIONAL	SPAIN	Long Term: 10 mg/m3 Source: LEP 2022
	NATIONAL	AUSTRIA	Long Term: 5 mg/m3; Short Term: 10 mg/m3 60(Miw), 2x, MAK, A Source: BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 10 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	DENMARK	Long Term: 6 mg/m3 K Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 5 mg/m3 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FRANCE	Long Term: 10 mg/m3 Cancérogène de catégorie 2 Source: INRS outil65
	NATIONAL	GREECE	Long Term: 10 mg/m3 εισπν. Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	GREECE	Long Term: 5 mg/m3 αναπν. Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	LATVIA	Long Term: 10 mg/m3 Source: KN325P1
	NATIONAL	LITHUANIA	Long Term: 5 mg/m3 Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	NORWAY	Long Term: 5 mg/m3 Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 10 mg/m3 4), 7) Source: Dz.U. 2018 poz. 1286
	NATIONAL	SLOVAKIA	Long Term: 5 mg/m3 Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	NATIONAL	SWEDEN	Long Term: 5 mg/m3 3 Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 3 mg/m3 TWA mg/m3: (a), SSC, Formel / Formal, NIOSH Source: suva.ch/valeurs-limites
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
Cellulose CAS: 9004-34-6	ACGIH		Long Term: 10 mg/m3 (8h) URT irr
	NATIONAL	BELGIUM	Long Term: 10 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	CROATIA	Long Term: 10 mg/m3; Short Term: 20 mg/m3 U Source: NN 1/2021
	NATIONAL	CROATIA	Long Term: 4 mg/m3 R Source: NN 1/2021
	NATIONAL	IRELAND	Long Term: 10 mg/m3 Source: 2021 Code of Practice
	NATIONAL	ROMANIA	Long Term: 10 mg/m3 fracțiune inhalabilă Source: Republicarea 1 - nr. 743 din 29 iulie 2021

	NATIONAL	SPAIN	Long Term: 10 mg/m3 Source: LEP 2022
	NATIONAL	ESTONIA	Long Term: 10 mg/m3 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FRANCE	Long Term: 10 mg/m3 Source: INRS outil65
	NATIONAL	LATVIA	Long Term: 2 mg/m3 Source: KN325P1
	SUVA	SWITZERLAND	Long Term: 3 mg/m3 TWA mg/m3: (a), VRS / OAW, NIOSH Source: suva.ch/valeurs-limites
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m3; Short Term: 20 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 4 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
sodium chloride CAS: 7647-14-5	NATIONAL	LATVIA	Long Term: 5 mg/m3 Source: KN325P1
	NATIONAL	LITHUANIA	Long Term: 5 mg/m3 Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
Quartz CAS: 14808-60-7	EU		Long Term: 0.1 mg/m3 Polvere di silice cristallina respirabile, frazione inalabile. (R), A2 - Pulm fibrosis, lung cancer. Directive 2017/2398
	ACGIH		Long Term: 0.025 mg/m3 (8h) R, A2 - Pulm fibrosis, lung cancer
	NATIONAL	HUNGARY	Long Term: 0.1 mg/m3 (8h) Respirable aerosol Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL	IRELAND	Long Term: 0.1 mg/m3 (8h) Respirable fraction Source: 2021 Code of Practice
	NATIONAL	ITALY	Long Term: 0.1 mg/m3 (8h) Polvere di silice cristallina respirabile (frazione inalabile). D.Lgs 81/2008 Source: D.lgs. 81/2008, Allegato XLIII
	NATIONAL	SPAIN	Long Term: 0.05 mg/m3 (8h) Respirable fraction Source: LEP 2022
	NATIONAL	CROATIA	Long Term: 0.1 mg/m3 Source: NN 1/2021
	NATIONAL	AUSTRIA	Long Term: 0.05 mg/m3 MAK, III C, A Source: BGBl. II Nr. 156/2021
	NATIONAL	BELGIUM	Long Term: 0.1 mg/m3 C Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	DENMARK	Long Term: 0.3 mg/m3 Source: BEK nr 2203 af 29/11/2021
	NATIONAL	DENMARK	Long Term: 0.1 mg/m3 EK Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 0.1 mg/m3 1, C Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105

	NATIONAL	FINLAND	Long Term: 0.05 mg/m3 alveolijae, liite 3 Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Long Term: 0.1 mg/m3 La VLEP s'applique à la fraction alvéolaire. Forme de silice cristalline. Source: INRS outil65, article R. 4412-149 du Code du travail
	NATIONAL	LITHUANIA	Long Term: 0.1 mg/m3 Žiūrėti 1 priedo 3 punktą. Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	NETHERLANDS	Long Term: 0.075 mg/m3 (2) Source: Arbeidsomstandighedenregeling - Lijst B1
	NATIONAL	NORWAY	Long Term: 0.3 mg/m3 K 7 Source: FOR-2021-06-28-2248
	NATIONAL	NORWAY	Long Term: 0.05 mg/m3 K G 7 21 Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 0.1 mg/m3 6) Source: Dz.U. 2018 poz. 1286
	NATIONAL	SWEDEN	Long Term: 0.1 mg/m3 C, M, 3 Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 0.15 mg/m3 TWA mg/m3: (a), C1A, SSC, P, Cancpulm Silicose / Lugenkrebs Silikose, HSE NIOSH OSHA Source: suva.ch/valeurs-limites
Poly(oxy-1,2-ethanediyl),α-hydro-ω-hydroxy- Ethane-1, 2-diol, ethoxylated CAS: 25322-68-3	NATIONAL	GERMANY	Long Term: 200 mg/m3 DFG, Y, E, 2 (II) Source: TRGS 900
	NATIONAL	SLOVAKIA	Long Term: 1000 mg/m3 Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	SUVA	SWITZERLAND	Long Term: 500 mg/m3 SSC, Mcorp / KG Source: suva.ch/valeurs-limites
2-amino-2-methylpropanol CAS: 124-68-5	NATIONAL	DENMARK	Long Term: 3 ppm Source: At-vejledning C.0.1-1
	SUVA	SWITZERLAND	Long Term: 8.7 mg/m3 - 2.4 ppm; Short Term: 17.4 mg/m3 - 4.8 ppm R/H, SSC, Foie / 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	GERMANY	Long Term: 3.7 mg/m3 - 1 ppm DFG, H, Y, 11, 2(II) Source: TRGS 900
	NATIONAL	SLOVENIA	Long Term: 3.7 mg/m3 - 1 ppm; Short Term: 7.4 mg/m3 - 2 ppm K, Y Source: UL št. 72, 11. 5. 2021
3-iodo-2-propynyl butylcarbamate; 3-iodoprop-2-yn-1-yl butylcarbamate CAS: 55406-53-6	SUVA	SWITZERLAND	Long Term: 0.12 mg/m3 - 0.01 ppm; Short Term: 0.24 mg/m3 - 0.02 ppm S, SSC, Cholin / Cholin, 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	GERMANY	Long Term: 0.058 mg/m3 - 0.005 ppm DFG, Y, Sh, 11, 2 (I) Source: TRGS 900
	NATIONAL	SLOVENIA	Long Term: 0.058 mg/m3 - 0.005 ppm; Short Term: 0.116 mg/m3 - 0.01 ppm Y Source: UL št. 72, 11. 5. 2021
2-octyl-2H-isothiazol-3-one CAS: 26530-20-1	NATIONAL	AUSTRIA	Long Term: 0.05 mg/m3; Short Term: Ceiling - 0.05 mg/m3 Mow, MAK, H, S, E

			Source: BGBl. II Nr. 156/2021
	SUVA	SWITZERLAND	Long Term: 0.05 mg/m3; Short Term: 0.1 mg/m3 TWA mg/m3: (i), R/H, S, VRS / OAW Source: suva.ch/valeurs-limites
	NATIONAL	GERMANY	Long Term: 0.05 mg/m3 DFG, H, Y, E, 2(I) Source: TRGS 900
	NATIONAL	SLOVENIA	Long Term: 0.05 mg/m3; Short Term: 0.1 mg/m3 K, Y, (I) Source: UL št. 72, 11. 5. 2021
2,2' -oxybisethanol; diethylene glycol CAS: 111-46-6	NATIONAL	AUSTRIA	Long Term: 44 mg/m3 - 10 ppm; Short Term: 176 mg/m3 - 40 ppm 15(Miw), 4x, MAK Source: GKV, BGBl. II Nr. 156/2021
	NATIONAL	DENMARK	Long Term: 11 mg/m3 - 2.5 ppm Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 45 mg/m3 - 10 ppm; Short Term: 90 mg/m3 - 20 ppm A Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	LATVIA	Long Term: 10 mg/m3 Source: KN325P1
	NATIONAL	LITHUANIA	Long Term: 45 mg/m3 - 10 ppm; Short Term: 90 mg/m3 - 20 ppm O Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	POLAND	Long Term: 10 mg/m3 4) Source: Dz.U. 2018 poz. 1286
	NATIONAL	SLOVAKIA	Long Term: 44 mg/m3 - 10 ppm; Short Term: 90 mg/m3 - 20 ppm Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	NATIONAL	SWEDEN	Long Term: 45 mg/m3 - 10 ppm; Short Term: 90 mg/m3 - 20 ppm H, V Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 44 mg/m3 - 10 ppm; Short Term: 176 mg/m3 - 40 ppm SSC, 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: 101 mg/m3 - 23 ppm Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	NATIONAL	CROATIA	Long Term: 101 mg/m3 - 23 ppm Source: NN 1/2021
	NATIONAL	GERMANY	Long Term: 44 mg/m3 - 10 ppm DFG, Y, 11, 4(II) Source: TRGS 900
	NATIONAL	IRELAND	Long Term: 100 mg/m3 - 23 ppm Source: 2021 Code of Practice
	NATIONAL	ROMANIA	Long Term: 500 mg/m3 - 115 ppm; Short Term: 800 mg/m3 - 184 ppm Source: Republicarea 1 - nr. 743 din 29 iulie 2021
	NATIONAL	SLOVENIA	Long Term: 44 mg/m3 - 10 ppm; Short Term: 176 mg/m3 - 40 ppm Y Source: UL št. 72, 11. 5. 2021
Kaolin CAS: 1332-58-7	ACGIH		Long Term: 2 mg/m3 (8h) E,R, A4 - Pneumoconiosis
	NATIONAL	BELGIUM	Long Term: 2 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	DENMARK	Long Term: 2 mg/m3 Source: BEK nr 2203 af 29/11/2021

	NATIONAL	FINLAND	Long Term: 2 mg/m3 alveolijae Source: HTP-ARVOT 2020
	NATIONAL	IRELAND	Long Term: 2 mg/m3 Source: 2021 Code of Practice
	NATIONAL	POLAND	Long Term: 10 mg/m3 4), 7) Source: Dz.U. 2018 poz. 1286
	SUVA	SWITZERLAND	Long Term: 3 mg/m3 TWA mg/m3: (a), Fibpulm / Lungenfibrose Source: suva.ch/valeurs-limites
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 2 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	NATIONAL	CROATIA	Long Term: 2 mg/m3 R Source: NN 1/2021
2-methylisothiazol-3(2H)-one CAS: 2682-20-4	NATIONAL	SLOVENIA	Long Term: 0.05 mg/m3 (8h)
	NATIONAL	AUSTRIA	Long Term: 0.05 mg/m3 MAK, Sh Source: GKV, BGBl. II Nr. 156/2021
Propylidynetrimethanol CAS: 77-99-6	NATIONAL	LITHUANIA	Short Term: Ceiling - 5 ppm Ū Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	SWEDEN	Long Term: 5 mg/m3 Source: AFS 2021:3
zinc oxide CAS: 1314-13-2	ACGIH		Long Term: 2 mg/m3 (8h); Short Term: 10 mg/m3 R - Metal fume fever
	NATIONAL	AUSTRIA	Long Term: 5 mg/m3 MAK, A Source: BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 5 mg/m3; Short Term: 10 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 2 mg/m3; Short Term: Ceiling - 5 mg/m3 Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Long Term: 4 mg/m3 Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 5 mg/m3 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Long Term: 2 mg/m3; Short Term: 10 mg/m3 Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Long Term: 5 mg/m3 Source: INRS outil65
	NATIONAL	FRANCE	Long Term: 10 mg/m3 Source: INRS outil65
	NATIONAL	GREECE	Long Term: 5 mg/m3; Short Term: 10 mg/m3 Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	HUNGARY	Long Term: 5 mg/m3 i, N Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL	HUNGARY	Long Term: 5 mg/m3 i, R Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL	LATVIA	Long Term: 0.5 mg/m3

			Source: KN325P1
	NATIONAL	LITHUANIA	Long Term: 5 mg/m3 Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	NORWAY	Long Term: 5 mg/m3 Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 5 mg/m3; Short Term: 10 mg/m3 4) Source: Dz.U. 2018 poz. 1286
	NATIONAL	SLOVAKIA	Long Term: 1 mg/m3; Short Term: 1 mg/m3 11) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	NATIONAL	SWEDEN	Long Term: 5 mg/m3 3 Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 3 mg/m3; Short Term: 3 mg/m3 TWA mg/m3: (a), Fimétal / Metallrauch, NIOSH OSHA Source: suva.ch/valeurs-limites
	NATIONAL	BELGIUM	Long Term: 2 mg/m3; Short Term: 10 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	CROATIA	Long Term: 2 mg/m3; Short Term: 10 mg/m3 GVI: R Source: NN 1/2021
	NATIONAL	IRELAND	Long Term: 2 mg/m3; Short Term: 10 mg/m3 OEL (8-hour reference period) : R Source: 2021 Code of Practice
	NATIONAL	ROMANIA	Long Term: 5 mg/m3; Short Term: 10 mg/m3 (Fumuri) Source: Republicarea 1 - nr. 743 din 29 iulie 2021
	NATIONAL	SPAIN	Long Term: 2 mg/m3; Short Term: 10 mg/m3 d Source: LEP 2022
sodium hydroxide; caustic soda CAS: 1310-73-2	ACGIH		Short Term: Ceiling - 2 mg/m3 URT, eye, and skin irr
	NATIONAL	ROMANIA	Long Term: 1 mg/m3; Short Term: 3 mg/m3
	NATIONAL	AUSTRIA	Long Term: 2 mg/m3; Short Term: Ceiling - 4 mg/m3 5(Mow), 8x, MAK, E Source: BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 2 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 1 mg/m3; Short Term: Ceiling - 2 mg/m3 I Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Short Term: Ceiling - 2 mg/m3 L Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 1 mg/m3; Short Term: 2 mg/m3 * Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Short Term: Ceiling - 2 mg/m3 kattoarvo Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Long Term: 2 mg/m3 Source: INRS outil65
	NATIONAL	GREECE	Long Term: 2 mg/m3; Short Term: 2 mg/m3 Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	HUNGARY	Long Term: 1 mg/m3; Short Term: 2 mg/m3 m, N Source: 5/2020. (II. 6.) ITM rendelet

	NATIONAL	LATVIA	Long Term: 0.5 mg/m3 Source: KN325P1
	NATIONAL	LITHUANIA	Short Term: Ceiling - 2 mg/m3 Ū Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	NORWAY	Short Term: Ceiling - 2 mg/m3 T Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 0.5 mg/m3; Short Term: 1 mg/m3 Source: Dz.U. 2018 poz. 1286
	NATIONAL	SLOVAKIA	Long Term: 2 mg/m3 Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	NATIONAL	SWEDEN	Long Term: 1 mg/m3; Short Term: 2 mg/m3 3 Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 2 mg/m3; Short Term: 2 mg/m3 TWA mg/m3: (i), SSC, VRS Peau Yeux / OAW Haut Auge, NIOSH OSHA Source: suva.ch/valeurs-limites
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Short Term: 2 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	NATIONAL	BELGIUM	Long Term: 2 mg/m3 M Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	CROATIA	Short Term: 2 mg/m3 Source: NN 1/2021
	NATIONAL	IRELAND	Short Term: 2 mg/m3 Source: 2021 Code of Practice
	NATIONAL	SPAIN	Short Term: 2 mg/m3 Source: LEP 2022
Copper dinitrate CAS: 3251-23-8	NATIONAL	FINLAND	Long Term: 0.02 mg/m3 Cu, alveolijae Source: HTP-ARVOT 2020
ethanediol; ethylene glycol CAS: 107-21-1	ACGIH		Short Term: 10 mg/m3 I, H, A4 - URT irr
	NATIONAL	AUSTRIA	Long Term: 26 mg/m3 - 10 ppm; Short Term: Ceiling - 52 mg/m3 - 20 ppm 5(Mow), 8x, MAK, H Source: BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm Кожа Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 50 mg/m3; Short Term: Ceiling - 100 mg/m3 D Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Long Term: 26 mg/m3 - 10 ppm EH Source: BEK nr 2203 af 29/11/2021
	NATIONAL	DENMARK	Long Term: 10 mg/m3 Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm A, 18 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Long Term: 50 mg/m3 - 20 ppm; Short Term: 100 mg/m3 - 40 ppm iho Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm

		Risque de pénétration percutanée Source: INRS outil65, arrêté du 30-06-2004 modifié
NATIONAL	GREECE	Long Term: 125 mg/m3 - 50 ppm; Short Term: 125 mg/m3 - 50 ppm Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	HUNGARY	Long Term: 52 mg/m3; Short Term: 104 mg/m3 b, i, EU1, N Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	LITHUANIA	Long Term: 25 mg/m3 - 10 ppm; Short Term: 50 mg/m3 - 20 ppm O, Šis RD taikomas bendrai garų ir aerozolio koncentracijai. Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NETHERLANDS	Long Term: 52 mg/m3; Short Term: 104 mg/m3 H Source: Arbeidsomstandighedenregeling - Lijst A
NATIONAL	NETHERLANDS	Long Term: 10 mg/m3; Short Term: 104 mg/m3 H Source: Arbeidsomstandighedenregeling - Lijst A
NATIONAL	NORWAY	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm H E 5 S Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 15 mg/m3; Short Term: 50 mg/m3 skóra Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm K Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 25 mg/m3 - 10 ppm; Short Term: 104 mg/m3 - 40 ppm H, 26 Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 26 mg/m3 - 10 ppm; Short Term: 52 mg/m3 - 20 ppm R/H, SSC, VRS Yeux / OAW Auge, La substance peut être présente sous forme de vapeur et d'aérosol en même temps / Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m3 Sk Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm Sk Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
NATIONAL	BELGIUM	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm D, M Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CYPRUS	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm δέρμα Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
NATIONAL	GERMANY	Long Term: 26 mg/m3 - 10 ppm DFG, EU, H, Y, 11, 2(I) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm Sk, IOELV Source: 2021 Code of Practice
NATIONAL	ITALY	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm Cute Source: D.lgs. 81/2008, Allegato XXXVIII
NATIONAL	LATVIA	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm

			Āda Source: KN325P1
	NATIONAL	LUXEMBOURG	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm Peau Source: Mémorial A n.226 du 22 mars 2021
	NATIONAL	MALTA	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm skin Source: S.L.424.24
	NATIONAL	PORTUGAL	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm Cutânea Source: Decreto-Lei n.º 1/2021
	NATIONAL	ROMANIA	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm P, Dir. 2000/39 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
	NATIONAL	SLOVENIA	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm K, Y, EU1 Source: UL št. 72, 11. 5. 2021
	NATIONAL	SPAIN	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm vía dérmica, VLI Source: LEP 2022
	EU		Long Term: 52 mg/m3 - 20 ppm (8h); Short Term: 104 mg/m3 - 40 ppm Skin
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/m3; Short Term: 0.4 mg/m3 DFG; Long term and short term: inhalable fraction Source: TRGS900
	NATIONAL	AUSTRIA	Long Term: 0.05 mg/m3 MAK, Sh Source: GKV, BGBl. II Nr. 156/2021
	SUVA	SWITZERLAND	Long Term: 0.2 mg/m3; Short Term: 0.4 mg/m3 TWA mg/m3: (i), S, SSC, VRS Peau Yeux / OAW Haut Auge Source: suva.ch/valeurs-limites
Pyridine-2-thiol 1-oxide, sodium salt CAS: 3811-73-2	NATIONAL	GERMANY	Long Term: 0.2 mg/m3 DFG, H, Y, E, 2(II) Source: TRGS 900
	NATIONAL	SLOVENIA	Long Term: 1 mg/m3; Short Term: 2 mg/m3 K, (I) Source: UL št. 72, 11. 5. 2021
	NATIONAL	AUSTRIA	Long Term: 1 mg/m3; Short Term: 4 mg/m3 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 TWA mg/m3: (i), R/H, SSC, SNP / PNS Source: suva.ch/valeurs-limites
octamethylcyclotetrasiloxane CAS: 556-67-2	NATIONAL	AUSTRIA	f Source: BGBl. II Nr. 156/2021
glyoxal…%; ethandial…% CAS: 107-22-2	ACGIH		Long Term: 0.1 mg/m3 (8h) IFV, DSEN, A4 - URT irr, larynx metaplasia
	NATIONAL	DENMARK	Short Term: Ceiling - 0.5 mg/m3 - 0.2 ppm L Source: BEK nr 2203 af 29/11/2021
	NATIONAL	FINLAND	Long Term: 0.02 mg/m3 Source: HTP-ARVOT 2020
	NATIONAL	IRELAND	Long Term: 0.1 mg/m3 IFV Source: 2021 Code of Practice

	NATIONAL BELGIUM	Long Term: 0.1 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL SPAIN	Long Term: 0.1 mg/m3 Sen, FIV, s Source: LEP 2022

Predicted No Effect Concentration (PNEC) values

Titanium dioxide CAS: 13463-67-7	Exposure Route: Fresh Water; PNEC Limit: 0.184 mg/l
	Exposure Route: Marine water; PNEC Limit: 0.018 mg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 1 mg/kg
	Exposure Route: Intermittent releases (marine water); PNEC Limit: 100 mg/kg
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 100 mg/kg
1-isopropyl-2,2-dimethyltrimethylene diisobutyrate CAS: 6846-50-0	Exposure Route: Fresh Water; PNEC Limit: 14 µg/l
	Exposure Route: Marine water; PNEC Limit: 1.4 µg/l
	Exposure Route: Marine water sediments; PNEC Limit: 3 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 5.29 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 529 µg/kg
	Exposure Route: Soil; PNEC Limit: 1.05 mg/kg
	Exposure Route: Secondary poisoning; PNEC Limit: 83.3 mg/kg
3-iodo-2-propynyl butylcarbamate; 3-iodoprop-2-yn-1-yl butylcarbamate CAS: 55406-53-6	Exposure Route: Fresh Water; PNEC Limit: 500 ng/L
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 530 ng/L
	Exposure Route: Marine water; PNEC Limit: 46 ng/L
	Exposure Route: Intermittent releases (marine water); PNEC Limit: 530 ng/L
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 440 ng/L
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 440 ng/L
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
2-octyl-2H-isothiazol-3-one CAS: 26530-20-1	Exposure Route: Fresh Water; PNEC Limit: 2.2 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 1.22 µg/l
	Exposure Route: Marine water; PNEC Limit: 220 ng/L
	Exposure Route: Intermittent releases (marine water); PNEC Limit: 122 ng/L
	Exposure Route: Freshwater sediments; PNEC Limit: 47.5 µg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 47.5 µg/kg
	Exposure Route: Soil; PNEC Limit: 8.2 µg/kg
2-methylisothiazol-3(2H)-one CAS: 2682-20-4	Exposure Route: Fresh Water; PNEC Limit: 3.39 µg/l
	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: Soil; PNEC Limit: 47.1 µg/kg
bronopol (INN); 2-bromo-2-nitropropane-1,3-diol CAS: 52-51-7	Exposure Route: Fresh Water; PNEC Limit: 10 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 2.5 µg/l
	Exposure Route: Marine water; PNEC Limit: 800 ng/L
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 430 µg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 41 µg/l
	Exposure Route: Marine water sediments; PNEC Limit: 3.28 µg/kg
	Exposure Route: Soil; PNEC Limit: 500 µg/kg
ethanediol; ethylene glycol CAS: 107-21-1	Exposure Route: Fresh Water; PNEC Limit: 10 mg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 10 mg/l
	Exposure Route: Marine water; PNEC Limit: 1 mg/l
	Exposure Route: Intermittent releases (marine water); PNEC Limit: 10 mg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 199.5 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 37 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 3.7 mg/kg
	Exposure Route: Soil; PNEC Limit: 1.53 mg/kg
Pyrithione zinc CAS: 13463-41-7	Exposure Route: Fresh Water; PNEC Limit: 90 ng/L
	Exposure Route: Marine water; PNEC Limit: 90 ng/L
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 10 µg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 9.5 µg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 9.5 µg/kg
	Exposure Route: Soil; PNEC Limit: 1.02 mg/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: Fresh Water; PNEC Limit: 3.39 µg/l
	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

Titanium dioxide CAS: 13463-67-7	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 10 mg/m³
1-isopropyl-2,2-dimethyltrimethylene diisobutyrate CAS: 6846-50-0	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 17.62 mg/m³; Consumer: 4.35 mg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 5 mg/kg; Consumer: 5 mg/kg
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 5 mg/kg
3-iodo-2-propynyl butylcarbamate; 3-iodoprop-2-yn-1-yl butylcarbamate	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 23 µg/m³

CAS: 55406-53-6	
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Worker Professional: 70 µg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 1.16 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Worker Professional: 1.16 mg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 2 mg/kg
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
2-methylisothiazol-3(2H)-one CAS: 2682-20-4	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 21 µg/m³; Consumer: 21 µg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Worker Professional: 43 µg/m³; Consumer: 43 µg/m³
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 27 µg/kg
	Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects Consumer: 53 µg/kg
bronopol (INN); 2-bromo-2-nitropropane-1,3-diol CAS: 52-51-7	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 4.1 mg/m³; Consumer: 1.2 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Worker Professional: 12.3 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 4.2 mg/m³; Consumer: 1.3 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Worker Professional: 4.2 mg/m³; Consumer: 1.3 mg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 2.3 mg/kg; Consumer: 1.4 mg/kg
	Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects Worker Professional: 7 mg/kg
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 350 µg/kg
	Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects Consumer: 1.1 mg/kg
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, local effects Worker Professional: 0.013 mg/cm²; Consumer: 0.008 mg/cm²
	Exposure Route: Human Dermal; Exposure Frequency: Short Term, local effects Worker Professional: 0.013 mg/cm²; Consumer: 0.008 mg/cm²
ethanediol; ethylene glycol CAS: 107-21-1	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 35 mg/m³; Consumer: 7 mg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 106 mg/kg; Consumer: 53 mg/kg
Pyrithione zinc CAS: 13463-41-7	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 10 µg/kg
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 20 µg/m³; Consumer: 20 µg/m³

CAS: 55965-84-9

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:

Eye glasses with side protection.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Protection for hands:

Suitable materials for safety gloves; EN 374:

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

Respiratory protection:

N.A.

Thermal Hazards:

N.A.

Environmental exposure controls:

N.A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Colour: In compliance with the product description

Odour: N.A.

Odour threshold: N.A.

pH: =8.80 (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: N.A.

Lower and upper explosion limit: N.A.

Relative vapour density: N.A.

Vapour pressure: N.A.

Density and/or relative density: 1.80 g/cm3 (EN 1097-03)

Solubility in water: Soluble

Solubility in oil: N.A.

Partition coefficient n-octanol/water (log value): N.A.

Auto-ignition temperature: N.A.

Decomposition temperature: N.A.

Flammability: N.A.

Volatile Organic compounds - VOCs = 0.28 % ; 4.98 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	The product is classified: Skin Sens. 1A(H317)
e) germ cell mutagenicity	Not classified
	Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified
	Based on available data, the classification criteria are not met
g) reproductive toxicity	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:

Titanium dioxide	a) acute toxicity	LD50 Oral Rat > 5000 mg/kg
		LC50 Inhalation > 6.82 mg/l
		LD50 Skin Rat > 2000 mg/kg
	c) serious eye damage/irritation	Eye Corrosive Negative
		Eye Irritant No
	d) respiratory or skin sensitisation	Skin Sensitization Negative
	i) STOT-repeated exposure	No Observed Adverse Effect Level 1000
1-isopropyl-2,2-dimethyltrimethylene diisobutyrate	a) acute toxicity	LD50 Oral Rat > 2000 mg/kg
		LC50 Inhalation Rat > 0.12 mg/l
		LD50 Skin Rabbit > 2000 mg/kg 24h
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative
	c) serious eye damage/irritation	Eye Irritant Rabbit No
	d) respiratory or skin sensitisation	Skin Sensitization Negative
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 276 mg/kg
Quartz	a) acute toxicity	LD50 Oral > 2000 mg/kg
3-iodo-2-propynyl butylcarbamate; 3-	a) acute toxicity	ATE - Inhalation (Dust/mist) : 0.17 mg/l

iodoprop-2-yn-1-yl butylcarbamate			
		LD50 Oral Rat = 1056 mg/kg	
		LC50 Inhalation Dust Rat > 6.89 mg/l 4h	
		LD50 Skin Rabbit > 2000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
		Carcinogenicity Oral Negative	Mouse
	g) reproductive toxicity	Reproductive Toxicity Oral Rat Negative	
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 Guineapig Positive	
	f) carcinogenicity	Genotoxicity Rat Negative	Oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 112 mg/kg	
2-octyl-2H-isothiazol-3-one	a) acute toxicity	ATE - Oral : 125 mg/kg bw	
		ATE - Dermal : 311 mg/kg bw	
		LD50 Oral Rat = 125 mg/kg	
		LC50 Inhalation Mist Rat = 0.27 mg/l 4h	
		LD50 Skin Rabbit = 311 mg/kg	
	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	
2-methylisothiazol-3(2H)-one	a) acute toxicity	LC50 Inhalation of aerosol Rat = 0.1 mg/l 4h	
		LD50 Oral Rat = 120 mg/kg	
		LD50 Skin Rat = 242 mg/kg 24h	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive 4h	
	c) serious eye damage/irritation	Eye Corrosive Rabbit Positive	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Positive	
	f) carcinogenicity	Genotoxicity Rat Negative	Oral route
		Carcinogenicity Oral Rat Negative	
	g) reproductive toxicity	Reproductive Toxicity Oral Rat = 200 Ppm	NOAEL
4,5-dichloro-2-octyl-2H-isothiazol-3-one (DCOIT)	a) acute toxicity	ATE - Oral : 567 mg/kg bw	
		ATE - Inhalation (Dust/mist) : 0.16 mg/l	

bronopol (INN); 2-bromo-2-nitropropane-1,3-diol	a) acute toxicity	LD50 Oral Rat = 305 mg/kg	
		LC50 Inhalation of aerosol Rat >= 0.59 mg/l 4h	
		LD50 Skin Rat > 2000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
		Carcinogenicity Oral Rat Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat 200	
ethanediol; ethylene glycol	a) acute toxicity	LD50 Oral Rat = 7712 mg/kg	
		LC50 Inhalation of aerosol Rat > 2.5 mg/l 6h	
		LD50 Skin Mouse > 3500 mg/kg	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative	
	c) serious eye damage/irritation	Eye Irritant Rabbit No 24h	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	f) carcinogenicity	Genotoxicity Rat Negative	Oral route
		Carcinogenicity Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat > 1000 mg/kg	
Pyrithione zinc	a) acute toxicity	ATE - Oral : 221 mg/kg bw	
		LD50 Oral Rat = 269 mg/kg	14 days
		LC50 Inhalation Dust Rat = 0.14 mg/l 4h	
		LD50 Skin Rat > 2000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	f) carcinogenicity	Genotoxicity Negative	
		Carcinogenicity Oral Rat = 0.5 mg/kg	NOAEL
		Carcinogenicity Skin = 5 mg/kg	NOAEL; mouse
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 1.4 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 >= 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
Titanium dioxide	CAS: 13463-67-7 - EINECS: 236-675-5	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas (Cavedano americano) > 1000 mg/L 96h
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata (alghe cloroficee) > 100 mg/L 72h
		a) Aquatic acute toxicity : NOEC Algae = 5600 mg/L
		a) Aquatic acute toxicity : EC50 Daphnia |Daphnia magna (Pulce d'acqua grande) > 100 mg/L 48h
1-isopropyl-2,2-dimethyltrimethylene diisobutyrate	CAS: 6846-50-0 - EINECS: 229-934-9	a) Aquatic acute toxicity : NOEC Fish Lepomis macrochirus > 6 mg/L 96h ,,OECD Guideline 203 (Fish, Acute Toxicity Test)
		a) Aquatic acute toxicity : NOEC Daphnia Daphnia magna > 1.46 mg/L 48h EU Method C.2 (Acute Toxicity for Daphnia)
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata > 7.49 mg/L 72h ,,OECD Guideline 201 (Alga, Growth Inhibition Test)
3-iodo-2-propynyl butylcarbamate; 3-iodoprop-2-yn-1-yl butylcarbamate	CAS: 55406-53-6 - EINECS: 259-627-5 - INDEX: 616-212-00-7	a) Aquatic acute toxicity : LC50 Fish Sheapshed minnow = 0.067 mg/L 96h
		b) Aquatic chronic toxicity : NOEC Fish Pimephales promelas = 8.4 µg/L EPA OPP 72-4 (Fish Early Life-Stage and Aquatic Invertebrate Life-Cycle Studies) - 35days
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 0.645 mg/L 48h EPA OPP 72-2 (Aquatic Invertebrate Acute Toxicity Test)
		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 49.9 µg/L OECD 202 - 21days
		a) Aquatic acute toxicity : LC50 Algae Desmodesmus subspicatus = 53 µg/L 72h ,,OECD Guideline 201 (Alga, Growth Inhibition Test)
		a) Aquatic acute toxicity : LC50 Sludge activated sludge = 44 mg/L 3h OECD Guideline 209
		e) Plant toxicity : LC50 Avena sativa = 4.92 mg/kg OECD Guideline 208 (Terrestrial Plants Test: Seedling Emergence and Seedling Growth Test)
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 Oncorynchus 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
2-octyl-2H-isothiazol-3-one	CAS: 26530-20-1 - EINECS: 247-761-7 - INDEX: 613-112-00-5	a) Aquatic acute toxicity : LC50 Fish freshwater fish = 0.122 mg/L dossier ECHA b) Aquatic chronic toxicity : EC10 Fish = 0.022 mg/L dossier ECHA a) Aquatic acute toxicity : EC50 freshwater invertebrates = 0.181 mg/L dossier ECHA b) Aquatic chronic toxicity : EC10 freshwater invertebrates = 0.035 mg/L dossier ECHA LC50 Algae freshwater algae = 0.15 mg/L
2-methylisothiazol-3(2H)-one	CAS: 2682-20-4 - EINECS: 220-239-6 - INDEX: 613-326-00-9	a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss = 4.77 mg/L 96h ,,OECD Guideline 203 (Fish, Acute Toxicity Test) b) Aquatic chronic toxicity : NOEC Fish Oncorhynchus mykiss = 4.93 mg/L Dossier ECHA a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 0.934 mg/L 48h OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) b) Aquatic chronic toxicity : EC10 Daphnia Daphnia magna = 0.044 mg/L OECD Guideline 211 (Daphnia magna Reproduction Test) - Duration 21d a) Aquatic acute toxicity : EC50 Algae Selenastrum capricornutum = 0.103 mg/L 72h Dossier ECHA a) Aquatic acute toxicity : EC50 Sludge activated sludge of a predominantly domestic sewage = 41 mg/L 3h ,,OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test b) Aquatic chronic toxicity : EC50 freshwater sediment = 50 mg/kg Duration 28d Draft OECD Guideline (now OECD Guideline 225) - 28days
bronopol (INN); 2-bromo-2-nitropropane-1,3-diol	CAS: 52-51-7 - EINECS: 200-143-0 - INDEX: 603-085-00-8	a) Aquatic acute toxicity : LC50 Fish Lepomis macrochirus = 37.5 mg/L 96h US EPA Guideline OPP 72 -1 b) Aquatic chronic toxicity : NOEC Fish Oncorhynchus mykiss = 21.5 mg/L OECD guideline 210 - 49days a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 1.4 mg/L 48h OECD guideline 202 b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 0.27 mg/L OECD guideline 202 - 21days a) Aquatic acute toxicity : NOEC Algae Skeletonema costatum = 0.08 mg/L 72h ISO 10253 a) Aquatic acute toxicity : EC20 Sludge activated sludge = 2 mg/L OECD 209 d) Terrestrial toxicity : LC50 Worm Eisenia foetida > 500 mg/kg OECD 207 d) Terrestrial toxicity : EC50 soil microorganisms = 679 mg/kg OECD guideline 216 - 28days
ethanediol; ethylene glycol	CAS: 107-21-1 - EINECS: 203-473-3	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 72860 mg/L 96h b) Aquatic chronic toxicity : NOEC Fish = 15380 mg/L - 7 days b) Aquatic chronic toxicity : NOEC Ceriodaphnia dubia = 8590 mg/L - 7days a) Aquatic acute toxicity : NOEC Algae Pseudokirchnerella subcapitata = 100

		mg/L 72h OECD guideline 201
Pyrithione zinc	CAS: 13463-41-7 - EINECS: 236-671-3 - INDEX: 613-333-00-7	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 2.6 µg/L 96h US EPA-72-1
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 8.2 µg/L US EPA-72-2
		a) Aquatic acute toxicity : EC50 Algae Navicula pelliculosa = 3 µg/L dossier ECHA
		b) Aquatic chronic toxicity : NOEC Fish Pimephales promelas = 1.22 µg/L ,,OECD Guideline 210 (Fish, Early-Life Stage Toxicity Test) - 28days
		b) Aquatic chronic toxicity : EC50 Lemna gibba = 9.6 µg/L EPA OPPTS 850.4400 (Aquatic Plant Toxicity Test using Lemna spp. Tiers I & II))
		d) Terrestrial toxicity : LC50 Folsomia candida = 822 mg/kg ISO 11267 (Inhibition of Reproduction of Collembola by Soil Pollutants)
		e) Plant toxicity : NOEC Tomato, Cucumber, Lettuce, Soybean, Cabbage, Carrot, Oat > 0.49 µg/L USEPA OPPTS 850.4100
		d) Terrestrial toxicity : LC50 Avian Northern Bobwhite = 60 mg/kg EPA FIFRA Guideline 71-1 - 14days
		d) Terrestrial toxicity : NOEC Avian Northern Bobwhite = 31.2 mg/kg EPA FIFRA Guideline 71-1 - 14days
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	Persitence/Degradability:	Test	Value	Notes:
1-isopropyl-2,2-dimethyltrimethylene diisobutyrate	Readily biodegradable			readily biodegradable but failing 10-day window
3-iodo-2-propynyl butylcarbamate; 3-iodoprop-2-yn-1-yl butylcarbamate	Non-readily biodegradable	Oxygen consumption		EU Method C.4-D (Determination of the "Ready" Biodegradability - Manometric Respirometry Test)
1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one	Non-readily biodegradable	CO2 production		OECD Guideline 301C
2-octyl-2H-isothiazol-3-one	Non-readily biodegradable			
2-methylisothiazol-3(2H)-one	Non-readily biodegradable	CO2 production		OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
bronopol (INN); 2-bromo-2-	Readily biodegradable			OECD guideline 301B

nitropropane-1,3-diol				
ethanediol; ethylene glycol	Readily biodegradable	Dissolved organic carbon	90.000	10days
Pyrithione zinc	Non-readily biodegradable	CO2 production		OECD 301B CO2evolution
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-isopropyl-2,2-dimethyltrimethylene diisobutyrate	Bioaccumulative	BCF - Bioconcentrantion factor	5030.000	whole body BCF - wet weight lipid content
1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one	Bioaccumulative	BCF - Bioconcentrantion factor	6.620	
2-octyl-2H-isothiazol-3-one	Bioaccumulative	BCF - Bioconcentrantion factor	19.210	L/kg ww
2-methylisothiazol-3(2H)-one	Bioaccumulative	BCF - Bioconcentrantion factor	5.750	carcass
	Bioaccumulative	BCF - Bioconcentrantion factor	48.100	viscera
bronopol (INN); 2-bromo-2-nitropropane-1,3-diol	Bioaccumulative	BCF - Bioconcentrantion factor		
Pyrithione zinc	Bioaccumulative	BCF - Bioconcentrantion factor	1.400	
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	Bioaccumulative	BCF - Bioconcentrantion 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

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

N.A.

14.3. Transport hazard class(es)

N.A.

14.4. Packing group

N.A.

14.5. Environmental hazards

N.A.

14.6. Special precautions for user

N.A.

Road and Rail (ADR-RID):

N.A.

Air (IATA):

N.A.

Sea (IMDG):

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: 30, 40, 70, 75

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.

2: Hazard to waters

German Lagerklasse according to TRGS 510:

LGK 10

SVHC Substances:

No SVHC substances present in concentration >= 0.1%

Dir. 2004/42/EC (VOC directive)

(ready to use)

Volatile Organic compounds - VOCs = 0.28 %

Volatile Organic compounds - VOCs = 4.98 g/L

REGULATION (EU) No 528/2012

Nomenclature IUPAC: Mixture of 5-chloro-2-methyl-2H- isothiazol-3-one (EINECS 247-500-7) and 2-methyl-2H-isothiazol-3-one (EINECS 220-239-6) (Mixture of CMIT/MIT)

Nomenclature BPR: C(M)IT/MIT (3:1)

CAS number: 55965-84-9

Product-type 6: Preservatives for products during storage

Assessment status: Approved

Commission Implementing Regulation (EU) 2016/131 ; Nomenclature IUPAC: octhilinone (ISO); 2-octyl-2H-isothiazol-3-one

Nomenclature BPR: OIT

CAS number: 26530-20-1

Product-type 6: Preservatives for products during storage

Assessment status: Initial application for approval in progress.

Product-type 7: Film preservatives

Assessment status: Initial application for approval in progress.

Product-type 8: Film preservatives

Assessment status: Approved

Commission Implementing Regulation EU 2017/1277

Product-type 10: Construction material preservatives

Assessment status: Initial application for approval in progress. Nomenclature IUPAC: 3-iodo-2-propynyl butylcarbamate

Nomenclature BPR: IPBC

CAS number: 55406-53-6

Product-type 6: Preservatives for products during storage

Assessment status: Approved EU 1037/2013

Commission Implementing Regulation

Product-type 7: Film preservatives

Assessment status: Initial application for approval in progress. Competent authority evaluation

Product-type 8: Film preservatives

Assessment status: Approved

Commission Implementing Regulation EU 2015/1728; Nomenclature IUPAC: 1,2-benzisothiazol-3(2H)-one

Nomenclature BPR: BIT

CAS number: 2634-33-5

Product-type 6: Preservatives for products during storage

Assessment status: Initial application for approval in progress. Nomenclature IUPAC: 2-methyl-2H-isothiazol-3-one

Nomenclature BPR: MIT

CAS number: 2682-20-4

Product-type 6: Preservatives for products during storage

Assessment status: Initial application for approval in progress. Nomenclature IUPAC: Bis [1-hydroxy-2(1H)-pyridinethionato-O, S](T-4)-zinc

Nomenclature BPR: Pyrithione zinc

CAS number:13463-41-7

Product-type 6: Preservatives for products during storage

Assessment status: Initial application for approval in progress.

Product-type 7: Film preservatives

Assessment status: Initial application for approval in progress. Nomenclature IUPAC:Terbutryn

Nomenclature BPR: Terbutryn

CAS number: 886-50-0

Product-type 7: Film preservatives

Assessment status: Initial application for approval in progress.

15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for the mixture.

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

1-isopropyl-2,2-dimethyltrimethylene diisobutyrate

ethanediol; ethylene glycol

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.
H361	Suspected of damaging fertility or the unborn child if inhaled and in contact with skin.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful 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
3.7/2	Repr. 2	Reproductive toxicity, Category 2
3.9/1	STOT RE 1	Specific target organ toxicity — repeated exposure, Category 1
3.9/2	STOT RE 2	Specific target organ toxicity — repeated exposure, Category 2
4.1/A1	Aquatic Acute 1	Acute aquatic hazard, category 1
4.1/C1	Aquatic Chronic 1	Chronic (long term) aquatic hazard, category 1
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
Skin Sens. 1A, H317	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 15: Regulatory information
- SECTION 16: Other information

Exposure Scenario
Ethane-1,2-diol

Exposure Scenario, 09/08/2021

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

Table of contents

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

1.1 TITLE SECTION

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

Environment Contributing Scenario

CS1	ERC8d

Worker Contributing Scenario

CS2 Material transfers	PROC8a
CS3 Rolling, Brushing	PROC10
CS4 Roller, spreader, flow application	PROC11
CS5 Handling and dilution of concentrates	PROC19

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8d)

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

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 1 %.

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

Amounts used:

Daily amount per site = 5479 kg

Release type: Continuous release

Emission days: 365 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

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

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

Waste treatment

Contain and dispose of waste according to local regulations.

Other conditions affecting environmental exposure

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

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

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

Product (article) characteristics

Physical form of product:
Liquid

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

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration < 8 h

Frequency:
Use frequency < 240 days per year

Technical and organisational conditions and measures

Technical and organisational measures

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

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

Personal protection
Wear suitable respiratory protection.

Other conditions affecting worker exposure

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

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

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:
Liquid

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

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration < 8 h

Frequency:
Use frequency < 240 days per year

Technical and organisational conditions and measures

Technical and organisational measures

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

operation conditions followed.	

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

Personal protection

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

Other conditions affecting worker exposure

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

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

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:
Liquid

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

Amount used, frequency and duration of use/exposure

Amounts used:
Application rate 0.05 L/min

Duration:
Exposure duration < 150 min

Frequency:
Use frequency < 5 days per week

Technical and organisational conditions and measures

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

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

Personal protection

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

Other conditions affecting worker exposure

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

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

Process Categories	Manual activities involving hand contact (PROC19)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 1 %.

Amount used, frequency and duration of use/exposure

Duration:

Exposure duration < 15 min

Frequency:

Use frequency < 240 days per year

Technical and organisational conditions and measures

Technical and organisational measures

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

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

Personal protection

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

Other conditions affecting worker exposure

Indoor use

Professional use

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

Body parts exposed:

Assumes that potential dermal contact is limited to hands.

1.3 Exposure estimation and reference to its source

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

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

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

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

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

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

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

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

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

Guidance to check compliance with the exposure scenario:

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

Exposure Scenario

1-isopropyl-2,2-dimethyltrimethylene diisobutyrate

Exposure Scenario, 19/05/2022

Substance identity	
	1-isopropyl-2,2-dimethyltrimethylene diisobutyrate
CAS No.	6846-50-0
EINECS No.	229-934-9

Table of contents

1. ES 1 Widespread use by professional workers; Various products (PC9b, PC9a); Building and construction work (SU19)

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks
Date - Version	19/05/2022 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Building and construction work (SU19)
Product Categories	Fillers, putties, plasters, modelling clay (PC9b) - Coatings and paints, thinners, paint removers (PC9a)

Environment Contributing Scenario	
CS1	ERC8f
Worker Contributing Scenario	
CS2 Material transfers	PROC8a
CS3 Material transfers	PROC8a
CS4 Material transfers	PROC8a
CS5 Material transfers	PROC8a
CS6 Material transfers	PROC8a
CS7 Hand held spraying	PROC11
CS8 Hand held spraying	PROC11
CS9 Rolling, Brushing	PROC10
CS10 Rolling, Brushing	PROC10
CS11 Hand held spraying	PROC11
CS12 Material transfers	PROC8a
CS13 Material transfers	PROC8a
CS14 Material transfers	PROC8a
CS15 Material transfers	PROC8a

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8f)

Environmental release categories	Widespread use leading to inclusion into/onto article (outdoor) (ERC8f)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

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

Amounts used:

Daily amount per site <= 0.00099 tonnes/day

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.

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

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

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration <= 1 h

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.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 90 %

Other conditions affecting worker exposure

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

1.2. CS3: Worker Contributing Scenario: Material transfers (PROC8a)

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

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration <= 1 h

Technical and organisational conditions and measures

Technical and organisational measures
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 chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 90 %

Other conditions affecting worker exposure

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

Body parts exposed:
Palm of one hand

1.2. CS4: Worker Contributing Scenario: Material transfers (PROC8a)

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

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration <= 4 h

Technical and organisational conditions and measures

Technical and organisational measures
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 chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 90 %

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Assumes use at not more than 20 °C above ambient temperature.
Body parts exposed:
Palm of one hand

1.2. CS5: Worker Contributing Scenario: Material transfers (PROC8a)

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

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration <= 0.25 h

Technical and organisational conditions and measures

Technical and organisational measures
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 chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training.	Dermal - minimum efficiency of: 90 %

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Assumes use at not more than 20 °C above ambient temperature.
Body parts exposed:
Palm of one hand

1.2. CS6: Worker Contributing Scenario: Material transfers (PROC8a)

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

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration <= 4 h

Technical and organisational conditions and measures

Technical and organisational measures
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 chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 90 %

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Assumes use at not more than 20 °C above ambient temperature.
Body parts exposed:
Palm of one hand

1.2. CS7: Worker Contributing Scenario: Hand held spraying (PROC11)

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration <= 0.25 h

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.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 90 %

Other conditions affecting worker exposure

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

1.2. CS8: Worker Contributing Scenario: Hand held spraying (PROC11)

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration <= 4 h

Technical and organisational conditions and measures

Technical and organisational measures
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 chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 95 %

Other conditions affecting worker exposure

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

1.2. CS9: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration <= 1 h

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.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 90 %

Other conditions affecting worker exposure

Outdoor use
Professional use
Temperature: Assumes use at not more than 20 °C above ambient temperature.
Body parts exposed:
Palm of one hand

1.2. CS10: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration <= 4 h

Technical and organisational conditions and measures

Technical and organisational measures
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 chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 90 %

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Assumes use at not more than 20 °C above ambient temperature.
Body parts exposed:
Palm of one hand

1.2. CS11: Worker Contributing Scenario: Hand held spraying (PROC11)

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration <= 4 h

Technical and organisational conditions and measures

Technical and organisational measures
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 chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 95 %

Other conditions affecting worker exposure

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

1.2. CS12: Worker Contributing Scenario: Material transfers (PROC8a)

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

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration <= 0.25 h

Technical and organisational conditions and measures

Technical and organisational measures
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 chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training.	Dermal - minimum efficiency of: 90 %

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Assumes use at not more than 20 °C above ambient temperature.
Body parts exposed:
Palm of one hand

1.2. CS13: Worker Contributing Scenario: Material transfers (PROC8a)

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

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration <= 4 h

Technical and organisational conditions and measures

Technical and organisational measures
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 chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 90 %

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Assumes use at not more than 20 °C above ambient temperature.
Body parts exposed:
Palm of one hand

1.2. CS14: Worker Contributing Scenario: Material transfers (PROC8a)

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

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration <= 1 h

Technical and organisational conditions and measures

Technical and organisational measures
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 chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 90 %

Other conditions affecting worker exposure

Outdoor use
Professional use
Temperature: Assumes use at not more than 20 °C above ambient temperature.
Body parts exposed:
Palm of one hand

1.2. CS15: Worker Contributing Scenario: Material transfers (PROC8a)

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

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration <= 4 h

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.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 95 %

Other conditions affecting worker exposure

Outdoor use
Professional use
Temperature: Assumes use at not more than 20 °C above ambient temperature.
Body parts exposed:
Palm of one hand

1.3 Exposure estimation and reference to its source

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	2.506 mg/m³	ECETOC TRA worker v2.0	0.142
dermal, systemic, long-term	0.823 mg/kg bw/day	ECETOC TRA worker v2.0	0.165
combined routes, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.307

1.3. CS3: Worker Contributing Scenario: Material transfers (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	3.58 mg/m³	ECETOC TRA worker v2.0	0.203
dermal, systemic, long-term	0.823 mg/kg bw/day	ECETOC TRA worker v2.0	0.165
combined routes, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.368

1.3. CS4: Worker Contributing Scenario: Material transfers (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	2.148 mg/m³	ECETOC TRA worker v2.0	0.122
dermal, systemic, long-term	0.165 mg/kg bw/day	ECETOC TRA worker v2.0	0.03
combined routes, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.155

1.3. CS5: Worker Contributing Scenario: Material transfers (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	3.58 mg/m³	ECETOC TRA worker v2.0	0.203
dermal, systemic, long-term	0.165 mg/kg bw/day	ECETOC TRA worker v2.0	0.033
combined routes, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.236

1.3. CS6: Worker Contributing Scenario: Material transfers (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	2.148 mg/m³	ECETOC TRA worker v2.0	0.122
dermal, systemic, long-term	0.165 mg/kg bw/day	ECETOC TRA worker v2.0	0.033
combined routes, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.155

1.3. CS7: Worker Contributing Scenario: Hand held spraying (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	1.671 mg/m³	ECETOC TRA worker v2.0	0.095
dermal, systemic, long-term	2.143 mg/kg bw/day	ECETOC TRA worker v2.0	0.429
combined routes, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.523

1.3. CS8: Worker Contributing Scenario: Hand held spraying (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	4.296 mg/m³	ECETOC TRA worker v2.0	0.244
dermal, systemic, long-term	1.286 mg/kg bw/day	ECETOC TRA worker v2.0	0.257
combined routes, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.501

1.3. CS9: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	2.506 mg/m³	ECETOC TRA worker v2.0	0.142
dermal, systemic, long-term	1.646 mg/kg bw/day	ECETOC TRA worker v2.0	0.329
combined routes, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.471

1.3. CS10: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	2.148 mg/m³	ECETOC TRA worker v2.0	0.122
dermal, systemic, long-term	1.646 mg/m³	ECETOC TRA worker v2.0	0.329
combined routes, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.451

1.3. CS11: Worker Contributing Scenario: Hand held spraying (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	4.296 mg/m³	ECETOC TRA worker v2.0	0.244
dermal, systemic, long-term	1.286 mg/kg bw/day	ECETOC TRA worker v2.0	0.257
combined routes, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.501

1.3. CS12: Worker Contributing Scenario: Material transfers (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	3.58 mg/m³	ECETOC TRA worker v2.0	0.203
dermal, systemic, long-term	0.165 mg/kg bw/day	ECETOC TRA worker v2.0	0.033
combined routes, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.236

1.3. CS13: Worker Contributing Scenario: Material transfers (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	2.148 mg/m³	ECETOC TRA worker v2.0	0.122
dermal, systemic, long-term	0.165 mg/kg bw/day	ECETOC TRA worker v2.0	0.033
combined routes, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.155

1.3. CS14: Worker Contributing Scenario: Material transfers (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	2.506 mg/m³	ECETOC TRA worker v2.0	0.142
dermal, systemic, long-term	0.823 mg/kg bw/day	ECETOC TRA worker v2.0	0.165
combined routes, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.307

1.3. CS15: Worker Contributing Scenario: Material transfers (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	3.759 mg/m³	ECETOC TRA worker v2.0	0.213
dermal, systemic, long-term	0.823 mg/kg bw/day	ECETOC TRA worker v2.0	0.165
combined routes, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.378

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.

2. ES 2 Widespread use by professional workers; Adhesives, sealants (PC1); Other (SU0)

2.1 TITLE SECTION

Exposure Scenario name	Use in rigid foams, coatings, adhesives and sealants
Date - Version	19/05/2022 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22) - Other (SU0)
Product Categories	Adhesives, sealants (PC1)

Environment Contributing Scenario	
CS1	ERC8c
CS2	ERC8f

Worker Contributing Scenario	
CS3 Rolling, Brushing	PROC10

2.2 Conditions of use affecting exposure

2.2. CS1: Environment Contributing Scenario (ERC8c)

Environmental release categories	Widespread use leading to inclusion into/onto article (indoor) (ERC8c)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

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

Amounts used:

Daily amount per site <= 5.5E-05 tonnes/day

2.2. CS2: Environment Contributing Scenario (ERC8f)

Environmental release categories	Widespread use leading to inclusion into/onto article (outdoor) (ERC8f)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

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

Amounts used:

Daily amount per site <= 5.5E-05 tonnes/day

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

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:

Exposure duration <= 1 h

Technical and organisational conditions and measures

Technical and organisational measures

Provide a good standard of controlled ventilation (5 to 10 air changes per hour).

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. Use suitable eye protection.	Dermal - minimum efficiency of: 90 %

Other conditions affecting worker exposure

Covers indoor and outdoor use

Professional use

Temperature: Assumes process temperature up to .... 30°C

Body parts exposed:

Palm of one hand

2.3 Exposure estimation and reference to its source

2.3. CS1: Environment Contributing Scenario (ERC8c)

Release route	Release rate	Release estimation method
Water	0.054 kg/day	N/A
Air	1.5 kg/day	N/A

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	0.0007 mg/L	EUSES v2.1	0.051
freshwater sediment	0.272 mg/kg dry weight	EUSES v2.1	0.051
marine water	7.14E-05 mg/L	EUSES v2.1	0.051
marine sediment	0.272 mg/kg dry weight	EUSES v2.1	0.051
Sewage treatment plant	0.00591 mg/L	EUSES v2.1	< 0.01
Man via environment - Inhalation	6.74E-05 mg/m³	EUSES v2.1	< 0.01

2.3. CS2: Environment Contributing Scenario (ERC8f)

Release route	Release rate	Release estimation method
Water	0.002 kg/day	N/A

Air	15 kg/day	N/A

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	0.000162 mg/L	EUSES v2.1	0.012
freshwater sediment	0.061 mg/kg dry weight	EUSES v2.1	0.012
marine water	1.56E-05 mg/L	EUSES v2.1	0.011
marine sediment	0.0059 mg/kg dry weight	EUSES v2.1	0.011
Sewage treatment plant	0.003 mg/L	EUSES v2.1	< 0.01
Man via environment - Inhalation	6.6E-05 mg/m³	EUSES v2.1	< 0.01

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	10.74 mg/m³	ECETOC TRA worker v2.0	0.61
dermal, systemic, long-term	1.646 mg/kg bw/day	ECETOC TRA worker v2.0	0.329
combined routes, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.939

2.4 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.