

Safety Data Sheet

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

FACTORY COLORWET EP (A)

Date of first edition: 7/21/2021

Safety Data Sheet dated 25/11/2024

version 3

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

1.1. Product identifier

Mixture identification:

Trade name: FACTORY COLORWET EP (A)

Trade code: 001051010-2

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

Recommended use: Paints/coatings - Protective and functional; Restricted to professional users

Uses advised against: All uses other than recommended ones; Not intended for use by private individuals or non-professionals.

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 Poison information centre: 01 809 2166 (Daily 8am-10pm) In case of emergency call 999 or 112

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 Irrit. 2 Causes skin irritation.

Eye Irrit. 2 Causes serious eye irritation.

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

Repr. 1B May damage fertility.

Aquatic Chronic 3 Harmful to aquatic life with long lasting effects.

DECL10 This titanium dioxide-containing product is not classified as carcinogen by inhalation because it does not meet the criteria stated in Note 10, Annex VI of Regulation (EC) 1272/2008.

Note 10: The classification as a carcinogen by inhalation applies only to mixtures in powder form containing 1 % or more of titanium dioxide which is in the form of or incorporated in particles with aerodynamic diameter $\leq 10 \mu\text{m}$.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

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

Hazard pictograms and Signal Word



Danger

Hazard statements

H315 Causes skin irritation.

- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H360F May damage fertility.
- H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe mist.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/clothing and eye/face protection.
- P280 Wear protective gloves and eye protection.
- P302+P352 IF ON SKIN: Wash with plenty of water.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P501 Dispose of contents/container in accordance with applicable regulations.

Contains

oxirane, mono[(C12-14-alkyloxy)methyl] derivs.

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane

triisobutyl phosphate

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

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

Dir. 2004/42/EC (VOC directive)

- Two-pack reactive performance coatings for specific end use such as floors
- EU limit value for this product (cat. A/j): 140 g/l
- This product contains max 3.18 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); The product is identified as an article treated pursuant to art. 58 of Regulation (EU) no. 528/2012 and subsequent amendments. It is recommended to avoid possible exposure to the skin. Protective gloves and work clothes are recommended. Minimize the uncontrolled release of 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: FACTORY COLORWET EP (A)

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

Qty	Name	Ident. Numb.	Classification	Registration Number
≥5-<10 %	bis-[4-(2,3-epoxipropoxy)phenyl]propane	CAS:1675-54-3 EC:216-823-5 Index:603-073-00-2	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411, M-Chronic:1	01-2119456619-26
Specific Concentration Limits: C ≥ 5%: Eye Irrit. 2 H319 C ≥ 5%: Skin Irrit. 2 H315				

≥1-<3 %	Titanium dioxide	CAS:13463-67-7 EC:236-675-5 Index:022-006-00-2	Not classified as hazardous	
≥1-<3 %	oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	CAS:68609-97-2 EC:271-846-8 Index:603-103-00-4	Skin Irrit. 2, H315; Skin Sens. 1B, H317; Repr. 1B, H360F	01-2119485289-22
≥1-<3 %	Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane	EC:701-263-0	Skin Irrit. 2, H315; Skin Sens. 1, H317; Aquatic Chronic 2, H411, M-Chronic:1	01-2119454392-40
≥1-<3 %	triisobutyl phosphate	CAS:126-71-6 EC:204-798-3	Skin Sens. 1B, H317	
≥0.1-<0.3 %	Quartz	CAS:14808-60-7 EC:238-878-4	STOT RE 1, H372	
<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	
<0.01 %	ethanediol; ethylene glycol	CAS:107-21-1 EC:203-473-3	Acute Tox. 4, H302; STOT RE 2, H373	01-2119456816-28
<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	
<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: 221mg/kg bw	
<0.0015 %	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	

This mixture contains $\geq 1\%$ 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 immediately and dispose off safely.
- After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

- After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.
- Protect uninjured eye.

In case of Ingestion:

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

In case of Inhalation:

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

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

Eye irritation
Eye damages
Skin Irritation
Erythema

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

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

- Water.
- Carbon dioxide (CO₂).

Extinguishing media which must not be used for safety reasons:

- None in particular.

5.2. Special hazards arising from the substance or mixture

- Do not inhale explosion and combustion gases.
- Burning produces heavy smoke.

5.3. Advice for firefighters

- Use suitable breathing apparatus .
 - Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
 - Move undamaged containers from immediate hazard area if it can be done safely.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non emergency personnel:

- Wear personal protection equipment.
- Remove persons to safety.
- See protective measures under point 7 and 8.

For emergency responders:

- Wear personal protection equipment.

6.2. Environmental precautions

- Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
- Retain contaminated washing water and dispose it.
- In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.
- Suitable material for taking up: absorbing material, organic, sand

6.3. Methods and material for containment and cleaning up

- Suitable material for taking up: absorbing material, organic, sand
- Wash with plenty of water.

6.4. Reference to other sections

- See also section 8 and 13
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.
Exercise the greatest care when handling or opening the container.
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
Barium sulfate CAS: 7727-43-7	NATIONAL	AUSTRALIA	Long Term: 10 mg/m ³ (8h)
	ACGIH		Long Term: 5 mg/m ³ (8h) I, E - Pneumoconiosis
	NATIONAL	BELGIUM	Long Term: 5 mg/m ³ Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	CROATIA	Long Term: 10 mg/m ³ U Source: NN 1/2021
	NATIONAL	CROATIA	Long Term: 4 mg/m ³ R Source: NN 1/2021
	NATIONAL	IRELAND	Long Term: 5 mg/m ³ Source: 2021 Code of Practice
	NATIONAL	SPAIN	Long Term: 10 mg/m ³ e Source: LEP 2022
	NATIONAL	BULGARIA	Long Term: 10 mg/m ³ Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	SLOVAKIA	Long Term: 4 mg/m ³ 10) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	NATIONAL	SLOVAKIA	Long Term: 1.5 mg/m ³ 11) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	SUVA	SWITZERLAND	Long Term: 3 mg/m ³ TWA mg/m ³ : (a), Formel / Formal Source: suva.ch/valeurs-limites
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m ³ Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND	Long Term: 4 mg/m ³ Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)

Quartz
CAS: 14808-60-7

NORTHERN
IRELAND

ACGIH		Long Term: 0.025 mg/m ³ (8h) R, A2 - Pulm fibrosis, lung cancer
NATIONAL	AUSTRALIA	Long Term: 0.05 mg/m ³ Respirable fraction
NATIONAL	HUNGARY	Long Term: 0.1 mg/m ³ Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	INDIA	Long Term: 10 mg/m ³ (8h)
NATIONAL	IRELAND	Long Term: 0.1 mg/m ³ Respirable fraction Source: 2021 Code of Practice
NATIONAL	ITALY	Long Term: 0.1 mg/m ³ Polvere di silice cristallina respirabile (frazione inalabile). Rif:D.Lgs 81/2008 Source: D.lgs. 81/2008, Allegato XXXVIII
NATIONAL	SPAIN	Long Term: 0.05 mg/m ³ Respirable fraction Source: LEP 2022
NATIONAL	CROATIA	Long Term: 0.1 mg/m ³ Source: NN 1/2021
NATIONAL	AUSTRIA	Long Term: 0.05 mg/m ³ MAK, III C, A Source: BGBl. II Nr. 156/2021
NATIONAL	BELGIUM	Long Term: 0.1 mg/m ³ C Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	DENMARK	Long Term: 0.3 mg/m ³ Source: BEK nr 2203 af 29/11/2021
NATIONAL	DENMARK	Long Term: 0.1 mg/m ³ EK Source: BEK nr 2203 af 29/11/2021
NATIONAL	ESTONIA	Long Term: 0.1 mg/m ³ 1, C Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FINLAND	Long Term: 0.05 mg/m ³ alveolijae, liite 3 Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 0.1 mg/m ³ 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/m ³ Žiūrėti 1 priedo 3 punktą. Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NETHERLAND S	Long Term: 0.075 mg/m ³ (2) Source: Arbeidsomstandighedenregeling - Lijst B1
NATIONAL	NORWAY	Long Term: 0.3 mg/m ³ K 7 Source: FOR-2021-06-28-2248
NATIONAL	NORWAY	Long Term: 0.05 mg/m ³ K G 7 21 Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 0.1 mg/m ³ 6) Source: Dz.U. 2018 poz. 1286
NATIONAL	SWEDEN	Long Term: 0.1 mg/m ³ C, M, 3 Source: AFS 2021:3

Titanium dioxide
CAS: 13463-67-7

SUVA	SWITZERLAND	Long Term: 0.15 mg/m ³ TWA mg/m ³ : (a), C1A, SSC, P, Cancpulm Silicose / Lungenkrebs Silikose, HSE NIOSH OSHA Source: suva.ch/valeurs-limites
ACGIH		Long Term: 2.5 mg/m ³ (8h) Finescale particles; R ; A3 - LRT irr, pneumoconiosis
NATIONAL	AUSTRALIA	Long Term: 10 mg/m ³ (8h)
NATIONAL	GERMANY	Long Term: 0.3 mg/m ³ ; Short Term: 2.4 mg/m ³ DFG; Long term and short term: excluding ultrafine particles; respirable fraction; multiplied by the material density; Source: TRGS900
NATIONAL	BELGIUM	Long Term: 10 mg/m ³ Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 10 mg/m ³ U Source: NN 1/2021
NATIONAL	CROATIA	Long Term: 4 mg/m ³ R Source: NN 1/2021
NATIONAL	IRELAND	Long Term: 10 mg/m ³ Source: 2021 Code of Practice
NATIONAL	IRELAND	Long Term: 4 mg/m ³ Source: 2021 Code of Practice
NATIONAL	ROMANIA	Long Term: 10 mg/m ³ ; Short Term: 15 mg/m ³ Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SPAIN	Long Term: 10 mg/m ³ Source: LEP 2022
NATIONAL	AUSTRIA	Long Term: 5 mg/m ³ ; Short Term: 10 mg/m ³ 60(Miw), 2x, MAK, A Source: BGBl. II Nr. 156/2021
NATIONAL	BULGARIA	Long Term: 10 mg/m ³ Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
NATIONAL	DENMARK	Long Term: 6 mg/m ³ K Source: BEK nr 2203 af 29/11/2021
NATIONAL	ESTONIA	Long Term: 5 mg/m ³ Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FRANCE	Long Term: 10 mg/m ³ Cancérogène de catégorie 2 Source: INRS outil65
NATIONAL	GREECE	Long Term: 10 mg/m ³ εισπν. Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	GREECE	Long Term: 5 mg/m ³ αvapν. Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	LATVIA	Long Term: 10 mg/m ³ Source: KN325P1
NATIONAL	LITHUANIA	Long Term: 5 mg/m ³ Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NORWAY	Long Term: 5 mg/m ³ Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 10 mg/m ³ 4), 7) Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 5 mg/m ³ Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 5 mg/m ³

3
Source: AFS 2021:3

SUVA SWITZERLAND Long Term: 3 mg/m³
D TWA mg/m³: (a), SSC, Formel / Formal, NIOSH
Source: suva.ch/valeurs-limites

WEL-EH40 UNITED Long Term: 10 mg/m³
KINGDOM OF Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
GREAT
BRITAIN AND
NORTHERN
IRELAND

triisobutyl phosphate
CAS: 126-71-6

NATIONAL GERMANY Long Term: 50 mg/m³
AGS, Sh, 11, 2 (II)
Source: TRGS 900

NATIONAL SLOVENIA Long Term: 50 mg/m³; Short Term: 100 mg/m³
Source: UL št. 72, 11. 5. 2021

NATIONAL AUSTRIA Long Term: 50 mg/m³; Short Term: Ceiling - 100 mg/m³
60(Mow), 3x, MAK
Source: BGBl. II Nr. 156/2021

silicon dioxide, chemically
prepared
CAS: 7631-86-9

NATIONAL AUSTRALIA Long Term: 2 mg/m³
This value is for inhalable dust containing no asbestos and < 1% crystalline silica

NATIONAL BELGIUM Long Term: 10 mg/m³
Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1

NATIONAL IRELAND Long Term: 6 mg/m³
Inhalable fraction
Source: 2021 Code of Practice

NATIONAL IRELAND Long Term: 2.4 mg/m³
Respirable fraction
Source: 2021 Code of Practice

NATIONAL UNITED Long Term: 6 mg/m³
KINGDOM OF Inhalable aerosol
GREAT Source: EH40/2005 Workplace exposure limits
BRITAIN AND
NORTHERN
IRELAND

NATIONAL UNITED Long Term: 2.4 mg/m³
KINGDOM OF Respirable aerosol
GREAT Source: EH40/2005 Workplace exposure limits
BRITAIN AND
NORTHERN
IRELAND

NATIONAL GERMANY Long Term: 4 mg/m³
DFG, 2, Y, E
Source: TRGS 900

NATIONAL SLOVENIA Long Term: 4 mg/m³
Y, (I)
Source: UL št. 72, 11. 5. 2021

NATIONAL AUSTRIA MAK
Source: BGBl. II Nr. 156/2021

NATIONAL ESTONIA Long Term: 2 mg/m³
1
Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105

NATIONAL LATVIA Long Term: 1 mg/m³
Source: KN325P1

SUVA SWITZERLAND SSC, Fibpulm / Lungenfibrose, Des VMEs se trouvent sous les substances associées /
D MAK-Werte finden sich unter den zugeordneten Stoffen
Source: suva.ch/valeurs-limites

SUVA SWITZERLAND Long Term: 4 mg/m³
D TWA mg/m³: (i), SSC, Fibpulm / Lungenfibrose
Source: suva.ch/valeurs-limites

strontium oxide CAS: 1314-11-0	NATIONAL	LITHUANIA	Long Term: 1 mg/m ³ Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	EU		Long Term: 0.1 mg/m ³ Polvere di silice cristallina respirabile, frazione inalabile. (R), A2 - Pulm fibrosis, lung cancer. Directive 2017/2398
Quartz CAS: 14808-60-7	ACGIH		Long Term: 0.025 mg/m ³ (8h) R, A2 - Pulm fibrosis, lung cancer
	NATIONAL	AUSTRALIA	Long Term: 0.05 mg/m ³ (8h) Respirable fraction
	NATIONAL	HUNGARY	Long Term: 0.1 mg/m ³ (8h) Respirable aerosol Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL	INDIA	Long Term: 10 mg/m ³
	NATIONAL	IRELAND	Long Term: 0.1 mg/m ³ (8h) Respirable fraction Source: 2021 Code of Practice
	NATIONAL	ITALY	Long Term: 0.1 mg/m ³ (8h) Polvere di silice cristallina respirabile (frazione inalabile). D.Lgs 81/2008 Source: D.lgs. 81/2008, Allegato XXXVIII
	NATIONAL	SPAIN	Long Term: 0.05 mg/m ³ (8h) Respirable fraction Source: LEP 2022
	NATIONAL	CROATIA	Long Term: 0.1 mg/m ³ Source: NN 1/2021
	NATIONAL	AUSTRIA	Long Term: 0.05 mg/m ³ MAK, III C, A Source: BGBl. II Nr. 156/2021
	NATIONAL	BELGIUM	Long Term: 0.1 mg/m ³ C Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	DENMARK	Long Term: 0.3 mg/m ³ Source: BEK nr 2203 af 29/11/2021
	NATIONAL	DENMARK	Long Term: 0.1 mg/m ³ EK Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 0.1 mg/m ³ 1, C Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Long Term: 0.05 mg/m ³ alveolijae, liite 3 Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Long Term: 0.1 mg/m ³ 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/m ³ Žiūrėti 1 priedo 3 punktą. Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	NETHERLAND S	Long Term: 0.075 mg/m ³ (2) Source: Arbeidsomstandighedenregeling - Lijst B1
	NATIONAL	NORWAY	Long Term: 0.3 mg/m ³ K 7 Source: FOR-2021-06-28-2248
	NATIONAL	NORWAY	Long Term: 0.05 mg/m ³ K G 7 21 Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 0.1 mg/m ³ 6) Source: Dz.U. 2018 poz. 1286

	NATIONAL	SWEDEN	Long Term: 0.1 mg/m ³ C, M, 3 Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 0.15 mg/m ³ TWA mg/m ³ : (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/m ³ DFG, Y, E, 2 (II) Source: TRGS 900
Aluminium oxide CAS: 1344-28-1	NATIONAL	SLOVAKIA	Long Term: 1000 mg/m ³ Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	SUVA	SWITZERLAND	Long Term: 500 mg/m ³ SSC, Mcorp / KG Source: suva.ch/valeurs-limites
	NATIONAL	AUSTRALIA	Long Term: 10 mg/m ³ (8h) Inhalable dust containing no asbestos and < 1% crystalline silica
	NATIONAL	BELGIUM	Long Term: 1 mg/m ³ Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	CROATIA	Long Term: 10 mg/m ³ U Source: NN 1/2021
	NATIONAL	CROATIA	Long Term: 4 mg/m ³ R Source: NN 1/2021
	NATIONAL	ROMANIA	Long Term: 2 mg/m ³ ; Short Term: 5 mg/m ³ (Aerosoli) Source: Republicarea 1 - nr. 743 din 29 iulie 2021
	NATIONAL	SPAIN	Long Term: 10 mg/m ³ véase Capítulo 9 Source: LEP 2022
	NATIONAL	AUSTRIA	Long Term: 5 mg/m ³ ; Short Term: 10 mg/m ³ 60(Miw), 2x, A Source: GKV, BGBl. II Nr. 156/2021
	NATIONAL	AUSTRIA	Long Term: 5 mg/m ³ ; Short Term: 10 mg/m ³ 60(Miw), 2x, MAK, A Source: GKV, BGBl. II Nr. 156/2021
	NATIONAL	DENMARK	Long Term: 5 mg/m ³ Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 4 mg/m ³ 1 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FRANCE	Long Term: 10 mg/m ³ Source: INRS outil65
	NATIONAL	GREECE	Long Term: 10 mg/m ³ εισπν Source: ΦΕΚ 94/A` 13.5.1999
	NATIONAL	GREECE	Long Term: 5 mg/m ³ αvapv Source: ΦΕΚ 94/A` 13.5.1999
	NATIONAL	HUNGARY	Long Term: 5 mg/m ³ N Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL	HUNGARY	Long Term: 2 mg/m ³ resp, N Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL	LATVIA	Long Term: 6 mg/m ³ Source: KN325P1

NATIONAL	LATVIA	Long Term: 4 mg/m ³ Source: KN325P1
NATIONAL	NORWAY	Long Term: 10 mg/m ³ 1 Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 2.5 mg/m ³ 4) Source: Dz.U. 2018 poz. 1286
NATIONAL	POLAND	Long Term: 1.2 mg/m ³ 6) Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 4 mg/m ³ 10) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
SUVA	SWITZERLAND	Long Term: 3 mg/m ³ TWA mg/m ³ : (a), B, Formel / Formal, NIOSH Source: suva.ch/valeurs-limites
SUVA	SWITZERLAND	Long Term: 3 mg/m ³ ; Short Term: 24 mg/m ³ TWA mg/m ³ : (a), Fimétal / Metallrauch, NIOSH Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m ³ Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 4 mg/m ³ Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
Diiron trioxide CAS: 1309-37-1	ACGIH	Long Term: 5 mg/m ³ (8h) R, A4 - Pneumoconiosis
	NATIONAL AUSTRALIA	Long Term: 5 mg/m ³ (8h)
	NATIONAL BELGIUM	Long Term: 5 mg/m ³ Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL CROATIA	Long Term: 5 mg/m ³ ; Short Term: 10 mg/m ³ Source: NN 1/2021
	NATIONAL CROATIA	Long Term: 10 mg/m ³ U Source: NN 1/2021
	NATIONAL CROATIA	Long Term: 4 mg/m ³ R Source: NN 1/2021
	NATIONAL IRELAND	Long Term: 5 mg/m ³ ; Short Term: 10 mg/m ³ Source: 2021 Code of Practice
	NATIONAL IRELAND	Long Term: 10 mg/m ³ Source: 2021 Code of Practice
	NATIONAL IRELAND	Long Term: 4 mg/m ³ Source: 2021 Code of Practice
	NATIONAL ROMANIA	Long Term: 5 mg/m ³ ; Short Term: 10 mg/m ³ (Fumuri, pulberi) Source: Republicarea 1 - nr. 743 din 29 iulie 2021
	NATIONAL SPAIN	Long Term: 5 mg/m ³ Source: LEP 2022
	NATIONAL AUSTRIA	Long Term: 5 mg/m ³ ; Short Term: 10 mg/m ³ 60(Miw), 2x, MAK, A Source: GKV, BGBl. II Nr. 156/2021
	NATIONAL BULGARIA	Long Term: 5 mg/m ³

Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.

NATIONAL	DENMARK	Long Term: 3.5 mg/m ³ Source: BEK nr 2203 af 29/11/2021
NATIONAL	ESTONIA	Long Term: 3.5 mg/m ³ 1 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FINLAND	Long Term: 5 mg/m ³ Fe Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 5 mg/m ³ Source: INRS outil65
NATIONAL	GREECE	Long Term: 10 mg/m ³ ; Short Term: 10 mg/m ³ Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	HUNGARY	Long Term: 4 mg/m ³ resp, T Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	LITHUANIA	Long Term: 3.5 mg/m ³ Žiūrėti 1 priedo 3 punktą. Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NORWAY	Long Term: 3 mg/m ³ Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 5 mg/m ³ ; Short Term: 10 mg/m ³ 4) Source: Dz.U. 2018 poz. 1286
NATIONAL	POLAND	Long Term: 2.5 mg/m ³ ; Short Term: 5 mg/m ³ 6) Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 1.5 mg/m ³ 11) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SLOVAKIA	Long Term: 4 mg/m ³ 10) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 3.5 mg/m ³ 3 Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 3 mg/m ³ TWA mg/m ³ : (a), Formel / Formal, NIOSH Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 5 mg/m ³ ; Short Term: 10 mg/m ³ Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m ³ Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 4 mg/m ³ Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
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/m ³

Carbon black CAS: 1333-86-4	Source: AFS 2021:3	
	ACGIH	Long Term: 3 mg/m3 (8h) I, A3 - Bronchitis
	NATIONAL AUSTRALIA	Long Term: 3 mg/m3
	NATIONAL SWEDEN	Long Term: 3 mg/m3 Source: AFS 2021:3
	NATIONAL BELGIUM	Long Term: 3 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL CROATIA	Long Term: 3.5 mg/m3; Short Term: 7 mg/m3 Source: NN 1/2021
	NATIONAL IRELAND	Long Term: 3 mg/m3 I Source: 2021 Code of Practice
	NATIONAL SPAIN	Long Term: 3.5 mg/m3 Source: LEP 2022
	NATIONAL DENMARK	Long Term: 3.5 mg/m3 K Source: BEK nr 2203 af 29/11/2021
	NATIONAL FINLAND	Long Term: 3.5 mg/m3; Short Term: 7 mg/m3 Source: HTP-ARVOT 2020
	NATIONAL FRANCE	Long Term: 3.5 mg/m3 Source: INRS outil65
	NATIONAL GREECE	Long Term: 3.5 mg/m3; Short Term: 7 mg/m3 Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL HUNGARY	Long Term: 3 mg/m3 belélegezhető koncentráció Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL NORWAY	Long Term: 3.5 mg/m3 Source: FOR-2021-06-28-2248
	NATIONAL POLAND	Long Term: 4 mg/m3 4) Source: Dz.U. 2018 poz. 1286
29H,31H-phthalocyaninato(2-)-N29,N30,N31,N32 copper CAS: 147-14-8	WEL-EH40 UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 3.5 mg/m3; Short Term: 7 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	NATIONAL LATVIA	Long Term: 5 mg/m3 Source: KN325P1
docosate sodium CAS: 577-11-7	NATIONAL LITHUANIA	Long Term: 5 mg/m3 Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL ROMANIA	Short Term: 20 mg/m3 Source: Republicarea 1 - nr. 743 din 29 iulie 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
propan-2-ol; isopropyl alcohol; isopropanol CAS: 67-63-0	NATIONAL AUSTRALIA	Long Term: 983 mg/m3 - 400 ppm (8h); Short Term: 1230 mg/m3 - 500 ppm

ACGIH		Long Term: 200 ppm (8h); Short Term: 400 ppm A4, BEI - Eye and URT irr, CNS impair
NATIONAL	AUSTRIA	Long Term: 500 mg/m ³ - 200 ppm; Short Term: 2000 mg/m ³ - 800 ppm 15(Miw), 4x, MAK Source: BGBl. II Nr. 156/2021
NATIONAL	BULGARIA	Long Term: 980 mg/m ³ ; Short Term: 1225 mg/m ³ Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
NATIONAL	CZECHIA	Long Term: 500 mg/m ³ ; Short Term: Ceiling - 1000 mg/m ³ I Source: Nařízení vlády č. 361-2007 Sb
NATIONAL	DENMARK	Long Term: 490 mg/m ³ - 200 ppm Source: BEK nr 2203 af 29/11/2021
NATIONAL	ESTONIA	Long Term: 350 mg/m ³ - 150 ppm; Short Term: 600 mg/m ³ - 250 ppm Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FINLAND	Long Term: 500 mg/m ³ - 200 ppm; Short Term: 620 mg/m ³ - 250 ppm Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Short Term: 980 mg/m ³ - 400 ppm Source: INRS outil65
NATIONAL	GREECE	Long Term: 980 mg/m ³ - 400 ppm; Short Term: 1225 mg/m ³ - 500 ppm Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	HUNGARY	Long Term: 500 mg/m ³ ; Short Term: 1000 mg/m ³ b, i, R Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	LATVIA	Long Term: 350 mg/m ³ ; Short Term: 600 mg/m ³ Source: KN325P1
NATIONAL	LITHUANIA	Long Term: 350 mg/m ³ - 150 ppm; Short Term: 600 mg/m ³ - 250 ppm Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NORWAY	Long Term: 245 mg/m ³ - 100 ppm Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 900 mg/m ³ ; Short Term: 1200 mg/m ³ skóra Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 500 mg/m ³ - 200 ppm; Short Term: 1000 mg/m ³ - 400 ppm Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 350 mg/m ³ - 150 ppm; Short Term: 600 mg/m ³ - 250 ppm V Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 500 mg/m ³ - 200 ppm; Short Term: 1000 mg/m ³ - 400 ppm SSC, B, VRS Foie SNC Yeux / OAW Laber ZNS Auge, INRS NIOSH Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 999 mg/m ³ - 400 ppm; Short Term: 1250 mg/m ³ - 500 ppm Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
NATIONAL	BELGIUM	Long Term: 500 mg/m ³ - 200 ppm; Short Term: 1000 mg/m ³ - 400 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 999 mg/m ³ - 400 ppm; Short Term: 1250 mg/m ³ - 500 ppm Source: NN 1/2021
NATIONAL	GERMANY	Long Term: 500 mg/m ³ - 200 ppm DFG, Y, 2(II) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 200 ppm; Short Term: 400 ppm Sk Source: 2021 Code of Practice
NATIONAL	ROMANIA	Long Term: 200 mg/m ³ - 81 ppm; Short Term: 500 mg/m ³ - 203 ppm Source: Republicarea 1 - nr. 743 din 29 iulie 2021

zinc oxide
CAS: 1314-13-2

NATIONAL	SLOVENIA	Long Term: 500 mg/m ³ - 200 ppm; Short Term: 1000 mg/m ³ - 400 ppm Y, BAT Source: UL št. 72, 11. 5. 2021
NATIONAL	SPAIN	Long Term: 500 mg/m ³ - 200 ppm; Short Term: 1000 mg/m ³ - 400 ppm VLB®, s Source: LEP 2022
ACGIH		Long Term: 2 mg/m ³ (8h); Short Term: 10 mg/m ³ R - Metal fume fever
NATIONAL	AUSTRIA	Long Term: 5 mg/m ³ MAK, A Source: BGBl. II Nr. 156/2021
NATIONAL	BULGARIA	Long Term: 5 mg/m ³ ; Short Term: 10 mg/m ³ Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
NATIONAL	CZECHIA	Long Term: 2 mg/m ³ ; Short Term: Ceiling - 5 mg/m ³ Source: Nařízení vlády č. 361-2007 Sb
NATIONAL	DENMARK	Long Term: 4 mg/m ³ Source: BEK nr 2203 af 29/11/2021
NATIONAL	ESTONIA	Long Term: 5 mg/m ³ Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FINLAND	Long Term: 2 mg/m ³ ; Short Term: 10 mg/m ³ Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 5 mg/m ³ Source: INRS outil65
NATIONAL	FRANCE	Long Term: 10 mg/m ³ Source: INRS outil65
NATIONAL	GREECE	Long Term: 5 mg/m ³ ; Short Term: 10 mg/m ³ Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	HUNGARY	Long Term: 5 mg/m ³ i, N Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	HUNGARY	Long Term: 5 mg/m ³ i, R Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	LATVIA	Long Term: 0.5 mg/m ³ Source: KN325P1
NATIONAL	LITHUANIA	Long Term: 5 mg/m ³ Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NORWAY	Long Term: 5 mg/m ³ Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 5 mg/m ³ ; Short Term: 10 mg/m ³ 4) Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 1 mg/m ³ ; Short Term: 1 mg/m ³ 11) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 5 mg/m ³ 3 Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 3 mg/m ³ ; Short Term: 3 mg/m ³ TWA mg/m ³ : (a), Fimétal / Metallrauch, NIOSH OSHA Source: suva.ch/valeurs-limites
NATIONAL	BELGIUM	Long Term: 2 mg/m ³ ; Short Term: 10 mg/m ³ Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 2 mg/m ³ ; Short Term: 10 mg/m ³ GVI: R Source: NN 1/2021
NATIONAL	IRELAND	Long Term: 2 mg/m ³ ; Short Term: 10 mg/m ³

		OEL (8-hour reference period) : R Source: 2021 Code of Practice
sodium hydroxide; caustic soda CAS: 1310-73-2	NATIONAL ROMANIA	Long Term: 5 mg/m ³ ; Short Term: 10 mg/m ³ (Fumuri) Source: Republicarea 1 - nr. 743 din 29 iulie 2021
	NATIONAL SPAIN	Long Term: 2 mg/m ³ ; Short Term: 10 mg/m ³ d Source: LEP 2022
	ACGIH	Short Term: Ceiling - 2 mg/m ³ URT, eye, and skin irr
	NATIONAL AUSTRALIA	Short Term: Ceiling - 2 mg/m ³ (15min)
	NATIONAL ROMANIA	Long Term: 1 mg/m ³ ; Short Term: 3 mg/m ³
	NATIONAL AUSTRIA	Long Term: 2 mg/m ³ ; Short Term: Ceiling - 4 mg/m ³ 5(Mow), 8x, MAK, E Source: BGBl. II Nr. 156/2021
	NATIONAL BULGARIA	Long Term: 2 mg/m ³ Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL CZECHIA	Long Term: 1 mg/m ³ ; Short Term: Ceiling - 2 mg/m ³ I Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL DENMARK	Short Term: Ceiling - 2 mg/m ³ L Source: BEK nr 2203 af 29/11/2021
	NATIONAL ESTONIA	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ * Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL FINLAND	Short Term: Ceiling - 2 mg/m ³ kattoarvo Source: HTP-ARVOT 2020
	NATIONAL FRANCE	Long Term: 2 mg/m ³ Source: INRS outil65
	NATIONAL GREECE	Long Term: 2 mg/m ³ ; Short Term: 2 mg/m ³ Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL HUNGARY	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ m, N Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL LATVIA	Long Term: 0.5 mg/m ³ Source: KN325P1
	NATIONAL LITHUANIA	Short Term: Ceiling - 2 mg/m ³ Ū Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL NORWAY	Short Term: Ceiling - 2 mg/m ³ T Source: FOR-2021-06-28-2248
	NATIONAL POLAND	Long Term: 0.5 mg/m ³ ; Short Term: 1 mg/m ³ Source: Dz.U. 2018 poz. 1286
	NATIONAL SLOVAKIA	Long Term: 2 mg/m ³ Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	NATIONAL SWEDEN	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ 3 Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 2 mg/m ³ ; Short Term: 2 mg/m ³ TWA mg/m ³ : (i), SSC, VRS Peau Yeux / OAW Haut Auge, NIOSH OSHA Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND	Short Term: 2 mg/m ³ Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)

		NORTHERN IRELAND	
	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
ethanediol; ethylene glycol CAS: 107-21-1	ACGIH		Short Term: 10 mg/m3 I, H, A4 - URT irr
	EU		Long Term: 52 mg/m3 - 20 ppm (8h); Short Term: 104 mg/m3 - 40 ppm Skin
	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 aerosolio koncentracijai. Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	NETHERLAND S	Long Term: 52 mg/m3; Short Term: 104 mg/m3 H Source: Arbeidsomstandighedenregeling - Lijst A
	NATIONAL	NETHERLAND S	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/m ³ - 20 ppm; Short Term: 104 mg/m ³ - 40 ppm K Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 25 mg/m ³ - 10 ppm; Short Term: 104 mg/m ³ - 40 ppm H, 26 Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 26 mg/m ³ - 10 ppm; Short Term: 52 mg/m ³ - 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/m ³ Sk Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 52 mg/m ³ - 20 ppm; Short Term: 104 mg/m ³ - 40 ppm Sk Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
NATIONAL	BELGIUM	Long Term: 52 mg/m ³ - 20 ppm; Short Term: 104 mg/m ³ - 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/m ³ - 20 ppm; Short Term: 104 mg/m ³ - 40 ppm δέρμα Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
NATIONAL	GERMANY	Long Term: 26 mg/m ³ - 10 ppm DFG, EU, H, Y, 11, 2(I) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 52 mg/m ³ - 20 ppm; Short Term: 104 mg/m ³ - 40 ppm Sk, IOELV Source: 2021 Code of Practice
NATIONAL	ITALY	Long Term: 52 mg/m ³ - 20 ppm; Short Term: 104 mg/m ³ - 40 ppm Cute Source: D.lgs. 81/2008, Allegato XXXVIII
NATIONAL	LATVIA	Long Term: 52 mg/m ³ - 20 ppm; Short Term: 104 mg/m ³ - 40 ppm Āda Source: KN325P1
NATIONAL	LUXEMBOURG	Long Term: 52 mg/m ³ - 20 ppm; Short Term: 104 mg/m ³ - 40 ppm Peau Source: Mémorial A n.226 du 22 mars 2021
NATIONAL	MALTA	Long Term: 52 mg/m ³ - 20 ppm; Short Term: 104 mg/m ³ - 40 ppm skin Source: S.L.424.24
NATIONAL	PORTUGAL	Long Term: 52 mg/m ³ - 20 ppm; Short Term: 104 mg/m ³ - 40 ppm Cutânea Source: Decreto-Lei n.º 1/2021
NATIONAL	ROMANIA	Long Term: 52 mg/m ³ - 20 ppm; Short Term: 104 mg/m ³ - 40 ppm P, Dir. 2000/39 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SLOVENIA	Long Term: 52 mg/m ³ - 20 ppm; Short Term: 104 mg/m ³ - 40 ppm K, Y, EU1 Source: UL št. 72, 11. 5. 2021
NATIONAL	SPAIN	Long Term: 52 mg/m ³ - 20 ppm; Short Term: 104 mg/m ³ - 40 ppm vía dérmica, VLI Source: LEP 2022
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-	NATIONAL GERMANY	Long Term: 0.2 mg/m ³ ; Short Term: 0.4 mg/m ³ DFG; Long term and short term: inhalable fraction Source: TRGS900

3-one (3:1)
CAS: 55965-84-9

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

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-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

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

Predicted No Effect Concentration (PNEC) values

bis-[4-(2,3-epoxipropoxy)phenyl]
propane
CAS: 1675-54-3

Exposure Route: Fresh Water; PNEC Limit: 0.006 mg/l

Exposure Route: Marine water; PNEC Limit: 600 ng/L

Exposure Route: Freshwater sediments; PNEC Limit: 0.996 mg/kg

Exposure Route: Marine water sediments; PNEC Limit: 0.099 mg/kg

Exposure Route: Soil; PNEC Limit: 0.196 mg/kg

Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 10 mg/l

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0.018 mg/l

Titanium dioxide

Exposure Route: Fresh Water; PNEC Limit: 0.184 mg/l

CAS: 13463-67-7

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
Exposure Route: Fresh Water; PNEC Limit: 0.007 mg/l

oxirane, mono[(C12-14-alkyloxy)methyl] derivs.
CAS: 68609-97-2

Exposure Route: Marine water; PNEC Limit: 0.072 µg/l
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 10 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 66.77 mg/kg
Exposure Route: Marine water sediments; PNEC Limit: 6.677 mg/kg
Exposure Route: Soil; PNEC Limit: 80.12 mg/kg
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0.072 mg/l
Exposure Route: Fresh Water; PNEC Limit: 3 µg/l

Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)] bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)] bis(oxirane) and 2-(2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 25.4 µg/l
Exposure Route: Marine water; PNEC Limit: 300 ng/L
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 10 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 294 µg/kg
Exposure Route: Marine water sediments; PNEC Limit: 29.4 µg/kg
Exposure Route: Soil; PNEC Limit: 237 µg/kg
Exposure Route: Fresh Water; PNEC Limit: 14.3 µg/l

triisobutyl phosphate
CAS: 126-71-6

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 143 µg/l
Exposure Route: Marine water; PNEC Limit: 1.43 µg/l
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 3.72 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 2.05 mg/kg
Exposure Route: Marine water sediments; PNEC Limit: 205 µg/kg
Exposure Route: Soil; PNEC Limit: 426 µg/kg

bronopol (INN); 2-bromo-2-nitropropane-1,3-diol
CAS: 52-51-7

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
Exposure Route: Fresh Water; PNEC Limit: 10 mg/l

ethanediol; ethylene glycol
CAS: 107-21-1

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

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

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

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

Derived No Effect Level (DNEL) values

bis-[4-(2,3-epoxipropoxy)phenyl]propane
CAS: 1675-54-3

Exposure Route: Human Oral; Exposure Frequency: Long Term, local effects
Worker Professional: 0.75 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Worker Professional: 0.75 mg/kg

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 3.571 mg/kg

Exposure Route: Human Dermal; Exposure Frequency: Long Term, local effects
Worker Professional: 3.571 mg/kg

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 12.25 mg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 12.25 mg/m³

Titanium dioxide
CAS: 13463-67-7

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 10 mg/m³

oxirane, mono[(C12-14-alkyloxy)methyl] derivs.
CAS: 68609-97-2

Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects
Worker Professional: 17 mg/kg; Consumer: 10 mg/kg

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 29 mg/m³; Consumer: 7.6 mg/m³

Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects
Consumer: 1219 mg/kg

Exposure Route: Human Dermal; Exposure Frequency: Short Term, local effects
Worker Professional: 68 mg/kg; Consumer: 40 mg/kg

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects

Worker Professional: 9.8 mg/m³; Consumer: 2.9 mg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 3.9 mg/kg; Consumer: 2.35 mg/kg

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 13.8 mg/m³; Consumer: 4.1 mg/m³

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 1 mg/kg

Exposure Route: Human Dermal; Exposure Frequency: Long Term, local effects
Worker Professional: 1.7 mg/kg; Consumer: 1 mg/kg

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 0.98 mg/kg; Consumer: 1.46 mg/kg

Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(2-(4-(oxiran-2-ylmethoxy)benzyl)phenoxy)methyl)oxirane

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 29.39 mg/m³; Consumer: 8.7 mg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 104.15 mg/kg; Consumer: 62.5 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 6.25 mg/kg

triisobutyl phosphate
CAS: 126-71-6

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Consumer: 8.89 mg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 4.25 mg/kg; Consumer: 2.13 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 2.13 mg/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

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

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

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

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

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

Pyrithione zinc
CAS: 13463-41-7

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 10 µg/kg

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.(EN166)

Protection for skin:

Chemical protection clothing. Safety shoes.

Protection for hands:

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

Nitrile rubber - NBR: thickness ≥0,4mm; breakthrough time ≥480min.

Butyl rubber - IIR: thickness ≥0,4mm; breakthrough time ≥480min.

Respiratory protection:

Respiratory protective equipment should be worn when there is a possibility that the exposure limit value will be exceeded. In the absence of exposure limit values, respiratory protective equipment should be worn when adverse effects occur, such as respiratory irritation or discomfort, or if indicated by the results of your risk assessment. Use the following CE-approved air-purifying respirator: A-type organic vapour cartridge (boiling point >65°C)

Thermal Hazards:

Not expected if used as intended

Environmental exposure controls:

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Colour: Grey

Odour: Odourless

Odour threshold: N.A.

pH: ≈10.00 (OECD 122)

Kinematic viscosity: N.A.

Melting point/freezing point: N.A.

Boiling point or initial boiling point and boiling range: 73 °C (163 °F) (ASTM-E537)

Flash point: > 93°C

Lower and upper explosion limit: N.A.

Relative vapour density: N.A.

Vapour pressure: N.A.

Density and/or relative density: 2.24 g/cm³ (ISO 2811)

Solubility in water: Miscible

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 = 0.30 % ; 6.71 g/l

Particle characteristics:

Particle size: N.A.

9.2. Other 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	The product is classified: Skin Irrit. 2(H315)
c) serious eye damage/irritation	The product is classified: Eye Irrit. 2(H319)
d) respiratory or skin sensitisation	The product is classified: Skin Sens. 1B(H317)
e) germ cell mutagenicity	Not classified
	Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified
	Based on available data, the classification criteria are not met
g) reproductive toxicity	The product is classified: Repr. 1B(H360)
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:

bis-[4-(2,3-epoxipropoxy)phenyl]propane	a) acute toxicity	LD50 Oral Rabbit = 19800 mg/kg	
		LD50 Skin Rabbit > 20 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive	epoxy resin with an average molecular mass <= 700 d irritate skin of rabbits
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
	f) carcinogenicity	Genotoxicity Negative	Mouse, oral
		Carcinogenicity Oral Rat = 15 mg/kg	NOAEL
		Carcinogenicity Skin Rat = 1 mg/kg	NOAEL
	g) reproductive toxicity	No Observed Effect Level Oral Rat = 750 mg/kg	
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	Eye Corrosive Negative	

	damage/irritation	Eye Irritant No	
	d) respiratory or skin sensitisation	Skin Sensitization Negative	
	i) STOT-repeated exposure	No Observed Adverse Effect Level 1000	
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	a) acute toxicity	LD50 Oral Rat = 26800 mg/kg	
		LC50 Inhalation Rat > 0.206 mg/l 4h	
		LD50 Skin Rabbit > 4.5 ml/Kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Yes	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Guinea pig Positive	
	g) reproductive toxicity	No Observed Adverse Effect Level Skin Rat = 200 mg/kg	
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane	a) acute toxicity	LD50 Oral Rat > 5000 mg/kg	
		LD50 Skin Rat > 2000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit No	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
	f) carcinogenicity	Genotoxicity Negative	Hamster oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 750 mg/kg	
triisobutyl phosphate	a) acute toxicity	LD50 Oral Rat > 5000 mg/kg	
		LC50 Inhalation of aerosol Rat > 5.14 mg/l 4h	
		LD50 Skin Rabbit > 5000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit 48h	
	d) respiratory or skin sensitisation	Skin Sensitization Guinea pig 6h	
	f) carcinogenicity	Genotoxicity Negative	Mouse intraperitoneal route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rabbit = 150 mg/kg	
Quartz	a) acute toxicity	LD50 Oral > 2000 mg/kg	
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	
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	
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	

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 Guinea pig Positive

11.2. Information on other hazards

Endocrine disrupting properties:

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

SECTION 12: Ecological information

12.1. Toxicity

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

Eco-Toxicological Information:

Harmful to aquatic life with long lasting effects.

List of Eco-Toxicological properties of the product

The product is classified: Aquatic Chronic 3(H412)

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
bis-[4-(2,3-epoxipropoxy)phenyl]propane	CAS: 1675-54-3 - EINECS: 216-823-5 - INDEX: 603-073-00-2	a) Aquatic acute toxicity : LC50 Fish <i>Oncorhynchus mykiss</i> = 2 mg/L 96h a) Aquatic acute toxicity : LC50 <i>Daphnia magna</i> = 1.8 mg/L 48h a) Aquatic acute toxicity : EC50 Algae <i>Scenedesmus capricornutum</i> = 11 mg/L 72h EPA-660/3-75-009 c) Bacteria toxicity : EC50 Sludge activated sludge = 100 mg/L 3h
Titanium dioxide	CAS: 13463-67-7 - EINECS: 236-675-5 - INDEX: 022-006-00-2	a) Aquatic acute toxicity : LC50 Fish <i>Pimephales promelas</i> (Cavedano americano) > 1000 mg/L 96h a) Aquatic acute toxicity : EC50 Algae <i>Pseudokirchneriella subcapitata</i> (alghe cloroficee) > 100 mg/L 72h a) Aquatic acute toxicity : NOEC Algae = 5600 mg/L a) Aquatic acute toxicity : EC50 <i>Daphnia magna</i> (Pulce d'acqua grande) > 100 mg/L 48h
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	CAS: 68609-97-2 - EINECS: 271-846-8 - INDEX: 603-103-00-4	a) Aquatic acute toxicity : LC50 Fish <i>Oncorhynchus mykiss</i> > 5000 mg/L 96h a) Aquatic acute toxicity : NOEC Algae <i>Pseudokirchneriella subcapitata</i> = 500 mg/L 72h „OECD Guideline 201 (Alga, Growth Inhibition Test) a) Aquatic acute toxicity : EC50 Algae <i>Pseudokirchneriella subcapitata</i> = 843 mg/L 72h c) Bacteria toxicity : EC50 Sludge > 100 mg/L
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-	EINECS: 701-263-0	a) Aquatic acute toxicity : LC50 Fish <i>Leuciscus idus</i> = 2.54 mg/L 96h

[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane

		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 2.55 mg/L 48h b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 0.3 mg/L - 21days a) Aquatic acute toxicity : EC50 Algae Selenastrum capricornutum = 1.8 mg/L 72h a) Aquatic acute toxicity : NOEC Sludge activated sludge = 100 mg/L 3h
triisobutyl phosphate	CAS: 126-71-6 - EINECS: 204-798-3	a) Aquatic acute toxicity : LC50 Fish Danio rerio = 12.6 mg/L 96h OECD 203 a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 24 mg/L 48h OECD 202 a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 14.3 mg/L 72h OECD 201 a) Aquatic acute toxicity : NOEC Sludge = 37.2 mg/L OECD guideline 209 - 30min
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
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

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 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

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

12.2. Persistence and degradability

Component	Persistence/Degradability:	Test	Value	Notes:
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Non-readily biodegradable	Oxygen consumption		OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	Readily biodegradable	Oxygen consumption	87.000	%; OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane	Non-readily biodegradable		16.000	28days
triisobutyl phosphate	Readily biodegradable	CO2 production	75.000	28days
bronopol (INN); 2-bromo-2-nitropropane-1,3-diol	Readily biodegradable			OECD guideline 301B

ethanediol; ethylene glycol	Readily biodegradable	Dissolved organic carbon	90.000	10days
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	Non-readily biodegradable			
Pyrithione zinc	Non-readily biodegradable	CO2 production		OECD 301B CO2evolution
2-octyl-2H-isothiazol-3-one	Non-readily biodegradable			

12.3. Bioaccumulative potential

Component	Bioaccumulation	Test	Value	Notes:
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Bioaccumulative	BCF - Bioconcentrantion factor	31.000	
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	Bioaccumulative	BCF - Bioconcentrantion factor	160.000	
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane	Bioaccumulative	BCF - Bioconcentrantion factor	150.000	
triisobutyl phosphate	Not bioaccumulative			
bronopol (INN); 2-bromo-2-nitropropane-1,3-diol	Bioaccumulative	BCF - Bioconcentrantion factor		
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
Pyrithione zinc	Bioaccumulative	BCF - Bioconcentrantion factor	1.400	
2-octyl-2H-isothiazol-3-one	Bioaccumulative	BCF - Bioconcentrantion factor	19.210	L/kg ww

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

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.

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

SECTION 14: Transport information

Not classified as dangerous in the meaning of transport regulations.

14.1. UN number or ID number

N/A

14.2. UN proper shipping name

ADR-Shipping Name: N/A

IATA-Technical name: N/A

IMDG-Technical name: N/A

14.3. Transport hazard class(es)

ADR-Class: N/A

IATA-Class: N/A
IMDG-Class: N/A

14.4. Packing group

ADR-Packing Group: N/A
IATA-Packing group: N/A
IMDG-Packing group: N/A

14.5. Environmental hazards

Marine pollutant: No
Environmental Pollutant: No
IMDG-EMS: N/A

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: N/A
ADR - Hazard identification number: N/A
ADR-Special Provisions: N/A
ADR-Transport category (Tunnel restriction code): N/A
ADR Limited Quantities: N/A
ADR Excepted Quantities: N/A

Air (IATA):

IATA-Passenger Aircraft: N/A
IATA-Cargo Aircraft: N/A
IATA-Label: N/A
IATA-Subsidiary hazards: N/A
IATA-Erg: N/A
IATA-Special Provisions: N/A

Sea (IMDG):

IMDG-Stowage Code: N/A
IMDG-Stowage Note: N/A
IMDG-Subsidiary hazards: N/A
IMDG-Special Provisions: N/A

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

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

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

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

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

Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013

Regulation (EU) n. 286/2011 (ATP 2 CLP)

Regulation (EU) n. 618/2012 (ATP 3 CLP)

Regulation (EU) n. 487/2013 (ATP 4 CLP)

Regulation (EU) n. 944/2013 (ATP 5 CLP)

Regulation (EU) n. 605/2014 (ATP 6 CLP)

Regulation (EU) n. 2015/1221 (ATP 7 CLP)

Regulation (EU) n. 2016/918 (ATP 8 CLP)

Regulation (EU) n. 2016/1179 (ATP 9 CLP)

Regulation (EU) n. 2017/776 (ATP 10 CLP)

Regulation (EU) n. 2018/669 (ATP 11 CLP)

Regulation (EU) n. 2018/1480 (ATP 13 CLP)

Regulation (EU) n. 2019/521 (ATP 12 CLP)

Regulation (EU) n. 2020/217 (ATP 14 CLP)

Regulation (EU) n. 2020/1182 (ATP 15 CLP)

Regulation (EU) n. 2021/643 (ATP 16 CLP)

Regulation (EU) n. 2021/849 (ATP 17 CLP)

Regulation (EU) n. 2022/692 (ATP 18 CLP)

Regulation (EU) n. 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.
3: Severe 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 = 0.17 %
Volatile Organic compounds - VOCs = 3.18 g/L

FACTORY COLORWET EP (A) (not ready to use)
Volatile Organic compounds - VOCs = 0.30 %
Volatile Organic compounds - VOCs = 6.71 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 ; The product is identified as an article treated pursuant to art. 58 of Regulation (EU) no. 528/2012 and subsequent amendments.
Substances included in Regulation (EU) n. 528/2012 (concerning the making available on the market and use of biocidal products)

15.2. Chemical safety assessment
No Chemical Safety Assessment has been carried out for the mixture.
Substances for which a Chemical Safety Assessment has been carried out:
bis-[4-(2,3-epoxipropoxy)phenyl]propane
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.
ethanediol; ethylene glycol

SECTION 16: Other information

Code	Description	
H302	Harmful if swallowed.	
H315	Causes skin irritation.	
H317	May cause an allergic skin reaction.	
H319	Causes serious eye irritation.	
H360F	May damage fertility.	
H372	Causes damage to organs through prolonged or repeated exposure.	
H373	May cause damage to organs through prolonged or repeated exposure.	
H411	Toxic to aquatic life with long lasting effects.	
H412	Harmful to aquatic life with long lasting effects.	
Code	Hazard class and hazard category	Description
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.4.2/1B	Skin Sens. 1B	Skin Sensitisation, Category 1B
3.7/1B	Repr. 1B	Reproductive toxicity, Category 1B

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/C2	Aquatic Chronic 2	Chronic (long term) aquatic hazard, category 2
4.1/C3	Aquatic Chronic 3	Chronic (long term) aquatic hazard, category 3

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

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
--	---------------------------------

Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Skin Sens. 1B, H317	Calculation method
Repr. 1B, H360F	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

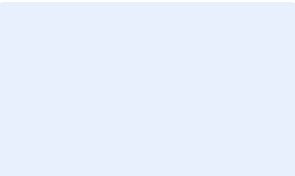
KAFH: Keep Away From Heat

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 1: Identification of the substance/mixture and of the company/undertaking
- SECTION 2: Hazards identification
- SECTION 3: Composition/information on ingredients
- SECTION 7: Handling and storage
- SECTION 8: Exposure controls/personal protection
- SECTION 9: Physical and chemical properties
- SECTION 11: Toxicological information
- SECTION 12: Ecological information
- SECTION 13: Disposal considerations
- SECTION 14: Transport information
- SECTION 15: Regulatory information
- SECTION 16: Other information



Exposure Scenario

Ethane-1,2-diol

Exposure Scenario, 09/08/2021

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

Table of contents

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

1. ES 1

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

1.1 TITLE SECTION

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

Environment Contributing Scenario

CS1	ERC8d
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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)
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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)
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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)
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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/m ³	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/m ³	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/m ³	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/m ³	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

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Exposure Scenario, 07/06/2021

Substance identity	
	bis-[4-(2,3-epoxipropoxy)phenyl]propane
CAS No.	1675-54-3
INDEX No.	603-073-00-2
EINECS No.	216-823-5
Registration number	01-2119456619-26

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1. **ES 1** Widespread use by professional workers; ESC2_0000001

1. ES 1 Widespread use by professional workers; ESC2_0000001	
1.1 TITLE SECTION	
Exposure Scenario name	Professional application of coatings and inks - Etching agent - Resins (prepolymers) - Adhesion promotor
Date - Version	27/05/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	ESC2_0000001
Article Category(ies)	Other articles made of stone, plaster, cement, glass or ceramic (AC4g)
Environment Contributing Scenario	
CS1	ERC8c - ERC8f
Worker Contributing Scenario	
CS2 Material transfers	PROC8a
CS3 Rolling, Brushing	PROC10
CS4 Roller, spreader, flow application	PROC11
CS5 Mixing operations - Manual	PROC19
1.2 Conditions of use affecting exposure	
1.2. CS1: Environment Contributing Scenario (ERC8c, ERC8f)	
Environmental release categories	Widespread use leading to inclusion into/onto article (indoor) - Widespread use leading to inclusion into/onto article (outdoor) (ERC8c, ERC8f)
<i>Product (article) characteristics</i>	
Physical form of product: Liquid, vapour pressure < 0,5 kPa at STP	
Concentration of substance in product: Covers percentage substance in the product up to 100 %.	
<i>Amount used, frequency and duration of use (or from service life)</i>	
Amounts used: Daily amount per site = 175 kg/day	
Release type: Continuous release	
Emission days: 365 days per year	
<i>Technical and organisational conditions and measures</i>	
Control measures to prevent releases Provide onsite wastewater removal efficiency of ³ (%):	
<i>Conditions and measures related to sewage treatment plant</i>	
STP type: Municipal Sewage Treatment Plant	
STP effluent (m³/day): 2	
<i>Conditions and measures related to treatment of waste (including article waste)</i>	
Waste treatment Dispose of waste cans and containers according to local regulations.	
<i>Other conditions affecting environmental exposure</i>	

Local marine water dilution factor: 100
Local freshwater dilution factor: 10
Receiving surface water flow: 18000 m³/day
Covers indoor and outdoor use

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

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

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Avoid carrying out activities involving exposure for more than 4 hours per day.

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.

Other conditions affecting worker exposure

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

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

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

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Avoid carrying out activities involving exposure for more than 4 hours per day.

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.

Other conditions affecting worker exposure

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

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

Process Categories	Non industrial spraying (PROC11)
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Product (article) characteristics

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

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

Covers daily exposures up to 8 hours

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

Avoid carrying out activities involving exposure for more than 4 hours per day.

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

Wear chemically resistant gloves (tested to EN374) in combination with "basic" employee training.

Wear suitable face shield.

Wear an impervious suit.

Wear a respirator conforming to EN140.

Other conditions affecting worker exposure

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

1.2. CS5: Worker Contributing Scenario: Mixing operations - Manual (PROC19)**Process Categories**

Manual activities involving hand contact (PROC19)

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

Liquid, vapour pressure < 0,5 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

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

Covers daily exposures up to 8 hours

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

Avoid carrying out activities involving exposure for more than 1 hour per day.

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.

Other conditions affecting worker exposure

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

1.3 Exposure estimation and reference to its source**1.3. CS1: Environment Contributing Scenario (ERC8c, ERC8f)**

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	= 0.0022 mg/L	EUSES	= 0.00022
marine sediment	= 0.00127 mg/L	EUSES	= 0.0128
freshwater sediment	= 0.012 mg/L	EUSES	= 0.0369
marine water	= 2.34E-05 mg/L	EUSES	= 0.029
soil	= 0.00142 mg/kg dry weight	EUSES	= 0.00722

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	= 0.84 mg/m ³	ECETOC TRA worker v2.0	0.07
dermal, systemic, long-term	= 0.2742 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.03

1.3. 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	= 5E-07 mg/m ³	ECETOC TRA worker v2.0	< 0.001
dermal, systemic, long-term	= 2.743 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.33

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, systemic, long-term	= 0.36 mg/m ³	ECETOC TRA worker v2.0	0.03
dermal, systemic, long-term	= 2.68 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.32

1.3. CS5: Worker Contributing Scenario: Mixing operations - Manual (PROC19)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 2E-07 mg/m ³	ECETOC TRA worker v2.0	< 0.001
dermal, systemic, long-term	= 1.414 mg/kg bw/day	ECETOC TRA worker v3	< 0.42
combined routes, systemic, long-term	N/A	ECETOC TRA worker v3	= 0.42

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

oxirane, mono[(c12-14-alkyloxy)methyl] derivs.

Exposure Scenario, 08/06/2021

Substance identity	
	oxirane, mono[(c12-14-alkyloxy)methyl] derivs.
CAS No.	68609-97-2
INDEX No.	603-103-00-4
EINECS No.	271-846-8
Registration number	01-2119485289-22

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1. **ES 1** Widespread use by professional workers; Various products (PC1, PC9a, PC9b)

1. ES 1		Widespread use by professional workers; Various products (PC1, PC9a, PC9b)	
1.1 TITLE SECTION			
Exposure Scenario name	Professional application of coatings and inks by brush or roller - Professional application of coatings and inks		
Date - Version	07/04/2021 - 1.0		
Life Cycle Stage	Widespread use by professional workers		
Main user group	Professional uses		
Sector(s) of use	Professional uses (SU22)		
Product Categories	Adhesives, sealants (PC1) - Coatings and paints, thinners, paint removers (PC9a) - Fillers, putties, plasters, modelling clay (PC9b)		
Environment Contributing Scenario			
CS1		ERC8c	
Worker Contributing Scenario			
CS2 Mixing operations		PROC5	
CS3 Large surfaces - Surfaces - Rolling, Brushing		PROC10	
CS4 Large surfaces - Surfaces - Roller, spreader, flow application		PROC11	
CS5 Large surfaces - Surfaces - Rolling, Brushing		PROC19	
1.2 Conditions of use affecting exposure			
1.2. 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, vapour pressure < 0,5 kPa at STP			
Amount used, frequency and duration of use (or from service life)			
Release type: Intermittent release			
1.2. CS2: Worker Contributing Scenario: Mixing operations (PROC5)			
Process Categories	Mixing or blending in batch processes (PROC5)		
Product (article) characteristics			
Physical form of product: Liquid, vapour pressure < 0,5 kPa at STP			
Concentration of substance in product: Covers percentage substance in the product up to 25 %.			
Amount used, frequency and duration of use/exposure			
Duration: Covers daily exposures up to 8 hours			
Technical and organisational conditions and measures			
Technical and organisational measures Ensure operatives are trained to minimise exposures. Avoid direct eye contact with product, also via contamination on hands.			
Conditions and measures related to personal protection, hygiene and health evaluation			
Personal protection Wear suitable gloves tested to EN374.			

Other conditions affecting worker exposure	
Indoor use Professional use Temperature: Covers use at ambient temperatures. Body parts exposed: Assumes that potential dermal contact is limited to hands and forearms.	
1.2. CS3: Worker Contributing Scenario: Large surfaces - Surfaces - Rolling, Brushing (PROC10)	
Process Categories	Roller application or brushing (PROC10)
Product (article) characteristics	
Physical form of product: Liquid, vapour pressure < 0,5 kPa at STP	
Concentration of substance in product: Covers percentage substance in the product up to 25 %.	
Amount used, frequency and duration of use/exposure	
Duration: Covers daily exposures up to 8 hours	
Technical and organisational conditions and measures	
Technical and organisational measures Ensure operatives are trained to minimise exposures. Provide extract ventilation to points where emissions occur. Avoid direct eye contact with product, also via contamination on hands. Use long handled brushes and rollers.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection Wear suitable gloves tested to EN374. Wear a respirator conforming to EN140.	
Other conditions affecting worker exposure	
Indoor use Professional use Temperature: Covers use at ambient temperatures.	
1.2. CS4: Worker Contributing Scenario: Large surfaces - Surfaces - Roller, spreader, flow application (PROC11)	
Process Categories	Non industrial spraying (PROC11)
Product (article) characteristics	
Physical form of product: Liquid, vapour pressure < 0,5 kPa at STP	
Concentration of substance in product: Covers percentage substance in the product up to 100 %.	
Amount used, frequency and duration of use/exposure	
Duration: Covers daily exposures up to 8 hours	
Frequency: For each use, avoid using for more than < 4 h/event	
Technical and organisational conditions and measures	
Technical and organisational measures Ensure operatives are trained to minimise exposures. Provide extract ventilation to points where emissions occur. Avoid direct eye contact with product, also via contamination on hands. Use long handled brushes and rollers. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.	
Conditions and measures related to personal protection, hygiene and health evaluation	

Personal protection Wear suitable gloves tested to EN374. Wear a respirator conforming to EN140.															
<i>Other conditions affecting worker exposure</i>															
Indoor use Professional use Temperature: Covers use at ambient temperatures.															
1.2. CS5: Worker Contributing Scenario: Large surfaces - Surfaces - Rolling, Brushing (PROC19)															
Process Categories		Manual activities involving hand contact (PROC19)													
<i>Product (article) characteristics</i>															
Physical form of product: Liquid, vapour pressure < 0,5 kPa at STP															
Concentration of substance in product: Covers percentage substance in the product up to 25 %.															
<i>Amount used, frequency and duration of use/exposure</i>															
Duration: Covers daily exposures up to 8 hours															
Frequency: For each use, avoid using for more than < 1 h/event															
<i>Technical and organisational conditions and measures</i>															
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<i>Other conditions affecting worker exposure</i>															
Indoor use Professional use Temperature: Covers use at ambient temperatures.															
1.3 Exposure estimation and reference to its source															
1.3. CS2: Worker Contributing Scenario: Mixing operations (PROC5)															
<table border="1"> <thead> <tr> <th>Exposure route, Health effect, Exposure indicator</th> <th>Exposure level</th> <th>Calculation method</th> <th>Risk Characterization Ratio (RCR)</th> </tr> </thead> <tbody> <tr> <td>inhalative, systemic, long-term</td> <td>= 9.3 mg/m³</td> <td>ECETOC TRA worker v2.0</td> <td>= 0.674</td> </tr> <tr> <td>dermal, systemic, long-term</td> <td>= 0.007 mg/kg bw/day</td> <td>ECETOC TRA worker v2.0</td> <td>= 0.002</td> </tr> </tbody> </table>				Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)	inhalative, systemic, long-term	= 9.3 mg/m ³	ECETOC TRA worker v2.0	= 0.674	dermal, systemic, long-term	= 0.007 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.002
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dermal, systemic, long-term	= 0.007 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.002												
Additional information on exposure estimation: If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374.															
1.3. CS3: Worker Contributing Scenario: Large surfaces - Surfaces - Rolling, Brushing (PROC10)															
<table border="1"> <thead> <tr> <th>Exposure route, Health effect, Exposure indicator</th> <th>Exposure level</th> <th>Calculation method</th> <th>Risk Characterization Ratio (RCR)</th> </tr> </thead> <tbody> </tbody> </table>				Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)								
Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)												

inhalative, local, short-term	= 2.325 mg/m ³	ECETOC TRA worker v2.0	= 0.168
dermal, systemic, long-term	= 0.137 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.035

Additional information on exposure estimation:

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

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, local, short-term	= 0.36 mg/m ³	ECETOC TRA worker v2.0	= 0.03
dermal, systemic, long-term	= 2.68 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.32

Additional information on exposure estimation:

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

1.3. CS5: Worker Contributing Scenario: Large surfaces - Surfaces - Rolling, Brushing (PROC19)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, local, long-term	= 2E-07 mg/m ³	ECETOC TRA worker v2.0	< 0.001
dermal, systemic, long-term	= 1.414 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.42

Additional information on exposure estimation:

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

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

Guidance to check compliance with the exposure scenario:

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