

Safety Data Sheet

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

CEMENTORESINA WALL (A)

Date of first edition: 11/3/2021

Safety Data Sheet dated 04/08/2025

version 6

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

1.1. Product identifier

Mixture identification:

Trade name: CEMENTORESINA WALL (A)

Trade code: 001052034 04

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

Recommended use: resin

Uses advised against: All uses other than recommended ones

1.3. Details of the supplier of the safety data sheet

Company: KERAKOLL S.p.A.

Via dell'Artigianato, 9

41049 Sassuolo (MODENA) - ITALY

Tel.+39 0536 816511 Fax. +39 0536816581

safety@kerakoll.com

1.4. Emergency telephone number

European emergency phone number 112

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

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

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

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

SECTION 2: Hazards identification



2.1. Classification of the substance or mixture

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

Skin Irrit. 2 Causes skin irritation.

Eye Irrit. 2 Causes serious eye irritation.

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

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



Warning

Hazard statements

H315 Causes skin irritation.

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

Precautionary statements

P102 Keep out of reach of children.
 P280 Wear protective gloves and eye protection.
 P302+P352 IF ON SKIN: Wash with plenty of water.
 P501 Dispose of contents/container in accordance with applicable regulations.

Contains

1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate

Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane

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

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

1,3-Propanediol, 2-(hydroxymethyl)-2-methyl-, polymer with 2-(chloromethyl)oxirane

Cashew, nutshell liq.

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

None.

2.3. Other hazards

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

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: CEMENTORESINA WALL (A)

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

Qty	Name	Ident. Numb.	Classification	Registration Number
≥10-<20 %	Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane	EC:701-333-0	Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; Aquatic Chronic 3, H412	01-2120759332-55
≥3-<5 %	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
≥3-<5 %	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

≥3-<5 %	1,3-Propanediol, 2-(hydroxymethyl)-2-methyl-, polymer with 2-(chloromethyl)oxirane	CAS:68460-21-9 EC:688-271-7	Skin Irrit. 2, H315; Eye Irrit. 2, H319; Aquatic Chronic 3, H412; Skin Sens. 1, H317	
≥1-<3 %	Titanium dioxide	CAS:13463-67-7 EC:236-675-5	Not classified as hazardous	
≥0.5-<1 %	1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	CAS:1065336-91-5 EC:915-687-0	Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Repr. 2, H361; Skin Sens. 1A, H317, M-Chronic:1, M-Acute:1	01-2119491304-40-XXXX
≥0.1-<0.15 %	Cashew, nutshell liq.	CAS:8007-24-7 EC:232-355-4	Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Irrit. 2, H315; Eye Dam. 1, H318; Skin Sens. 1A, H317	01-2119502450-57
≥0.05-<0.1 %	Quartz	CAS:14808-60-7 EC:238-878-4	STOT RE 1, H372	
<0.0015 %	methanol	CAS:67-56-1 EC:200-659-6 Index:603-001-00-X	Flam. Liq. 2, H225; STOT SE 1, H370; Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331	01-2119433307-44

Specific Concentration Limits:
C ≥ 10%: STOT SE 1 H370
3% ≤ C < 10%: STOT SE 2 H371

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

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

- Immediately take off all contaminated clothing.
- Remove contaminated clothing 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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non emergency personnel:

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

For emergency responders:

Wear personal protection equipment.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.
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
Limestone CAS: 1317-65-3	NATIONAL	BULGARIA	Long Term: 10 mg/m ³ Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	ESTONIA	Long Term: 10 mg/m ³ Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	ESTONIA	Long Term: 5 mg/m ³ Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	GREECE	Long Term: 10 mg/m ³ εισπν. Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	GREECE	Long Term: 5 mg/m ³ αναπν. Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	SPAIN	Long Term: 10 mg/m ³ (1) inhalable aerosol Source: LEP 2022
	NATIONAL	HUNGARY	Long Term: 10 mg/m ³

		N Source: 5/2020. (II. 6.) ITM rendelet
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m3 Inhalable fraction Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 4 mg/m3 Respirable fraction Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
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: 10 mg/m3 Source: 2021 Code of Practice
NATIONAL	IRELAND	Long Term: 4 mg/m3 Source: 2021 Code of Practice
NATIONAL	SWITZERLAND	Long Term: 3 mg/m3 (1) respirable aerosol Source: suva.ch/valeurs-limites
Quartz CAS: 14808-60-7	ACGIH	Long Term: 0.025 mg/m3 (8h) R, A2 - Pulm fibrosis, lung cancer
	NATIONAL HUNGARY	Long Term: 0.1 mg/m3 Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL IRELAND	Long Term: 0.1 mg/m3 Respirable fraction Source: 2021 Code of Practice
	NATIONAL ITALY	Long Term: 0.1 mg/m3 Polvere di silice cristallina respirabile (frazione inalabile). Rif:D.Lgs 81/2008 Source: D.lgs. 81/2008, Allegato XLIII
	NATIONAL SPAIN	Long Term: 0.3 mg/m3 Respirable fraction Source: LEP 2022
	NATIONAL BELGIUM	Long Term: 0.1 mg/m3 C Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL DENMARK	Long Term: 0.3 mg/m3 alveolijae, liite 3 Source: BEK nr 2203 af 29/11/2021
	NATIONAL DENMARK	Long Term: 0.1 mg/m3 EK Source: BEK nr 2203 af 29/11/2021
	NATIONAL ESTONIA	Long Term: 0.1 mg/m3 1, C Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL FINLAND	Long Term: 0.05 mg/m3 alveolijae, liite 3 Source: HTP-ARVOT 2020
	NATIONAL FRANCE	Long Term: 0.1 mg/m3 La VLEP s'applique à la fraction alvéolaire. Forme de silice cristalline. Source: INRS outil65, article R. 4412-149 du Code du travail
	NATIONAL LITHUANIA	Long Term: 0.1 mg/m3 Žiūrėti 1 priedo 3 punktą. Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL NETHERLANDS	Long Term: 0.075 mg/m3 (2) Source: Arbeidsomstandighedenregeling - Lijst B1

	NATIONAL	NORWAY	Long Term: 0.3 mg/m3 K 7 Source: FOR-2021-06-28-2248
	NATIONAL	NORWAY	Long Term: 0.05 mg/m3 K G 7 21 Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 0.1 mg/m3 6) Source: Dz.U. 2018 poz. 1286
	NATIONAL	SWEDEN	Long Term: 0.1 mg/m3 C, M, 3 Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 0.15 mg/m3 TWA mg/m3: (a), C1A, SSC, P, Cancpulm Silicose / Lugenkrebs Silikose, HSE NIOSH OSHA Source: suva.ch/valeurs-limites
Calcium carbonate CAS: 471-34-1	NATIONAL	HUNGARY	Long Term: 10 mg/m3 inhalable aerosol Source: 5/2020. (II. 6.) ITM
	NATIONAL	IRELAND	Long Term: 10 mg/m3 Inhalable fraction Source: 2021 Code of Practice
	NATIONAL	IRELAND	Long Term: 4 mg/m3 Respirable fraction Source: 2021 Code of Practice
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m3 inhalable aerosol Source: EH40/2005 Workplace exposure limits
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 4 mg/m3 respirable aerosol Source: EH40/2005 Workplace exposure limits
	NATIONAL	CROATIA	Long Term: 10 mg/m3 U Source: NN 1/2021
	NATIONAL	CROATIA	Long Term: 4 mg/m3 R Source: NN 1/2021
	NATIONAL	FRANCE	Long Term: 10 mg/m3 Source: INRS outil65
	NATIONAL	LATVIA	Long Term: 6 mg/m3 Source: KN325P1
	NATIONAL	POLAND	Long Term: 10 mg/m3 4) Source: Dz.U. 2018 poz. 1286
	SUVA	SWITZERLAND	Long Term: 3 mg/m3 TWA mg/m3: (a), Formel / Formal, NIOSH Source: suva.ch/valeurs-limites
Titanium dioxide CAS: 13463-67-7	ACGIH		Long Term: 2.5 mg/m3 (8h) Finescale particles; R ; A3 - LRT irr, pneumoconiosis
	NATIONAL	GERMANY	Long Term: 0.3 mg/m3; Short Term: 2.4 mg/m3 DFG; Long term and short term: excluding ultrafine particles; respirable fraction; multiplied by the material density; Source: TRGS900
	NATIONAL	BELGIUM	Long Term: 10 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1

NATIONAL	CROATIA	Long Term: 10 mg/m3 U Source: NN 1/2021
NATIONAL	CROATIA	Long Term: 4 mg/m3 R Source: NN 1/2021
NATIONAL	IRELAND	Long Term: 10 mg/m3 Source: 2021 Code of Practice
NATIONAL	IRELAND	Long Term: 4 mg/m3 Source: 2021 Code of Practice
NATIONAL	ROMANIA	Long Term: 10 mg/m3; Short Term: 15 mg/m3 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SPAIN	Long Term: 10 mg/m3 Source: LEP 2022
NATIONAL	AUSTRIA	Long Term: 5 mg/m3; Short Term: 10 mg/m3 60(Miw), 2x, MAK, A Source: BGBl. II Nr. 156/2021
NATIONAL	BULGARIA	Long Term: 10 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
NATIONAL	DENMARK	Long Term: 6 mg/m3 K Source: BEK nr 2203 af 29/11/2021
NATIONAL	ESTONIA	Long Term: 5 mg/m3 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FRANCE	Long Term: 10 mg/m3 Cancérogène de catégorie 2 Source: INRS outil65
NATIONAL	GREECE	Long Term: 10 mg/m3 εισπν. Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	GREECE	Long Term: 5 mg/m3 αναπν. Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	LATVIA	Long Term: 10 mg/m3 Source: KN325P1
NATIONAL	LITHUANIA	Long Term: 5 mg/m3 Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NORWAY	Long Term: 5 mg/m3 Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 10 mg/m3 4), 7) Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 5 mg/m3 Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 5 mg/m3 3 Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 3 mg/m3 TWA mg/m3: (a), SSC, Formel / Formal, NIOSH Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
Quartz CAS: 14808-60-7	EU	Long Term: 0.1 mg/m3 Polvere di silice cristallina respirabile, frazione inalabile. (R), A2 - Pulm fibrosis, lung cancer. Directive 2017/2398

ACGIH		Long Term: 0.025 mg/m ³ (8h) R, A2 - Pulm fibrosis, lung cancer
NATIONAL	HUNGARY	Long Term: 0.1 mg/m ³ (8h) Respirable aerosol Source: 5/2020. (II. 6.) ITM rendelet
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 XLIII
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 D	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
2,6-di-tert-butyl-p-cresol CAS: 128-37-0	ACGIH	Long Term: 2 mg/m ³ (8h) IFV, A4 - URT irr

NATIONAL	BELGIUM	Long Term: 2 mg/m ³ Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 10 mg/m ³ Source: NN 1/2021
NATIONAL	GERMANY	Long Term: 10 mg/m ³ DFG, Y, 11, E, 4 (II) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 2 mg/m ³ Source: 2021 Code of Practice
NATIONAL	SLOVENIA	Long Term: 10 mg/m ³ ; Short Term: 40 mg/m ³ Y, (I) Source: UL št. 72, 11. 5. 2021
NATIONAL	SPAIN	Long Term: 10 mg/m ³ Source: LEP 2022
NATIONAL	AUSTRIA	Long Term: 10 mg/m ³ MAK Source: GKV, BGBl. II Nr. 156/2021
NATIONAL	BULGARIA	Long Term: 10 mg/m ³ ; Short Term: 50 mg/m ³ Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
NATIONAL	DENMARK	Long Term: 10 mg/m ³ Source: BEK nr 2203 af 29/11/2021
NATIONAL	FINLAND	Long Term: 10 mg/m ³ ; Short Term: 20 mg/m ³ Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 10 mg/m ³ Source: INRS outil65
NATIONAL	GREECE	Long Term: 10 mg/m ³ Source: ΦΕΚ 94/Α` 13.5.1999
SUVA	SWITZERLAND	Long Term: 10 mg/m ³ ; Short Term: 40 mg/m ³ TWA mg/m ³ : (i), C1#B, SSC, Foie / Leber, Pas de risque accru de cancer si la VME est respectée. La substance peut être présente sous forme de vapeur et d'aérosol en même temps / Kein erhöhtes Krebsrisiko bei Einhalten des MAK-Werts. Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen. Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m ³ Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
methanol CAS: 67-56-1	ACGIH	Long Term: 200 ppm (8h); Short Term: 250 ppm Skin, BEI - Headache, eye dam, dizziness, nausea
	NATIONAL	AUSTRIA Long Term: 260 mg/m ³ - 200 ppm; Short Term: 1040 mg/m ³ - 800 ppm 15(Miw), 4x, MAK, H Source: BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA Long Term: 260 mg/m ³ - 200 ppm Кожа Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA Long Term: 250 mg/m ³ ; Short Term: Ceiling - 1000 mg/m ³ D, B Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK Long Term: 260 mg/m ³ - 200 ppm EH Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA Long Term: 250 mg/m ³ - 200 ppm; Short Term: 350 mg/m ³ - 250 ppm A Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND Long Term: 270 mg/m ³ - 200 ppm; Short Term: 330 mg/m ³ - 250 ppm iho Source: HTP-ARVOT 2020

NATIONAL	FRANCE	Long Term: 260 mg/m ³ - 200 ppm; Short Term: 1300 mg/m ³ - 1000 ppm Risque de pénétration percutanée Source: INRS outil65, article R. 4412-149 du Code du travail
NATIONAL	GREECE	Long Term: 260 mg/m ³ - 200 ppm; Short Term: 325 mg/m ³ - 250 ppm Δ Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	HUNGARY	Long Term: 260 mg/m ³ b, i, BEM, EU2, R+T Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	LITHUANIA	Long Term: 260 mg/m ³ - 200 ppm O Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NETHERLANDS	Long Term: 133 mg/m ³ H Source: Arbeidsomstandighedenregeling - Lijst A
NATIONAL	NORWAY	Long Term: 130 mg/m ³ - 100 ppm H E Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 100 mg/m ³ ; Short Term: 300 mg/m ³ skóra Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 260 mg/m ³ - 200 ppm K, 7) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 250 mg/m ³ - 200 ppm; Short Term: 350 mg/m ³ - 250 ppm H, V Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 260 mg/m ³ - 200 ppm; Short Term: 520 mg/m ³ - 400 ppm R/H, SSC, B, SNC / ZNS, INRS NIOSH Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 266 mg/m ³ - 200 ppm; Short Term: 333 mg/m ³ - 250 ppm Sk Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
NATIONAL	BELGIUM	Long Term: 266 mg/m ³ - 200 ppm; Short Term: 333 mg/m ³ - 250 ppm D Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 260 mg/m ³ - 200 ppm koža Source: 2006/15/EZ
NATIONAL	CYPRUS	Long Term: 260 mg/m ³ - 200 ppm δέρμα Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
NATIONAL	GERMANY	Long Term: 130 mg/m ³ - 100 ppm DFG, EU, H, Y, 2(II) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 260 mg/m ³ - 200 ppm Sk, IOELV Source: 2021 Code of Practice
NATIONAL	ITALY	Long Term: 260 mg/m ³ - 200 ppm Cute Source: D.lgs. 81/2008, Allegato XXXVIII
NATIONAL	LATVIA	Long Term: 260 mg/m ³ - 200 ppm Āda Source: KN325P1
NATIONAL	LUXEMBOURG	Long Term: 260 mg/m ³ - 200 ppm Peau Source: Mémorial A n.226 du 22 mars 2021

NATIONAL MALTA	Long Term: 260 mg/m ³ - 200 ppm skin Source: S.L.424.24
NATIONAL PORTUGAL	Long Term: 260 mg/m ³ - 200 ppm Cutânea Source: Decreto-Lei n.º 1/2021
NATIONAL ROMANIA	Long Term: 260 mg/m ³ - 200 ppm P, Dir. 2006/15 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL SLOVENIA	Long Term: 260 mg/m ³ - 200 ppm; Short Term: 1040 mg/m ³ - 800 ppm K, Y, BAT, EU2 Source: UL št. 72, 11. 5. 2021
NATIONAL SPAIN	Long Term: 266 mg/m ³ - 200 ppm vía dérmica, VLB®, VLI, r Source: LEP 2022
EU	Long Term: 260 mg/m ³ - 200 ppm (8h) Skin

Biological limit values

methanol
CAS: 67-56-1
Biological Indicator: Methyl alcohol; Sampling Period: End of turn; End of working week
Value: 30 mg/L; Medium: Urine

Predicted No Effect Concentration (PNEC) values

Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
Exposure Route: Fresh Water; PNEC Limit: 0.047 mg/l

Exposure Route: Marine water; PNEC Limit: 0.004 mg/l

Exposure Route: Freshwater sediments; PNEC Limit: 0.248 mg/kg

Exposure Route: Marine water sediments; PNEC Limit: 0.025 mg/kg

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0.47 mg/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: Fresh Water; PNEC Limit: 3 µg/l

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: 0.006 mg/l

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

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
CAS: 13463-67-7

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

Exposure Route: Marine water; PNEC Limit: 0.018 mg/l

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 1 mg/kg

Exposure Route: Intermittent releases (marine water); PNEC Limit: 100 mg/kg
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 100 mg/kg

1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate
CAS: 1065336-91-5

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 9 µg/l
Exposure Route: Marine water; PNEC Limit: 220 ng/L
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 1 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 1.05 mg/kg
Exposure Route: Marine water sediments; PNEC Limit: 110 µg/kg
Exposure Route: Soil; PNEC Limit: 210 µg/kg

Cashew, nutshell liq.
CAS: 8007-24-7

Exposure Route: Fresh Water; PNEC Limit: 0.003 mg/l
Exposure Route: Marine water sediments; PNEC Limit: 0.088 mg/kg
Exposure Route: Freshwater sediments; PNEC Limit: 0.97 mg/kg
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0.03 mg/l
Exposure Route: Soil; PNEC Limit: 6.71 mg/kg

methanol
CAS: 67-56-1

Exposure Route: Fresh Water; PNEC Limit: 20.8 mg/l
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 1540 mg/l
Exposure Route: Marine water; PNEC Limit: 2.08 mg/l
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 100 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 77 mg/kg
Exposure Route: Marine water sediments; PNEC Limit: 7.7 mg/kg
Exposure Route: Soil; PNEC Limit: 100 mg/kg

Derived No Effect Level (DNEL) values

Reaction products of 2,2-dimethylpropane-1,3-diol with 1-chloro-2,3-epoxypropane
Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 3.29 mg/m³

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Worker Professional: 6.66 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

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

1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate
bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate
CAS: 1065336-91-5

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 680 µg/m³; Consumer: 170 µg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 500 µg/kg; Consumer: 250 µg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 50 µg/kg

Cashew, nutshell liq.
CAS: 8007-24-7

Exposure Route: Human Dermal; Exposure Frequency: Long Term, local effects
Worker Professional: 0.5 mg/kg; Consumer: 0.25 mg/kg

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 0.88 mg/m³; Consumer: 0.2 mg/m³

Exposure Route: Human Oral; Exposure Frequency: Long Term, local effects
Consumer: 0.25 mg/kg

methanol
CAS: 67-56-1

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 130 mg/m³; Consumer: 26 mg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 130 mg/m³; Consumer: 26 mg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 130 mg/m³; Consumer: 26 mg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
Worker Professional: 130 mg/m³; Consumer: 26 mg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 20 mg/kg; Consumer: 4 mg/kg

Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects
Worker Professional: 20 mg/kg; Consumer: 4 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 4 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects
Consumer: 4 mg/kg

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.(EN166)

Protection for skin:

Chemical protection clothing. Safety shoes.

Protection for hands:

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: In compliance with the product description
Odour: Fruity
Odour threshold: N.A.
pH: Not Relevant
Kinematic viscosity: N.A.
Melting point/freezing point: N.A.
Boiling point or initial boiling point and boiling range: N.A.
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: 1.47 g/cm³ (ISO 2811)
Solubility in water: Immiscible
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 = 0.00 % ; 0.02 g/l

Particle characteristics:

Particle size: N.A.

9.2. Other information

No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Data not available.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Heating. Humidity

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. 1A(H317)
e) germ cell mutagenicity	Not classified Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified Based on available data, the classification criteria are not met
g) reproductive toxicity	Not classified Based on available data, the classification criteria are not met
h) STOT-single exposure	Not classified Based on available data, the classification criteria are not met
i) STOT-repeated exposure	Not classified

pentamethylpiperidin-4-yl
 decanedioate
 bis(1,2,2,6,6-
 pentamethylpiperidin-4-
 yl) decanedioate

		LD50 Skin Rat > 3170 mg/kg	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 24h	
	c) serious eye damage/irritation	Eye Irritant Rabbit No	
	d) respiratory or skin sensitisation	Skin Sensitization Guinea pig Positive	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 30 mg/kg	
Cashew, nutshell liq.	a) acute toxicity	LD50 Oral Rat = 2000 mg/kg LD50 Skin Rat > 2000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
Quartz	a) acute toxicity	LD50 Oral > 2000 mg/kg	
methanol	a) acute toxicity	LD50 Oral Rat >= 2528 mg/kg LC50 Inhalation = 43.68 mg/l 6h LD50 Skin Rabbit = 17100 mg/kg	Cat
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative	
	c) serious eye damage/irritation	Eye Irritant Rabbit No	
	d) respiratory or skin sensitisation	Skin Sensitization Guinea pig Negative	
	f) carcinogenicity	Genotoxicity Negative Carcinogenicity Rat Negative	Mouse intraperitoneal route
	g) reproductive toxicity	Lowest Observed Adverse Effect Level Oral = 1000 mg/kg	Mouse

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration >= 0.1%

SECTION 12: Ecological information

12.1. Toxicity

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

Eco-Toxicological Information:

Harmful to aquatic life with long lasting effects.

List of Eco-Toxicological properties of the product

The product is classified: Aquatic Chronic 3(H412)

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis	EINECS: 701-263-0	a) Aquatic acute toxicity : LC50 Fish Leuciscus idus = 2.54 mg/L 96h

(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
bis-[4-(2,3-epoxipropoxy)phenyl]propane	CAS: 1675-54-3 - EINECS: 216-823-5 - INDEX: 603-073-00-2	a) Aquatic acute toxicity : NOEC Sludge activated sludge = 100 mg/L 3h a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss = 2 mg/L 96h
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 1.8 mg/L 48h a) Aquatic acute toxicity : EC50 Algae Scenedesmus capricornutum = 11 mg/L 72h EPA-660/3-75-009
Titanium dioxide	CAS: 13463-67-7 - EINECS: 236-675-5	c) Bacteria toxicity : EC50 Sludge activated sludge = 100 mg/L 3h a) Aquatic acute toxicity : LC50 Fish Pimephales promelas (Cavedano americano) > 1000 mg/L 96h
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata (alghe cloroficee) > 100 mg/L 72h
		a) Aquatic acute toxicity : NOEC Algae = 5600 mg/L a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna (Pulce d'acqua grande) > 100 mg/L 48h
1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	CAS: 1065336-91-5 - EINECS: 915-687-0	a) Aquatic acute toxicity : LC50 Fish Danio rerio = 0.9 mg/L 96h OECD Guideline 203
		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 1 mg/L OECD guideline 211
		a) Aquatic acute toxicity : EC50 Algae Desmodesmus subspicatus = 1.68 mg/L 72h OECD Guideline 201
		a) Aquatic acute toxicity : EC20 Sludge activated sludge >= 100 mg/L 3h OECD guideline 209
Cashew, nutshell liq.	CAS: 8007-24-7 - EINECS: 232-355-4	a) Aquatic acute toxicity : LC50 Fish Cyprinidon variegatus = 1000 mg/L 96h ,,OECD Guideline 203 (Fish, Acute Toxicity Test)
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 40.46 mg/L 48h ,,EPA OPPTS 850.1010 (Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids)
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 1300 mg/L 72h ,,OECD Guideline 201 (Alga, Growth Inhibition Test)
		a) Aquatic acute toxicity : NOEC Sludge activated sludge = 100 mg/L
methanol	CAS: 67-56-1 - EINECS: 200-659-6 - INDEX: 603-001-00-X	a) Aquatic acute toxicity : LC50 Fish Lepomis macrochirus = 15400 mg/L 96h
		b) Aquatic chronic toxicity : NOEC Fish = 450 mg/L
		a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 22200 mg/L 48h b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 208 mg/L
		a) Aquatic acute toxicity : EC50 Algae Selenastrum capricornutum = 22000 mg/L 96h OECD 201 Guideline.
		d) Terrestrial toxicity : NOEC Worm Eisenia andrei = 10000 mg/kg d) Terrestrial toxicity : NOEC Folsomia candida = 1000 mg/kg OECD Guideline 232

12.2. Persistence and degradability

Component	Persistence/Degradability:	Test	Value	Notes:
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
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Non-readily biodegradable	Oxygen consumption		OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	Non-readily biodegradable		38.000	28days
Cashew, nutshell liq.	Readily biodegradable	Oxygen consumption	83.800	%; EU Method C.4-D
methanol	Readily biodegradable			

12.3. Bioaccumulative potential

Component	Bioaccumulation	Test	Value	Notes:
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 - Bioconcentration factor	150.000	
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Bioaccumulative	BCF - Bioconcentration factor	31.000	
1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	Not bioaccumulative			
methanol	Not bioaccumulative	BCF - Bioconcentration factor	< 10	

12.4. Mobility in soil

Data not available.

12.5. Results of PBT and vPvB assessment

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

12.6. Endocrine disrupting properties

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

12.7. Other adverse effects

Data not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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

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

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

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

N.A.

SECTION 14: Transport information

Not classified as dangerous in the meaning of transport regulations.

14.1. UN number or ID number

N/A

14.2. UN proper shipping name

ADR-Shipping Name: N/A

IATA-Shipping Name: N/A

IMDG-Shipping Name: N/A

14.3. Transport hazard class(es)

ADR-Class: N/A

IATA-Class: N/A

IMDG-Class: N/A

14.4. Packing group

ADR-Packing Group: N/A

IATA-Packing group: N/A

IMDG-Packing group: N/A

14.5. Environmental hazards

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: N/A

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: N/A

ADR - Hazard identification number: N/A

ADR-Special Provisions: N/A

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

ADR Limited Quantities: N/A

ADR Excepted Quantities: N/A

Air (IATA):

IATA-Passenger Aircraft: N/A

IATA-Cargo Aircraft: N/A

IATA-Label: N/A

IATA-Subsidiary hazards: N/A

IATA-Erg: N/A

IATA-Special Provisions: N/A

Sea (IMDG):

IMDG-Stowage and handling: N/A

IMDG-Segregation: N/A

IMDG-Subsidiary hazards: N/A

IMDG-Special Provisions: N/A

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Regulation (EU) n. 2019/521 (ATP 12 CLP)
Regulation (EU) n. 2020/217 (ATP 14 CLP)
Regulation (EU) n. 2020/1182 (ATP 15 CLP)
Regulation (EU) n. 2021/643 (ATP 16 CLP)
Regulation (EU) n. 2021/849 (ATP 17 CLP)
Regulation (EU) n. 2022/692 (ATP 18 CLP)
Regulation (EU) n. 2023/707
Regulation (EU) n. 2023/1434 (ATP 19 CLP)
Regulation (EU) n. 2023/1435 (ATP 20 CLP)
Regulation (EU) n. 2024/197 (ATP 21 CLP)
Regulation (EU) n. 2020/878

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

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

Restrictions related to the product: 3

Restrictions related to the substances contained: 40, 69, 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 $\geq 0.1\%$

15.2. Chemical safety assessment

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

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

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

1,3-Propanediol, 2-(hydroxymethyl)-2-methyl-, polymer with 2-(chloromethyl)oxirane

1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate

Cashew, nutshell liq.

SECTION 16: Other information

Code	Description
H225	Highly flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H361	Suspected of damaging fertility or the unborn child.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
2.6/2	Flam. Liq. 2	Flammable liquid, Category 2
3.1/3/Dermal	Acute Tox. 3	Acute toxicity (dermal), Category 3
3.1/3/Inhal	Acute Tox. 3	Acute toxicity (inhalation), Category 3
3.1/3/Oral	Acute Tox. 3	Acute toxicity (oral), Category 3
3.1/4/Dermal	Acute Tox. 4	Acute toxicity (dermal), Category 4
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/1	Eye Dam. 1	Serious eye damage, Category 1
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.4.2/1A	Skin Sens. 1A	Skin Sensitisation, Category 1A
3.7/2	Repr. 2	Reproductive toxicity, Category 2
3.8/1	STOT SE 1	Specific target organ toxicity — single exposure, Category 1
3.9/1	STOT RE 1	Specific target organ toxicity — repeated exposure, Category 1
4.1/A1	Aquatic Acute 1	Acute aquatic hazard, category 1
4.1/C1	Aquatic Chronic 1	Chronic (long term) aquatic hazard, category 1
4.1/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. 1A, H317	Calculation method
Aquatic Chronic 3, H412	Calculation method

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

Main bibliographic sources:

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

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

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

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

This MSDS cancels and replaces any preceding release.

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

ACGIH: American Conference of Governmental Industrial Hygienists

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

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

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

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

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging.

CMR: Carcinogenic, Mutagenic and Reprotoxic

COD: Chemical Oxygen Demand

COV: Volatile Organic Compound

CSA: Chemical Safety Assessment

CSR: Chemical Safety Report

DMEL: Derived Minimal Effect Level

DNEL: Derived No Effect Level.

DPD: Dangerous Preparations Directive

DSD: Dangerous Substances Directive

EC50: Half Maximal Effective Concentration

ECHA: European Chemicals Agency
EINECS: European Inventory of Existing Commercial Chemical Substances.
ES: Exposure Scenario
GefStoffVO: Ordinance on Hazardous Substances, Germany.
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association.
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
IC50: half maximal inhibitory concentration
ICAO: International Civil Aviation Organization.
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG: International Maritime Code for Dangerous Goods.
INCI: International Nomenclature of Cosmetic Ingredients.
IRCCS: Scientific Institute for Research, Hospitalization and Health Care
KAHF: 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 8: Exposure controls/personal protection
- SECTION 9: Physical and chemical properties
- SECTION 11: Toxicological information
- SECTION 12: Ecological information
- SECTION 15: Regulatory information
- SECTION 16: Other information

Exposure Scenario

1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate
bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate

Exposure Scenario, 20/04/2022

Substance identity	
	1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate
CAS No.	1065336-91-5
EINECS No.	915-687-0

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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	Professional application of coatings and inks - Use in rigid foams, coatings, adhesives and sealants
Date - Version	20/04/2022 - 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	ERC8c
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Worker Contributing Scenario

CS2 Material transfers	PROC8a
CS3 Rolling, Brushing	PROC10

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

Liquid

Vapour pressure:

Vapour pressure < 0.01 Pa at standard temperature and pressure 0.0001 Pa

*Amount used, frequency and duration of use (or from service life)***Emission days:** 365 days per year*Technical and organisational conditions and measures***Control measures to prevent releases**

Air - minimum efficiency of: 15 % Water - minimum efficiency of: 1 %

*Conditions and measures related to sewage treatment plant***STP type:**

Municipal Sewage Treatment Plant

Water - minimum efficiency of: = 88.9 %

STP effluent (m³/day): 2000*Other conditions affecting environmental exposure***Local marine water dilution factor:** 100**Local freshwater dilution factor:** 10**Receiving surface water flow:** 18000 m³/day

Indoor 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)
Product (article) characteristics	
Physical form of product: Liquid	
Vapour pressure: Vapour pressure < 0.01 Pa at standard temperature and pressure 0.0001 Pa	
Concentration of substance in product: Covers percentage substance in the product up to 5 %.	
Amount used, frequency and duration of use/exposure	
Duration: Covers use up to 480 min	
Frequency: Covers use up to 5 days per week	
Technical and organisational conditions and measures	
Technical and organisational measures Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Ensure operatives are trained to minimise exposures.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection	
Wear chemically resistant gloves (tested to EN374) in combination with "basic" employee training.	Dermal - minimum efficiency of: = 90 %
Wear suitable face shield. Wear suitable coveralls to prevent exposure to the skin.	
Other conditions affecting worker exposure	
Indoor use Professional use	
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.	
Additional Good Practice Advice: Ensure no splashing occurs during transfer.	
1.2. CS3: Worker Contributing Scenario: Rolling, Brushing (PROC10)	
Process Categories	Roller application or brushing (PROC10)
Product (article) characteristics	
Physical form of product: Liquid	
Vapour pressure: Vapour pressure < 0.01 Pa at standard temperature and pressure 0.0001 Pa	
Concentration of substance in product: Covers percentage substance in the product up to 5 %.	
Amount used, frequency and duration of use/exposure	
Duration: Covers use up to 480 min	
Frequency: Covers use up to 5 days per week	
Technical and organisational conditions and measures	
Technical and organisational measures	

Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Ensure operatives are trained to minimise exposures.

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

Personal protection

Wear chemically resistant gloves (tested to EN374) in combination with "basic" employee training.	Dermal - minimum efficiency of: = 90 %
Wear suitable face shield. Wear suitable coveralls to prevent exposure to the skin.	

Other conditions affecting worker exposure

Indoor use
Professional use

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

Additional Good Practice Advice:

Ensure no splashing occurs during transfer.

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario (ERC8c)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
soil	N/A	ECETOC TRA environment v2.0	0.0579

Additional information on exposure estimation:

Risk from environmental exposure is driven by soil.

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	= 0.2743 mg/kg bw/day	ECETOC TRA worker v3	= 0.137143
inhalative, systemic, long-term	= 0.4233 mg/m ³	ECETOC TRA worker v3	= 0.119924

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	= 0.5486 mg/kg bw/day	ECETOC TRA worker v3	= 0.274286
inhalative, systemic, long-term	= 0.274286 mg/m ³	ECETOC TRA worker v3	= 0.097

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
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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)
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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 (or from service life)

Amounts used:

Daily amount per site = 175 kg/day

Release type: Continuous release

Emission days: 365 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Provide onsite wastewater removal efficiency of ³ (%):

Conditions and measures related to sewage treatment plant

STP type:

Municipal Sewage Treatment Plant

STP effluent (m³/day): 2

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

Waste treatment

Dispose of waste cans and containers according to local regulations.

Other conditions affecting environmental exposure

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)

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)

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)

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

1,3-Propanediol, 2-(hydroxymethyl)-2-methyl-, polymer with 2-(chloromethyl)oxirane

Exposure Scenario, 04/11/2021

Substance identity	
	1,3-Propanediol, 2-(hydroxymethyl)-2-methyl-, polymer with 2-(chloromethyl)oxirane
CAS No.	68460-21-9
EINECS No.	688-271-7

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

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

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks
Date - Version	04/11/2021 - 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)

Environment Contributing Scenario

CS1	ERC8c - ERC8f
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Worker Contributing Scenario

CS2 Rolling, Brushing	PROC10
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1.2 Conditions of use affecting exposure

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

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

Physical form of product:
Liquid

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

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

Amounts used:
Amount per use < 0.08 kg

1.2. CS2: 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 5 %.

Amount used, frequency and duration of use/exposure

Amounts used:
Amount per use < 0.08 kg

Duration:
Covers daily exposures up to 8 hours

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).	Inhalation - minimum efficiency of: 30 %
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Local exhaust ventilation	Inhalation - minimum efficiency of: 90 %
Ensure operatives are trained to minimise exposures.	

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

Personal protection

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

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. CS1: Environment Contributing Scenario (ERC8c, ERC8f)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	5.11E-05 mg/L	N/A	0.011
freshwater sediment	0.000275 mg/kg dry weight	N/A	0.011
marine water	5.05E-06 mg/L	N/A	0.011
marine sediment	2.72E-05 mg/kg dry weight	N/A	0.011
Sewage treatment plant	0.000206 mg/kg dry weight	N/A	< 0.01
Agricultural soil	4.12E-05 mg/kg dry weight	N/A	0.022

1.3. CS2: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.25 mg/m ³	ECETOC TRA worker v2.0	0.214
inhalative, local, long-term	0.25 mg/m ³	ECETOC TRA worker v2.0	N/A
inhalative, local, short-term	18.9 mg/m ³	ECETOC TRA worker v2.0	N/A
dermal, systemic, long-term	0.25 mg/kg bw/day	ECETOC TRA worker v2.0	0.373
dermal, local, long-term	0.2 mg/kg bw/day	ECETOC TRA worker v2.0	N/A
dermal, local, short-term	0.2 mg/kg bw/day	ECETOC TRA worker v2.0	N/A
combined routes, systemic, long-term	N/A	ECETOC TRA worker v2.0	0.587

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

Cashew, nutshell liq.

Exposure Scenario, 08/06/2021

Substance identity	
	Cashew, nutshell liq.
CAS No.	8007-24-7
EINECS No.	232-355-4
Registration number	01-2119502450-57

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

1. ES 1

Widespread use by professional workers; Various products (PC9b, PC9a, PC1)

1.1 TITLE SECTION

Exposure Scenario name	Dye - Professional application of coatings and inks by brush or roller - Use in rigid foams, coatings, adhesives and sealants
Date - Version	21/05/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Fillers, putties, plasters, modelling clay (PC9b) - Coatings and paints, thinners, paint removers (PC9a) - Adhesives, sealants (PC1)
Article Category(ies)	Stone, plaster, cement, glass and ceramic articles: Large surface area articles (AC4a) - Other articles made of stone, plaster, cement, glass or ceramic (AC4g)

Environment Contributing Scenario

CS1	ERC8c - ERC8f
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Worker Contributing Scenario

CS2 Mixing operations	PROC19
CS3 Equipment cleaning and maintenance - (aqueous) - Material transfers	PROC8b
CS4 Equipment cleaning and maintenance - Large surfaces - Surfaces - Rolling, Brushing - Finishing operations - (aqueous)	PROC10

1.2 Conditions of use affecting exposure**1.2. CS1: Environment Contributing Scenario (ERC8c, ERC8f)**

Environmental release categories	Widespread use leading to inclusion into/onto article (indoor) - Widespread use leading to inclusion into/onto article (outdoor) (ERC8c, ERC8f)
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*Product (article) characteristics***Physical form of product:**

Liquid

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:**

< 50 t(tonnes)/year
< 167 kg/day

Release type: Intermittent release**Emission days:** 365 days per year*Conditions and measures related to sewage treatment plant***STP type:**

Municipal Sewage Treatment Plant
Water - minimum efficiency of: = 93.2 %

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

Residues which cannot be recycled are disposed off as chemical waste

*Other conditions affecting environmental exposure***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: Mixing operations (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

Amounts used:

< 50 t(tonnes)/year

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.

Wear suitable coveralls to prevent exposure to the skin.

Use eye protection according to EN 166.

Wear a respirator conforming to EN140.

Other conditions affecting worker exposure

Covers indoor and outdoor use

Professional use

Temperature: Covers use at ambient temperatures.

1.2. CS3: Worker Contributing Scenario: Equipment cleaning and maintenance - (aqueous) - Material transfers (PROC8b)

Process Categories

Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

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

Frequency:

Avoid using product more than = 4 h/event

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.

1.2. CS4: Worker Contributing Scenario: Equipment cleaning and maintenance - Large surfaces - Surfaces - Rolling, Brushing - Finishing operations - (aqueous) (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

Frequency:

Avoid using product 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.

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.

1.3 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)
N/A	N/A	N/A	< 1

1.3. CS2: Worker Contributing Scenario: Mixing operations (PROC19)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative	N/A	ECETOC TRA worker v2.0	< 1
dermal	N/A	ECETOC TRA worker v2.0	< 1

1.3. CS3: Worker Contributing Scenario: Equipment cleaning and maintenance - (aqueous) - Material transfers (PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 7.75 mg/m ³	ECETOC TRA worker v2.0	= 0.562

dermal, systemic, long-term	= 0.014 mg/m ³	ECETOC TRA worker v2.0	= 0.004
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1.3. CS4: Worker Contributing Scenario: Equipment cleaning and maintenance - Large surfaces - Surfaces - Rolling, Brushing - Finishing operations - (aqueous) (PROC10)

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/m ³	ECETOC TRA worker v2.0	= 0.035

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.

Safety Data Sheet

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

CEMENTORESINA WALL (B)

Date of first edition: 11/4/2021

Safety Data Sheet dated 13/01/2026

version 5

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

1.1. Product identifier

Mixture identification:

Trade name: CEMENTORESINA WALL (B)

Trade code: 001052035 03

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

Recommended use: hardener

Uses advised against: All uses other than recommended ones

1.3. Details of the supplier of the safety data sheet

Company: KERAKOLL S.p.A.

Via dell'Artigianato, 9

41049 Sassuolo (MODENA) - ITALY

Tel.+39 0536 816511 Fax. +39 0536816581

safety@kerakoll.com

1.4. Emergency telephone number

European emergency phone number 112

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

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

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

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

SECTION 2: Hazards identification



2.1. Classification of the substance or mixture

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

Skin Corr. 1B Causes severe skin burns and eye damage.

Eye Dam. 1 Causes serious eye damage.

Skin Sens. 1 May cause an allergic skin reaction.

Aquatic Chronic 2 Toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

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

Hazard pictograms and Signal Word



Danger

Hazard statements

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P102 Keep out of reach of children.

P260 Do not breathe vapours.

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.

Contains

3,3'-oxybis(ethyleneoxy)bis(propylamine)
 1,2-Ethanediamine, N-(2-aminoethyl)-,
 reaction products with glycidyl tolyl ether

N,N'-bis(3-aminopropyl)ethylenediamine
 2,2'-iminodiethylamine; diethylenetriamine

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

None.

2.3. Other hazards

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

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: CEMENTORESINA WALL (B)

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

Qty	Name	Ident. Numb.	Classification	Registration Number
≥20-<50 %	3,3'-oxybis(ethyleneoxy)bis(propylamine)	CAS:4246-51-9 EC:224-207-2	Skin Corr. 1B, H314; Eye Dam. 1, H318; Skin Sens. 1, H317	
≥5-<10 %	1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether	CAS:84144-79-6 EC:282-199-6	Acute Tox. 4, H302; Skin Corr. 1C, H314; Eye Dam. 1, H318; Skin Sens. 1, H317; Aquatic Acute 1, H400; Aquatic Chronic 1, H410, M-Chronic:1, M-Acute:1	01-2120762088-49
≥5-<10 %	p-toluenesulphonic acid (containing a maximum of 5 % H2SO4)	CAS:104-15-4 EC:203-180-0 Index:016-030-00-2	Eye Irrit. 2, H319; STOT SE 3, H335; Skin Irrit. 2, H315 Specific Concentration Limits: C ≥ 20%: STOT SE 3 H335	01-2119538811-39
≥3-<5 %	N,N'-bis(3-aminopropyl)ethylenediamine	CAS:10563-26-5 EC:234-147-9	Acute Tox. 4, H302; Acute Tox. 3, H311; Eye Dam. 1, H318; Skin Corr. 1B, H314; Skin Sens. 1, H317; STOT RE 2, H373	01- 2119976331- 37
≥3-<5 %	Polyoxpropylenediamine	CAS:9046-10-0 EC:618-561-0	Skin Corr. 1C, H314; Eye Dam. 1, H318; Aquatic Chronic 3, H412	01-2119557899-12
≥1-<3 %	1,3-Cyclohexanedimethanamine	CAS:2579-20-6 EC:219-941-5	Acute Tox. 4, H302; Acute Tox. 4, H312; Aquatic Chronic 3, H412; Skin Corr. 1A, H314	01-2119543741-41
≥0.5-<1 %	Alcohols, C10-16	CAS:67762-41-8 EC:267-019-6	Aquatic Acute 1, H400, M-Acute:1	
≥0.5-<1 %	Quartz	CAS:14808-60-7 EC:238-878-4	STOT RE 1, H372	
≥0.25-<0.3 %	2,2'-iminodiethylamine; diethylenetriamine	CAS:111-40-0 EC:203-865-4 Index:612-058-00-X	Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 2, H330; Skin Corr. 1B, H314; Eye Dam. 1, H318; STOT SE 3, H335; Skin Sens. 1B, H317 Acute Toxicity Estimate : ATE - Oral : 1.553 mg/kg bw ATE - Dermal : 1.045 mg/kg bw ATE - Inhalation (Dust/mist) :	01-2119473793-27

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

- Immediately take off all contaminated clothing.
- OBTAIN IMMEDIATE MEDICAL ATTENTION.
- 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.
-

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non emergency personnel:

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

For emergency responders:

- Wear personal protection equipment.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections

- See also section 8 and 13
-

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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

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

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

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

7.2. Conditions for safe storage, including any incompatibilities

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

	OEL Type	Country	Occupational Exposure Limit
Calcium carbonate CAS: 471-34-1	NATIONAL	HUNGARY	Long Term: 10 mg/m ³ inhalable aerosol Source: 5/2020. (II. 6.) ITM
	NATIONAL	IRELAND	Long Term: 10 mg/m ³ Inhalable fraction Source: 2021 Code of Practice
	NATIONAL	IRELAND	Long Term: 4 mg/m ³ Respirable fraction Source: 2021 Code of Practice
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m ³ inhalable aerosol Source: EH40/2005 Workplace exposure limits
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 4 mg/m ³ respirable aerosol Source: EH40/2005 Workplace exposure limits
	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	FRANCE	Long Term: 10 mg/m ³ Source: INRS outil65
	NATIONAL	LATVIA	Long Term: 6 mg/m ³ Source: KN325P1
	NATIONAL	POLAND	Long Term: 10 mg/m ³ 4) Source: Dz.U. 2018 poz. 1286
SUVA	SWITZERLAND	Long Term: 3 mg/m ³ TWA mg/m ³ : (a), Formel / Formal, NIOSH Source: suva.ch/valeurs-limites	

2,2',2''-nitrioltriethanol CAS: 102-71-6	ACGIH	Long Term: 5 mg/m ³ (8h) Eye and skin irr
	NATIONAL BELGIUM	Long Term: 5 mg/m ³ Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL GERMANY	Long Term: 1 mg/m ³ DFG, Y, E, 1 (I) Source: TRGS 900
	NATIONAL IRELAND	Long Term: 5 mg/m ³ Source: 2021 Code of Practice
	NATIONAL SPAIN	Long Term: 5 mg/m ³ Source: LEP 2022
	NATIONAL AUSTRIA	Long Term: 5 mg/m ³ - 0.8 ppm; Short Term: 10 mg/m ³ - 1.6 ppm 15(Miw), 4x, MAK, S, E Source: BGBl. II Nr. 156/2021
	NATIONAL CZECHIA	Long Term: 5 mg/m ³ ; Short Term: Ceiling - 10 mg/m ³ D, I Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL DENMARK	Long Term: 3.1 mg/m ³ - 0.5 ppm Source: BEK nr 2203 af 29/11/2021
	NATIONAL ESTONIA	Long Term: 5 mg/m ³ ; Short Term: 10 mg/m ³ S Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL FINLAND	Long Term: 5 mg/m ³ Source: HTP-ARVOT 2020
	NATIONAL LITHUANIA	Long Term: 5 mg/m ³ ; Short Term: 10 mg/m ³ J 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 SWEDEN	Long Term: 5 mg/m ³ - 0.8 ppm; Short Term: 10 mg/m ³ - 1.6 ppm H, V Source: AFS 2021:3
	SUVA	SWITZERLAND D Long Term: 5 mg/m ³ ; Short Term: 5 mg/m ³ TWA mg/m ³ : (i), SSC, VRS Peau Yeux / OAW Haut Auge, NIOSH Source: suva.ch/valeurs-limites
Quartz CAS: 14808-60-7	ACGIH	Long Term: 0.025 mg/m ³ (8h) R, A2 - Pulm fibrosis, lung cancer
	NATIONAL HUNGARY	Long Term: 0.1 mg/m ³ Source: 5/2020. (II. 6.) ITM rendelet
	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 XLIII
	NATIONAL SPAIN	Long Term: 0.3 mg/m ³ Respirable fraction Source: LEP 2022
	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 alveolijae, liite 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/m3 alveolijae, liite 3 Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 0.1 mg/m3 La VLEP s'applique à la fraction alvéolaire. Forme de silice cristalline. Source: INRS outil65, article R. 4412-149 du Code du travail
NATIONAL	LITHUANIA	Long Term: 0.1 mg/m3 Žiūrėti 1 priedo 3 punktą. Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NETHERLANDS	Long Term: 0.075 mg/m3 (2) Source: Arbeidsomstandighedenregeling - Lijst B1
NATIONAL	NORWAY	Long Term: 0.3 mg/m3 K 7 Source: FOR-2021-06-28-2248
NATIONAL	NORWAY	Long Term: 0.05 mg/m3 K G 7 21 Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 0.1 mg/m3 6) Source: Dz.U. 2018 poz. 1286
NATIONAL	SWEDEN	Long Term: 0.1 mg/m3 C, M, 3 Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 0.15 mg/m3 TWA mg/m3: (a), C1A, SSC, P, Cancpulm Silicose / Lugenkrebs Silikose, HSE NIOSH OSHA Source: suva.ch/valeurs-limites
Quartz CAS: 14808-60-7	EU	Long Term: 0.1 mg/m3 Polvere di silice cristallina respirabile, frazione inalabile. (R), A2 - Pulm fibrosis, lung cancer. Directive 2017/2398
	ACGIH	Long Term: 0.025 mg/m3 (8h) R, A2 - Pulm fibrosis, lung cancer
	NATIONAL	HUNGARY Long Term: 0.1 mg/m3 (8h) Respirable aerosol Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL	IRELAND Long Term: 0.1 mg/m3 (8h) Respirable fraction Source: 2021 Code of Practice
	NATIONAL	ITALY Long Term: 0.1 mg/m3 (8h) Polvere di silice cristallina respirabile (frazione inalabile). D.Lgs 81/2008 Source: D.lgs. 81/2008, Allegato XLIII
	NATIONAL	SPAIN Long Term: 0.05 mg/m3 (8h) Respirable fraction Source: LEP 2022
	NATIONAL	CROATIA Long Term: 0.1 mg/m3 Source: NN 1/2021
	NATIONAL	AUSTRIA Long Term: 0.05 mg/m3 MAK, III C, A Source: BGBl. II Nr. 156/2021
	NATIONAL	BELGIUM Long Term: 0.1 mg/m3 C Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	DENMARK Long Term: 0.3 mg/m3 Source: BEK nr 2203 af 29/11/2021
	NATIONAL	DENMARK Long Term: 0.1 mg/m3 EK Source: BEK nr 2203 af 29/11/2021

NATIONAL	ESTONIA	Long Term: 0.1 mg/m3 1, C Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FINLAND	Long Term: 0.05 mg/m3 alveolijae, liite 3 Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 0.1 mg/m3 La VLEP s'applique à la fraction alvéolaire. Forme de silice cristalline. Source: INRS outil65, article R. 4412-149 du Code du travail
NATIONAL	LITHUANIA	Long Term: 0.1 mg/m3 Žiūrėti 1 priedo 3 punktą. Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NETHERLANDS	Long Term: 0.075 mg/m3 (2) Source: Arbeidsomstandighedenregeling - Lijst B1
NATIONAL	NORWAY	Long Term: 0.3 mg/m3 K 7 Source: FOR-2021-06-28-2248
NATIONAL	NORWAY	Long Term: 0.05 mg/m3 K G 7 21 Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 0.1 mg/m3 6) Source: Dz.U. 2018 poz. 1286
NATIONAL	SWEDEN	Long Term: 0.1 mg/m3 C, M, 3 Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 0.15 mg/m3 TWA mg/m3: (a), C1A, SSC, P, Cancpulm Silicose / Lugenkrebs Silikose, HSE NIOSH OSHA Source: suva.ch/valeurs-limites
2,2'-iminodiethylamine; diethylenetriamine CAS: 111-40-0	ACGIH	Long Term: 1 ppm (8h) Skin - URT and eye irr
NATIONAL	AUSTRIA	Long Term: 4 mg/m3 - 1 ppm MAK, Sh Source: GKV, BGBl. II Nr. 156/2021
NATIONAL	BULGARIA	Long Term: 4 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
NATIONAL	CZECHIA	Long Term: 4 mg/m3; Short Term: Ceiling - 8 mg/m3 I, S Source: Nařízení vlády č. 361-2007 Sb
NATIONAL	DENMARK	Long Term: 4 mg/m3 - 1 ppm H Source: BEK nr 2203 af 29/11/2021
NATIONAL	ESTONIA	Long Term: 4.5 mg/m3 - 1 ppm; Short Term: 10 mg/m3 - 2 ppm A, S Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FINLAND	Long Term: 4.3 mg/m3 - 1 ppm; Short Term: 13 mg/m3 - 3 ppm iho Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 4 mg/m3 - 1 ppm Risques d'allergie cutanée Source: INRS outil65
NATIONAL	GREECE	Long Term: 4 mg/m3 - 1 ppm Δ Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	HUNGARY	Long Term: 4 mg/m3; Short Term: 8 mg/m3 b, m, sz, T Source: 5/2020. (II. 6.) ITM rendelet

NATIONAL	LITHUANIA	Long Term: 4.5 mg/m ³ - 1 ppm; Short Term: 10 mg/m ³ - 2 ppm J O Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NORWAY	Long Term: 4 mg/m ³ - 1 ppm H A Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 4 mg/m ³ ; Short Term: 12 mg/m ³ skóra Source: Dz.U. 2018 poz. 1286
NATIONAL	SWEDEN	Long Term: 4.5 mg/m ³ - 1 ppm; Short Term: 10 mg/m ³ - 2 ppm H, S, V Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 4 mg/m ³ - 1 ppm R/H, VRS Yeux / OAW Auge, NIOSH Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 4.3 mg/m ³ - 1 ppm Sk Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
NATIONAL	BELGIUM	Long Term: 4.3 mg/m ³ - 1 ppm D Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 4.3 mg/m ³ - 1 ppm alergen koža Source: NN 1/2021
NATIONAL	IRELAND	Long Term: 4 mg/m ³ - 1 ppm Sk Source: 2021 Code of Practice
NATIONAL	ROMANIA	Long Term: 2 mg/m ³ - 0.5 ppm; Short Term: 4 mg/m ³ - 1 ppm P Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SPAIN	Long Term: 4.3 mg/m ³ - 1 ppm vía dérmica, Sen Source: LEP 2022
2,6-di-tert-butyl-p-cresol CAS: 128-37-0	ACGIH	Long Term: 2 mg/m ³ (8h) IFV, A4 - URT irr
NATIONAL	BELGIUM	Long Term: 2 mg/m ³ Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 10 mg/m ³ Source: NN 1/2021
NATIONAL	GERMANY	Long Term: 10 mg/m ³ DFG, Y, 11, E, 4 (II) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 2 mg/m ³ Source: 2021 Code of Practice
NATIONAL	SLOVENIA	Long Term: 10 mg/m ³ ; Short Term: 40 mg/m ³ Y, (I) Source: UL št. 72, 11. 5. 2021
NATIONAL	SPAIN	Long Term: 10 mg/m ³ Source: LEP 2022
NATIONAL	AUSTRIA	Long Term: 10 mg/m ³ MAK Source: GKV, BGBl. II Nr. 156/2021
NATIONAL	BULGARIA	Long Term: 10 mg/m ³ ; Short Term: 50 mg/m ³ Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
NATIONAL	DENMARK	Long Term: 10 mg/m ³ Source: BEK nr 2203 af 29/11/2021

2,2'-iminodiethanol;
diethanolamine
CAS: 111-42-2

NATIONAL	FINLAND	Long Term: 10 mg/m ³ ; Short Term: 20 mg/m ³ Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 10 mg/m ³ Source: INRS outil65
NATIONAL	GREECE	Long Term: 10 mg/m ³ Source: ΦEK 94/A` 13.5.1999
SUVA	SWITZERLAN D	Long Term: 10 mg/m ³ ; Short Term: 40 mg/m ³ TWA mg/m ³ : (i), C1#B, SSC, Foie / Leber, Pas de risque accru de cancer si la VME est respectée. La substance peut être présente sous forme de vapeur et d'aérosol en même temps / Kein erhöhtes Krebsrisiko bei Einhalten des MAK-Werts. Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen. Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m ³ Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
ACGIH		Long Term: 1 mg/m ³ (8h) IFV, Skin, A3 - Liver and kidney dam
NATIONAL	AUSTRIA	Long Term: 2 mg/m ³ - 0.46 ppm; Short Term: 4 mg/m ³ - 0.92 ppm 15(Miw), 4x, MAK, H, Sh, Reaktion mit nitro- sierenden Agentien kann zur Bildung des kanzerogenen N- Nitrosodiethanol- amins führen. Source: GKV, BGBl. II Nr. 156/2021
NATIONAL	BULGARIA	Long Term: 10 mg/m ³ Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
NATIONAL	CZECHIA	Long Term: 5 mg/m ³ ; Short Term: Ceiling - 10 mg/m ³ I Source: Nařízení vlády č. 361-2007 Sb
NATIONAL	DENMARK	Long Term: 2 mg/m ³ - 0.46 ppm H Source: BEK nr 2203 af 29/11/2021
NATIONAL	ESTONIA	Long Term: 5 mg/m ³ - 3 ppm; Short Term: 30 mg/m ³ - 6 ppm A Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FINLAND	Long Term: 2 mg/m ³ - 0.46 ppm iho Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 15 mg/m ³ - 3 ppm Source: INRS outil65
NATIONAL	GREECE	Long Term: 15 mg/m ³ - 3 ppm Source: ΦEK 94/A` 13.5.1999
NATIONAL	LITHUANIA	Long Term: 15 mg/m ³ - 3 ppm; Short Term: 30 mg/m ³ - 6 ppm O Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NORWAY	Long Term: 15 mg/m ³ - 3 ppm Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 9 mg/m ³ skóra Source: Dz.U. 2018 poz. 1286
NATIONAL	SWEDEN	Long Term: 15 mg/m ³ - 3 ppm; Short Term: 30 mg/m ³ - 6 ppm H, V Source: AFS 2021:3
SUVA	SWITZERLAN D	Long Term: 1 mg/m ³ ; Short Term: 1 mg/m ³ TWA mg/m ³ : (i), R/H, S, SSC, Rein VRS Foie / Niere OAW Leber, En présence d'agents nitrosants, il peut se former de la N-Nitrosodiéthanolamine cancérigène. La substance peut être présente sous forme de vapeur et d'aérosol en même temps. / Reaktion mit nitrosierenden Agentien kann zur Bildung des kanzerogenen N-Nitrosodiethanolamins führen. Der Stoff kann gleichzeitig als Aerosol und Dampf vorliegen. Source: suva.ch/valeurs-limites

NATIONAL	BELGIUM	Long Term: 1 mg/m ³ - 0.2 ppm D Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 15 mg/m ³ - 3 ppm koža Source: NN 1/2021
NATIONAL	GERMANY	Long Term: 0.5 mg/m ³ - 0.11 ppm AGS, H, Sh, Y, 11, 6, 1 (I) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 1 mg/m ³ - 0.2 ppm OEL (8-hour reference period) mg/m ³ : IFV Source: 2021 Code of Practice
NATIONAL	SLOVENIA	Long Term: 0.5 mg/m ³ - 0.11 ppm; Short Term: 0.5 mg/m ³ - 0.11 ppm K, Y Source: UL št. 72, 11. 5. 2021
NATIONAL	SPAIN	Long Term: 1 mg/m ³ - 0.2 ppm vía dérmica, f, FIV Source: LEP 2022

Predicted No Effect Concentration (PNEC) values

3,3'-oxybis(ethyleneoxy)bis(propylamine)
CAS: 4246-51-9

Exposure Route: Fresh Water; PNEC Limit: 220 µg/l

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 2.2 mg/l

Exposure Route: Marine water; PNEC Limit: 22 µg/l

Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 125 mg/l

Exposure Route: Freshwater sediments; PNEC Limit: 1.1 mg/kg

Exposure Route: Marine water sediments; PNEC Limit: 110 µg/kg

Exposure Route: Soil; PNEC Limit: 90.7 µg/kg

1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether
CAS: 84144-79-6

Exposure Route: Fresh Water; PNEC Limit: 170 ng/L

Exposure Route: Marine water; PNEC Limit: 17 ng/L

Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 660 µg/l

Exposure Route: Freshwater sediments; PNEC Limit: 524 µg/kg

Exposure Route: Marine water sediments; PNEC Limit: 52.4 mg/kg

Exposure Route: Soil; PNEC Limit: 524 µg/kg

p-toluenesulphonic acid (containing a maximum of 5 % H₂SO₄)
CAS: 104-15-4

Exposure Route: Fresh Water; PNEC Limit: 73 µg/l

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 730 µg/l

Exposure Route: Marine water; PNEC Limit: 1.3 µg/l

Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 58 mg/l

Exposure Route: Freshwater sediments; PNEC Limit: 57.7 µg/kg

Exposure Route: Marine water sediments; PNEC Limit: 5.77 µg/kg

Exposure Route: Soil; PNEC Limit: 16 µg/kg

N,N'-bis(3-aminopropyl)ethylenediamine
CAS: 10563-26-5

Exposure Route: Fresh Water; PNEC Limit: 114 µg/l

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 430 µg/l

Exposure Route: Marine water; PNEC Limit: 14.4 µg/l

Exposure Route: Freshwater sediments; PNEC Limit: 45.3 mg/kg

Exposure Route: Marine water sediments; PNEC Limit: 4.53 mg/kg

Exposure Route: Soil; PNEC Limit: 8.96 mg/kg

Polyoxpropylenediamine
CAS: 9046-10-0 Exposure Route: Fresh Water; PNEC Limit: 15 µg/l

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 150 µg/l

Exposure Route: Marine water; PNEC Limit: 14.2 µg/l

Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 7.5 mg/l

Exposure Route: Freshwater sediments; PNEC Limit: 132 µg/kg

Exposure Route: Marine water sediments; PNEC Limit: 125 µg/kg

Exposure Route: Soil; PNEC Limit: 17.6 µg/kg

Exposure Route: Secondary poisoning; PNEC Limit: 6.93 mg/kg

1,3-Cyclohexanedimethanamine
CAS: 2579-20-6 Exposure Route: Fresh Water; PNEC Limit: 33.1 µg/l

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 331 µg/l

Exposure Route: Marine water; PNEC Limit: 3.31 µg/l

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

2,2'-iminodiethylamine;
diethylenetriamine
CAS: 111-40-0 Exposure Route: Fresh Water; PNEC Limit: 560 µg/l

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 320 µg/l

Exposure Route: Marine water; PNEC Limit: 56 µg/l

Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 6 mg/l

Exposure Route: Freshwater sediments; PNEC Limit: 1072 mg/kg

Exposure Route: Marine water sediments; PNEC Limit: 107.2 mg/kg

Exposure Route: Soil; PNEC Limit: 7.97 mg/kg

Derived No Effect Level (DNEL) values

3,3'-oxybis(ethyleneoxy)bis(propylamine)
CAS: 4246-51-9 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 59 mg/m³; Consumer: 17 mg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 176 mg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 1 mg/m³; Consumer: 500 µg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
Worker Professional: 13 mg/m³; Consumer: 6.5 mg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 8.3 mg/kg; Consumer: 5 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 5 mg/kg

1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether
CAS: 84144-79-6 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 2.35 mg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 666 µg/kg

p-toluenesulphonic acid (containing a maximum of 5 % H₂SO₄)
CAS: 104-15-4 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 53.6 mg/m³; Consumer: 8.7 mg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 7.6 mg/kg; Consumer: 2.5 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 2.5 mg/kg

N,N'-bis(3-aminopropyl) Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 1234 mg/m³

ethylenediamine
CAS: 10563-26-5

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Consumer: 217 µg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 350 µg/kg

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Consumer: 125 µg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 125 µg/kg

Polyoxpropylenediamine
CAS: 9046-10-0

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 1.36 mg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 2.5 mg/kg

1,3-Cyclohexanedimethanamine
CAS: 2579-20-6

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 9.47 µg/m³

2,2'-iminodiethylamine;
diethylenetriamine
CAS: 111-40-0

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 15.4 mg/m³; Consumer: 4.6 mg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 91.1 mg/m³; Consumer: 25.5 mg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 870 µg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
Worker Professional: 2.6 mg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 11.4 mg/kg; Consumer: 4.88 mg/kg

Exposure Route: Human Dermal; Exposure Frequency: Long Term, local effects
Worker Professional: 1.1 mg/cm²

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.(EN166)

Protection for skin:

Chemical protection clothing. Safety shoes.

Protection for hands:

Protection for hands:

Suitable materials for safety gloves; BS EN 16523-1:2015+A1:2018: Level 6.

Butyl rubber - BR: thickness ≥0.40mm; breakthrough time ≥480min.

Nitrile rubber - NBR: thickness ≥0.40mm; breakthrough time ≥480min.

Respiratory protection:

Use adequate protective respiratory equipment.

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: In compliance with the product description

Odour: Acidic

Odour threshold: N.A.

pH: Not Relevant

Kinematic viscosity: N.A.

Melting point/freezing point: N.A.

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

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: 1.09 g/cm³ (ISO 2811)
Solubility in water: N.A.
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 = 6.15 % ; 67.02 g/l

Particle characteristics:

Particle size: N.A.

9.2. Other information

No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Data not available.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

None in particular.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

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

Toxicological Information of the Preparation

a) acute toxicity	Not classified Based on available data, the classification criteria are not met
b) skin corrosion/irritation	The product is classified: Skin Corr. 1B(H314)
c) serious eye damage/irritation	The product is classified: Eye Dam. 1(H318)
d) respiratory or skin sensitisation	The product is classified: Skin Sens. 1(H317)
e) germ cell mutagenicity	Not classified Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified Based on available data, the classification criteria are not met
g) reproductive toxicity	Not classified Based on available data, the classification criteria are not met
h) STOT-single exposure	Not classified Based on available data, the classification criteria are not met
i) STOT-repeated exposure	Not classified Based on available data, the classification criteria are not met
j) aspiration hazard	Not classified Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

3,3'-oxybis(ethyleneoxy)bis(propylamine)	a) acute toxicity	LD50 Oral Rat > 2850 mg/kg	2 850 - 3 160 mg/kg bw
		LC50 Inhalation Vapour Rat Negative 4h	
		LD50 Skin Rat > 2150 mg/kg 24h	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive	

	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 600 mg/kg	
1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether	a) acute toxicity	LD50 Oral Rat < 301 mg/kg	
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4)	a) acute toxicity	LD50 Oral Rat >= 1104 mg/kg	
		LC50 Inhalation Vapour Rat >= 50 mg/l 8h	
		LD50 Skin Rabbit > 2000 mg/kg	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive 4h	
	c) serious eye damage/irritation	Eye Corrosive Rabbit Positive	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
		Carcinogenicity Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 1000 mg/kg	
N,N'-bis(3-aminopropyl) ethylenediamine	a) acute toxicity	LD50 Oral Rat = 1140 mg/kg bw	
		LD50 Skin Rabbit = 200 mg/kg	
		No Observed Adverse Effect Level Oral Rat = 30 mg/kg	
Polyoxpropylenediamine	a) acute toxicity	LD50 Oral Rat = 2885 mg/kg	
		LC50 Inhalation Vapour Rat > 0.74 mg/l 8h	
		LD50 Skin Rabbit = 2980 mg/kg 24h	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive 4h	
	c) serious eye damage/irritation	Eye Corrosive Rabbit Positive	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Skin Rat = 30 mg/kg	
1,3-Cyclohexanedimethanamine	a) acute toxicity	LD50 Oral Rat > 300 mg/kg	
		LD50 Skin Rabbit = 1700 mg/kg 24h	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
	g) reproductive toxicity	No Observed Effect Level Oral Rat = 300 mg/kg	
Quartz	a) acute toxicity	LD50 Oral > 2000 mg/kg	
2,2'-iminodiethylamine; diethylenetriamine	a) acute toxicity	ATE - Oral : 1.553 mg/kg bw	

	ATE - Dermal : 1.045 mg/kg bw	
	ATE - Inhalation (Dust/mist) : 0.07 mg/l	
	LD50 Oral Rat = 1.62 ml/Kg	
	LC50 Inhalation Dust Rat = 0.07 mg/l 4h	No mortality
	LD50 Skin Rabbit = 1.09 ml/Kg	
b) skin corrosion/irritation	Skin Corrosive Rabbit Positive	
c) serious eye damage/irritation	Eye Corrosive Rabbit Positive	
d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
	Respiratory Sensitization Negative	Mouse
f) carcinogenicity	Genotoxicity Negative	Mouse oral route
	Carcinogenicity Skin Negative	
g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 30 mg/kg	

11.2. Information on other hazards

Endocrine disrupting properties:

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

SECTION 12: Ecological information

12.1. Toxicity

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

Eco-Toxicological Information:

Toxic to aquatic life with long lasting effects.

List of Eco-Toxicological properties of the product

The product is classified: Aquatic Chronic 2(H411)

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
3,3'-oxybis(ethyleneoxy)bis(propylamine)	CAS: 4246-51-9 - EINECS: 224-207-2	a) Aquatic acute toxicity : LC50 Fish <i>Leuciscus idus</i> > 215 mg/L 96h - 215 - < 464 mg/L a) Aquatic acute toxicity : LC50 <i>Daphnia magna</i> = 218.16 mg/L EU Method C2 a) Aquatic acute toxicity : NOEC Algae <i>Desmodesmus subspicatus</i> = 15.6 mg/L 72h „DIN 38412, Part 9 c) Bacteria toxicity : EC50 Sludge <i>Pseudomonas putida</i> = 221.9 mg/L „DIN 38412, part 8 - 17h
1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether	CAS: 84144-79-6 - EINECS: 282-199-6	a) Aquatic acute toxicity : LC50 Fish = 660 µg/L 96h OECD Guideline 203 a) Aquatic acute toxicity : LC50 <i>Daphnia</i> = 14 mg/L 24h OECD Guideline 202 a) Aquatic acute toxicity : EC50 Algae = 0.17 mg/L 72h OECD Guideline 201 a) Aquatic acute toxicity : EC50 Sludge = 66 mg/L 3h OECD Guideline 209
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4)	CAS: 104-15-4 - EINECS: 203-180-0 - INDEX: 016-030-00-2	a) Aquatic acute toxicity : LC50 Fish Goldorfen = 325 mg/L 96h OECD Guideline 203 a) Aquatic acute toxicity : LC50 <i>Daphnia magna</i> = 100 mg/L 48h OECD 202 a) Aquatic acute toxicity : NOEC Algae <i>Selenastrum capricornutum</i> = 44.8 mg/L 72h OECD Guideline 201
N,N'-bis(3-aminopropyl)ethylenediamine	CAS: 10563-26-5 - EINECS: 234-147-9	a) Aquatic acute toxicity : NOEC Sludge activated sludge = 580 mg/L 3h a) Aquatic acute toxicity : LC50 Fish = 340 mg/L 96h

		a) Aquatic acute toxicity : LC0 Fish = 100 mg/L 96h
		a) Aquatic acute toxicity : LC100 Fish = 460 mg/L 96h
		a) Aquatic acute toxicity : NOEC Fish = 100 mg/L 96h
		e) Plant toxicity : EL50 Algae = 100 mg/L 72h
		e) Plant toxicity : NOEC Algae = 50 mg/L 72h
		e) Plant toxicity : LOEC Algae = 100 mg/L 72h
		e) Plant toxicity : EC10 Algae = 93.6 mg/L 72h
		e) Plant toxicity : EC90 Algae = 100 mg/L 72h
Polyoxpropylenediamine	CAS: 9046-10-0 - EINECS: 618-561-0	a) Aquatic acute toxicity : LC50 Fish <i>Oncorhynchus mykiss</i> > 15 mg/L 96h OECD Guideline 203
		a) Aquatic acute toxicity : LC50 <i>Daphnia magna</i> = 80 mg/L 48h OECD Guideline 202
		a) Aquatic acute toxicity : EC50 Algae <i>Pseudokirchneriella subcapitata</i> = 15 mg/L 72h OECD Guideline 201
		a) Aquatic acute toxicity : NOEC Algae <i>Pseudokirchneriella subcapitata</i> = 1.4 mg/L 72h OECD Guideline 201
		a) Aquatic acute toxicity : EC50 Sludge Activated Sludge = 750 mg/L 3h OECD Guideline 209
		a) Aquatic acute toxicity : NOEC Sludge Activated Sludge = 310 mg/L 3h OECD Guideline 209
1,3-Cyclohexanedimethanamine	CAS: 2579-20-6 - EINECS: 219-941-5	a) Aquatic acute toxicity : LC50 Fish Golden orfe = 130 mg/L 96h OECD test guideline 203
		a) Aquatic acute toxicity : LC50 <i>Daphnia magna</i> = 33.1 mg/L 48h OECD test guideline 202
		a) Aquatic acute toxicity : EC50 Algae <i>Pseudokirchneriella subcapitata</i> = 56.7 mg/L 72h OECD test guideline 201
		a) Aquatic acute toxicity : EC50 microorganisms > 1000 mg/L
2,2'-iminodiethylamine; diethylenetriamine	CAS: 111-40-0 - EINECS: 203-865-4 - INDEX: 612-058-00-X	a) Aquatic acute toxicity : LC50 Fish <i>Poecilia reticulata</i> = 430 mg/L 96h
		b) Aquatic chronic toxicity : NOEC Fish <i>Gasterosteus aculeatus</i> = 10 mg/L - 28days
		a) Aquatic acute toxicity : LC50 <i>Daphnia magna</i> = 32 mg/L 48h
		b) Aquatic chronic toxicity : NOEC <i>Daphnia magna</i> = 5.6 mg/L - 21days
		a) Aquatic acute toxicity : EC50 Algae <i>Pseudokirchnerella subcapitata</i> = 1164 mg/L 72h OECD 201
		c) Bacteria toxicity : EC50 nitrifying bacteria = 32.7 mg/L - 17h
		d) Terrestrial toxicity : LC50 Worm = 797 mg/kg

12.2. Persistence and degradability

Component	Persistence/Degradability:	Test	Value	Notes:
3,3'-oxybis(ethyleneoxy)bis(propylamine)	Non-readily biodegradable	CO2 production		OECD 301 B
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4)	Readily biodegradable	CO2 production		
Polyoxpropylenediamine	Non-readily biodegradable	CO2 production	9.800	%; OECD Guideline 301B
1,3-Cyclohexanedimethanamine	Non-readily biodegradable	CO2 production		OECD Guideline No 301 B.
2,2'-iminodiethylamine; diethylenetriamine	Readily biodegradable		87.000	21days

12.3. Bioaccumulative potential

Component	Bioaccumulation	Test	Value
3,3'-oxybis(ethyleneoxy)bis(propylamine)	Bioaccumulative	BCF - Bioconcentration factor	1.160
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4)	Not bioaccumulative		
2,2'-iminodiethylamine; diethylenetriamine	Bioaccumulative	BCF - Bioconcentration factor	6.300

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

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

12.6. Endocrine disrupting properties

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

12.7. Other adverse effects

N.A.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force. Disposal through discharge into wastewater is not permitted

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

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

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

N.A.

SECTION 14: Transport information

14.1. UN number or ID number

2735

14.2. UN proper shipping name

ADR-Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. (3,3'-oxybis(ethyleneoxy)bis(propylamine) - 1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether)

IATA-Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. (3,3'-oxybis(ethyleneoxy)bis(propylamine) - 1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether)

IMDG-Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. (3,3'-oxybis(ethyleneoxy)bis(propylamine) - 1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether)

14.3. Transport hazard class(es)

ADR-Class: 8

IATA-Class: 8

IMDG-Class: 8

14.4. Packing group

ADR-Packing Group: II

IATA-Packing group: II

IMDG-Packing group: II

14.5. Environmental hazards

Most important toxic component: 1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether

Marine pollutant: Yes

Environmental Pollutant: Yes

IMDG-EMS: F-A, S-B

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: 8

ADR - Hazard identification number: 80

ADR-Special Provisions: 274

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

ADR Limited Quantities: 1 L

ADR Excepted Quantities: E2

Air (IATA):

IATA-Passenger Aircraft: 851

IATA-Cargo Aircraft: 855

IATA-Label: 8

IATA-Subsidiary hazards: -

IATA-Erg: 8L

IATA-Special Provisions: A3 A803

Sea (IMDG):

IMDG-Stowage and handling: Category A

IMDG-Segregation: SG35 SGG18

IMDG-Subsidiary hazards: -

IMDG-Special Provisions: 274

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Regulation (EU) n. 2023/707

Regulation (EU) n. 2023/1434 (ATP 19 CLP)

Regulation (EU) n. 2023/1435 (ATP 20 CLP)

Regulation (EU) n. 2024/197 (ATP 21 CLP)

Regulation (EU) n. 2020/878

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

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

Restrictions related to the product: 3

Restrictions related to the substances contained: 75

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

Seveso III category according to Annex 1, part 1 **Lower-tier threshold (tonnes)** **Upper-tier threshold (tonnes)**

Product belongs to category: E2 200 500

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 8A

SVHC Substances:

No SVHC substances present in concentration $\geq 0.1\%$ **15.2. Chemical safety assessment**

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

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

Polyoxpropylenediamine

1,3-Cyclohexanedimethanamine

SECTION 16: Other information

Code	Description
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure if swallowed.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
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
3.1/2/Inhal	Acute Tox. 2	Acute toxicity (inhalation), Category 2
3.1/3/Dermal	Acute Tox. 3	Acute toxicity (dermal), Category 3
3.1/4/Dermal	Acute Tox. 4	Acute toxicity (dermal), Category 4
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/1A	Skin Corr. 1A	Skin corrosion, Category 1A
3.2/1B	Skin Corr. 1B	Skin corrosion, Category 1B
3.2/1C	Skin Corr. 1C	Skin corrosion, Category 1C
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/1	Eye Dam. 1	Serious eye damage, Category 1
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.4.2/1B	Skin Sens. 1B	Skin Sensitisation, Category 1B
3.8/3	STOT SE 3	Specific target organ toxicity — single exposure, Category 3
3.9/1	STOT RE 1	Specific target organ toxicity — repeated exposure, Category 1
3.9/2	STOT RE 2	Specific target organ toxicity — repeated exposure, Category 2
4.1/A1	Aquatic Acute 1	Acute aquatic hazard, category 1
4.1/C1	Aquatic Chronic 1	Chronic (long term) aquatic hazard, category 1
4.1/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 Corr. 1B, H314	Calculation method
Eye Dam. 1, H318	Calculation method

Skin Sens. 1, H317
Aquatic Chronic 2, H411

Calculation method
Calculation method

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

Main bibliographic sources:

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

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

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

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

This MSDS cancels and replaces any preceding release.

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

ACGIH: American Conference of Governmental Industrial Hygienists

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

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

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

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

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging.

CMR: Carcinogenic, Mutagenic and Reprotoxic

COD: Chemical Oxygen Demand

COV: Volatile Organic Compound

CSA: Chemical Safety Assessment

CSR: Chemical Safety Report

DMEL: Derived Minimal Effect Level

DNEL: Derived No Effect Level.

DPD: Dangerous Preparations Directive

DSD: Dangerous Substances Directive

EC50: Half Maximal Effective Concentration

ECHA: European Chemicals Agency

EINECS: European Inventory of Existing Commercial Chemical Substances.

ES: Exposure Scenario

GefStoffVO: Ordinance on Hazardous Substances, Germany.

GHS: Globally Harmonized System of Classification and Labeling of Chemicals.

IARC: International Agency for Research on Cancer

IATA: International Air Transport Association.

IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

IC50: half maximal inhibitory concentration

ICAO: International Civil Aviation Organization.

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).

IMDG: International Maritime Code for Dangerous Goods.

INCI: International Nomenclature of Cosmetic Ingredients.

IRCCS: Scientific Institute for Research, Hospitalization and Health Care

KAFH: Keep Away From Heat

KSt: Explosion coefficient.

LC50: Lethal concentration, for 50 percent of test population.

LD50: Lethal dose, for 50 percent of test population.

LDLo: Leathal Dose Low

N.A.: Not Applicable

N/A: Not Applicable

N/D: Not defined/ Not available

NA: Not available

NIOSH: National Institute for Occupational Safety and Health

NOAEL: No Observed Adverse Effect Level

OSHA: Occupational Safety and Health Administration

PBT: Persistent, Bioaccumulative and Toxic

PGK: Packaging Instruction

PNEC: Predicted No Effect Concentration.

PSG: Passengers

RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.

STEL: Short Term Exposure limit.

STOT: Specific Target Organ Toxicity.

TLV: Threshold Limiting Value.

TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).

vPvB: Very Persistent, Very Bioaccumulative.

WGK: German Water Hazard Class.

Paragraphs modified from the previous revision:

- SECTION 2: Hazards identification
- SECTION 3: Composition/information on ingredients
- SECTION 8: Exposure controls/personal protection
- SECTION 9: Physical and chemical properties
- SECTION 11: Toxicological information
- SECTION 15: Regulatory information
- SECTION 16: Other information



Exposure Scenario

1,3-Cyclohexanedimethanamine

Exposure Scenario, 29/12/2021

Substance identity	
	1,3-Cyclohexanedimethanamine
CAS No.	2579-20-6
EINECS No.	219-941-5
Registration number	01-2119543741-41

Table of contents

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

1. ES 1 Widespread use by professional workers

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks
Date - Version	29/12/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

Environment Contributing Scenario

CS1 Wet formulation	ERC8a - ERC8c
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Worker Contributing Scenario

CS2 Rolling, Brushing - Material transfers	PROC8a - PROC10
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1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario: Wet formulation (ERC8a, ERC8c)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use leading to inclusion into/onto article (indoor) (ERC8a, ERC8c)
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Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

34 Pa

Technical and organisational conditions and measures

Control measures to prevent releases

No specific measures identified.

Conditions and measures related to sewage treatment plant

STP type:

No specific measures identified.

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

Waste treatment

This material and its container must be disposed of as hazardous.

Dispose of this material and its container at hazardous or special waste collection point.

Dispose of waste cans and containers according to local regulations.

1.2. CS2: Worker Contributing Scenario: Rolling, Brushing - Material transfers (PROC8a, PROC10)

Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities - Roller application or brushing (PROC8a, PROC10)
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Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

34 Pa

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.

Local exhaust ventilation

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

Personal protection

Wear suitable gloves tested to EN374.

Wear suitable face shield.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

Use suitable eye protection.

Wear suitable coveralls to prevent exposure to the skin.

Wear suitable respiratory protection.

Other conditions affecting worker exposure

Indoor use

Professional use

Body parts exposed:

Assumes that potential dermal contact is limited to hands.

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

Additional Good Practice Advice:

Clear spills immediately.

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario: Wet formulation (ERC8a, ERC8c)

Additional information on exposure estimation:

As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

1.3. CS2: Worker Contributing Scenario: Rolling, Brushing - Material transfers (PROC8a, PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, short-term	N/A	ECETOC TRA worker v2.0	0.992
dermal, systemic, short-term	N/A	ECETOC TRA worker v2.0	0.005
combined routes, systemic, short-term	N/A	ECETOC TRA worker v2.0	0.998

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

Polyoxpropylenediamine

Exposure Scenario, 17/06/2021

Substance identity	
	Polyoxpropylenediamine
CAS No.	9046-10-0
EINECS No.	618-561-0
Registration number	01-2119557899-12

Table of contents

1. **ES 1** Widespread use by professional workers; Various products (PC9b, PC32)

1. ES 1 Widespread use by professional workers; Various products (PC9b, PC32)

1.1 TITLE SECTION

Exposure Scenario name	Use in coatings - Use in rigid foams, coatings, adhesives and sealants - Waterproofing agent
Date - Version	17/06/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Fillers, putties, plasters, modelling clay (PC9b) - Polymer preparations and compounds (PC32)

Environment Contributing Scenario

CS1	ERC8c
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Worker Contributing Scenario

CS2 Rolling, Brushing	PROC10
CS3 Mixing operations - Manual	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)
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Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

= 90 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

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

Emission days: 365 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Municipal sewage treatment plant is assumed.	Water - minimum efficiency of: = 1.5 %
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Conditions and measures related to sewage treatment plant

STP type:

Municipal Sewage Treatment Plant

STP effluent (m³/day): 2000

Other conditions affecting environmental exposure

Local marine water dilution factor: 100

Local freshwater dilution factor: 10

Receiving surface water flow: 18000 m³/day

Indoor use

1.2. CS2: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Process Categories	Roller application or brushing (PROC10)
Product (article) characteristics	
Physical form of product: Liquid	
Vapour pressure: = 90 Pa	
Concentration of substance in product: Covers percentage substance in the product up to 25 %.	
Amount used, frequency and duration of use/exposure	
Duration: Covers use up to = 480 min	
Frequency: Covers use up to = 5 days per week	
Technical and organisational conditions and measures	
Technical and organisational measures Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. 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 chemically resistant gloves (tested to EN374) in combination with "basic" employee training. Wear respiratory protection when its use is identified for certain contributing scenarios. Wear suitable respiratory protection. Wear suitable face shield.	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.	
1.2. CS3: 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: = 90 Pa	
Concentration of substance in product: Covers percentage substance in the product up to 25 %.	
Amount used, frequency and duration of use/exposure	
Duration: Covers use up to = 240 min	
Frequency: Covers use up to = 5 days per week	
Technical and organisational conditions and measures	
Technical and organisational measures Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. 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 chemically resistant gloves (tested to EN374) in combination with "basic" employee training.
Wear respiratory protection when its use is identified for certain contributing scenarios.
Wear suitable respiratory protection.
Wear suitable face shield.

Dermal - minimum efficiency of: = 95 %

Other conditions affecting worker exposure

Indoor use
Professional use

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

1.3 Exposure estimation and reference to its source

1.3. CS2: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	= 0.6857 mg/kg bw/day	ECETOC TRA worker v3	= 0.274286

1.3. CS3: Worker Contributing Scenario: Mixing operations - Manual (PROC19)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	= 1.7697 mg/kg bw/day	ECETOC TRA worker v3	= 0.707143

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

Polyoxpropylenediamine

Exposure Scenario, 17/06/2021

Substance identity	
	Polyoxpropylenediamine
CAS No.	9046-10-0
EINECS No.	618-561-0
Registration number	01-2119557899-12

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1. **ES 1** Widespread use by professional workers; Various products (PC9b, PC32)

1. ES 1 Widespread use by professional workers; Various products (PC9b, PC32)

1.1 TITLE SECTION

Exposure Scenario name	Use in coatings - Use in rigid foams, coatings, adhesives and sealants - Waterproofing agent
Date - Version	17/06/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Fillers, putties, plasters, modelling clay (PC9b) - Polymer preparations and compounds (PC32)

Environment Contributing Scenario

CS1	ERC8c
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Worker Contributing Scenario

CS2 Rolling, Brushing	PROC10
CS3 Mixing operations - Manual	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)
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Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

= 90 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

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

Emission days: 365 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Municipal sewage treatment plant is assumed.	Water - minimum efficiency of: = 1.5 %
--	--

Conditions and measures related to sewage treatment plant

STP type:

Municipal Sewage Treatment Plant

STP effluent (m³/day): 2000

Other conditions affecting environmental exposure

Local marine water dilution factor: 100

Local freshwater dilution factor: 10

Receiving surface water flow: 18000 m³/day

Indoor use

1.2. CS2: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Process Categories	Roller application or brushing (PROC10)
Product (article) characteristics	
Physical form of product: Liquid	
Vapour pressure: = 90 Pa	
Concentration of substance in product: Covers percentage substance in the product up to 25 %.	
Amount used, frequency and duration of use/exposure	
Duration: Covers use up to = 480 min	
Frequency: Covers use up to = 5 days per week	
Technical and organisational conditions and measures	
Technical and organisational measures Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. 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 chemically resistant gloves (tested to EN374) in combination with "basic" employee training. Wear respiratory protection when its use is identified for certain contributing scenarios. Wear suitable respiratory protection. Wear suitable face shield.	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.	
1.2. CS3: 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: = 90 Pa	
Concentration of substance in product: Covers percentage substance in the product up to 25 %.	
Amount used, frequency and duration of use/exposure	
Duration: Covers use up to = 240 min	
Frequency: Covers use up to = 5 days per week	
Technical and organisational conditions and measures	
Technical and organisational measures Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. 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 chemically resistant gloves (tested to EN374) in combination with "basic" employee training.
Wear respiratory protection when its use is identified for certain contributing scenarios.
Wear suitable respiratory protection.
Wear suitable face shield.

Dermal - minimum efficiency of: = 95 %

Other conditions affecting worker exposure

Indoor use
Professional use

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

1.3 Exposure estimation and reference to its source

1.3. CS2: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
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Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	= 1.7697 mg/kg bw/day	ECETOC TRA worker v3	= 0.707143

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Guidance to check compliance with the exposure scenario:

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