Safety Data Sheet
Conforms to Regulation (EC) No. 1907/2006 (REACH), Article 31, Annex II, as amended by Commission Regulation (EU) 2020/878
FUGALITE INVISIBILE (A)
Date of first edition: 4/26/2021
Safety Data Sheet dated 09/01/2025
version 8

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

1.1. Product identifier

Mixture identification:

Trade name: FUGALITE INVISIBILE (A)

Trade code: S100B0087 .090

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

Recommended use: Mortar for joints

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

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Skin Irrit. 2	Causes skin irritation.
Eye Irrit. 2	Causes serious eye irritation.
Skin Sens. 1A	May cause an allergic skin reaction.
Aquatic Chronic 3	Harmful to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

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

Hazard pictograms and Signal Word

Warning

Hazard statements

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.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

p-tert-butylphenyl 1-(2,3-epoxy)propyl ether

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

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

4-morpholinecarbaldehyde

triisobutyl phosphate

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: FUGALITE INVISIBILE (A)

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

Qty	Name	Ident. Numb.	Classification	Registration Number
≥5-<10 %	p-tert-butylphenyl 1-(2,3-epoxy)propyl ether	CAS:3101-60-8 EC:221-453-2	Skin Sens. 1, H317; Aquatic Chronic 2, H411, M-Chronic:1	
≥5-<10 %	bis-[4-(2,3-epoxipropoxi)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 Specific Concentration Limits: C ≥ 5%: Eye Irrit. 2 H319 C ≥ 5%: Skin Irrit. 2 H315	01-2119456619-26
≥5-<10 %	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
≥0.5-<1 %	4-morpholinecarbaldehyde	CAS:4394-85-8 EC:224-518-3	Skin Sens. 1B, H317	01-2119987993-12
≥0.3-<0.5 %	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-<0.3 %	triisobutyl phosphate	CAS:126-71-6 EC:204-798-3	Skin Sens. 1B, H317	

<0.0015 % xylene	CAS:1330-20-7 EC:215-535-7 Index:601-022-00-9	Flam. Liq. 3, H226; Acute Tox. 4, H332; Acute Tox. 4, H312; Skin Irrit. 2, H315; STOT SE 3, H335; STOT RE 2, H373; Asp. Tox. 1, H304; Aquatic Chronic 3, H412; Eye Irrit. 2, H319, M-Chronic:1	01-2119488216-32
<0.0015 % ethyl acrylate	CAS:140-88-5 EC:205-438-8 Index:607-032-00-X	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Skin Sens. 1, H317 Acute Tox. 4, H302 Acute Tox. 3, H331 Acute Tox. 4, H312 Specific Concentration Limits: C ≥ 5%: Skin Irrit. 2 H315 C ≥ 5%: Eye Irrit. 2 H319 C ≥ 5%: STOT SE 3 H335 Acute Toxicity Estimate: ATE - Oral: 120mg/kg bw ATE - Dermal: 1800mg/kg bw ATE - Inhalation (Vapours): 9mg/l	01-2119459301-46

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Remove contaminated clothing immediatley and dispose off safely.

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

In case of eyes contact:

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

Protect uninjured eye.

In case of Ingestion:

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

In case of Inhalation:

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

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

Eye irritation

Eye damages

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 (CO_2).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

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

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non emergency personnel:

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

For emergency responders:

Wear personal protection equipment.

6.2. Environmental precautions

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

Retain contaminated washing water and dispose it.

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

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

6.3. Methods and material for containment and cleaning up

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

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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

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

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

Contamined clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

7.2. Conditions for safe storage, including any incompatibilities

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

	OEL Type	Country	Occupational Exposure Limit
triisobutyl phosphate CAS: 126-71-6	NATIONAL	GERMANY	Long Term: 50 mg/m3 AGS, Sh, 11, 2 (II) Source: TRGS 900
	NATIONAL	SLOVENIA	Long Term: 50 mg/m3; Short Term: 100 mg/m3 Source: UL št. 72, 11. 5. 2021
	NATIONAL	AUSTRIA	Long Term: 50 mg/m3; Short Term: Ceiling - 100 mg/m3 60(Mow), 3x, MAK Source: BGBl. II Nr. 156/2021
xylene CAS: 1330-20-7	ACGIH		Long Term: 20 ppm (8h) A4, BEI - URT and eye irr; hematologic eff; CNS impair
	EU		Long Term: 221 mg/m3 - 50 ppm (8h); Short Term: 442 mg/m3 - 100 ppm Skin
	NATIONAL	AUSTRIA	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm 15(Miw), 4x, MAK Source: BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm Кожа Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 200 mg/m3; Short Term: Ceiling - 400 mg/m3 B, D, I Source: Nařízení vlády č. 361-2007 Sb

NATIONAL	DENMARK	Long Term: 109 mg/m3 - 25 ppm EH Source: BEK nr 2203 af 29/11/2021
NATIONAL	ESTONIA	Long Term: 200 mg/m3 - 50 ppm; Short Term: 450 mg/m3 - 100 ppm A Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FINLAND	Long Term: 220 mg/m3 - 50 ppm; Short Term: 440 mg/m3 - 100 ppm iho Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm Risque de pénétration percutanée Source: INRS outil65, article R. 4412-149 du Code du travail
NATIONAL	GREECE	Long Term: 435 mg/m3 - 100 ppm; Short Term: 650 mg/m3 - 150 ppm Δ Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	HUNGARY	Long Term: 221 mg/m3; Short Term: 442 mg/m3 b, BEM, EU1, R Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	LITHUANIA	Long Term: 200 mg/m3 - 50 ppm; Short Term: 450 mg/m3 - 100 ppm O Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NETHERLANDS	Long Term: 210 mg/m3; Short Term: 442 mg/m3 H Source: Arbeidsomstandighedenregeling - Lijst A
NATIONAL	NORWAY	Long Term: 108 mg/m3 - 25 ppm H E Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 100 mg/m3; Short Term: 200 mg/m3 skóra Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm K, 7) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm H Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 220 mg/m3 - 50 ppm; Short Term: 440 mg/m3 - 100 ppm R/H, B, SNC / ZNS, NIOSH INRS Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 220 mg/m3 - 50 ppm; Short Term: 441 mg/m3 - 100 ppm Sk, BMGV Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
NATIONAL	BELGIUM	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm D Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm koža Source: 2000/39/EZ
NATIONAL	CYPRUS	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm δέρμα Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
NATIONAL	GERMANY	Long Term: 220 mg/m3 - 50 ppm DFG, EU, H, 2(II) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm Sk, IOELV Source: 2021 Code of Practice

	NATIONAL	ITALY	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm Cute Source: D.lgs. 81/2008, Allegato XXXVIII
	NATIONAL	LATVIA	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm Āda Source: KN325P1
	NATIONAL	LUXEMBOURG	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm Peau Source: Mémorial A n.226 du 22 mars 2021
	NATIONAL	MALTA	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm skin Source: S.L.424.24
	NATIONAL	PORTUGAL	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm Cutânea Source: Decreto-Lei n.º 1/2021
	NATIONAL	ROMANIA	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm P, Dir. 2000/39 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
	NATIONAL	SLOVENIA	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm K, BAT, EU1 Source: UL št. 72, 11. 5. 2021
	NATIONAL	SPAIN	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm vía dérmica, VLB®, VLI Source: LEP 2022
ethyl acrylate CAS: 140-88-5	ACGIH		Long Term: 5 ppm (8h); Short Term: 15 ppm A4 - URT, eye, and GI irr, CNS impair, skin sens
	EU		Long Term: 21 mg/m3 - 5 ppm (8h); Short Term: 42 mg/m3 - 10 ppm
	NATIONAL	AUSTRIA	Long Term: 20 mg/m3 - 5 ppm; Short Term: Ceiling - 40 mg/m3 - 10 ppm 5(Mow), 8x, MAK, H, Sh Source: BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CYPRUS	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
	NATIONAL	CZECHIA	Long Term: 20 mg/m3; Short Term: Ceiling - 40 mg/m3 I, S Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Long Term: 21 mg/m3 - 5 ppm EHK Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm S Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm iho Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm Source: INRS outil65, article R. 4412-149 du Code du travail
	NATIONAL	GREECE	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm Source: ΦΕΚ 19/Α` 9.2.2012
	NATIONAL	HUNGARY	Long Term: 21 mg/m3; Short Term: 42 mg/m3 b, i, sz, EU4, N Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL	LATVIA	Long Term: 10 mg/m3 Source: KN325P1
	NATIONAL	LITHUANIA	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm J Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389

NATIONAL	NETHERLANDS	Long Term: 21 mg/m3; Short Term: 42 mg/m3 Source: Arbeidsomstandighedenregeling - Lijst A
NATIONAL	NORWAY	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm H A K E S Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 20 mg/m3; Short Term: 40 mg/m3 skóra Source: Dz.U. 2018 poz. 1286
NATIONAL	PORTUGAL	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm Source: Decreto-Lei n.º 1/2021
NATIONAL	SLOVAKIA	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm S Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 20 mg/m3 - 5 ppm; Short Term: 40 mg/m3 - 10 ppm M, S Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 10 mg/m3 - 2.5 ppm; Short Term: 42 mg/m3 - 10 ppm S, SSC, VRS Yeux / OAW Auge, INRS NIOSH Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
NATIONAL	BELGIUM	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm koža, alergen koža Source: 2009/161/EU
NATIONAL	GERMANY	Long Term: 8.3 mg/m3 - 2 ppm DFG, EU, H, Y, Sh, 2(I) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 20 mg/m3 - 5 ppm; Short Term: 41 mg/m3 - 10 ppm IOELV, Sk, Sens Source: 2021 Code of Practice
NATIONAL	ITALY	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm Source: D.lgs. 81/2008, Allegato XXXVIII
NATIONAL	LUXEMBOURG	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm Source: Mémorial A n.226 du 22 mars 2021
NATIONAL	MALTA	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm Source: S.L.424.24
NATIONAL	ROMANIA	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm Dir. 2009/161 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SLOVENIA	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm K, Y, EU3 Source: UL št. 72, 11. 5. 2021
NATIONAL	SPAIN	Long Term: 21 mg/m3 - 5 ppm; Short Term: 42 mg/m3 - 10 ppm VLI, Sen Source: LEP 2022

Biological limit values

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

Predicted No Effect Concentration (PNEC) values

bis-[4-(2,3-epoxipropoxi)phenyl] propane CAS: 1675-54-3	Exposure Route: Fresh Water; PNEC Limit: 0.006 mg/l

	Exposure Route: Marine water; PNEC Limit: 600 ng/L
	Exposure Route: Freshwater sediments; PNEC Limit: 0.996 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 0.099 mg/kg
	Exposure Route: Soil; PNEC Limit: 0.196 mg/kg
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 10 mg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0.018 mg/l
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
4-morpholinecarbaldehyde CAS: 4394-85-8	Exposure Route: Fresh Water; PNEC Limit: 500 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 5 mg/l
	Exposure Route: Marine water; PNEC Limit: 50 µg/l
	Exposure Route: Marine water; PNEC Limit: 2000 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 2.69 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 269 µg/kg
	Exposure Route: Soil; PNEC Limit: 244 µg/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: Fresh Water; PNEC Limit: 2.2 µg/l
	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
triisobutyl phosphate CAS: 126-71-6	Exposure Route: Fresh Water; PNEC Limit: 14.3 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 143 µg/l
	Exposure Route: Marine water; PNEC Limit: 1.43 µg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 3.72 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 2.05 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 205 µg/kg
	Exposure Route: Soil; PNEC Limit: 426 µg/kg
xylene CAS: 1330-20-7	Exposure Route: Fresh Water; PNEC Limit: 327 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 327 µg/l
	Exposure Route: Marine water; PNEC Limit: 327 µg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 6.58 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 12.46 mg/kg

	Exposure Route: Marine water sediments; PNEC Limit: 12.46 mg/kg
	Exposure Route: Soil; PNEC Limit: 2.31 mg/kg
ethyl acrylate CAS: 140-88-5	Exposure Route: Fresh Water; PNEC Limit: 2.72 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 11 µg/l
	Exposure Route: Marine water; PNEC Limit: 270 ng/L
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 10 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 21.3 µg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 21.3 µg/kg
	Exposure Route: Soil; PNEC Limit: 1 mg/kg
	Exposure Route: Secondary poisoning; PNEC Limit: 10 mg/kg

Derived No Effect Level (DNEL) values

bis-[4-(2,3-epoxipropoxi)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
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
4-morpholinecarbaldehyde CAS: 4394-85-8	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 98 mg/m³; Consumer: 29 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 1.7 mg/m³; Consumer: 840 µg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 14 mg/kg; Consumer: 8 mg/kg
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, local effects Worker Professional: 0.293 mg/cm²; Consumer: 176 mg/cm²
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 8 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: 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
triisobutyl phosphate CAS: 126-71-6	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Consumer: 8.89 mg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 4.25 mg/kg; Consumer: 2.13 mg/kg
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 2.13 mg/kg
xylene CAS: 1330-20-7	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 221 mg/m³; Consumer: 65.3 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Worker Professional: 442 mg/m³; Consumer: 260 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 221 mg/m³; Consumer: 65.3 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Worker Professional: 442 mg/m³; Consumer: 260 mg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 212 mg/kg; Consumer: 125 mg/kg
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 12.5 mg/kg
ethyl acrylate CAS: 140-88-5	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 21 mg/m³; Consumer: 2.5 mg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Short Term, local effects Worker Professional: 0.92 mg/cm²; Consumer: 0.92 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:

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:

N.A.

Thermal Hazards:

N.A.

Environmental exposure controls:

N.A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Colour: Colourless

Odour: N.A.

Odour threshold: N.A.

pH: N.A.

Kinematic viscosity: N.A.

Melting point/freezing point: N.A.

Boiling point or initial boiling point and boiling range: 200 °C (392 °F)

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: 1.77 g/cm3

Solubility in water: Insoluble

Solubility in oil: N.A.
Partition coefficient n-octanol/water (log value): N.A.
Auto-ignition temperature: N.A.
Decomposition temperature: N.A.
Flammability: N.A.
Volatile Organic compounds - VOCs = 0.00 % ; 0.01 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 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
	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:

p-tert-butylphenyl 1-(2,3-epoxy)propyl ether	a) acute toxicity	LD50 Oral Rat > 2000 mg/kg	
		LD50 Skin Rat > 2000 mg/kg 24h	
	c) serious eye damage/irritation	Eye Irritant Rabbit No	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
	f) carcinogenicity	Genotoxicity Rat Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 100 mg/kg	

bis-[4-(2,3-epoxipropoxi)phenyl] propane	a) acute toxicity	LD50 Oral Rabbit = 19800 mg/kg	
		LD50 Skin Rabbit > 20 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive	epoxy resin with an avera molecular mass <= 700 d irritate skin of rabbits
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
	f) carcinogenicity	Genotoxicity Negative	Mouse, oral
		Carcinogenicity Oral Rat = 15 mg/kg	NOAEL
		Carcinogenicity Skin Rat = 1 mg/kg	NOAEL
	g) reproductive toxicity	No Observed Effect Level Oral Rat = 750 mg/kg	
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)] bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)] bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl] phenoxy}methyl)oxirane	a) acute toxicity	LD50 Oral Rat > 5000 mg/kg	
		LD50 Skin Rat > 2000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit No	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
	f) carcinogenicity	Genotoxicity Negative	Hamster oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 750 mg/kg	
4-morpholinecarbaldehyde	a) acute toxicity	LD50 Oral Rat > 7360 mg/kg	
		LC50 Inhalation of aerosol Rat > 5.3 mg/l 4h	
		LD50 Skin Rabbit > 18400 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative	
	c) serious eye damage/irritation	Eye Irritant Rabbit No	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 1000 mg/kg	
1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	a) acute toxicity	LD50 Oral Rat = 3230 mg/kg	
		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 Guineapig Positive	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 30 mg/kg	
triisobutyl phosphate	a) acute toxicity	LD50 Oral Rat > 5000 mg/kg	
		LC50 Inhalation of aerosol Rat > 5.14 mg/l 4h	
		LD50 Skin Rabbit > 5000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit 48h	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig 6h	
	f) carcinogenicity	Genotoxicity Negative	Mouse intraperitoneal rout
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rabbit = 150 mg/kg	
xylene	a) acute toxicity	LD50 Oral Rat = 3523 ml/Kg	
		LC50 Inhalation Vapour Rat = 29000 mg/m3 4h	
		LD50 Skin Rabbit = 12126 mg/kg 24h	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Negative 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes 1h	
	f) carcinogenicity	Genotoxicity Negative	Mouse subcutaneous route
	g) reproductive toxicity	No Observed Adverse Effect Level Inhalation Rat = 2171 mg/kg	
ethyl acrylate	a) acute toxicity	ATE - Oral : 120 mg/kg bw	
		ATE - Dermal : 1800 mg/kg bw	
		ATE - Inhalation (Vapours) : 9 mg/l	
		LD50 Oral Rat = 1120 ml/Kg	
		LC50 Inhalation Vapour Rat < 9.13 mg/l 4h	
		LD50 Skin Rat = 3049 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes 72h	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
	f) carcinogenicity	Genotoxicity Negative	Mouse intraperitoneal rout
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 110 mg/kg	

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration >= 0.1%

SECTION 12: Ecological information

12.1. Toxicity

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

Eco-Toxicological Information:

Harmful to aquatic life with long lasting effects.

List of Eco-Toxicological properties of the product

The product is classified: Aquatic Chronic 3(H412)

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
p-tert-butylphenyl 1-(2,3-epoxy)propyl ether	CAS: 3101-60-8 - EINECS: 221-453-2	a) Aquatic acute toxicity : LC50 Fish rainbow trout = 7.5 mg/L ,,OECD Guideline 203 (Fish, Acute Toxicity Test)
		a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 67.9 mg/L 48h OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 9 mg/L 72h ,,OECD Guideline 201 (Alga, Growth Inhibition Test)
		a) Aquatic acute toxicity : EC50 Sludge activated sludge > 1000 mg/L 3h ,,OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test
bis-[4-(2,3-epoxipropoxi)phenyl]propane	CAS: 1675-54-3 - EINECS: 216-823-5 - INDEX: 603-073-00-2	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
		c) Bacteria toxicity : EC50 Sludge activated sludge = 100 mg/L 3h
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	EINECS: 701-263-0	a) Aquatic acute toxicity : LC50 Fish Leuciscus idus = 2.54 mg/L 96h
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 2.55 mg/L 48h
		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 0.3 mg/L - 21days
		a) Aquatic acute toxicity : EC50 Algae Selenastrum capricornutum = 1.8 mg/L 72h
		a) Aquatic acute toxicity : NOEC Sludge activated sludge = 100 mg/L 3h
4-morpholinecarbaldehyde	CAS: 4394-85-8 - EINECS: 224-518-3	a) Aquatic acute toxicity : LC50 Fish Leuciscus idus > 500 mg/L 96h ,,German Industrial Standard DIN 38412, Part 15
		a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna > 500 mg/L 48h EEC Directive 79/831/EEC
		a) Aquatic acute toxicity : EC50 Algae German Industrial Standard guideline DIN 38412, part 9 = 23.8 g/L 72h ,,German Industrial Standard guideline DIN 38412, part 9
		c) Bacteria toxicity : EC10 Pseudomonas putida > 2000 mg/L ,,German Industrial Standard guideline DIN 38412, part 8 an EC10
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
triisobutyl phosphate	CAS: 126-71-6 - EINECS: 204-798-3	a) Aquatic acute toxicity : LC50 Fish Danio rerio = 12.6 mg/L 96h OECD 203
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 24 mg/L 48h OECD

		202
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 14.3 mg/L 72h OECD 201
		a) Aquatic acute toxicity : NOEC Sludge = 37.2 mg/L OECD guideline 209 - 30min
xylene	CAS: 1330-20-7 - EINECS: 215-535-7 - INDEX: 601-022-00-9	a) Aquatic acute toxicity : LC50 Fish freshwater fish = 2.6 mg/L 96h OECD 203
		b) Aquatic chronic toxicity : NOEC Fish freshwater fish = 1.3 mg/L - 56days
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 1 mg/L 24h OECD 202
		b) Aquatic chronic toxicity : NOEC Daphnia Ceriodaphnia dubia = 0.96 mg/L - 7days
		a) Aquatic acute toxicity : EC50 Algae freshwater algae = 1.3 mg/L 48h OECD 201
		a) Aquatic acute toxicity : EC50 microorganisms = 96 mg/L OECD 301F
		d) Terrestrial toxicity : NOEC Worm earthworms = 16 mg/kg - 14days
		e) Plant toxicity : LC50 terrestrial plants = 1 mg/kg - 14days
ethyl acrylate	CAS: 140-88-5 - EINECS: 205-438-8 - INDEX: 607-032-00-X	a) Aquatic acute toxicity : LC50 Fish Salmo gairdneri = 4.6 mg/L 96h EPA OTS 797.1400
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 7.9 mg/L 48h EPA OTS 797.1300
		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 0.19 mg/L EPA OTS 797.1330
		a) Aquatic acute toxicity : EC50 Algae Selenastrum capricornutum = 4.5 mg/L 72h OECD TG 201
		a) Aquatic acute toxicity : NOEC Sludge activated sludge = 100 mg/L

12.2. Persistence and degradability

Component	Persitence/Degradability:	Test	Value	Notes:
p-tert-butylphenyl 1-(2,3-epoxy)propyl ether	Non-readily biodegradable	Oxygen consumption		28days
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Non-readily biodegradable	Oxygen consumption		OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis (oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis (oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy} methyl)oxirane	Non-readily biodegradable		16.000	28days
4-morpholinecarbaldehyde	Readily biodegradable	Dissolved organic carbon	96.000	%; OECD 301 A
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
triisobutyl phosphate	Readily biodegradable	CO2 production	75.000	28days
xylene	Readily biodegradable			
ethyl acrylate	Readily biodegradable	Biochemical oxigen demand	100.000	

12.3. Bioaccumulative potential

Component	Bioaccumulation	Test	Value
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Bioaccumulative	BCF - Bioconcentrantion factor	31.000
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis (oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis (oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy} methyl)oxirane	Bioaccumulative	BCF - Bioconcentrantion factor	150.000
4-morpholinecarbaldehyde	Bioaccumulative	BCF - Bioconcentrantion factor	1.900
1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	Not bioaccumulative		
triisobutyl phosphate	Not bioaccumulative		
xylene	Bioaccumulative	BCF - Bioconcentrantion factor	25.900
ethyl acrylate	Bioaccumulative	BCF - Bioconcentrantion factor	2.000

12.4. Mobility in soil

Data not available.

12.5. Results of PBT and vPvB assessment

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

12.6. Endocrine disrupting properties

No endocrine disruptor substances present in concentration >= 0.1%

12.7. Other adverse effects

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

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

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

SECTION 14: Transport information

Not classified as dangerous in the meaning of transport regulations.

14.1. UN number or ID number

N/A

14.2. UN proper shipping name

ADR-Shipping Name: N/A

IATA-Technical name: N/A

IMDG-Technical name: N/A

14.3. Transport hazard class(es)

ADR-Class: N/A

IATA-Class: N/A

IMDG-Class: N/A

14.4. Packing group

ADR-Packing Group: N/A

IATA-Packing group: N/A

IMDG-Packing group: N/A

14.5. Environmental hazards

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: N/A

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: N/A

ADR - Hazard identification number: N/A

ADR-Special Provisions: N/A

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

ADR Limited Quantities: N/A

ADR Excepted Quantities: N/A

Air (IATA):

IATA-Passenger Aircraft: N/A

IATA-Cargo Aircraft: N/A

IATA-Label: N/A

IATA-Subsidiary hazards: N/A

IATA-Erg: N/A

IATA-Special Provisions: N/A

Sea (IMDG):

IMDG-Stowage Code: N/A

IMDG-Stowage Note: N/A

IMDG-Subsidiary hazards: N/A

IMDG-Special Provisions: N/A

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Regulation (EU) n. 2020/878

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

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

Restrictions related to the product: 3

Restrictions related to the substances contained: 40, 75

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

None

Explosives precursors – Regulation 2019/1148

No substances listed

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

No substances listed

German Water Hazard Class.

3: Severe hazard to waters

German Lagerklasse according to TRGS 510:

LGK 10

SVHC Substances:

No SVHC substances present in concentration >= 0.1%

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-epoxipropoxi)phenyl]propane

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

SECTION 16: Other information

Code	Description
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
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
2.6/3	Flam. Liq. 3	Flammable liquid, Category 3
3.1/3/Inhal	Acute Tox. 3	Acute toxicity (inhalation), Category 3
3.1/4/Dermal	Acute Tox. 4	Acute toxicity (dermal), Category 4
3.1/4/Inhal	Acute Tox. 4	Acute toxicity (inhalation), Category 4
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.10/1	Asp. Tox. 1	Aspiration hazard, Category 1
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.4.2/1A	Skin Sens. 1A	Skin Sensitisation, Category 1A
3.4.2/1B	Skin Sens. 1B	Skin Sensitisation, Category 1B
3.7/2	Repr. 2	Reproductive toxicity, Category 2
3.8/3	STOT SE 3	Specific target organ toxicity — single exposure, Category 3
3.9/2	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 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

KAFH: Keep Away From Heat

KSt: Explosion coefficient.

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

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

LDLo: Leathal Dose Low

N.A.: Not Applicable

N/A: Not Applicable

N/D: Not defined/ Not available

NA: Not available

NIOSH: National Institute for Occupational Safety and Health

NOAEL: No Observed Adverse Effect Level
OSHA: Occupational Safety and Health Administration
PBT: Persistent, Bioaccumulative and Toxic
PGK: Packaging Instruction
PNEC: Predicted No Effect Concentration.
PSG: Passengers
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.
TLV: Threshold Limiting Value.
TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
vPvB: Very Persistent, Very Bioaccumulative.
WGK: German Water Hazard Class.

Paragraphs modified from the previous revision:

- SECTION 1: Identification of the substance/mixture and of the company/undertaking
- SECTION 2: Hazards identification
- SECTION 3: Composition/information on ingredients
- SECTION 8: Exposure controls/personal protection
- 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

Table of contents

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

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)

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/m³	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/m³	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-epoxipropoxi)phenyl]propane

Exposure Scenario, 07/06/2021

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

Table of contents

1. ES 1 Widespread use by professional workers; ESC2_0000001

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks - Etching agent - Resins (prepolymers) - Adhesion promotor
Date - Version	27/05/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	ESC2_0000001
Article Category(ies)	Other articles made of stone, plaster, cement, glass or ceramic (AC4g)

Environment Contributing Scenario

CS1	ERC8c - ERC8f

Worker Contributing Scenario

CS2 Material transfers	PROC8a
CS3 Rolling, Brushing	PROC10
CS4 Roller, spreader, flow application	PROC11
CS5 Mixing operations - Manual	PROC19

1.2 Conditions of use affecting exposure

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

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

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 (m^3/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/m³	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/m³	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/m³	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/m³	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.

Safety Data Sheet
Conforms to Regulation (EC) No. 1907/2006 (REACH), Article 31, Annex II, as amended by Commission Regulation (EU) 2020/878
FUGALITE INVISIBILE parte B
Date of first edition: 6/25/2021
Safety Data Sheet dated 07/02/2025
version 9

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

1.1. Product identifier

Mixture identification:

Trade name: FUGALITE INVISIBILE parte B

Trade code: S100B0167 .041

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

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Acute Tox. 4	Harmful if swallowed.
Skin Corr. 1B	Causes severe skin burns and eye damage.
Eye Dam. 1	Causes serious eye damage.
Skin Sens. 1A	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

H302	Harmful if swallowed.
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.
P501	Dispose of contents/container in accordance with applicable regulations.

Contains

3-aminomethyl-3,5,5-trimethylcyclohexylamine

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine

2-propenenitrile, reaction products with ethylenediamine, hydrogenated, reaction products with benzaldehyde, diethylenetriamine and triethylenetetramine, hydrogenated

1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether

3-aminopropyldiethylamine

benzyl alcohol

Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine

Reaction product of fatty acids, C18 alkyl with amines, polyethylenepoly-tetraethylenepentamine fraction

2,2'-iminodiethylamine; diethylenetriamine

Amines, polyethylenepoly-, tetraethylenepentamine fraction

Polyethylene polyamine, pentaethylenehexamine fraction

Amines, polyethylenepoly-, triethylenetetramine fraction

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: FUGALITE INVISIBILE parte B

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

Qty	Name	Ident. Numb.	Classification	Registration Number
≥20-<50 %	3-aminomethyl-3,5,5-trimethylcyclohexylamine	CAS:2855-13-2 EC:220-666-8 Index:612-067-00-9	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Specific Concentration Limits: C ≥ 0.001%: Skin Sens. 1A H317 Acute Toxicity Estimate: ATE - Oral: 1030mg/kg bw	01-2119514687-32

≥20-<50 %	2-propenenitrile, reaction products with ethylenediamine, hydrogenated, reaction products with benzaldehyde, diethylenetriamine and triethylenetetramine, hydrogenated	CAS:1173092-74-4 EC:630-554-4	Skin Corr. 1, H314; Skin Sens. 1, H317	
≥10-<20 %	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
≥3-<5 %	2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	CAS:25513-64-8 EC:247-063-2	Acute Tox. 4, H302; Skin Corr. 1A, H314; Eye Dam. 1, H318; Skin Sens. 1A, H317	01-2119560598-25
≥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 %	3-aminopropyldiethylamine	CAS:104-78-9 EC:203-236-4 Index:612-062-00-1	Flam. Liq. 3, H226; Acute Tox. 4, H302; Acute Tox. 3, H311; Skin Corr. 1B, H314; Eye Dam. 1, H318; Skin Sens. 1, H317; Repr. 2, H361; STOT SE 3, H335	
≥1-<3 %	benzyl alcohol	CAS:100-51-6 EC:202-859-9 Index:603-057-00-5	Acute Tox. 4, H302 Skin Sens. 1B, H317 Eye Irrit. 2, H319 Acute Toxicity Estimate: ATE - Oral: 1200mg/kg bw	01-2119492630-38
≥1-<3 %	Reaction product of fatty acids, C18 alkyl with amines, polyethylenepoly-tetraethylenepentamine fraction	EC:701-046-0	Skin Irrit. 2, H315; Eye Dam. 1, H318; Skin Sens. 1A, H317; Aquatic Chronic 2, H411, M-Chronic:1	01-2119972321-42
≥1-<3 %	Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	CAS:68082-29-1 EC:500-191-5	Skin Irrit. 2, H315; Eye Dam. 1, H318; Aquatic Chronic 2, H411; Skin Sens. 1A, H317, M-Chronic:1	01-2119972320-44
≥0.5-<1 %	2,2'-iminodiethylamine; diethylenetriamine	CAS:111-40-0 EC:203-865-4 Index:612-058-00-X	Skin Corr. 1B, H314; Skin Sens. 1, H317; Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 2, H330; STOT SE 3, H335	01-2119473793-27
≥0.3-<0.5 %	Amines, polyethylenepoly-, tetraethylenepentamine fraction	CAS:90640-66-7 EC:292-587-7	Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Corr. 1B, H314; Skin Sens. 1,1A,1B, H317; Eye Dam. 1, H318; Aquatic Chronic 2, H411	01-2119487290-37
≥0.3-<0.5 %	Polyethylene polyamine, pentaethylenehexamine fraction	EC:701-266-7	Skin Corr. 1B, H314; Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317; Eye Dam. 1, H318; Aquatic Acute 1, H400; Aquatic Chronic 1, H410, EUH071	01-2119485826-22
≥0.1-<0.3 %	Amines, polyethylenepoly-, triethylenetetramine fraction	CAS:90640-67-8 EC:292-588-2 Index:612-059-00-5	Acute Tox. 4, H312; Acute Tox. 4, H302; Skin Corr. 1B, H314; Skin Sens. 1, H317; Aquatic Chronic 3, H412; Eye Dam. 1, H318	01-2119487919-13

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 immediatley and dispose off safely.

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

In case of eyes contact:

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

Protect uninjured eye.

In case of Ingestion:

Give nothing to eat or drink.

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 (CO_2).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

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

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non emergency personnel:

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

For emergency responders:

Wear personal protection equipment.

6.2. Environmental precautions

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

Retain contaminated washing water and dispose it.

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

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

6.3. Methods and material for containment and cleaning up

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

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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

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

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

Contamined clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

7.2. Conditions for safe storage, including any incompatibilities

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

	OEL Type	Country	Occupational Exposure Limit
benzyl alcohol CAS: 100-51-6	NATIONAL	BULGARIA	Long Term: 5 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 40 mg/m3; Short Term: Ceiling - 80 mg/m3 Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	FINLAND	Long Term: 45 mg/m3 - 10 ppm Source: HTP-ARVOT 2020
	NATIONAL	LATVIA	Long Term: 5 mg/m3 Source: KN325P1
	NATIONAL	LITHUANIA	Long Term: 5 mg/m3 O Ū Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	POLAND	Long Term: 240 mg/m3 Source: Dz.U. 2018 poz. 1286
	SUVA	SWITZERLAND	Long Term: 22 mg/m3 - 5 ppm R/H, SSC, VR / AW, NIOSH, La substance peut être présente sous forme de vapeur et d'aérosol en même temps / Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen Source: suva.ch/valeurs-limites
	NATIONAL	GERMANY	Long Term: 22 mg/m3 DFG, H, Y, 11, 2 (I) Source: TRGS 900
	NATIONAL	SLOVENIA	Long Term: 22 mg/m3 - 5 ppm; Short Term: 44 mg/m3 - 10 ppm K, Y Source: UL št. 72, 11. 5. 2021
2,2',2''-nitrilotriethanol CAS: 102-71-6	ACGIH		Long Term: 5 mg/m3 (8h) Eye and skin irr
	NATIONAL	BELGIUM	Long Term: 5 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	GERMANY	Long Term: 1 mg/m3 DFG, Y, E, 1 (I) Source: TRGS 900
	NATIONAL	IRELAND	Long Term: 5 mg/m3 Source: 2021 Code of Practice
	NATIONAL	SPAIN	Long Term: 5 mg/m3 Source: LEP 2022
	NATIONAL	AUSTRIA	Long Term: 5 mg/m3 - 0.8 ppm; Short Term: 10 mg/m3 - 1.6 ppm 15(Miw), 4x, MAK, S, E Source: BGBl. II Nr. 156/2021
	NATIONAL	CZECHIA	Long Term: 5 mg/m3; Short Term: Ceiling - 10 mg/m3 D, I Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Long Term: 3.1 mg/m3 - 0.5 ppm Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 5 mg/m3; Short Term: 10 mg/m3 S Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Long Term: 5 mg/m3 Source: HTP-ARVOT 2020

	NATIONAL	LITHUANIA	Long Term: 5 mg/m3; Short Term: 10 mg/m3 J 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	SWEDEN	Long Term: 5 mg/m3 - 0.8 ppm; Short Term: 10 mg/m3 - 1.6 ppm H, V Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 5 mg/m3; Short Term: 5 mg/m3 TWA mg/m3: (i), SSC, VRS Peau Yeux / OAW Haut Auge, NIOSH 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	AUSTRALIA	Long Term: 4.2 mg/m3 - 1 ppm (8h)
	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/m3 - 1 ppm; Short Term: 10 mg/m3 - 2 ppm J O Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	NORWAY	Long Term: 4 mg/m3 - 1 ppm H A Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 4 mg/m3; Short Term: 12 mg/m3 skóra Source: Dz.U. 2018 poz. 1286
	NATIONAL	SWEDEN	Long Term: 4.5 mg/m3 - 1 ppm; Short Term: 10 mg/m3 - 2 ppm H, S, V Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 4 mg/m3 - 1 ppm R/H, VRS Yeux / OAW Auge, NIOSH Source: suva.ch/valeurs-limites
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN	Long Term: 4.3 mg/m3 - 1 ppm Sk Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)

		IRELAND	
	NATIONAL	BELGIUM	Long Term: 4.3 mg/m3 - 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/m3 - 1 ppm alergen koža Source: NN 1/2021
	NATIONAL	IRELAND	Long Term: 4 mg/m3 - 1 ppm Sk Source: 2021 Code of Practice
	NATIONAL	ROMANIA	Long Term: 2 mg/m3 - 0.5 ppm; Short Term: 4 mg/m3 - 1 ppm P Source: Republicarea 1 - nr. 743 din 29 iulie 2021
	NATIONAL	SPAIN	Long Term: 4.3 mg/m3 - 1 ppm vía dérmica, Sen Source: LEP 2022
2,2'-iminodiethanol; diethanolamine CAS: 111-42-2	NATIONAL	AUSTRALIA	Long Term: 13 mg/m3 - 3 ppm (8h)
	ACGIH		Long Term: 1 mg/m3 (8h) IFV, Skin, A3 - Liver and kidney dam
	NATIONAL	AUSTRIA	Long Term: 2 mg/m3 - 0.46 ppm; Short Term: 4 mg/m3 - 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/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 5 mg/m3; Short Term: Ceiling - 10 mg/m3 I Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Long Term: 2 mg/m3 - 0.46 ppm H Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 5 mg/m3 - 3 ppm; Short Term: 30 mg/m3 - 6 ppm A Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Long Term: 2 mg/m3 - 0.46 ppm iho Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Long Term: 15 mg/m3 - 3 ppm Source: INRS outil65
	NATIONAL	GREECE	Long Term: 15 mg/m3 - 3 ppm Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	LITHUANIA	Long Term: 15 mg/m3 - 3 ppm; Short Term: 30 mg/m3 - 6 ppm O Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	NORWAY	Long Term: 15 mg/m3 - 3 ppm Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 9 mg/m3 skóra Source: Dz.U. 2018 poz. 1286
	NATIONAL	SWEDEN	Long Term: 15 mg/m3 - 3 ppm; Short Term: 30 mg/m3 - 6 ppm H, V Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 1 mg/m3; Short Term: 1 mg/m3 TWA mg/m3: (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/m3 - 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/m3 - 3 ppm koža Source: NN 1/2021
NATIONAL	GERMANY	Long Term: 0.5 mg/m3 - 0.11 ppm AGS, H, Sh, Y, 11, 6, 1 (I) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 1 mg/m3 - 0.2 ppm OEL (8-hour reference period) mg/m3 : IFV Source: 2021 Code of Practice
NATIONAL	SLOVENIA	Long Term: 0.5 mg/m3 - 0.11 ppm; Short Term: 0.5 mg/m3 - 0.11 ppm K, Y Source: UL št. 72, 11. 5. 2021
NATIONAL	SPAIN	Long Term: 1 mg/m3 - 0.2 ppm vía dérmica, f, FIV Source: LEP 2022

Predicted No Effect Concentration (PNEC) values

3-aminomethyl-3,5,5-trimethylcyclohexylamine CAS: 2855-13-2	Exposure Route: Fresh Water; PNEC Limit: 60 µg/l
	Exposure Route: Marine water; PNEC Limit: 6 µg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 5.784 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 578 µg/kg
	Exposure Route: Soil (agricultural); PNEC Limit: 1.121 mg/kg
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0.23 mg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 3.18 mg/l
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
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine CAS: 25513-64-8	Exposure Route: Fresh Water; PNEC Limit: 102 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 315 µg/l
	Exposure Route: Marine water; PNEC Limit: 10.2 µg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 72 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 622 µg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 62 µg/kg
	Exposure Route: Soil; PNEC Limit: 10 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
3-aminopropyldiethylamine CAS: 104-78-9	Exposure Route: Fresh Water; PNEC Limit: 30 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 300 µg/l
	Exposure Route: Marine water; PNEC Limit: 3 µg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 10 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 418.2 µg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 41.8 µg/kg
	Exposure Route: Soil; PNEC Limit: 66 µg/kg
benzyl alcohol CAS: 100-51-6	Exposure Route: Fresh Water; PNEC Limit: 1 mg/l
	Exposure Route: Marine water; PNEC Limit: 0.1 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 5.27 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 0.527 mg/kg
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 2.3 mg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 39 mg/l
	Exposure Route: Soil; PNEC Limit: 0.456 mg/kg
Reaction product of fatty acids, C18 alkyl with amines, polyethylenepoly-tetraethylenepentamine fraction	Exposure Route: Fresh Water; PNEC Limit: 2.63 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 26.3 µg/l
	Exposure Route: Marine water; PNEC Limit: 263 ng/L
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 7.21 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 263.01 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 26.301 mg/kg
	Exposure Route: Soil; PNEC Limit: 58.58 mg/kg
Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine CAS: 68082-29-1	Exposure Route: Fresh Water; PNEC Limit: 4.34 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 43.4 µg/l
	Exposure Route: Marine water; PNEC Limit: 434 ng/L
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 3.84 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 434.02 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 43.4 mg/kg
	Exposure Route: Soil; PNEC Limit: 86.78 mg/kg
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
Amines, polyethylenepoly-, tetraethylenepentamine fraction CAS: 90640-66-7	Exposure Route: Fresh Water; PNEC Limit: 6.8 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 68 µg/l
	Exposure Route: Marine water; PNEC Limit: 680 ng/L
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 4.6 mg/l

	Exposure Route: Freshwater sediments; PNEC Limit: 341 µg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 764 µg/kg
	Exposure Route: Soil; PNEC Limit: 274 µg/kg
	Exposure Route: Secondary poisoning; PNEC Limit: 230 µg/kg
Amines, polyethylenepoly-, triethylenetetramine fraction CAS: 90640-67-8	Exposure Route: Fresh Water; PNEC Limit: 26.8 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 200 µg/l
	Exposure Route: Marine water; PNEC Limit: 2.68 µg/l
	Exposure Route: Intermittent releases (marine water); PNEC Limit: 20 µg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 130 µg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 8.572 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 857.2 µg/kg
	Exposure Route: Soil; PNEC Limit: 1.25 mg/kg

Derived No Effect Level (DNEL) values

3-aminomethyl-3,5,5-trimethylcyclohexylamine CAS: 2855-13-2	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Worker Professional: 20.1 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Worker Professional: 20.1 mg/m³
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 526 µg/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
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine CAS: 25513-64-8	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 50 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
3-aminopropyldiethylamine CAS: 104-78-9	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 24.7 mg/m³; Consumer: 1.8 mg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 3.5 mg/kg
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 500 µg/l
benzyl alcohol CAS: 100-51-6	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 22 mg/m³; Consumer: 8.1 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Worker Professional: 450 mg/m³; Consumer: 40.5 mg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 9.5 mg/kg; Consumer: 5.7 mg/kg
	Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects Worker Professional: 47 mg/kg; Consumer: 28.5 mg/kg
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 5 mg/kg
	Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects

	Consumer: 25 mg/kg
Reaction product of fatty acids, C18 alkyl with amines, polyethylenepoly-tetraethylenepentamine fraction	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 3.9 mg/m³; Consumer: 970 µg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 1.1 mg/kg; Consumer: 560 µg/kg
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 560 µg/kg
Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine CAS: 68082-29-1	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 3.9 mg/m³; Consumer: 970 µg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 1.1 mg/kg; Consumer: 560 µg/kg
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 560 µg/kg
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
Amines, polyethylenepoly-, tetraethylenepentamine fraction CAS: 90640-66-7	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 1.29 mg/m³; Consumer: 380 µg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Worker Professional: 6940 mg/m³; Consumer: 2071 mg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 740 µg/kg; Consumer: 320 µg/kg
	Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects Consumer: 10 mg/kg
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, local effects Worker Professional: 0.036 mg/cm²; Consumer: 0.56 mg/cm²
	Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects Consumer: 1.29 mg/cm²
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 530 µg/kg
	Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects Consumer: 26 mg/kg
Amines, polyethylenepoly-, triethylenetetramine fraction CAS: 90640-67-8	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 540 µg/m³; Consumer: 96 µg/m³
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects

Consumer: 140 µg/kg

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.

Protection for skin:

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

Protection for hands:

Protection for hands:

Suitable materials for safety gloves; EN 374:

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

Respiratory protection:

Use adequate protective respiratory equipment.

Thermal Hazards:

N.A.

Environmental exposure controls:

N.A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Colour: Amber

Odour: Like: Ammonia

Odour threshold: N.A.

pH: N.A.

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: 1.02 g/cm3

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 = 2.09 % ; 21.23 g/l

Particle characteristics:

Particle size: N.A.

9.2. Other information

No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Data not available.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

None in particular.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

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

Toxicological Information of the Preparation

a) acute toxicity	The product is classified: Acute Tox. 4(H302)
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. 1A(H317)
e) germ cell mutagenicity	Not classified
	Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified
	Based on available data, the classification criteria are not met
g) reproductive toxicity	Not classified
	Based on available data, the classification criteria are not met
h) STOT-single exposure	Not classified
	Based on available data, the classification criteria are not met
i) STOT-repeated exposure	Not classified
	Based on available data, the classification criteria are not met
j) aspiration hazard	Not classified
	Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

3-aminomethyl-3,5,5-trimethylcyclohexylamine	a) acute toxicity	ATE - Oral : 1030 mg/kg bw	
		LD50 Oral Rat = 1030 mg/kg	
		LC50 Inhalation of aerosol Rat > 5.01 mg/l 4h	
		LD50 Skin Rat > 2000 mg/kg	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Positive	
	f) carcinogenicity	Genotoxicity Negative	Mouse, oral route
		Carcinogenicity Negative	
1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether	a) acute toxicity	LD50 Oral Rat < 301 mg/kg	
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	a) acute toxicity	LD50 Oral Rat = 910 mg/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 Guineapig Positive	
	f) carcinogenicity	Genotoxicity Negative	Mouse ora route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 10 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	
3-aminopropyldiethylamine	a) acute toxicity	LD50 Oral Rat = 830 mg/kg	
		LC50 Inhalation Vapour Rat Negative 4h	No mortality
		LD50 Skin Rabbit = 524 mg/kg 24h	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
benzyl alcohol	a) acute toxicity	ATE - Oral : 1200 mg/kg bw	
		LD50 Oral Rat = 1620 mg/kg	
		LC50 Inhalation of aerosol Rat > 4178 mg/m3 4h	
		LD50 Skin Rabbit > 2000 mg/kg 24h	
		LC50 Inhalation Mist Rat = 4.18 mg/l 4h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes 24h	
	d) respiratory or skin sensitisation	Skin Sensitization Negative	Mouse
	f) carcinogenicity	Genotoxicity Negative	Mouse
		Carcinogenicity Oral Rat Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Oral = 200 mg/kg	Mouse
Reaction product of fatty acids, C18 alkyl with amines, polyethylenepoly-tetraethylenepentamine fraction	a) acute toxicity	LD50 Oral Rat > 2000 mg/kg	
		LD50 Skin Rat > 2000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Negative	
	c) serious eye damage/irritation	Eye Corrosive Positive	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 1000 mg/kg	
Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	a) acute toxicity	LD50 Oral Rat > 2000 mg/kg	
		LD50 Skin Rat > 2000 mg/kg 24h	
	c) serious eye damage/irritation	Eye Irritant Yes 1h	
		Eye Corrosive Rabbit Positive	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 1000 mg/kg	
2,2'-iminodiethylamine; diethylenetriamine	a) acute toxicity	LD50 Oral Rat = 1.62 ml/Kg	
		LC50 Inhalation Rat Negative 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	
Amines, polyethylenepoly-, tetraethylenepentamine fraction	a) acute toxicity	LD50 Oral Rat = 1861.9 mg/kg	
		LD50 Skin Rabbit = 1465.4 mg/kg 24h	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Positive	
	f) carcinogenicity	Genotoxicity Negative	Mouse intraperitoneal rout
	g) reproductive toxicity	Reproductive Toxicity Oral Rat Negative	
Amines, polyethylenepoly-, triethylenetetramine fraction	a) acute toxicity	LD50 Oral Rat = 1716.2 mg/kg	
		LD50 Skin Rabbit = 1465.4 mg/kg 24h	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Positive	
	f) carcinogenicity	Genotoxicity Negative	Mouse intraperitoneal rout
		Carcinogenicity Skin = 50 mg/kg	Mouse NOAEL

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:

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-aminomethyl-3,5,5-trimethylcyclohexylamine	CAS: 2855-13-2 - EINECS: 220-666-8 - INDEX: 612-067-00-9	a) Aquatic acute toxicity : LC50 Fish Leuciscus idus = 110 mg/L 96h ,,according to 84/449/EEC, C.1, 1984
		a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 23 mg/L 48h

		OECD 202
		a) Aquatic acute toxicity : EC50 Algae Scenedesmus subspicatus > 50 mg/L 72h
		b) Aquatic chronic toxicity : NOEC Daphnia = 3 mg/L 504h
		c) Bacteria toxicity : EC10 Pseudomonas putida = 1120 mg/L 18h
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 Daphnia = 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
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	CAS: 25513-64-8 - EINECS: 247-063-2	a) Aquatic acute toxicity : LC50 Fish Leuciscus idus melanotus = 174 mg/L 48h ,,DIN 38412, part 15
		b) Aquatic chronic toxicity : NOEC Fish Danio rerio = 10 mg/L OECD 210
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 31.5 mg/L ,,DIN 38412, part II
		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 1.02 mg/L OECD 211 - 21days
		a) Aquatic acute toxicity : EC50 Algae Scendesmus subspicatus = 43.5 mg/L 72h UBA 1984
		c) Bacteria toxicity : EC50 Pseudomonas putida 89 mg/L ,,DIN 38412, part 8 - 16 hours
		d) Terrestrial toxicity : NOEC Worm Eisenia fetida = 1000 mg/kg OECD Guideline 222
		d) Terrestrial toxicity : NOEC soil microorganisms = 1000 mg/kg OECD Guideline 216 (2000)
Polyoxpropylenediamine	CAS: 9046-10-0 - EINECS: 618-561-0	a) Aquatic acute toxicity : LC50 Fish Oncorhyncus mykiss > 15 mg/L 96h OECD Guideline 203
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 80 mg/L 48h OECD Guideline 202
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 15 mg/L 72h OECD Guideline 201
		a) Aquatic acute toxicity : NOEC Algae Pseudokirchneriella subcapitata = 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
3-aminopropyldiethylamine	CAS: 104-78-9 - EINECS: 203-236-4 - INDEX: 612-062-00-1	a) Aquatic acute toxicity : LC50 Fish Leuscisus idus = 146.6 mg/L 96h DIN 38412 part 15
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 30.16 mg/L 48h ,,EU Directive 79/831/EEC, Annex V, part C
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 34 mg/L 72h
		c) Bacteria toxicity : EC50 Pseudomonas putida = 100.5 mg/L ,,DIN 38412, part 8
benzyl alcohol	CAS: 100-51-6 - EINECS: 202-859-9 - INDEX: 603-057-00-5	a) Aquatic acute toxicity : LC50 Fish Oryzias latipes = 460 mg/L 96h OECD SIDS (2001)
		b) Aquatic chronic toxicity : NOEC Fish = 48.897 mg/L ECOSAR QSAR
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 230 mg/L 48h

		OECD SIDS (2001) b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 51 mg/L OECD Guideline 211 a) Aquatic acute toxicity : EC50 Algae Pseudokirchnerella subcapitata = 770 mg/L 72h OECD SIDS on Benzoates (2001) c) Bacteria toxicity : EC50 Nitrosomonas = 390 mg/L
Reaction product of fatty acids, C18 alkyl with amines, polyethylenepoly-tetraethylenepentamine fraction	EINECS: 701-046-0	a) Aquatic acute toxicity : LC50 Fish Zebrafish = 7.07 mg/L 96h OECD 203 a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 5.18 mg/L 48h OECD 202 a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 2.63 mg/L 72h OECD 201 a) Aquatic acute toxicity : EC50 Sludge Activated sludge = 721 mg/L 3h OECD 209 c) Bacteria toxicity : NOEC 1.41 mg/L
Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	CAS: 68082-29-1 - EINECS: 500-191-5	a) Aquatic acute toxicity : LC50 Fish = 10 mg/L 96h a) Aquatic acute toxicity : EC100 Daphnia = 10 mg/L 24h a) Aquatic acute toxicity : EC50 Algae = 4.34 mL/L 72h
2,2'-iminodiethylamine; diethylenetriamine	CAS: 111-40-0 - EINECS: 203-865-4 - INDEX: 612-058-00-X	a) Aquatic acute toxicity : LC50 Fish Poecilia reticulata = 430 mg/L 96h b) Aquatic chronic toxicity : NOEC Fish Gasterosteus aculeatus = 10 mg/L - 28days a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 32 mg/L 48h b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 5.6 mg/L - 21days a) Aquatic acute toxicity : EC50 Algae Pseudokirchnerella subcapitata = 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
Amines, polyethylenepoly-, tetraethylenepentamine fraction	CAS: 90640-66-7 - EINECS: 292-587-7	a) Aquatic acute toxicity : LC50 Fish freshwater fish = 420 mg/L a) Aquatic acute toxicity : LC50 freshwater invertebrates = 24.1 mg/L a) Aquatic acute toxicity : EC50 Algae freshwater algae = 6.8 mg/L a) Aquatic acute toxicity : EC50 microorganisms = 97.3 mg/L a) Aquatic acute toxicity : NOEC Algae = 0.5 mg/L
Amines, polyethylenepoly-, triethylenetetramine fraction	CAS: 90640-67-8 - EINECS: 292-588-2 - INDEX: 612-059-00-5	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 330 mg/L 96h ,,U.S EPA- TSCA, 40 CFR Part 797 1400 a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 31.1 mg/L 48h EU Method C.2 (Acute Toxicity for Daphnia) a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 20 mg/L 72h OECD 201 d) Terrestrial toxicity : NOEC Worm Eisenia fetida = 62.5 mg/kg OECD Guideline 222 (Earthworm Reproduction Test (Eisenia fetida/Eisenia andrei)) - 56days a) Aquatic acute toxicity : NOEC Algae soil microorganisms = 72 mg/L

12.2. Persistence and degradability

Component	Persitence/Degradability:	Test	Value	Notes:
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Non-readily biodegradable	Dissolved organic carbon	8.000	%; EU-method C.4-A
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	Non-readily biodegradable	Dissolved organic carbon	7.000	%; EU-Method C.4 -A
Polyoxpropylenediamine	Non-readily biodegradable	CO2 production	9.800	%; OECD Guideline 301B
3-aminopropyldiethylamine	Readily biodegradable			OECD Guideline 301A
benzyl alcohol	Readily biodegradable	Dissolved organic carbon	96.000	%; OECD Guideline 301A
Reaction product of fatty acids, C18 alkyl with amines, polyethylenepoly-tetraethylenepentamine fraction	Non-readily biodegradable			
Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Non-readily biodegradable			OECD 301 D
2,2'-iminodiethylamine; diethylenetriamine	Readily biodegradable		87.000	21days
Amines, polyethylenepoly-, tetraethylenepentamine fraction	Non-readily biodegradable			
Amines, polyethylenepoly-, triethylenetetramine fraction	Non-readily biodegradable			OECD 301D

12.3. Bioaccumulative potential

Component	Bioaccumulation	Test	Value	Notes:
benzyl alcohol	Bioaccumulative	BCF - Bioconcentrantion factor	1.000	L/kg ww
Reaction product of fatty acids, C18 alkyl with amines, polyethylenepoly-tetraethylenepentamine fraction	Bioaccumulative	BCF - Bioconcentrantion factor	138.000	L/kg ww
Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Bioaccumulative	BCF - Bioconcentrantion factor	77.400	L/kg ww; QSAR
2,2'-iminodiethylamine; diethylenetriamine	Bioaccumulative	BCF - Bioconcentrantion factor	6.300	

12.4. Mobility in soil

Component	Mobility in soil
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Not mobile

12.5. Results of PBT and vPvB assessment

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

12.6. Endocrine disrupting properties

No endocrine disruptor substances present in concentration >= 0.1%

12.7. Other adverse effects

N.A.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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

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

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

SECTION 14: Transport information

14.1. UN number or ID number

2735

14.2. UN proper shipping name

ADR-Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine - 2-propenenitrile, reaction products with ethylenediamine, hydrogenated, reaction products with benzaldehyde, diethylenetriamine and triethylenetetramine, hydrogenated)

IATA-Technical name: AMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine - 2-propenenitrile, reaction products with ethylenediamine, hydrogenated, reaction products with benzaldehyde, diethylenetriamine and triethylenetetramine, hydrogenated)

IMDG-Technical name: AMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine - 2-propenenitrile, reaction products with ethylenediamine, hydrogenated, reaction products with benzaldehyde, diethylenetriamine and triethylenetetramine, hydrogenated)

14.3. Transport hazard class(es)

ADR-Class: 8

IATA-Class: 8

IMDG-Class: 8

14.4. Packing group

ADR-Packing Group: III

IATA-Packing group: III

IMDG-Packing group: III

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): 3 (E)

ADR Limited Quantities: 5 L

ADR Excepted Quantities: E1

Air (IATA):

IATA-Passenger Aircraft: 852

IATA-Cargo Aircraft: 856

IATA-Label: 8

IATA-Subsidiary hazards: -

IATA-Erg: 8L

IATA-Special Provisions: A3 A803

Sea (IMDG):

IMDG-Stowage Code: Category A

IMDG-Stowage Note: SG35 SGG18

IMDG-Subsidiary hazards: -

IMDG-Special Provisions: 223 274

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. 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, 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 >= 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:

3-aminomethyl-3,5,5-trimethylcyclohexylamine

Polyoxpropylenediamine

benzyl alcohol

SECTION 16: Other information

Code	Description
EUH071	Corrosive to the respiratory tract.
H226	Flammable liquid and vapour.
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.
H361	Suspected of damaging fertility or the unborn child.
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
2.6/3	Flam. Liq. 3	Flammable liquid, Category 3
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
3.2/1	Skin Corr. 1	Skin corrosion, Category 1
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
3.4.2/1-1A-1B	Skin Sens. 1,1A,1B	Skin Sensitisation, Category 1,1A,1B
3.4.2/1A	Skin Sens. 1A	Skin Sensitisation, Category 1A
3.4.2/1B	Skin Sens. 1B	Skin Sensitisation, Category 1B
3.7/2	Repr. 2	Reproductive toxicity, Category 2
3.8/3	STOT SE 3	Specific target organ toxicity — single exposure, Category 3
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
Acute Tox. 4, H302	Calculation method
Skin Corr. 1B, H314	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1A, H317	Calculation method
Aquatic Chronic 2, H411	Calculation method

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

Main bibliographic sources:

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

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

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

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

This MSDS cancels and replaces any preceding release.

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

ACGIH: American Conference of Governmental Industrial Hygienists

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

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

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

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

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging.

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

Paragraphs modified from the previous revision:

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

Exposure Scenario
Benzyl alcohol

Exposure Scenario, 30/06/2021

Substance identity	
	Benzyl alcohol
CAS No.	100-51-6
INDEX No.	603-057-00-5
EINECS No.	202-859-9
Registration number	01-2119492630-38

Table of contents

1. ES 1 Widespread use by professional workers; Various products (PC9b, PC9a, PC1, PC15); Building and construction work (SU19)

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks - Use in rigid foams, coatings, adhesives and sealants
Date - Version	30/06/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22) - Building and construction work (SU19)
Product Categories	Fillers, putties, plasters, modelling clay (PC9b) - Coatings and paints, thinners, paint removers (PC9a) - Adhesives, sealants (PC1) - Non-metal surface treatment products (PC15)

Environment Contributing Scenario

CS1	ERC8a - ERC8d

Worker Contributing Scenario

CS2	PROC8a - PROC10

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8a, ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)

Product (article) characteristics

Physical form of product:
Liquid, vapour pressure < 10 Pa (Standard Temperature and Pressure)

Vapour pressure:
= 7 Pa

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

Amounts used:
Annual site tonnage = 1000 t(onnes)/year

Release type: Continuous 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: = 87.36 %

STP effluent (m^3/day): 2000

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

Waste treatment
Product residual disposal complies with applicable regulations.

1.2. CS2: Worker Contributing Scenario (PROC8a, PROC10)

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

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:

< 7 Pa

Amount used, frequency and duration of use/exposure

Duration:

Covers use up to = 8 h/day

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

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

Personal protection

Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: = 90 %

Other conditions affecting worker exposure

Covers indoor and outdoor use
Professional use
Temperature: Assumes use at not more than 20 °C above ambient temperature.
Body parts exposed:

Assumes that potential dermal contact is limited to hands.

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario (ERC8a, ERC8d)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	N/A	EUSES v2.1	< 0.01
freshwater sediment	N/A	EUSES v2.1	< 0.01
marine water	N/A	EUSES v2.1	< 0.01
marine sediment	N/A	EUSES v2.1	< 0.01
soil	N/A	EUSES v2.1	= 0.019
Man via environment - Inhalation	N/A	EUSES v2.1	< 0.01
Man via environment - Oral	N/A	EUSES v2.1	< 0.01

1.3. CS2: Worker Contributing Scenario (PROC8a, PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
combined routes, systemic, long-term	N/A	ECETOC TRA worker v3	0.977

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

3-aminomethyl-3,5,5-trimethylcyclohexylamine

Exposure Scenario, 01/06/2022

Substance identity	
	3-aminomethyl-3,5,5-trimethylcyclohexylamine
CAS No.	2855-13-2
INDEX No.	612-067-00-9
EINECS No.	220-666-8
Registration number	01-2119514687-32

Table of contents

1. ES 1 Widespread use by professional workers; Various products (PC9b, PC9a, PC1, PC32)

1.1 TITLE SECTION

Exposure Scenario name	Use in rigid foams, coatings, adhesives and sealants
Date - Version	01/06/2022 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Fillers, putties, plasters, modelling clay (PC9b) - Coatings and paints, thinners, paint removers (PC9a) - Adhesives, sealants (PC1) - Polymer preparations and compounds (PC32)

Environment Contributing Scenario	
CS1	ERC8c
CS2	ERC8f

Worker Contributing Scenario	
CS3 Material transfers	PROC8a
CS4 Rolling, Brushing	PROC10
CS5 Material transfers	PROC8a
CS6 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)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Technical and organisational conditions and measures

Control measures to prevent releases

	Water - minimum efficiency of: 0.015 %

1.2. CS2: Environment Contributing Scenario (ERC8f)

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

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Technical and organisational conditions and measures

Control measures to prevent releases

	Water - minimum efficiency of: 0.015 %

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

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

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers use up to 4 h/day

Frequency:

Covers use up to <= 240 days per year

Technical and organisational conditions and measures

Technical and organisational measures

Local exhaust ventilation	Inhalation - minimum efficiency of: 80 %

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

Personal protection

Wear suitable respiratory protection.	Inhalation - minimum efficiency of: 95 %
Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: 98 %
Wear suitable coveralls to prevent exposure to the skin.	
Use suitable eye protection.	

Other conditions affecting worker exposure

Indoor use

Professional use

Body parts exposed:

Assumes that potential dermal contact is limited to hands.

1.2. CS4: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers use up to 4 h/day

Frequency:

Covers use up to <= 240 days per year

Technical and organisational conditions and measures

Technical and organisational measures

Local exhaust ventilation	Inhalation - minimum efficiency of: 80 %

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

Personal protection

Wear suitable respiratory protection.	Inhalation - minimum efficiency of: 95 %
Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: 98 %
Wear suitable coveralls to prevent exposure to the skin.	
Use suitable eye protection.	

Other conditions affecting worker exposure

Indoor use
Professional use
Body parts exposed:
Assumes that potential dermal contact is limited to hands.

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

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

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:
Covers use up to 1 h
Frequency:
Covers use up to <= 240 days per year

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

Personal protection

Wear suitable respiratory protection.	Inhalation - minimum efficiency of: 98 %
Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: 98 %
Wear suitable coveralls to prevent exposure to the skin.	
Use suitable eye protection.	

Other conditions affecting worker exposure

Outdoor use
Professional use
Body parts exposed:
Assumes that potential dermal contact is limited to hands.

1.2. CS6: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers use up to 1 h

Frequency:

Covers use up to <= 240 days per year

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

Personal protection

Wear suitable respiratory protection.	Inhalation - minimum efficiency of: 98 %
Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: 98 %
Wear suitable coveralls to prevent exposure to the skin.	
Use suitable eye protection.	

Other conditions affecting worker exposure

Outdoor use

Professional use

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)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	0.0004855 mg/L	N/A	< 0.01
freshwater sediment	0.047 mg/kg dry weight	N/A	< 0.01
marine water	4.85E-05 mg/L	N/A	< 0.01
marine sediment	0.005 mg/kg dry weight	N/A	< 0.01
marine water	4.85E-05 mg/L	N/A	< 0.01
Sewage treatment plant	1.48E-05 mg/L	N/A	< 0.01
Agricultural soil	0.017 mg/kg dry weight	N/A	< 0.01
Man via environment - Oral	0.000188 mg/kg bw/day	N/A	< 0.01

1.3. CS2: Environment Contributing Scenario (ERC8f)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	0.000487 mg/L	N/A	< 0.01
freshwater sediment	0.047 mg/kg dry weight	N/A	< 0.01
marine water	4.815E-05 mg/L	N/A	< 0.01
marine sediment	0.005 mg/kg dry weight	N/A	< 0.01
Sewage treatment plant	2.96E-05 mg/L	N/A	< 0.01
Agricultural soil	0.017 mg/kg dry weight	N/A	= 0.015
Man via environment - Oral	0.0001193 mg/kg bw/day	N/A	< 0.01

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal	13.714 mg/kg bw/day	N/A	0.274
inhalative	106.438 mg/m³	N/A	N/A

1.3. CS4: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal	27.429 mg/kg bw/day	N/A	0.549
inhalative	106.438 mg/m³	N/A	N/A

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal	13.714 mg/kg bw/day	N/A	0.274
inhalative	24.835 mg/m³	N/A	0.497

1.3. CS6: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal	27.429 mg/kg bw/day	N/A	0.549
inhalative	24.835 mg/m³	N/A	0.497

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

Reaction product of fatty acids, C18 alkyl with amines, polyethylenepoly-tetraethylenepentamine fraction

Exposure Scenario, 08/11/2024

Substance identity	
	Reaction product of fatty acids, C18 alkyl with amines, polyethylenepoly-tetraethylenepentamine fraction
EINECS No.	701-046-0
Registration number	01-2119972321-42

Table of contents

1. ES 1 Widespread use by professional workers; Adhesives, sealants (PC1)

1.1 TITLE SECTION

Exposure Scenario name	Use in rigid foams, coatings, adhesives and sealants
Date - Version	08/11/2024 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Adhesives, sealants (PC1)

Environment Contributing Scenario	
CS1	ERC8c
CS2	ERC8f

Worker Contributing Scenario	
CS3 Material transfers	PROC8a
CS4 Roller, spreader, flow application	PROC10
CS5 Roller, spreader, flow application	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)

Product (article) characteristics

Physical form of product:
Liquid

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

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

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

Amounts used:
Daily amount per site <= 5.494E-05 tonnes/day

Conditions and measures related to sewage treatment plant

STP type:
Municipal Sewage Treatment Plant
Water - minimum efficiency of: = 91.34 %

STP effluent (m^3/day): 0.002

Other conditions affecting environmental exposure

Receiving surface water flow: 0.00018 m^3/day

1.2. CS2: Environment Contributing Scenario (ERC8f)

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

Product (article) characteristics

Physical form of product:
Liquid

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

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

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

Amounts used:
Daily amount per site <= 5.494E-05 tonnes/day

Conditions and measures related to sewage treatment plant

STP type:
Municipal Sewage Treatment Plant
Water - minimum efficiency of: = 91.34 %
STP effluent (m^3/day): 0.002

Other conditions affecting environmental exposure

Receiving surface water flow: 0.00018 m^3/day

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

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

Product (article) characteristics

Physical form of product:
Liquid

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

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration < 4 h

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).

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

Personal protection

Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: = 95 %

Other conditions affecting worker exposure

Covers indoor and outdoor use
Professional use
Temperature: Assumes process temperature up to .... 40°C
Body parts exposed:
Palm of one hand

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

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:

Exposure duration < 480 min

Technical and organisational conditions and measures

Technical and organisational measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Ensure regular inspection, cleaning and maintenance of equipment and machines.

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

Personal protection

Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: = 95 %

Other conditions affecting worker exposure

Indoor use
Professional use
Room size: Covers use in room size of = 300 m^3
Temperature: Covers use at ambient temperatures.
Body parts exposed:

Palm of one hand

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

Additional Good Practice Advice:

Ensure regular inspection, cleaning and maintenance of equipment and machines.

1.2. CS5: Worker Contributing Scenario: Roller, spreader, flow application (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

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:

Exposure duration < 480 min

Technical and organisational conditions and measures

Technical and organisational measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Ensure regular inspection, cleaning and maintenance of equipment and machines.

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

Personal protection

Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: = 95 %

Other conditions affecting worker exposure

Outdoor use
Professional use
Temperature: Assumes process temperature up to .... 25°C

Body parts exposed:

Palm of one hand

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

Additional Good Practice Advice:

Ensure regular inspection, cleaning and maintenance of equipment and machines.

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario (ERC8c)

Release route	Release rate	Release estimation method
Water	0.008 kg/day	FEICA SPERC 8c.1a.v1
Air	0	FEICA SPERC 8c.1a.v1
soil	0	FEICA SPERC 8c.1a.v1

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	= 8.15E-05 mg/L	NGOA	= 0.031
freshwater sediment	= 8.15 mg/kg dry weight	NGOA	= 0.031
marine water	= 1.242E-05 mg/L	NGOA	= 0.047
marine sediment	= 1.242 mg/kg dry weight	NGOA	= 0.047
Agricultural soil	= 7.229 mg/kg dry weight	NGOA	= 0.138
Sewage treatment plant	= 0.000357 mg/L	NGOA	< 0.01
Man via environment - Inhalation	= 8.41E-07 mg/m³	NGOA	< 0.01

1.3. CS2: Environment Contributing Scenario (ERC8f)

Release route	Release rate	Release estimation method
Water	0.008 kg/day	FEICA SPERC 8f.1.v1
Air	0	FEICA SPERC 8f.1.v1
soil	0	FEICA SPERC 8f.1.v1

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	= 8.15E-05 mg/L	NGOA	= 0.031
freshwater sediment	= 8.15 mg/kg dry weight	NGOA	= 0.031
marine water	= 1.242E-05 mg/L	NGOA	= 0.047
marine sediment	= 1.242 mg/kg dry weight	NGOA	= 0.029

Agricultural soil	= 7.229 mg/kg dry weight	NGOA	= 0.138
Sewage treatment plant	= 0.000357 mg/L	NGOA	< 0.01
Man via environment - Inhalation	= 8.41E-07 mg/m³	NGOA	< 0.01

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 0.656 mg/m³	ECETOC TRA worker v3	= 0.168
dermal, systemic, long-term	= 0.171 mg/kg bw/day	ECETOC TRA worker v3	= 0.156
combined routes, systemic, long-term	NGOA	NGOA	= 0.324

1.3. CS4: Worker Contributing Scenario: Roller, spreader, flow application (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 0.063 mg/m³	ART v1.5	= 0.016
dermal, systemic, long-term	= 0.0343 mg/kg bw/day	ECETOC TRA worker v3	= 0.312
combined routes, systemic, long-term	NGOA	NGOA	= 0.328

1.3. CS5: Worker Contributing Scenario: Roller, spreader, flow application (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 0.0093 mg/m³	ART v1.5	= 0.002
dermal, systemic, long-term	= 0.0343 mg/kg bw/day	ECETOC TRA worker v3	= 0.312
combined routes, systemic, long-term	NGOA	NGOA	= 0.314

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)

1.1 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

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)

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)
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

Table of contents

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

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)

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)
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.