Safety Data Sheet
Conforms to Regulation (EC) No. 1907/2006 (REACH), Article 31, Annex II, as amended by Commission Regulation (EU) 2020/878
SUPERFLEX (A)
Date of first edition: 5/4/2021
Safety Data Sheet dated 26/11/2024
version 11

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

1.1. Product identifier

Mixture identification:

Trade name: SUPERFLEX (A)

Trade code: S100B0038 .040

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

Recommended use: Adhesives, sealants; Restricted to professional users

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

1.3. Details of the supplier of the safety data sheet

Company: KERAKOLL S.p.A.
Via dell'Artigianato, 9
41049 Sassuolo (MODENA) - ITALY
Tel.+39 0536 816511 Fax. +39 0536816581
safety@kerakoll.com

1.4. Emergency telephone number

European emergency phone number 112

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

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Skin Irrit. 2	Causes skin irritation.
Eye Irrit. 2	Causes serious eye irritation.
Skin Sens. 1A	May cause an allergic skin reaction.
Aquatic Chronic 3	Harmful to aquatic life with long lasting effects.
Repr. 1B	May damage fertility.
DECL10	This titanium dioxide-containing product is not classified as carcinogen by inhalation because it does not meet the criteria stated in Note 10, Annex VI of Regulation (EC) 1272/2008. Note 10: The classification as a carcinogen by inhalation applies only to mixtures in powder form containing 1 % or more of titanium dioxide which is in the form of or incorporated in particles with aerodynamic diameter ≤ 10 µm.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

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

Hazard pictograms and Signal Word

Danger

Hazard statements

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.

H319	Causes serious eye irritation.
H360F	May damage fertility.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

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

Contains

Cashew, nutshell liq.

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

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

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: SUPERFLEX (A)

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

Qty	Name	Ident. Numb.	Classification	Registration Number
≥5-<10 %	bis-[4-(2,3-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
≥3-<5 %	propylene carbonate	CAS:108-32-7 EC:203-572-1 Index:607-194-00-1	Eye Irrit. 2, H319	01-2119537232-48
≥1-<3 %	oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	CAS:68609-97-2 EC:271-846-8 Index:603-103-00-4	Skin Irrit. 2, H315; Skin Sens. 1B, H317; Repr. 1B, H360F	01-2119485289-22
≥1-<3 %	Titanium dioxide	CAS:13463-67-7 EC:236-675-5 Index:022-006-00-2	Not classified as hazardous	
≥0.5-<1 %	Cashew, nutshell liq.	CAS:8007-24-7 EC:232-355-4	Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Irrit. 2, H315; Eye Dam. 1, H318; Skin Sens. 1A, H317	01-2119502450-57

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

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Remove contaminated clothing immediatley and dispose off safely.

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.

Exercise the greatest care when handling or opening the container.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

7.2. Conditions for safe storage, including any incompatibilities

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

	OEL Type	Country	Occupational Exposure Limit
Calcium carbonate CAS: 471-34-1	NATIONAL	AUSTRALIA	Long Term: 10 mg/m3 This value is for inhalable dust containing no asbestos and <1 % crystalline silica.
	NATIONAL	HUNGARY	Long Term: 10 mg/m3 inhalable aerosol Source: 5/2020. (II. 6.) ITM
	NATIONAL	IRELAND	Long Term: 10 mg/m3 Inhalable fraction Source: 2021 Code of Practice
	NATIONAL	IRELAND	Long Term: 4 mg/m3 Respirable fraction Source: 2021 Code of Practice
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m3 inhalable aerosol Source: EH40/2005 Workplace exposure limits
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 4 mg/m3 respirable aerosol Source: EH40/2005 Workplace exposure limits
	NATIONAL	CROATIA	Long Term: 10 mg/m3 U Source: NN 1/2021
	NATIONAL	CROATIA	Long Term: 4 mg/m3 R Source: NN 1/2021
	NATIONAL	FRANCE	Long Term: 10 mg/m3 Source: INRS outil65
	NATIONAL	LATVIA	Long Term: 6 mg/m3 Source: KN325P1
	NATIONAL	POLAND	Long Term: 10 mg/m3 4) Source: Dz.U. 2018 poz. 1286
	SUVA	SWITZERLAND	Long Term: 3 mg/m3 TWA mg/m3: (a), Formel / Formal, NIOSH Source: suva.ch/valeurs-limites
Limestone CAS: 1317-65-3	NATIONAL	BULGARIA	Long Term: 10 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	ESTONIA	Long Term: 10 mg/m3 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105

	NATIONAL	ESTONIA	Long Term: 5 mg/m3 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	GREECE	Long Term: 10 mg/m3 εισπν Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	GREECE	Long Term: 5 mg/m3 αναπν Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	GREECE	Long Term: 10 mg/m3 εισπν. Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	GREECE	Long Term: 5 mg/m3 αναπν. Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	HUNGARY	Long Term: 10 mg/m3 N Source: 5/2020. (II. 6.) ITM rendelet
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 4 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 4 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 4 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	NATIONAL	BELGIUM	Long Term: 10 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	IRELAND	Long Term: 10 mg/m3 Source: 2021 Code of Practice
	NATIONAL	IRELAND	Long Term: 4 mg/m3 Source: 2021 Code of Practice
propylene carbonate CAS: 108-32-7	NATIONAL	LATVIA	Long Term: 2 mg/m3 Source: KN325P1
	NATIONAL	LITHUANIA	Long Term: 7 mg/m3 Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389

	SUVA	SWITZERLAND	Long Term: 25.5 mg/m3 - 6 ppm; Short Term: 25.5 mg/m3 - 6 ppm SSC, Yeux / Auge Source: suva.ch/valeurs-limites
	NATIONAL	GERMANY	Long Term: 8.5 mg/m3 - 2 ppm DFG, Y, 11, 1 (I) Source: TRGS 900
Titanium dioxide CAS: 13463-67-7	ACGIH		Long Term: 2.5 mg/m3 (8h) Finescale particles; R ; A3 - LRT irr, pneumoconiosis
	NATIONAL	AUSTRALIA	Long Term: 10 mg/m3 (8h)
	NATIONAL	GERMANY	Long Term: 0.3 mg/m3; Short Term: 2.4 mg/m3 DFG; Long term and short term: excluding ultrafine particles; respirable fraction; multiplied by the material density; Source: TRGS900
	NATIONAL	BELGIUM	Long Term: 10 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	CROATIA	Long Term: 10 mg/m3 U Source: NN 1/2021
	NATIONAL	CROATIA	Long Term: 4 mg/m3 R Source: NN 1/2021
	NATIONAL	IRELAND	Long Term: 10 mg/m3 Source: 2021 Code of Practice
	NATIONAL	IRELAND	Long Term: 4 mg/m3 Source: 2021 Code of Practice
	NATIONAL	ROMANIA	Long Term: 10 mg/m3; Short Term: 15 mg/m3 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
	NATIONAL	SPAIN	Long Term: 10 mg/m3 Source: LEP 2022
	NATIONAL	AUSTRIA	Long Term: 5 mg/m3; Short Term: 10 mg/m3 60(Miw), 2x, MAK, A Source: BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 10 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	DENMARK	Long Term: 6 mg/m3 K Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 5 mg/m3 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FRANCE	Long Term: 10 mg/m3 Cancérogène de catégorie 2 Source: INRS outil65
	NATIONAL	GREECE	Long Term: 10 mg/m3 εισπν. Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	GREECE	Long Term: 5 mg/m3 αναπν. Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	LATVIA	Long Term: 10 mg/m3 Source: KN325P1
	NATIONAL	LITHUANIA	Long Term: 5 mg/m3 Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	NORWAY	Long Term: 5 mg/m3 Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 10 mg/m3 4), 7) Source: Dz.U. 2018 poz. 1286
	NATIONAL	SLOVAKIA	Long Term: 5 mg/m3

			Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	NATIONAL	SWEDEN	Long Term: 5 mg/m3 3 Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 3 mg/m3 TWA mg/m3: (a), SSC, Formel / Formal, NIOSH Source: suva.ch/valeurs-limites
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
silicon dioxide, chemically prepared CAS: 7631-86-9	NATIONAL	AUSTRALIA	Long Term: 2 mg/m3 This value is for inhalable dust containing no asbestos and < 1% crystalline silica
	NATIONAL	BELGIUM	Long Term: 10 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	IRELAND	Long Term: 6 mg/m3 Inhalable fraction Source: 2021 Code of Practice
	NATIONAL	IRELAND	Long Term: 2.4 mg/m3 Respirable fraction Source: 2021 Code of Practice
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 6 mg/m3 Inhalable aerosol Source: EH40/2005 Workplace exposure limits
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 2.4 mg/m3 Respirable aerosol Source: EH40/2005 Workplace exposure limits
	NATIONAL	GERMANY	Long Term: 4 mg/m3 DFG, 2, Y, E Source: TRGS 900
	NATIONAL	SLOVENIA	Long Term: 4 mg/m3 Y, (I) Source: UL št. 72, 11. 5. 2021
	NATIONAL	AUSTRIA	MAK Source: BGBl. II Nr. 156/2021
	NATIONAL	ESTONIA	Long Term: 2 mg/m3 1 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	LATVIA	Long Term: 1 mg/m3 Source: KN325P1
	SUVA	SWITZERLAND	SSC, Fibpulm / Lungenfibrose, Des VMEs se trouvent sous les substances associées / MAK-Werte finden sich unter den zugeordneten Stoffen Source: suva.ch/valeurs-limites
	SUVA	SWITZERLAND	Long Term: 4 mg/m3 TWA mg/m3: (i), SSC, Fibpulm / Lungenfibrose Source: suva.ch/valeurs-limites
Aluminium oxide CAS: 1344-28-1	NATIONAL	AUSTRALIA	Long Term: 10 mg/m3 (8h) Inhalable dust containing no asbestos and < 1% crystalline silica
	NATIONAL	BELGIUM	Long Term: 1 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	CROATIA	Long Term: 10 mg/m3 U

		Source: NN 1/2021
NATIONAL	CROATIA	Long Term: 4 mg/m3 R Source: NN 1/2021
NATIONAL	ROMANIA	Long Term: 2 mg/m3; Short Term: 5 mg/m3 (Aerosoli) Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SPAIN	Long Term: 10 mg/m3 véase Capítulo 9 Source: LEP 2022
NATIONAL	AUSTRIA	Long Term: 5 mg/m3; Short Term: 10 mg/m3 60(Miw), 2x, A Source: GKV, BGBl. II Nr. 156/2021
NATIONAL	AUSTRIA	Long Term: 5 mg/m3; Short Term: 10 mg/m3 60(Miw), 2x, MAK, A Source: GKV, BGBl. II Nr. 156/2021
NATIONAL	DENMARK	Long Term: 5 mg/m3 Source: BEK nr 2203 af 29/11/2021
NATIONAL	ESTONIA	Long Term: 4 mg/m3 1 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FRANCE	Long Term: 10 mg/m3 Source: INRS outil65
NATIONAL	GREECE	Long Term: 10 mg/m3 εισπν Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	GREECE	Long Term: 5 mg/m3 αναπν Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	HUNGARY	Long Term: 5 mg/m3 N Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	HUNGARY	Long Term: 2 mg/m3 resp, N Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	LATVIA	Long Term: 6 mg/m3 Source: KN325P1
NATIONAL	LATVIA	Long Term: 4 mg/m3 Source: KN325P1
NATIONAL	NORWAY	Long Term: 10 mg/m3 1 Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 2.5 mg/m3 4) Source: Dz.U. 2018 poz. 1286
NATIONAL	POLAND	Long Term: 1.2 mg/m3 6) Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 4 mg/m3 10) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
SUVA	SWITZERLAND	Long Term: 3 mg/m3 TWA mg/m3: (a), B, Formel / Formal, NIOSH Source: suva.ch/valeurs-limites
SUVA	SWITZERLAND	Long Term: 3 mg/m3; Short Term: 24 mg/m3 TWA mg/m3: (a), Fimétal / Metallrauch, NIOSH Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF	Long Term: 10 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)

		GREAT BRITAIN AND NORTHERN IRELAND	
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 4 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
Kaolin CAS: 1332-58-7	ACGIH		Long Term: 2 mg/m3 (8h) E,R, A4 - Pneumoconiosis
	NATIONAL	AUSTRALIA	Long Term: 10 mg/m3 (8h) This value is for inhalable dust containing no asbestos and < 1% crystalline silica.
	NATIONAL	BELGIUM	Long Term: 2 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	DENMARK	Long Term: 2 mg/m3 Source: BEK nr 2203 af 29/11/2021
	NATIONAL	FINLAND	Long Term: 2 mg/m3 alveolijae Source: HTP-ARVOT 2020
	NATIONAL	IRELAND	Long Term: 2 mg/m3 Source: 2021 Code of Practice
	NATIONAL	POLAND	Long Term: 10 mg/m3 4), 7) Source: Dz.U. 2018 poz. 1286
	SUVA	SWITZERLAND	Long Term: 3 mg/m3 TWA mg/m3: (a), Fibpulm / Lungenfibrose Source: suva.ch/valeurs-limites
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 2 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	NATIONAL	CROATIA	Long Term: 2 mg/m3 R Source: NN 1/2021

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
propylene carbonate CAS: 108-32-7	Exposure Route: Fresh Water; PNEC Limit: 900 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 9 mg/l
	Exposure Route: Marine water; PNEC Limit: 90 µg/l
	Exposure Route: Intermittent releases (marine water); PNEC Limit: 900 µg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 7400 mg/l
	Exposure Route: Soil; PNEC Limit: 810 µg/kg
oxirane, mono[(C12-14-alkyloxy)methyl] derivs. CAS: 68609-97-2	Exposure Route: Fresh Water; PNEC Limit: 0.007 mg/l

	Exposure Route: Marine water; PNEC Limit: 0.072 µg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 10 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 66.77 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 6.677 mg/kg
	Exposure Route: Soil; PNEC Limit: 80.12 mg/kg
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0.072 mg/l
Titanium dioxide CAS: 13463-67-7	Exposure Route: Fresh Water; PNEC Limit: 0.184 mg/l
	Exposure Route: Marine water; PNEC Limit: 0.018 mg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 1 mg/kg
	Exposure Route: Intermittent releases (marine water); PNEC Limit: 100 mg/kg
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 100 mg/kg
Cashew, nutshell liq. CAS: 8007-24-7	Exposure Route: Fresh Water; PNEC Limit: 0.003 mg/l
	Exposure Route: Marine water sediments; PNEC Limit: 0.088 mg/kg
	Exposure Route: Freshwater sediments; PNEC Limit: 0.97 mg/kg
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0.03 mg/l
	Exposure Route: Soil; PNEC Limit: 6.71 mg/kg

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
propylene carbonate CAS: 108-32-7	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 70.53 mg/m³; Consumer: 17.4 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 20 mg/m³; Consumer: 10 mg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, local effects Worker Professional: 20 mg/kg; Consumer: 10 mg/kg
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 10 mg/kg
oxirane, mono[(C12-14-alkyloxy)methyl] derivs. CAS: 68609-97-2	Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects Worker Professional: 17 mg/kg; Consumer: 10 mg/kg
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Worker Professional: 29 mg/m³; Consumer: 7.6 mg/m³
	Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects Consumer: 1219 mg/kg
	Exposure Route: Human Dermal; Exposure Frequency: Short Term, local effects Worker Professional: 68 mg/kg; Consumer: 40 mg/kg
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Worker Professional: 9.8 mg/m³; Consumer: 2.9 mg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 3.9 mg/kg; Consumer: 2.35 mg/kg
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects

	Worker Professional: 13.8 mg/m³; Consumer: 4.1 mg/m³ Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 1 mg/kg Exposure Route: Human Dermal; Exposure Frequency: Long Term, local effects Worker Professional: 1.7 mg/kg; Consumer: 1 mg/kg Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 0.98 mg/kg; Consumer: 1.46 mg/kg
Titanium dioxide CAS: 13463-67-7	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 10 mg/m³
Cashew, nutshell liq. CAS: 8007-24-7	Exposure Route: Human Dermal; Exposure Frequency: Long Term, local effects Worker Professional: 0.5 mg/kg; Consumer: 0.25 mg/kg Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 0.88 mg/m³; Consumer: 0.2 mg/m³ Exposure Route: Human Oral; Exposure Frequency: Long Term, local effects Consumer: 0.25 mg/kg

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.(EN166)

Protection for skin:

Chemical protection clothing. Safety shoes.

Protection for hands:

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

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

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

Respiratory protection:

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

Thermal Hazards:

Not expected if used as intended

Environmental exposure controls:

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Colour: White

Odour: N.A.

Odour threshold: N.A.

pH: Not Relevant

Kinematic viscosity: N.A.

Melting point/freezing point: N.A.

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

Flash point: > 93°C

Lower and upper explosion limit: N.A.

Relative vapour density: N.A.

Vapour pressure: N.A.

Density and/or relative density: 1.46 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 = 4.2 % ; 61.32 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	The product is classified: Repr. 1B(H360)
h) STOT-single exposure	Not classified
	Based on available data, the classification criteria are not met
i) STOT-repeated exposure	Not classified
	Based on available data, the classification criteria are not met
j) aspiration hazard	Not classified
	Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

bis-[4-(2,3-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	
propylene carbonate	a) acute toxicity	LD50 Oral Rat > 5000 mg/kg	

		LC50 Inhalation Vapour Rat Negative 8h	
		LD50 Skin Rabbit >= 2000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 24h	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Negative	
	f) carcinogenicity	Genotoxicity Negative	Mouse intraperitoneal rout
		Carcinogenicity Negative	Mouse
	g) reproductive toxicity	No Observed Adverse Effect Level Oral = 10100 mg/kg	Mouse
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	a) acute toxicity	LD50 Oral Rat = 26800 mg/kg	
		LC50 Inhalation Rat > 0.206 mg/l 4h	
		LD50 Skin Rabbit > 4.5 ml/Kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Yes	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Positive	
	g) reproductive toxicity	No Observed Adverse Effect Level Skin Rat = 200 mg/kg	
Titanium dioxide	a) acute toxicity	LD50 Oral Rat > 5000 mg/kg	
		LC50 Inhalation > 6.82 mg/l	
		LD50 Skin Rat > 2000 mg/kg	
	c) serious eye damage/irritation	Eye Corrosive Negative	
		Eye Irritant No	
	d) respiratory or skin sensitisation	Skin Sensitization Negative	
	i) STOT-repeated exposure	No Observed Adverse Effect Level 1000	
Cashew, nutshell liq.	a) acute toxicity	LD50 Oral Rat = 2000 mg/kg	
		LD50 Skin Rat > 2000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse

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
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
propylene carbonate	CAS: 108-32-7 - EINECS: 203-572-1 - INDEX: 607-194-00-1	a) Aquatic acute toxicity : LC50 Fish Cyprinus carpio > 1000 mg/L 96h EU Method C1
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna > 1000 mg/L 48h EU Method C2
		a) Aquatic acute toxicity : EC50 Algae freshwater algae > 900 mg/L 72h OECD guideline 201
		c) Bacteria toxicity : NOEC Pseudomonas putida = 7400 mg/L
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	CAS: 68609-97-2 - EINECS: 271-846-8 - INDEX: 603-103-00-4	a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss > 5000 mg/L 96h
		a) Aquatic acute toxicity : NOEC Algae Pseudokirchneriella subcapitata = 500 mg/L 72h ,,OECD Guideline 201 (Alga, Growth Inhibition Test)
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 843 mg/L 72h
		c) Bacteria toxicity : EC50 Sludge > 100 mg/L
Titanium dioxide	CAS: 13463-67-7 - EINECS: 236-675-5 - INDEX: 022-006-00-2	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas (Cavedano americano) > 1000 mg/L 96h
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata (alghe cloroficee) > 100 mg/L 72h
		a) Aquatic acute toxicity : NOEC Algae = 5600 mg/L
		a) Aquatic acute toxicity : EC50 Daphnia |Daphnia magna (Pulce d'acqua grande) > 100 mg/L 48h
Cashew, nutshell liq.	CAS: 8007-24-7 - EINECS: 232-355-4	a) Aquatic acute toxicity : LC50 Fish Cyprinidon variegatus = 1000 mg/L 96h ,,OECD Guideline 203 (Fish, Acute Toxicity Test)
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 40.46 mg/L 48h ,,EPA OPPTS 850.1010 (Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids)
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 1300 mg/L 72h ,,OECD Guideline 201 (Alga, Growth Inhibition Test)
		a) Aquatic acute toxicity : NOEC Sludge activated sludge = 100 mg/L

12.2. Persistence and degradability

Component	Persitence/Degradability:	Test	Value	Notes:
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Non-readily biodegradable	Oxygen consumption		OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
propylene carbonate	Readily biodegradable	CO2 production		OECD guideline 301 B
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	Readily biodegradable	Oxygen consumption	87.000	%; OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)

Cashew, nutshell liq.	Readily biodegradable	Oxygen consumption	83.800	%; EU Method C.4-D

12.3. Bioaccumulative potential

Component	Bioaccumulation	Test	Value
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Bioaccumulative	BCF - Bioconcentrantion factor	31.000
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	Bioaccumulative	BCF - Bioconcentrantion factor	160.000

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

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

12.6. Endocrine disrupting properties

No endocrine disruptor substances present in concentration >= 0.1%

12.7. Other adverse effects

N.A.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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

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

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

SECTION 14: Transport information

Not classified as dangerous in the meaning of transport regulations.

14.1. UN number or ID number

N/A

14.2. UN proper shipping name

ADR-Shipping Name: N/A

IATA-Technical name: N/A

IMDG-Technical name: N/A

14.3. Transport hazard class(es)

IATA-Class: N/A

IMDG-Class: N/A

14.4. Packing group

IATA-Packing group: N/A

IMDG-Packing group: N/A

14.5. Environmental hazards

N.A.

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: 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.

Class 1: slightly hazardous for water.

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

propylene carbonate

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

Cashew, nutshell liq.

SECTION 16: Other information

Code	Description
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H360F	May damage fertility.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
3.1/4/Dermal	Acute Tox. 4	Acute toxicity (dermal), Category 4
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/1	Eye Dam. 1	Serious eye damage, Category 1
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.4.2/1A	Skin Sens. 1A	Skin Sensitisation, Category 1A
3.4.2/1B	Skin Sens. 1B	Skin Sensitisation, Category 1B
3.7/1B	Repr. 1B	Reproductive toxicity, Category 1B
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
Repr. 1B, H360F	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 16: Other information

Exposure Scenario
Propylene carbonate

Exposure Scenario, 07/06/2021

Substance identity	
	Propylene carbonate
CAS No.	108-32-7
INDEX No.	607-194-00-1
EINECS No.	203-572-1
Registration number	01-2119537232-48

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	07/06/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Adhesives, sealants (PC1)

Environment Contributing Scenario

CS1	ERC8a

Worker Contributing Scenario

CS2 Hand application - finger paints, pastels, adhesives	PROC19

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8a)

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

Product (article) characteristics

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

Vapour pressure:
= 6 Pa

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:
Application rate = 35000 kg/ha

Release type: Continuous release

Emission days: 365 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

	Air - minimum efficiency of: = 100 % Water - minimum efficiency of: = 100 %

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: Hand application - finger paints, pastels, adhesives (PROC19)

Process Categories	Manual activities involving hand contact (PROC19)

Product (article) characteristics

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

Vapour pressure:
= 6 Pa

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

Amount used, frequency and duration of use/exposure

Duration:
Covers use up to = 480 min/day

Frequency:
Covers frequency up to: = 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures

Provide a good standard of controlled ventilation (5 to 10 air changes per hour).	Inhalation - minimum efficiency of: = 70 %

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

Personal protection

Wear suitable face shield. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.	Dermal - minimum efficiency of: = 80 %

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Covers use at ambient temperatures. 20°C

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario (ERC8a)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
Man via environment - Oral	N/A	ECETOC TRA environment v3	= 0.000933

1.3. CS2: Worker Contributing Scenario: Hand application - finger paints, pastels, adhesives (PROC19)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	= 5.4857 mg/kg bw/day	ECETOC TRA worker v3	= 0.274286
inhalative, systemic, long-term	= 23.7781 mg/m³	ECETOC TRA worker v3	= 0.336992

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.

Exposure Scenario

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

Exposure Scenario, 08/06/2021

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

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

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks by brush or roller - Professional application of coatings and inks
Date - Version	07/04/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Adhesives, sealants (PC1) - Coatings and paints, thinners, paint removers (PC9a) - Fillers, putties, plasters, modelling clay (PC9b)

Environment Contributing Scenario

CS1	ERC8c

Worker Contributing Scenario

CS2 Mixing operations	PROC5
CS3 Large surfaces - Surfaces - Rolling, Brushing	PROC10
CS4 Large surfaces - Surfaces - Roller, spreader, flow application	PROC11
CS5 Large surfaces - Surfaces - Rolling, Brushing	PROC19

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8c)

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

Product (article) characteristics

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

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

Release type: Intermittent release

1.2. CS2: Worker Contributing Scenario: Mixing operations (PROC5)

Process Categories	Mixing or blending in batch processes (PROC5)

Product (article) characteristics

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

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

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures
Ensure operatives are trained to minimise exposures.
Avoid direct eye contact with product, also via contamination on hands.

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

Personal protection
Wear suitable gloves tested to EN374.

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Covers use at ambient temperatures.
Body parts exposed:
Assumes that potential dermal contact is limited to hands and forearms.

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

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

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

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

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures
Ensure operatives are trained to minimise exposures.
Provide extract ventilation to points where emissions occur.
Avoid direct eye contact with product, also via contamination on hands.
Use long handled brushes and rollers.

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

Personal protection
Wear suitable gloves tested to EN374.
Wear a respirator conforming to EN140.

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Covers use at ambient temperatures.

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

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

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

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

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours
Frequency:
For each use, avoid using for more than .... < 4 h/event

Technical and organisational conditions and measures

Technical and organisational measures
Ensure operatives are trained to minimise exposures.
Provide extract ventilation to points where emissions occur.
Avoid direct eye contact with product, also via contamination on hands.
Use long handled brushes and rollers.
Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

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

Personal protection
Wear suitable gloves tested to EN374.
Wear a respirator conforming to EN140.

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Covers use at ambient temperatures.

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

Process Categories	Manual activities involving hand contact (PROC19)

Product (article) characteristics

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

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

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours
Frequency:
For each use, avoid using for more than .... < 1 h/event

Technical and organisational conditions and measures

Technical and organisational measures
Ensure operatives are trained to minimise exposures.
Provide extract ventilation to points where emissions occur.
Avoid direct eye contact with product, also via contamination on hands.
Use long handled brushes and rollers.

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

Personal protection
Wear suitable gloves tested to EN374.

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Covers use at ambient temperatures.

1.3 Exposure estimation and reference to its source

1.3. CS2: Worker Contributing Scenario: Mixing operations (PROC5)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 9.3 mg/m³	ECETOC TRA worker v2.0	= 0.674
dermal, systemic, long-term	= 0.007 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.002

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

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)

inhalative, local, short-term	= 2.325 mg/m³	ECETOC TRA worker v2.0	= 0.168
dermal, systemic, long-term	= 0.137 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.035

Additional information on exposure estimation:

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

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, local, short-term	= 0.36 mg/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

Additional information on exposure estimation:

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

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, local, long-term	= 2E-07 mg/m³	ECETOC TRA worker v2.0	< 0.001
dermal, systemic, long-term	= 1.414 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.42

Additional information on exposure estimation:

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

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

Guidance to check compliance with the exposure scenario:

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

Exposure Scenario
Cashew, nutshell liq.

Exposure Scenario, 08/06/2021

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

Table of contents

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

1.1 TITLE SECTION

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

Environment Contributing Scenario

CS1	ERC8c - ERC8f

Worker Contributing Scenario

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

1.2 Conditions of use affecting exposure

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

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

Product (article) characteristics

Physical form of product:
Liquid

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

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

Amounts used:
< 50 t(onnes)/year
< 167 kg/day

Release type: Intermittent release

Emission days: 365 days per year

Conditions and measures related to sewage treatment plant

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

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

Waste treatment
Residues which cannot be recycled are disposed off as chemical waste

Other conditions affecting environmental exposure

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

Receiving surface water flow: 18000 m³/day
Covers indoor and outdoor use

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

Process Categories	Manual activities involving hand contact (PROC19)

Product (article) characteristics

Physical form of product:
Liquid

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

Amount used, frequency and duration of use/exposure

Amounts used:
< 50 t(onnes)/year

Duration:
Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures
Ensure operatives are trained to minimise exposures.
Avoid direct eye contact with product, also via contamination on hands.

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

Personal protection
Wear suitable gloves tested to EN374.
Wear suitable coveralls to prevent exposure to the skin.
Use eye protection according to EN 166.
Wear a respirator conforming to EN140.

Other conditions affecting worker exposure

Covers indoor and outdoor use
Professional use
Temperature: Covers use at ambient temperatures.

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

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

Product (article) characteristics

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

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

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours

Frequency:
Avoid using product more than .... = 4 h/event

Technical and organisational conditions and measures

Technical and organisational measures
Ensure operatives are trained to minimise exposures.
Avoid direct eye contact with product, also via contamination on hands.

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

Personal protection
Wear suitable gloves tested to EN374.

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Covers use at ambient temperatures.

1.2. CS4: Worker Contributing Scenario: Equipment cleaning and maintenance - Large surfaces - Surfaces - Rolling, Brushing - Finishing operations - (aqueous) (PROC10)

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

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

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

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours

Frequency:
Avoid using product more than .... = 4 h/event

Technical and organisational conditions and measures

Technical and organisational measures
Ensure operatives are trained to minimise exposures.
Provide extract ventilation to points where emissions occur.
Avoid direct eye contact with product, also via contamination on hands.
Use long handled brushes and rollers.

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

Personal protection
Wear suitable gloves tested to EN374.
Wear a respirator conforming to EN140.

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Covers use at ambient temperatures.

1.3 Exposure estimation and reference to its source

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

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
N/A	N/A	N/A	< 1

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

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

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 7.75 mg/m³	ECETOC TRA worker v2.0	= 0.562

dermal, systemic, long-term	= 0.014 mg/m³	ECETOC TRA worker v2.0	= 0.004

1.3. CS4: Worker Contributing Scenario: Equipment cleaning and maintenance - Large surfaces - Surfaces - Rolling, Brushing - Finishing operations - (aqueous) (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, local, short-term	= 2.325 mg/m³	ECETOC TRA worker v2.0	= 0.168
dermal, systemic, long-term	= 0.137 mg/m³	ECETOC TRA worker v2.0	= 0.035

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

Guidance to check compliance with the exposure scenario:

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

Safety Data Sheet

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

SUPERFLEX (B)

Date of first edition: 5/4/2021

Safety Data Sheet dated 5/16/2023

version 12

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

1.1. Product identifier

Mixture identification:

Trade name: SUPERFLEX (B)

Trade code: B0277 .021

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

Recommended use: Products for the polymerisation of resins and foams (includes curing agents, hardeners, cross-linkers)

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

Kerakoll Italy (+39) 0536 816511

Ireland

Poison information centre: (+353) 809 2166 (Daily 8am-10pm)

In case of emergency call 999 or 112

Malta

In case of emergency call: 112 (24h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Skin Corr. 1B	Causes severe skin burns and eye damage.
Eye Dam. 1	Causes serious eye damage.
Skin Sens. 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):

Pictograms and Signal Words

Danger

Hazard statements

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
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

3-aminomethyl-3,5,5-trimethylcyclohexylamine

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

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with m-phenylenebis(methylamine)

M-phenylenebis(methylamine)

3,6,9,12-tetra-azatetradecamethylenediamine; pentacthylenehexamine

Amines, polyethylenepoly-, triethylenetetramine fraction

Phenol, styrenated

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: SUPERFLEX (B)

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

Qty	Name	Ident. Numb.	Classification	Registration Number
5-9,9 %	benzyl alcohol	CAS:100-51-6 EC:202-859-9 Index:603-057-00-5	Acute Tox. 4, H302; Acute Tox. 4, H332; Eye Irrit. 2, H319	01-2119492630-38
2,5-4,9 %	4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with m-phenylenebis(methylamine)	CAS:113930-69-1 EC:500-302-7	Skin Corr. 1B, H314; Skin Sens. 1, H317; Aquatic Chronic 2, H411	01-2119965162-39
2,5-4,9 %	2,4,6-tris(dimethylaminomethyl)phenol	CAS:90-72-2 EC:202-013-9 Index:603-069-00-0	Acute Tox. 4, H302; Skin Corr. 1C, H314; Eye Dam. 1, H318	01-2119560597-27
2,5-4,9 %	titanium dioxide	CAS:13463-67-7 EC:236-675-5 Index:022-006-00-2	Carc. 2, H351	
2,5-4,9 %	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
2,5-4,9 %	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
1-2,4 %	3-aminomethyl-3,5,5-trimethylcyclohexylamine	CAS:2855-13-2 EC:220-666-8 Index:612-067-00-9	Skin Corr. 1B, H314; Acute Tox. 4, H302; Skin Sens. 1A, H317; Eye Dam. 1, H318	01-2119514687-32

1-2,4 %	1,3-Benzenedimethanamine, reaction products with glycidyl tolyl ether	CAS:90194-04-0 EC:290-611-0	Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Dam. 1, H318; Skin Sens. 1, H317; Aquatic Chronic 2, H411	01-2120770491-54
< 1 %	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
< 1 %	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
< 0,5 %	Phenol, styrenated	CAS:61788-44-1 EC:262-975-0	Skin Irrit. 2, H315; Skin Sens. 1, H317; Aquatic Chronic 2, H411; Eye Irrit. 2, H319, M-Chronic:1	01-2119980970-2
< 0,5 %	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
< 0,2 %	benzyldimethylamine	CAS:103-83-3 EC:203-149-1 Index:612-074-00-7	Flam. Liq. 3, H226; Skin Corr. 1B, H314; Acute Tox. 4, H302; Acute Tox. 4, H312; Eye Dam. 1, H318; Acute Tox. 3, H331; Aquatic Chronic 2, H411	01-2119529232-48
< 0,2 %	Salicylic acid	CAS:69-72-7 EC:200-712-3	Acute Tox. 4, H302; Eye Dam. 1, H318; Repr. 2, H361d	01-2119486984-17

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:

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

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

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, inhaltion 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.

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)

Component	OEL Type	Country	Ceiling	Long Term mg/m3	Long Term ppm	Short Term mg/m3	Short Term ppm	Notes
Calcium carbonate	NATIONAL	AUSTRALIA		10.000				This value is for inhalable dust containing no asbestos and <1 % crystalline silica.
	NATIONAL	FRANCE		10.000				inhalable aerosol
	NATIONAL	HUNGARY		10.000				inhalable aerosol
	NATIONAL	IRELAND		10.000				Inhalable fraction
	NATIONAL	IRELAND		4.000				Respirable fraction
	NATIONAL	LATVIA		6.000				
	NATIONAL	POLAND		10.000				
	NATIONAL	SWITZERLAND		3.000				respirable aerosol
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN		10.000				inhalable aerosol

		AND NORTHERN IRELAND					
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	4.000				respirable aerosol
	NATIONAL	BELGIUM	10.000				
	NATIONAL	CROATIA	10.000				
	NATIONAL	NETHERLANDS	10.000				
	NATIONAL	PORTUGAL	10.000				
	NATIONAL	SPAIN	10.000				
Kaolin	NATIONAL	AUSTRALIA	10.000				This value is for inhalable dust containing no asbestos and < 1% crystalline silica.
	NATIONAL	BELGIUM	2.000				
	NATIONAL	DENMARK	2.000		4.000		Respirable aerosol
	NATIONAL	FINLAND	2.000				Respirable fraction
	NATIONAL	FRANCE	10.000				Respirable aerosol
	NATIONAL	IRELAND	2.000				
	NATIONAL	SWITZERLAND	3.000				Respirable aerosol
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	2.000				Respirable aerosol
	NATIONAL	POLAND	10.000				inhalable fraction Dz. U. 2018 poz. 1286 wraz z późn. zm.
benzyl alcohol	NATIONAL	FINLAND	45.000	10.000			
	NATIONAL	GERMANY	22.000	5.000	44.000	10.000	AGS; Long term and short term: inhalable fraction
	NATIONAL	GERMANY	22.000	5.000	44.000	10.000	DFG; Long term and short term: inhalable fraction
	NATIONAL	LATVIA	5.000				
	NATIONAL	SWITZERLAND	5.000	22.000			
	NATIONAL	BULGARIA	5.000				
	NATIONAL	CZECHIA	40.000		80.000		
	NATIONAL	LITHUANIA	5.000				
	NATIONAL	POLAND	240.000				Dz. U. 2018 poz. 1286 wraz z późn. zm
	NATIONAL	SLOVENIA	22.000	5.000	44.000	10.000	
titanium dioxide	NATIONAL	AUSTRALIA	10				
	NATIONAL	BELGIUM	10.000				
	NATIONAL	DENMARK	6.000		12.000		Long term and short term: total dust
	NATIONAL	FRANCE	11.000				Inhalable aerosol
	NATIONAL	GERMANY	0.300		2.400		DFG; Long term and short term: excluding ultrafine particles; respirable fraction; multiplied by the material density;

	NATIONAL	IRELAND	10.000				Inhalable fraction
	NATIONAL	IRELAND	8.000				Respirable fraction
	NATIONAL	LATVIA	10.000				
	NATIONAL	POLAND	10.000		30.000		Dz. U. 2018 poz. 1286 wraz z późn. zm
	NATIONAL	ROMANIA	10.000		15.000		
	NATIONAL	SPAIN	10.000				Inhalable aerosol
	NATIONAL	SWEDEN	5.000				Inhalable aerosol
	NATIONAL	SWITZERLAND	3.000				Respirable aerosol
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	10.000				Inhalable aerosol
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	4.000				Respirable aerosol
	NATIONAL	AUSTRIA	5.000		10.000		
	NATIONAL	BULGARIA	10.000				
	NATIONAL	CROATIA	10.000				total dust
	NATIONAL	CROATIA	4.000				respirable dust
	NATIONAL	GREECE	10.000				
	NATIONAL	GREECE	50.000				
	NATIONAL	GREECE	5.000				
	NATIONAL	LITHUANIA	5.000				
	NATIONAL	PORTUGAL	10.000				
	NATIONAL	SLOVAKIA	5.000				
	NATIONAL	SLOVENIA	6.000				
	ACGIH	NNN	10.000				A4 - LRT irr
benzyldimethylamine	NATIONAL	BULGARIA	5.000				
	NATIONAL	LATVIA	5.000				
	NATIONAL	ROMANIA	5.000	0.900	10.000	1.800	
Aluminium oxide	NATIONAL	FRANCE	10.000				Respirable aerosol
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	10.000				Inhalable aerosol
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	4.000				Respirable aerosol
	NATIONAL	AUSTRALIA	10.000				Inhalable dust containing no asbestos and < 1% crystalline silica
	NATIONAL	AUSTRIA	10.000		20.000		Long term: inhalable fraction; Short term: inhalable fraction, 60 minutes average value
	NATIONAL	AUSTRIA	5.000		10.000		Long term: respirable fraction;

							Short term: respirable fraction, 60 minutes average value
	NATIONAL	DENMARK	5.000		10.000		Calculated as Al; Long term and Short term: inhalable aerosol
	NATIONAL	DENMARK	2.000		4.000		Calculated as Al; Long term and Short term: respirable aerosol
	NATIONAL	GERMANY	4.000				Inhalable aerosol
	NATIONAL	GERMANY	1.500				Respirable aerosol
	NATIONAL	HUNGARY	6.000				Respirable aerosol
	NATIONAL	IRELAND	10.000				Inhalable fraction
	NATIONAL	IRELAND	4.000				Respirable fraction
	NATIONAL	LATVIA	6.000				
	NATIONAL	POLAND	2.500		16.000		Dz. U. 2018 poz. 1286 wraz z późn. zm
	NATIONAL	POLAND	1.200				Aluminium trioxide as Al fume; Long term: respirable dust
	NATIONAL	ROMANIA	2.000	0.500	5.000	1.200	Long term and short term: aerosol
	NATIONAL	SPAIN	10.000				Inhalable aerosol
	NATIONAL	SPAIN	5.000				Respirable aerosol
	NATIONAL	SWEDEN	5.000				Inhalable aerosol
	NATIONAL	SWEDEN	2.000				Respirable aerosol
	NATIONAL	SWITZERLAND	3.000				Respirable aerosol
silicon dioxide, chemically prepared	NATIONAL	AUSTRALIA	2.000				This value is for inhalable dust containing no asbestos and < 1% crystalline silica
	NATIONAL	AUSTRIA	4.000				Inhalable aerosol
	NATIONAL	BELGIUM	10.000				
	NATIONAL	DENMARK	2.000		4.000		Inhalable aerosol
	NATIONAL	FINLAND	5.000				
	NATIONAL	GERMANY	4.000				AGS; Inhalable aerosol
	NATIONAL	GERMANY	4.000				DFG; Inhalable aerosol
	NATIONAL	IRELAND	6.000				Inhalable fraction
	NATIONAL	IRELAND	2.400				Respirable fraction
	NATIONAL	LATVIA	1.000				
	NATIONAL	SWITZERLAND	4.000				Inhalable aerosol
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	6.000				Inhalable aerosol
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	2.400				Respirable aerosol
	NATIONAL	ESTONIA	2.000				
	NATIONAL	SLOVENIA	4.000				Inhalable fraction

Predicted No Effect Concentration (PNEC) values

Component	CAS-No.	PNEC Limit	Exposure Route	Exposure Frequency

benzyl alcohol	100-51-6	1.000 mg/l	Freshwater
		0.100 mg/l	Marine water
		5.270 mg/kg	Freshwater sediments
		0.527 mg/kg	Marine water sediments
		2.300 mg/l	Intermittent releases (freshwater)
		39.000 mg/l	Microorganisms in sewage treatments
		0.456 mg/kg	Soil
2,4,6-tris (dimethylaminomethyl) phenol	90-72-2	84.000 µg/l	Freshwater
		840.000 µg/l	Intermittent releases (freshwater)
		8.400 µg/l	Marine water
		200.000 µg/l	Microorganisms in sewage treatments
titanium dioxide	13463-67-7	0.184 mg/l	Freshwater
		0.018 mg/l	Marine water
		1.000 mg/kg	Intermittent releases (freshwater)
		100.000 mg/kg	Intermittent releases (marine water)
		100.000 mg/kg	Microorganisms in sewage treatments
Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	68082-29-1	4.340 µg/l	Freshwater
		43.400 µg/l	Intermittent releases (freshwater)
		434.000 ng/L	Marine water
		3.840 mg/l	Microorganisms in sewage treatments
		434.020 mg/kg	Freshwater sediments
		43.400 mg/kg	Marine water sediments
		86.780 mg/kg	Soil
Reaction product of fatty acids, C18 alkyl with amines, polyethylenepoly-tetraethylenepentamine fraction		2.630 µg/l	Freshwater
		26.300 µg/l	Intermittent releases (freshwater)
		263.000 ng/L	Marine water
		7.210 mg/l	Microorganisms in sewage treatments
		263.010 mg/kg	Freshwater sediments
		26.301 mg/kg	Marine water sediments
		58.580 mg/kg	Soil
3-aminomethyl-3,5,5-trimethylcyclohexylamine	2855-13-2	60.000 µg/l	Freshwater
		6.000 µg/l	Marine water
		5.784 mg/kg	Freshwater sediments

		578.000 µg/kg	Marine water sediments
		1.121 mg/kg	Soil (agricultural)
		0.230 mg/l	Intermittent releases (freshwater)
		3.180 mg/l	Microorganisms in sewage treatments
Amines, polyethylenepoly-, tetraethylenepentamine fraction	90640-66-7	6.800 µg/l	Freshwater
		68.000 µg/l	Intermittent releases (freshwater)
		680.000 ng/L	Marine water
		4.600 mg/l	Microorganisms in sewage treatments
		341.000 µg/kg	Freshwater sediments
		764.000 µg/kg	Marine water sediments
		274.000 µg/kg	Soil
		230.000 µg/kg	Secondary poinsoning
Phenol, styrenated	61788-44-1	30.000 µg/l	Freshwater
		46.000 µg/l	Intermittent releases (freshwater)
		3.000 µg/l	Marine water
		4.600 µg/l	Intermittent releases (marine water)
		36.200 mg/l	Microorganisms in sewage treatments
		1.860 mg/kg	Freshwater sediments
		186.000 µg/kg	Marine water sediments
		355.000 µg/kg	Soil
Amines, polyethylenepoly-, triethylenetetramine fraction	90640-67-8	26.800 µg/l	Freshwater
		200.000 µg/l	Intermittent releases (freshwater)
		2.680 µg/l	Marine water
		20.000 µg/l	Intermittent releases (marine water)
		130.000 µg/l	Microorganisms in sewage treatments
		8.572 mg/kg	Freshwater sediments
		857.200 µg/kg	Marine water sediments
		1.250 mg/kg	Soil
benzyldimethylamine	103-83-3	4.800 µg/l	Freshwater
		13.400 µg/l	Intermittent releases (freshwater)
		480.000 ng/L	Marine water
		534.000 mg/l	Microorganisms in sewage treatments
		71.000 µg/kg	Freshwater sediments
		7.100 µg/kg	Marine water sediments
		11.400 µg/kg	Soil
Salicylic acid	69-72-7	200.000 µg/l	Freshwater
		1.000 mg/l	Intermittent releases

		(freshwater)
	20.000 µg/l	Marine water
	162.000 mg/l	Microorganisms in sewage treatments
	1.420 mg/kg	Freshwater sediments
	142.000 µg/kg	Marine water sediments
	166.000 µg/kg	Soil

Derived No Effect Level (DNEL) values

Component	CAS-No.	Worker Industry	Worker Professional	Consumer	Exposure Route	Exposure Frequency
benzyl alcohol	100-51-6		22.000 mg/m³	8.100 mg/m³	Human Inhalation	Long Term, systemic effects
			450.000 mg/m³	40.500 mg/m³	Human Inhalation	Short Term, systemic effects
			9.500 mg/kg	5.700 mg/kg	Human Dermal	Long Term, systemic effects
			47.000 mg/kg	28.500 mg/kg	Human Dermal	Short Term, systemic effects
				5.000 mg/kg	Human Oral	Long Term, systemic effects
				25.000 mg/kg	Human Oral	Short Term, systemic effects
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with m-phenylenebis (methylamine)	113930-69-1		493.000 µg/m³	74.000 µg/m³	Human Inhalation	Long Term, systemic effects
			6.990 mg/m³	1.500 mg/m³	Human Inhalation	Short Term, systemic effects
			140.000 µg/kg	50.000 µg/kg	Human Dermal	Long Term, systemic effects
				50.000 µg/kg	Human Oral	Long Term, systemic effects
				990.000 µg/kg	Human Oral	Short Term, systemic effects
titanium dioxide	13463-67-7		10.000 mg/m³		Human Inhalation	Long Term, local effects
Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	68082-29-1		3.900 mg/m³	970.000 µg/m³	Human Inhalation	Long Term, systemic effects
			1.100 mg/kg	560.000 µg/kg	Human Dermal	Long Term, systemic effects
				560.000 µg/kg	Human Oral	Long Term, systemic effects
Reaction product of fatty acids, C18 alkyl with amines, polyethylenepoly-tetraethylenepentamine fraction			3.900 mg/m³	970.000 µg/m³	Human Inhalation	Long Term, systemic effects
			1.100 mg/kg	560.000 µg/kg	Human Dermal	Long Term, systemic effects
				560.000 µg/kg	Human Oral	Long Term, systemic effects

3-aminomethyl-3,5,5-trimethylcyclohexylamine	2855-13-2	20.100 mg/m³		Human Inhalation	Short Term, systemic effects
		20.100 mg/m³		Human Inhalation	Short Term, local effects
			526.000 µg/kg	Human Oral	Long Term, systemic effects
Amines, polyethylenepoly-, tetraethylenepentamine fraction	90640-66-7	1.290 mg/m³	380.000 µg/m³	Human Inhalation	Long Term, systemic effects
		6940.000 mg/m³	2071.000 mg/m³	Human Inhalation	Short Term, systemic effects
		740.000 µg/kg	320.000 µg/kg	Human Dermal	Long Term, systemic effects
			10.000 mg/kg	Human Dermal	Short Term, systemic effects
		0.036 mg/cm²	0.560 mg/cm²	Human Dermal	Long Term, local effects
			1.290 mg/cm²	Human Dermal	Short Term, systemic effects
			530.000 µg/kg	Human Oral	Long Term, systemic effects
			26.000 mg/kg	Human Oral	Short Term, systemic effects
Phenol, styrenated	61788-44-1	7.400 mg/m³	1.310 mg/m³	Human Inhalation	Long Term, systemic effects
		2.100 mg/kg	750.000 µg/kg	Human Dermal	Long Term, systemic effects
			750.000 µg/kg	Human Oral	Long Term, systemic effects
Amines, polyethylenepoly-, triethylenetetramine fraction	90640-67-8	540.000 µg/m³	96.000 µg/m³	Human Inhalation	Long Term, systemic effects
			140.000 µg/kg	Human Oral	Long Term, systemic effects
benzyldimethylamine	103-83-3	14.600 mg/m³	43.700 mg/m³	Human Inhalation	Long Term, systemic effects
		2.300 mg/kg	1.250 mg/kg	Human Dermal	Long Term, systemic effects
			1.250 mg/kg	Human Oral	Long Term, systemic effects
		1.000 mg/m³		Human Inhalation	Long Term, local effects
Salicylic acid	69-72-7	16.000 mg/m³	4.000 mg/m³	Human Inhalation	Long Term, systemic effects
			0.200 mg/m³	Human Inhalation	Long Term, local effects
		2.000 mg/kg	1.000 mg/kg	Human Dermal	Long Term, systemic effects
			1.000 mg/kg	Human Oral	Long Term, systemic effects
			4.000 mg/kg	Human Oral	Short Term, systemic effects

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:

Nitrile rubber .

Respiratory protection:

N.A.

Thermal Hazards:

N.A.

Environmental exposure controls:

N.A.

Hygienic and Technical measures

N.A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State Liquid

Color: White

Odour: N.A.

Odour threshold: N.A.

pH: Not Relevant

Kinematic viscosity: N.A.

Melting point / freezing point: N.A.

Initial boiling point and boiling range: N.A.

Flash point: > 93°C

Upper/lower flammability or explosive limits: N.A.

Vapour density: N.A.

Vapour pressure: N.A.

Relative density: 1.78 g/cm3

Solubility in water: N.A.

Solubility in oil: N.A.

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

Auto-ignition temperature: N.A.

Decomposition temperature: N.A.

Flammability: N.A.

Volatile Organic compounds - VOCs = 11.36 % ; 202.13 g/l

Particle characteristics:

Particle size: N.A.

9.2. Other information

Miscibility: N.A.

Conductivity: N.A.

Evaporation rate: N.A. No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Data not available.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

None in particular.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

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

Toxicological Information of the Preparation

a) acute toxicity	Not classified
	Based on available data, the classification criteria are not met
b) skin corrosion/irritation	The product is classified: Skin Corr. 1B(H314)
c) serious eye damage/irritation	The product is classified: Eye Dam. 1(H318)
d) respiratory or skin sensitisation	The product is classified: Skin Sens. 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:

benzyl alcohol	a) acute toxicity	LD50 Oral Rat = 1620.00 mg/kg	
		LC50 Inhalation of aerosol Rat > 4178.00000 mg/m3 4h	
		LD50 Skin Rabbit > 2000.00000 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 = 200.00000 mg/kg	Mouse
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with m-phenylenebis (methylamine)	b) skin corrosion/irritation	Skin Corrosive Human Positive	
2,4,6-tris (dimethylaminomethyl) phenol	a) acute toxicity	LD50 Oral Rat = 2169.00000 mg/kg	
		LD50 Skin Rat > 1.00000 ml/Kg 6h	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	g) reproductive toxicity	No Observed Effect Level Oral Rat = 15.00000 mg/kg	
titanium dioxide	a) acute toxicity	LD50 Oral Rat > 5000.00 mg/kg	

		LC50 Inhalation > 6.82 mg/l	
	d) respiratory or skin sensitisation	Skin Sensitization Negative	
	i) STOT-repeated exposure	No Observed Adverse Effect Level 1000.00	
Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	a) acute toxicity	LD50 Oral Rat > 2000.00000 mg/kg	
		LD50 Skin Rat > 2000.00000 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 = 1000.00000 mg/kg	
Reaction product of fatty acids, C18 alkyl with amines, polyethylenepoly-tetraethylenepentamine fraction	a) acute toxicity	LD50 Oral Rat > 2000.00000 mg/kg	
		LD50 Skin Rat > 2000.00000 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 = 1000.00000 mg/kg	
1,3-Benzenedimethanamine, reaction products with glycidyl tolyl ether	a) acute toxicity	LD50 Oral Rat > 300.00 mg/kg	
		ATE Oral = 30003.00 mg/kg	
	b) skin corrosion/irritation	Skin Irritant Human Positive	
	c) serious eye damage/irritation	Eye Corrosive Positive	
	d) respiratory or skin sensitisation	Skin Sensitization	
	e) germ cell mutagenicity	Genotoxicity Negative	
		Genotoxicity Rat Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Rat = 25.00 mg/kg	General Toxicity - Parent: 25 mg/kg body weight
	i) STOT-repeated exposure	No Observed Adverse Effect Level Oral Rat = 15.00 mg/kg	Dose: 5, 15 and 25 mg/kg
3-aminomethyl-3,5,5-trimethylcyclohexylamine	a) acute toxicity	LD50 Oral Rat = 1030.00000 mg/kg	
		LC50 Inhalation of aerosol Rat > 5.01000 mg/l 4h	
		LD50 Skin Rat > 2000.00000 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	
Amines, polyethylenepoly-, tetraethylenepentamine fraction	a) acute toxicity	LD50 Oral Rat = 1861.90000 mg/kg	
		LD50 Skin Rabbit = 1465.40000 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	
Phenol, styrenated	a) acute toxicity	LD50 Oral Rat >= 2000.00000 mg/kg	
		LC50 Inhalation of aerosol Rat > 4.92000 mg/l 4h	
		LD50 Skin Rat > 2000.00000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive	
	c) serious eye damage/irritation	Eye Irritant Rabbit No 24h	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 124.00000 mg/kg	
Amines, polyethylenepoly-, triethylenetetramine fraction	a) acute toxicity	LD50 Oral Rat = 1716.20000 mg/kg	
		LD50 Skin Rabbit = 1465.40000 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 = 50.00000 mg/kg	Mouse NOAEL
benzyldimethylamine	a) acute toxicity	LD50 Oral Rat = 0.65000 ml/Kg	
		LC50 Inhalation Rat = 373.00000 Ppm 4h	
		LD50 Skin Rabbit = 1.66000 ml/Kg 24h	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes 24h	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat =	

		150.00000 mg/kg	
Salicylic acid	a) acute toxicity	LD50 Oral Rat = 891.00000 mg/kg	
		LD50 Skin Rat > 2000.00000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 4h	
	c) serious eye damage/irritation	Eye Corrosive Rabbit Positive	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
		Carcinogenicity Oral Rat Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 75.00000 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
benzyl alcohol	CAS: 100-51-6 - EINECS: 202-859-9 - INDEX: 603-057-00-5	a) Aquatic acute toxicity : LC50 Fish Oryzias latipes = 460.00000 mg/L 96h OECD SIDS (2001)
		b) Aquatic chronic toxicity : NOEC Fish = 48.89700 mg/L ECOSAR QSAR
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 230.00000 mg/L 48h OECD SIDS (2001)
		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 51.00000 mg/L OECD Guideline 211
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchnerella subcapitata = 770.00000 mg/L 72h OECD SIDS on Benzoates (2001)
		c) Bacteria toxicity : EC50 Nitrosomonas = 390.00000 mg/L
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with m-phenylenebis(methylamine)	CAS: 113930-69-1 - EINECS: 500-302-7	a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss = 64.00000 mg/L 96h ,,OECD Guideline 203 (Fish, Acute Toxicity Test)
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna <= 1.46000 mg/L 48h OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 30.00000 mg/L 72h ,,OECD Guideline 201 (Alga, Growth Inhibition Test)
		a) Aquatic acute toxicity : EC50 Sludge activated sludge = 888.90000 mg/L 3h ,,OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
2,4,6-tris(dimethylaminomethyl)phenol	CAS: 90-72-2 - EINECS: 202-013-9 - INDEX: 603-069-00-0	a) Aquatic acute toxicity : LC50 Fish Cyorinus carpio = 175.00000 mg/L 96h
		a) Aquatic acute toxicity : LC50 Salmo gairdneri < 240.00 mg/L 96h
		a) Aquatic acute toxicity : LC50 Daphnia Palemonetes vulgaris = 718.00 mg/L 96h

		a) Aquatic acute toxicity : EC50 Algae freshwater algae = 84.00 mg/L
titanium dioxide	CAS: 13463-67-7 - EINECS: 236-675-5 - INDEX: 022-006-00-2	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas (Cavedano americano) > 1000.00 mg/L 96h
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata (alghe cloroficee) > 100.00 mg/L 72h
		a) Aquatic acute toxicity : NOEC Algae = 5600.00 mg/L
		a) Aquatic acute toxicity : EC50 Daphnia |Daphnia magna (Pulce d'acqua grande) > 100.00 mg/L 48h
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 = 10.00 mg/L 96h
		a) Aquatic acute toxicity : EC100 Daphnia = 10.00 mg/L 24h
		a) Aquatic acute toxicity : EC50 Algae = 4.34 mL/L 72h
Reaction product of fatty acids, C18 alkyl with amines, polyethylenepoly-tetraethylenepentamine fraction	EINECS: 701-046-0	a) Aquatic acute toxicity : LC50 Fish Zebrafish = 7.07000 mg/L 96h OECD 203
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 5.18000 mg/L 48h OECD 202
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 2.63000 mg/L 72h OECD 201
		a) Aquatic acute toxicity : EC50 Sludge Activated sludge = 721.00000 mg/L 3h OECD 209
		c) Bacteria toxicity : NOEC 1.41000 mg/L
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 = 110.00000 mg/L 96h ,,according to 84/449/EEC, C.1, 1984
		a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 23.00000 mg/L 48h OECD 202
		a) Aquatic acute toxicity : EC50 Algae Scenedesmus subspicatus > 50.00 mg/L 72h
		b) Aquatic chronic toxicity : NOEC Daphnia = 3.00000 mg/L 504h
		c) Bacteria toxicity : EC10 Pseudomonas putida = 1120.00 mg/L 18h
1,3-Benzenedimethanamine, reaction products with glycidyl tolyl ether	CAS: 90194-04-0 - EINECS: 290-611-0	a) Aquatic acute toxicity : LL50 Fish Oncorhynchus mykiss (rainbow trout) = 1.10 mg/L 96h OECD Test Guideline 203
		a) Aquatic acute toxicity : EL50 Daphnia Daphnia magna (Water flea) = 3.90 mg/L 48h OECD Test Guideline 202
		a) Aquatic acute toxicity : EL50 Algae Pseudokirchneriella subcapitata (green algae) = 1.10 mg/L 72h OECD Test Guideline 201
Amines, polyethylenepoly-, tetraethylenepentamine fraction	CAS: 90640-66-7 - EINECS: 292-587-7	a) Aquatic acute toxicity : LC50 Fish freshwater fish = 420.00000 mg/L
		a) Aquatic acute toxicity : LC50 freshwater invertebrates = 24.10000 mg/L
		a) Aquatic acute toxicity : EC50 Algae freshwater algae = 6.80000 mg/L
		a) Aquatic acute toxicity : EC50 microorganisms = 97.30000 mg/L
		a) Aquatic acute toxicity : NOEC Algae = 0.50000 mg/L
Phenol, styrenated	CAS: 61788-44-1 - EINECS: 262-975-0	a) Aquatic acute toxicity : LC50 Fish Danio rerio = 24.00000 mg/L 96h ,,OECD Guideline 203 (Fish, Acute Toxicity Test)
		b) Aquatic chronic toxicity : NOEC Fish 3.80000 mg/L - 14days
		a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 4.60000 mg/L 48h OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 1.50000 mg/L - 21days a) Aquatic acute toxicity : EL50 Algae Chlorella vulgaris = 3.14000 72h ,,OECD Guideline 201 (Alga, Growth Inhibition Test) a) Aquatic acute toxicity : EC50 Sludge activated sludge = 360.00000 mg/L 3h ISO 8192 (Water quality - Test for inhibition of oxygen consumption by activated sludge for carbonaceous and ammonium oxidation)
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 = 330.00000 mg/L 96h ,,U.S EPA- TSCA, 40 CFR Part 797 1400 a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 31.10000 mg/L 48h EU Method C.2 (Acute Toxicity for Daphnia) a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 20.00000 mg/L 72h OECD 201 d) Terrestrial toxicity : NOEC Worm Eisenia fetida = 62.50000 mg/kg OECD Guideline 222 (Earthworm Reproduction Test (Eisenia fetida/Eisenia andrei)) - 56days a) Aquatic acute toxicity : NOEC Algae soil microorganisms = 72.00000 mg/L
benzyldimethylamine	CAS: 103-83-3 - EINECS: 203-149-1 - INDEX: 612-074-00-7	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 37.80000 mg/L 96h a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna > 100.00000 mg/L 48h EU method C.2 'Acute Toxicity for Daphnia' (2008) a) Aquatic acute toxicity : EC50 Algae Desmodesmus subspicatus = 1.34000 mg/L 72h EU method C.3 'Alga Inhibition Test' (2009)
Salicylic acid	CAS: 69-72-7 - EINECS: 200-712-3	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 1380.00000 mg/L 96h a) Aquatic acute toxicity : LC50 Daphnia freshwater invertebrates = 870.00000 mg/L 48h ,,Kamaya et al., 2005 b) Aquatic chronic toxicity : NOEC Daphnia = 10.00000 mg/L OECD guideline 202 - 21days a) Aquatic acute toxicity : EC50 Algae Scenedesmus subspicatus > 100.00000 mg/L 72h OECD guideline 201 c) Bacteria toxicity : EC50 Pseudomonas putida = 380.00000 mg/L

12.2. Persistence and degradability

Component	Persitence/Degradability:	Test	Duration	Value	Notes
benzyl alcohol	Readily biodegradable	Dissolved organic carbon		96.000	%; OECD Guideline 301A
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with m-phenylenebis(methylamine)	Non-readily biodegradable	Oxygen consumption		0.000	EU Method C.4-D (Determination of the "Ready" Biodegradability - Manometric Respirometry Test)
2,4,6-tris(dimethylaminomethyl)phenol	Non-readily biodegradable				
Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Non-readily biodegradable				OECD 301 D
Reaction product of fatty acids, C18 alkyl with amines, polyethylenepoly-tetraethylenepentamine fraction	Non-readily biodegradable				
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Non-readily biodegradable	Dissolved organic carbon		8.000	%; EU-method C.4-A

1,3-Benzenedimethanamine, reaction products with glycidyl tolyl ether	Non-readily biodegradable	Dissolved organic carbon	28d	8.000	Test Type: aerobic Inoculum: activated sludge Concentration: 6,9 mg/l Result: Not readily biodegradable. Biodegradation: 8 % Related to: Dissolved organic carbon (DOC) Exposure time: 28 d Method: Directive 67/548/EEC Annex V, C.4.A. Test substance: Fresh water GLP: yes
Amines, polyethylenepoly-, tetraethylenepentamine fraction	Non-readily biodegradable				
Phenol, styrenated	Non-readily biodegradable				
Amines, polyethylenepoly-, triethylenetetramine fraction	Non-readily biodegradable				OECD 301D
benzyldimethylamine	Non-readily biodegradable				
Salicylic acid	Readily biodegradable	Biochemical oxigen demand		88.100	%; OECD guideline 301C

12.3. Bioaccumulative potential

Component	Bioaccumulation	Test	Value	Notes
benzyl alcohol	Bioaccumulative	BCF - Bioconcentrantion factor	1.000	L/kg ww
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with m-phenylenebis(methylamine)	Bioaccumulative	BCF - Bioconcentrantion factor	4.770	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
Reaction product of fatty acids, C18 alkyl with amines, polyethylenepoly-tetraethylenepentamine fraction	Bioaccumulative	BCF - Bioconcentrantion factor	138.000	L/kg ww
Phenol, styrenated	Bioaccumulative	BCF - Bioconcentrantion factor	14.430	L/kg ww
benzyldimethylamine	Not bioaccumulative			

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/vPvB Ingredients are present

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. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and

national regulations currently in force.

A waste code according to European waste catalogue (EWC) cannot be specified, due to dependence on the usage. Contact an authorized waste disposal service.

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

N.A.

SECTION 14: Transport information

14.1. UN number or ID number

2735

14.2. UN proper shipping name

ADR-Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. (4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with m-phenylenebis(methylamine) - 2,4,6-tris(dimethylaminomethyl)phenol)

IATA-Technical name: AMINES, LIQUID, CORROSIVE, N.O.S. (4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with m-phenylenebis(methylamine) - 2,4,6-tris(dimethylaminomethyl)phenol)

IMDG-Technical name: AMINES, LIQUID, CORROSIVE, N.O.S. (4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with m-phenylenebis(methylamine) - 2,4,6-tris(dimethylaminomethyl)phenol)

14.3. Transport hazard class(es)

ADR-Class: 8

IATA-Class: 8

IMDG-Class: 8

14.4. Packing group

ADR-Packing Group: II

IATA-Packing group: II

IMDG-Packing group: II

14.5. Environmental hazards

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: F-A, S-B

14.6. Special precautions for user

Road and Rail (ADR-RID) :

ADR-Label: 8

ADR - Hazard identification number: 80

ADR-Special Provisions: 274

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

ADR Limited Quantities: 1 L

ADR Excepted Quantities: E2

Air (IATA) :

IATA-Passenger Aircraft: 851

IATA-Cargo Aircraft: 855

IATA-Label: 8

IATA-Subsidiary hazards: -

IATA-Erg: 8L

IATA-Special Provisioning: A3 A803

Sea (IMDG) :

IMDG-Stowage Code: Category A

IMDG-Stowage Note: SG35 SGG18

IMDG-Subsidiary hazards: -

IMDG-Special Provisioning: 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. 2020/878
Regulation (EC) nr 648/2004 (Detergents).

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

Restrictions related to the product: 3

Restrictions related to the substances contained: 75

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

N.A.

Regulation (EU) 649/2012 (PIC regulation):

No Substance Listed

German Water Hazard Class.

Class 1: slightly hazardous for water.

SVHC Substances:

No data available

15.2. Chemical safety assessment

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

SECTION 16: Other information

Code	Description
EUH071	Corrosive to the respiratory tract.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
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.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H351	Suspected of causing cancer if inhaled.
H361d	Suspected of damaging 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
3.1/3/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
3.2/1B	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
3.6/2	Carc. 2	Carcinogenicity, Category 2
3.7/2	Repr. 2	Reproductive toxicity, 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
3.2/1B	Calculation method
3.3/1	Calculation method
3.4.2/1A	Calculation method
4.1/C3	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:

- 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING
- 3. COMPOSITION/INFORMATION ON INGREDIENTS
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 11. TOXICOLOGICAL INFORMATION
- 12. ECOLOGICAL INFORMATION
- 13. DISPOSAL CONSIDERATIONS
- 14. TRANSPORT INFORMATION
- 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

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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
2,4,6-tris(dimethylaminomethyl)phenol

Exposure Scenario, 05/11/2021

Substance identity	
	2,4,6-tris(dimethylaminomethyl)phenol
CAS No.	90-72-2
INDEX No.	603-069-00-0
EINECS No.	202-013-9
Registration number	01-2119560597-27

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1. ES 1 Widespread use by professional workers; Fillers, putties, plasters, modelling clay (PC9b)

1.1 TITLE SECTION

Exposure Scenario name	Road and construction applications - Use in rigid foams, coatings, adhesives and sealants
Date - Version	05/11/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Fillers, putties, plasters, modelling clay (PC9b)

Environment Contributing Scenario

CS1	ERC8b - ERC8e

Worker Contributing Scenario

CS2 Material transfers	PROC8a
CS3 Rolling, Brushing	PROC10
CS4 Rolling, Brushing	PROC10
CS5 Roller, spreader, flow application	PROC11
CS6 Roller, spreader, flow application	PROC11

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8b, ERC8e)

Environmental release categories	Widespread use of reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of reactive processing aid (no inclusion into or onto article, outdoor) (ERC8b, ERC8e)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
0.197 Pa

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:
Amount per use <= 0.0014 tonnes/day

Release type: Continuous release

Conditions and measures related to sewage treatment plant

STP type:
No specific measures identified.
Water - minimum efficiency of: = 0.059 %

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

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

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:
= 0.197 Pa

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

Amount used, frequency and duration of use/exposure

Duration:
Duration of contact < 30 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).	Inhalation - minimum efficiency of: 30 %
Local exhaust ventilation	Inhalation - minimum efficiency of: 80 %

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

Personal protection

Wear chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training. Wear a full face respirator conforming to EN136.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 95 %
Use suitable eye protection.	

Other conditions affecting worker exposure

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

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

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
= 0.197 Pa

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

Amount used, frequency and duration of use/exposure

Duration:
Duration of contact < 440 min

Technical and organisational conditions and measures

Technical and organisational measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Inhalation - minimum efficiency of: 44 %

Ensure that direction of application is only horizontal or downward.
Open doors and windows.

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 a full face respirator conforming to EN136. Wear suitable respiratory protection. Wear an impervious suit.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 99 %
Use suitable eye protection.	

Other conditions affecting worker exposure

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

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

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
= 0.197 Pa

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

Amount used, frequency and duration of use/exposure

Duration:
Duration of contact < 440 min

Technical and organisational conditions and measures

Technical and organisational measures

Mechanical ventilation giving at least [ACH]:	Inhalation - minimum efficiency of: 44 %
Ensure that direction of application is only horizontal or downward.	
Open doors and windows.	

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 a full face respirator conforming to EN136. Wear suitable respiratory protection. Wear an impervious suit.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 99 %

Use suitable eye protection.

Other conditions affecting worker exposure

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

1.2. CS5: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
= 0.197 Pa

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

Amount used, frequency and duration of use/exposure

Duration:
Duration of contact < 4 h

Technical and organisational conditions and measures

Technical and organisational measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Inhalation - minimum efficiency of: 44 %
Ensure that direction of application is only horizontal or downward.	
Open doors and windows.	

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 a full face respirator conforming to EN136. Wear suitable respiratory protection. Wear an impervious suit.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 99 %
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. CS6: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

= 0.197 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Duration of contact < 4 h

Technical and organisational conditions and measures

Technical and organisational measures

Mechanical ventilation giving at least [ACH]:	Inhalation - minimum efficiency of: 44 %
Ensure that direction of application is only horizontal or downward.	
Open doors and windows.	

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 a full face respirator conforming to EN136. Wear suitable respiratory protection. Wear an impervious suit.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 99 %
Use suitable eye protection.	

Other conditions affecting worker exposure

Outdoor use

Professional use

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

Body parts exposed:

Assumes that potential dermal contact is limited to hands.

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario (ERC8b, ERC8e)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	0.00172 mg/L	EUSES v2.1	0.037
freshwater sediment	0.00701 mg/kg dry weight	EUSES v2.1	0.027
marine water	0.00017 mg/L	EUSES v2.1	0.037
marine sediment	0.0007 mg/kg dry weight	EUSES v2.1	0.027
Sewage treatment plant	0.014 mg/L	EUSES v2.1	0.069
Agricultural soil	8E-05 mg/kg dry weight	EUSES v2.1	< 0.01
Man via environment - Inhalation	< 0.0001 mg/m³	EUSES v2.1	< 0.01

Man via environment - Oral	< 0.0001 mg/kg bw/day	EUSES v2.1	< 0.01

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	0.023 mg/m³	EASY TRA v3.6	0.004
inhalative, systemic, short-term	0.464 mg/m³	EASY TRA v3.6	0.211
combined routes, systemic, long-term	N/A	N/A	0.247
dermal, systemic, long-term	0.03 mg/kg bw/day	RISKOFDERM v2.1	0.203

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	0.31 mg/m³	ECETOC TRA worker v3	0.584
inhalative, systemic, short-term	0.4641238 mg/m³	EASY TRA v3.6	0.59
combined routes, systemic, long-term	N/A	N/A	0.854
dermal, systemic, long-term	0.041 mg/kg bw/day	RISKOFDERM v2.1	0.27

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.039 mg/m³	ECETOC TRA worker v3	0.073
inhalative, systemic, short-term	0.867 mg/m³	EASY TRA v3.6	0.413
combined routes, systemic, long-term	N/A	N/A	0.343
dermal, systemic, long-term	0.041 mg/kg bw/day	RISKOFDERM v2.1	0.27

1.3. CS5: 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	0.367 mg/m³	ART v1.5	0.022
inhalative, systemic, short-term	0.023 mg/m³	ART v1.5	0.011
combined routes, systemic, long-term	N/A	N/A	0.827
dermal, systemic, long-term	0.121 mg/kg bw/day	RISKOFDERM v2.1	0.805

1.3. CS6: 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	0.019 mg/m³	ART v1.5	0.037
inhalative, systemic, short-term	0.039 mg/m³	ART v1.5	0.019
combined routes, systemic, long-term	N/A	N/A	0.101
dermal, systemic, long-term	0.05 mg/kg bw/day	RISKOFDERM v2.1	0.33

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.