

Safety Data Sheet

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

SP70 (A)

Date of first edition: 6/30/2020

Safety Data Sheet dated 25/11/2024

version 10

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

1.1. Product identifier

Mixture identification:

Trade name: SP70 (A)

Trade code: S100B0195 .050

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

Recommended use: Adhesives/sealants for resilient materials and textiles; 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)

Flam. Liq. 3	Flammable liquid and vapour.
Skin Irrit. 2	Causes skin irritation.
Eye Irrit. 2	Causes serious eye irritation.
Skin Sens. 1A	May cause an allergic skin reaction.
Repr. 1B	May damage fertility.
Aquatic Chronic 3	Harmful to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

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

Hazard pictograms and Signal Word



Danger

Hazard statements

H226	Flammable liquid and vapour.
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.
- P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
- 3
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- 8
- P501 Dispose of contents/container in accordance with applicable regulations.

Contains

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

Cashew, nutshell liq.

bis-[4-(2,3-epoxipropoxy)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: SP70 (A)

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

Qty	Name	Ident. Numb.	Classification	Registration Number
≥5-<10 %	bis-[4-(2,3-epoxipropoxy)phenyl]propane	CAS:1675-54-3 EC:216-823-5 Index:603-073-00-2	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411, M-Chronic:1	01-2119456619-26
			Specific Concentration Limits: C ≥ 5%: Eye Irrit. 2 H319 C ≥ 5%: Skin Irrit. 2 H315	
≥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 %	ethanol; ethyl alcohol	CAS:64-17-5 EC:200-578-6 Index:603-002-00-5	Flam. Liq. 2, H225 Eye Irrit. 2, H319	01-2119457610-43
			Specific Concentration Limits: C ≥ 50%: Eye Irrit. 2 H319	
≥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
≥0.3-<0.5 %	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

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.
Remove contaminated clothing immediately and dispose off safely.
After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

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

Protect uninjured eye.

In case of Ingestion:

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

In case of Inhalation:

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

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

Eye irritation
Eye damages
Skin Irritation
Erythema

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

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

CO2 or Dry chemical fire extinguisher.

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 all sources of ignition.

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.

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

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

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

7.2. Conditions for safe storage, including any incompatibilities

Avoid direct sunlight.

Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Cool and adequately ventilated.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

	OEL Type	Country	Occupational Exposure Limit
Limestone CAS: 1317-65-3	NATIONAL	BULGARIA	Long Term: 10 mg/m ³ Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	ESTONIA	Long Term: 10 mg/m ³ Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	ESTONIA	Long Term: 5 mg/m ³ Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	GREECE	Long Term: 10 mg/m ³ εισπν Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	GREECE	Long Term: 5 mg/m ³ αvapn Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	GREECE	Long Term: 10 mg/m ³ εισπν. Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	GREECE	Long Term: 5 mg/m ³ αvapn. Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	HUNGARY	Long Term: 10 mg/m ³ N Source: 5/2020. (II. 6.) ITM rendelet
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m ³ Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 4 mg/m ³ Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m ³ Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND	Long Term: 4 mg/m ³ Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)

		NORTHERN IRELAND	
	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
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
propylene carbonate CAS: 108-32-7	NATIONAL	LATVIA	Long Term: 2 mg/m3 Source: KN325P1

ethanol; ethyl alcohol
CAS: 64-17-5

NATIONAL	LITHUANIA	Long Term: 7 mg/m ³ Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
SUVA	SWITZERLAND	Long Term: 25.5 mg/m ³ - 6 ppm; Short Term: 25.5 mg/m ³ - 6 ppm SSC, Yeux / Auge Source: suva.ch/valeurs-limites
NATIONAL	GERMANY	Long Term: 8.5 mg/m ³ - 2 ppm DFG, Y, 11, 1 (I) Source: TRGS 900
ACGIH		Short Term: 1000 ppm A3 - URT irr
NATIONAL	AUSTRIA	Long Term: 1900 mg/m ³ - 1000 ppm; Short Term: Ceiling - 3800 mg/m ³ - 2000 ppm 60(Mow), 3x, MAK Source: GKV, BGBl. II Nr. 156/2021
NATIONAL	BULGARIA	Long Term: 1000 mg/m ³ Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
NATIONAL	CZECHIA	Long Term: 1000 mg/m ³ ; Short Term: Ceiling - 3000 mg/m ³ Source: Nařízení vlády č. 361-2007 Sb
NATIONAL	DENMARK	Long Term: 1900 mg/m ³ - 1000 ppm Source: BEK nr 2203 af 29/11/2021
NATIONAL	ESTONIA	Long Term: 1000 mg/m ³ - 500 ppm; Short Term: 1900 mg/m ³ - 1000 ppm Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FINLAND	Long Term: 1900 mg/m ³ - 1000 ppm; Short Term: 2500 mg/m ³ - 1300 ppm Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 1900 mg/m ³ - 1000 ppm; Short Term: 9500 mg/m ³ - 5000 ppm Source: INRS outil65
NATIONAL	GREECE	Long Term: 1900 mg/m ³ - 1000 ppm Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	HUNGARY	Long Term: 1900 mg/m ³ ; Short Term: 3800 mg/m ³ N Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	LATVIA	Long Term: 1000 mg/m ³ Source: KN325P1
NATIONAL	LITHUANIA	Long Term: 1000 mg/m ³ - 500 ppm; Short Term: 1900 mg/m ³ - 1000 ppm Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NETHERLANDS	Long Term: 260 mg/m ³ ; Short Term: 1900 mg/m ³ H Source: Arbeidsomstandighedenregeling - Lijst B2
NATIONAL	NORWAY	Long Term: 950 mg/m ³ - 500 ppm Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 1900 mg/m ³ Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 960 mg/m ³ - 500 ppm; Short Term: 1920 mg/m ³ - 1000 ppm Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 1000 mg/m ³ - 500 ppm; Short Term: 1900 mg/m ³ - 1000 ppm V Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 960 mg/m ³ - 500 ppm; Short Term: 1920 mg/m ³ - 1000 ppm SSC, Formel / Formal, INRS NIOSH Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 1920 mg/m ³ - 1000 ppm Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
NATIONAL	BELGIUM	Long Term: 1907 mg/m ³ - 1000 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1

propan-2-ol; isopropyl
alcohol; isopropanol
CAS: 67-63-0

NATIONAL	CROATIA	Long Term: 1900 mg/m ³ - 1000 ppm Source: NN 1/2021
NATIONAL	GERMANY	Long Term: 380 mg/m ³ - 200 ppm DFG, Y, 4(II) Source: TRGS 900
NATIONAL	IRELAND	Short Term: 1000 ppm Source: 2021 Code of Practice
NATIONAL	ROMANIA	Long Term: 1900 mg/m ³ - 1000 ppm; Short Term: 9500 mg/m ³ - 5000 ppm Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SLOVENIA	Long Term: 960 mg/m ³ - 500 ppm; Short Term: 1920 mg/m ³ - 1000 ppm Y Source: UL št. 72, 11. 5. 2021
NATIONAL	SPAIN	Short Term: 1910 mg/m ³ - 1000 ppm S Source: LEP 2022
NATIONAL	AUSTRALIA	Long Term: 983 mg/m ³ - 400 ppm (8h); Short Term: 1230 mg/m ³ - 500 ppm
ACGIH		Long Term: 200 ppm (8h); Short Term: 400 ppm A4, BEI - Eye and URT irr, CNS impair
NATIONAL	AUSTRIA	Long Term: 500 mg/m ³ - 200 ppm; Short Term: 2000 mg/m ³ - 800 ppm 15(Miw), 4x, MAK Source: BGBl. II Nr. 156/2021
NATIONAL	BULGARIA	Long Term: 980 mg/m ³ ; Short Term: 1225 mg/m ³ Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
NATIONAL	CZECHIA	Long Term: 500 mg/m ³ ; Short Term: Ceiling - 1000 mg/m ³ I Source: Nařízení vlády č. 361-2007 Sb
NATIONAL	DENMARK	Long Term: 490 mg/m ³ - 200 ppm Source: BEK nr 2203 af 29/11/2021
NATIONAL	ESTONIA	Long Term: 350 mg/m ³ - 150 ppm; Short Term: 600 mg/m ³ - 250 ppm Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FINLAND	Long Term: 500 mg/m ³ - 200 ppm; Short Term: 620 mg/m ³ - 250 ppm Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Short Term: 980 mg/m ³ - 400 ppm Source: INRS outil65
NATIONAL	GREECE	Long Term: 980 mg/m ³ - 400 ppm; Short Term: 1225 mg/m ³ - 500 ppm Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	HUNGARY	Long Term: 500 mg/m ³ ; Short Term: 1000 mg/m ³ b, i, R Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	LATVIA	Long Term: 350 mg/m ³ ; Short Term: 600 mg/m ³ Source: KN325P1
NATIONAL	LITHUANIA	Long Term: 350 mg/m ³ - 150 ppm; Short Term: 600 mg/m ³ - 250 ppm Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NORWAY	Long Term: 245 mg/m ³ - 100 ppm Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 900 mg/m ³ ; Short Term: 1200 mg/m ³ skóra Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 500 mg/m ³ - 200 ppm; Short Term: 1000 mg/m ³ - 400 ppm Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 350 mg/m ³ - 150 ppm; Short Term: 600 mg/m ³ - 250 ppm V Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 500 mg/m ³ - 200 ppm; Short Term: 1000 mg/m ³ - 400 ppm SSC, B, VRS Foie SNC Yeux / OAW Laber ZNS Auge, INRS NIOSH

WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 999 mg/m ³ - 400 ppm; Short Term: 1250 mg/m ³ - 500 ppm Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
NATIONAL	BELGIUM	Long Term: 500 mg/m ³ - 200 ppm; Short Term: 1000 mg/m ³ - 400 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 999 mg/m ³ - 400 ppm; Short Term: 1250 mg/m ³ - 500 ppm Source: NN 1/2021
NATIONAL	GERMANY	Long Term: 500 mg/m ³ - 200 ppm DFG, Y, 2(II) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 200 ppm; Short Term: 400 ppm Sk Source: 2021 Code of Practice
NATIONAL	ROMANIA	Long Term: 200 mg/m ³ - 81 ppm; Short Term: 500 mg/m ³ - 203 ppm Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SLOVENIA	Long Term: 500 mg/m ³ - 200 ppm; Short Term: 1000 mg/m ³ - 400 ppm Y, BAT Source: UL št. 72, 11. 5. 2021
NATIONAL	SPAIN	Long Term: 500 mg/m ³ - 200 ppm; Short Term: 1000 mg/m ³ - 400 ppm VLB®, s Source: LEP 2022
Chromium (III) oxide CAS: 1308-38-9	NATIONAL LATVIA	Long Term: 1 mg/m ³ Source: KN325P1

Predicted No Effect Concentration (PNEC) values

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

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

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

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

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

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

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

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

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

ethanol; ethyl alcohol
CAS: 64-17-5

Exposure Route: Fresh Water; PNEC Limit: 960 µg/l

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 2.75 mg/l

Exposure Route: Marine water; PNEC Limit: 790 µg/l

Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 580 mg/l

Exposure Route: Freshwater sediments; PNEC Limit: 3.6 mg/kg

Exposure Route: Marine water sediments; PNEC Limit: 2.9 mg/kg

Exposure Route: Soil; PNEC Limit: 630 µg/kg

Exposure Route: Secondary poisoning; PNEC Limit: 550 mg/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
 Exposure Route: Fresh Water; PNEC Limit: 0.003 mg/l

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

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-epoxipropoxy)phenyl]
 propane
 CAS: 1675-54-3

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

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

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

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

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

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

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

ethanol; ethyl alcohol
 CAS: 64-17-5

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
 Worker Professional: 950 mg/m³; Consumer: 114 mg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
 Worker Professional: 1900 mg/m³; Consumer: 950 mg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
 Worker Professional: 343 mg/kg; Consumer: 206 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
 Consumer: 87 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

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: Green

Odour: Like: Alcohol

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: 27 °C (81 °F)

Lower and upper explosion limit: N.A.

Relative vapour density: N.A.

Vapour pressure: N.A.

Density and/or relative density: 1.60 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: The product is classified Flam. Liq. 3 H226

Volatile Organic compounds - VOCs = 7.5 % ; 120 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

Avoid contact with combustible materials. The product could catch fire.

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-epoxipropoxy)phenyl] propane	a) acute toxicity	LD50 Oral Rabbit = 19800 mg/kg	
		LD50 Skin Rabbit > 20 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive	epoxy resin with an average molecular mass ≤ 700 Da 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 route
		Carcinogenicity Negative	Mouse
	g) reproductive toxicity	No Observed Adverse Effect Level Oral = 10100 mg/kg	Mouse
ethanol; ethyl alcohol	a) acute toxicity	LD50 Oral Rat = 10470 mg/kg	
		LC50 Inhalation Vapour Rat = 117 mg/l 4h	
		LD50 Skin Rabbit = 17100 mg/kg	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative	
	c) serious eye damage/irritation	Eye Irritant Rabbit No	
	d) respiratory or skin sensitisation	Skin Sensitization Guinea pig Negative	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral = 20700 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 Guinea pig Positive	
	g) reproductive toxicity	No Observed Adverse Effect Level Skin Rat = 200 mg/kg	
Cashew, nutshell liq.	a) acute toxicity	LD50 Oral Rat = 2000 mg/kg	
		LD50 Skin Rat > 2000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse

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-epoxipropoxy)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
ethanol; ethyl alcohol	CAS: 64-17-5 - EINECS: 200-578-6 - INDEX: 603-002-00-5	a) Aquatic acute toxicity : LC50 Fish S. gairdneri > 11.2 g/L 96h b) Aquatic chronic toxicity : NOEC Fish Oryzias latipes = 250 mg/L OECD212 a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 5012 mg/L 48h a) Aquatic acute toxicity : NOEC Daphnia Ceriodaphnia dubia = 9.6 mg/L - 10days a) Aquatic acute toxicity : EC50 Algae Chlorella vulgaris = 275 mg/L 72h a) Aquatic acute toxicity : LC50 Paramecium caudatum = 5800 mg/L - 16hr d) Terrestrial toxicity : LC50 Worm Eisenia foetida = 0.1 mg/cm2 e) Plant toxicity : EC50 = 633 mg/kg
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
Cashew, nutshell liq.	CAS: 8007-24-7 - EINECS: 232-355-4	a) Aquatic acute toxicity : LC50 Fish Cyprinodon 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	Persistence/Degradability:	Test	Value	Notes:
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Non-readily biodegradable	Oxygen consumption		OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
propylene carbonate	Readily biodegradable	CO2 production		OECD guideline 301 B

ethanol; ethyl alcohol	Readily biodegradable	CO2 production	75.000	
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-epoxipropoxy)phenyl]propane	Bioaccumulative	BCF - Bioconcentration factor	31.000
ethanol; ethyl alcohol	Bioaccumulative	BCF - Bioconcentration factor	4.500
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	Bioaccumulative	BCF - Bioconcentration 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

14.1. UN number or ID number

1133

14.2. UN proper shipping name

ADR-Shipping Name: ADHESIVES containing flammable liquid

IATA-Technical name: ADHESIVES containing flammable liquid

IMDG-Technical name: ADHESIVES containing flammable liquid

14.3. Transport hazard class(es)

ADR-Class: 3

IATA-Class: 3

IMDG-Class: 3

14.4. Packing group

ADR-Packing Group: III

IATA-Packing group: III

IMDG-Packing group: III

14.5. Environmental hazards

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: F-E, S-D

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: 3

ADR - Hazard identification number: -

ADR-Special Provisions: -

ADR-Transport category (Tunnel restriction code): 3 (E)

ADR Limited Quantities: 5 L
ADR Excepted Quantities: E1

Air (IATA):

IATA-Passenger Aircraft: 355
IATA-Cargo Aircraft: 366
IATA-Label: 3
IATA-Subsidiary hazards: -
IATA-Erg: 3L
IATA-Special Provisions: A3

Sea (IMDG):

IMDG-Stowage Code: Category A
IMDG-Stowage Note: -
IMDG-Subsidiary hazards: -
IMDG-Special Provisions: 223 955

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, 40

Restrictions related to the substances contained: 75

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

Seveso III category according to Annex 1, part 1	Lower-tier threshold (tonnes)	Upper-tier threshold (tonnes)
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Product belongs to category: P5c	5000	50000
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Explosives precursors – Regulation 2019/1148

No substances listed

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

No substances listed

German Water Hazard Class.

Class 2: hazardous for water.

German Lagerklasse according to TRGS 510:

SVHC Substances:

No SVHC substances present in concentration $\geq 0.1\%$

15.2. Chemical safety assessment

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

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

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

propylene carbonate

ethanol; ethyl alcohol

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

Cashew, nutshell liq.

SECTION 16: Other information

Code	Description
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
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
2.6/2	Flam. Liq. 2	Flammable liquid, Category 2
2.6/3	Flam. Liq. 3	Flammable liquid, Category 3
3.1/4/Dermal	Acute Tox. 4	Acute toxicity (dermal), Category 4
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/1	Eye Dam. 1	Serious eye damage, Category 1
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.4.2/1A	Skin Sens. 1A	Skin Sensitisation, Category 1A
3.4.2/1B	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
Flam. Liq. 3, H226	On basis of test data
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Skin Sens. 1A, H317	Calculation method
Repr. 1B, H360F	Calculation method
Aquatic Chronic 3, H412	Calculation method

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

Main bibliographic sources:

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

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

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and

constitutes no guarantee of particular quality.

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

This MSDS cancels and replaces any preceding release.

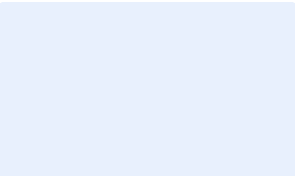
Legend to abbreviations and acronyms used in the safety data sheet:

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

WGK: German Water Hazard Class.

Paragraphs modified from the previous revision:

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



Exposure Scenario

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. 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
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Worker Contributing Scenario

CS2 Hand application - finger paints, pastels, adhesives	PROC19
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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)
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*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 %
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*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/m ³	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-epoxipropoxy)phenyl]propane

Exposure Scenario, 07/06/2021

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

Table of contents

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

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

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

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

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

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

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

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

Personal protection

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

Other conditions affecting worker exposure

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

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

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

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

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

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

Personal protection

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

Other conditions affecting worker exposure

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

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

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

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

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

Covers daily exposures up to 8 hours

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

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

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

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

Wear suitable face shield.

Wear an impervious suit.

Wear a respirator conforming to EN140.

Other conditions affecting worker exposure

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

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

Manual activities involving hand contact (PROC19)

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

Liquid, vapour pressure < 0,5 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

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

Covers daily exposures up to 8 hours

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

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

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

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

Other conditions affecting worker exposure

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

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

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

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 0.84 mg/m ³	ECETOC TRA worker v2.0	0.07
dermal, systemic, long-term	= 0.2742 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.03

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 5E-07 mg/m ³	ECETOC TRA worker v2.0	< 0.001
dermal, systemic, long-term	= 2.743 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.33

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

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

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

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

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

Guidance to check compliance with the exposure scenario:

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



Exposure Scenario

Ethanol

Exposure Scenario, 29/07/2021

Substance identity	
	Ethanol
CAS No.	64-17-5
INDEX No.	603-002-00-5
EINECS No.	200-578-6
Registration number	01-2119457610-43

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

1. ES 1		Widespread use by professional workers; Various products (PC9a, PC1)	
1.1 TITLE SECTION			
Exposure Scenario name	Professional application of coatings and inks		
Date - Version	29/07/2021 - 1.0		
Life Cycle Stage	Widespread use by professional workers		
Main user group	Professional uses		
Sector(s) of use	Professional uses (SU22)		
Product Categories	Coatings and paints, thinners, paint removers (PC9a) - Adhesives, sealants (PC1)		
Environment Contributing Scenario			
CS1	ERC8a - ERC8d		
Worker Contributing Scenario			
CS2 Rolling, Brushing	PROC10		
CS3 Roller, spreader, flow application	PROC11		
CS4 Handling and dilution of concentrates	PROC19		
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)		
<i>Product (article) characteristics</i>			
Physical form of product: Liquid			
Concentration of substance in product: Covers concentrations up to 80 %			
<i>Amount used, frequency and duration of use (or from service life)</i>			
Amounts used: Annual site tonnage = 10000 t			
Release type: Continuous release			
Emission days: 300 days per year			
<i>Technical and organisational conditions and measures</i>			
Control measures to prevent releases			
Prevent discharge of undissolved substance to or recover from onsite wastewater.		Air - minimum efficiency of: 100 % Soil - minimum efficiency of: 20 % Water - minimum efficiency of: 100 %	
<i>Conditions and measures related to sewage treatment plant</i>			
STP type: Municipal Sewage Treatment Plant Water - minimum efficiency of: = 90 %			
STP effluent (m ³ /day): 2000			

<i>Conditions and measures related to treatment of waste (including article waste)</i>	
Waste treatment Contain and dispose of waste according to local regulations.	
<i>Other conditions affecting environmental exposure</i>	
Local marine water dilution factor: 100 Local freshwater dilution factor: 10 Receiving surface water flow: 18000 m ³ /day	
1.2. CS2: Worker Contributing Scenario: Rolling, Brushing (PROC10)	
Process Categories	Roller application or brushing (PROC10)
<i>Product (article) characteristics</i>	
Physical form of product: Liquid	
Concentration of substance in product: Covers concentrations up to 80 %	
<i>Amount used, frequency and duration of use/exposure</i>	
Duration: Covers use up to > 4 h Frequency: Use frequency 5 days per week	
<i>Technical and organisational conditions and measures</i>	
Technical and organisational measures Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
Personal protection For further specification, refer to section 8 of the SDS.	
<i>Other conditions affecting worker exposure</i>	
Indoor use Professional use	
1.2. CS3: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)	
Process Categories	Non industrial spraying (PROC11)
<i>Product (article) characteristics</i>	
Physical form of product: Liquid	
Concentration of substance in product: Covers percentage substance in the product up to 25 %.	
<i>Amount used, frequency and duration of use/exposure</i>	
Duration: Covers use up to < 4 h Frequency: Use frequency 5 days per week	
<i>Technical and organisational conditions and measures</i>	
Technical and organisational measures Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
Personal protection	

Wear chemically resistant gloves (tested to EN374) in combination with "basic" employee training. For further specification, refer to section 8 of the SDS.		Dermal - minimum efficiency of: = 80 %	
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Other conditions affecting worker exposure

Indoor use
Professional use

1.2. CS4: Worker Contributing Scenario: Handling and dilution of concentrates (PROC19)

Process Categories	Manual activities involving hand contact (PROC19)		
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Product (article) characteristics

Physical form of product:
Liquid

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

Amount used, frequency and duration of use/exposure

Duration:
Covers use up to > 4 h

Frequency:
Use frequency 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures
Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
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
For further specification, refer to section 8 of the SDS.

Other conditions affecting worker exposure

Indoor use
Professional use

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	= 0.045 mg/L	EUSES v2.1	= 0.0469
freshwater sediment	= 0.045 mg/kg dry weight	EUSES v2.1	= 0.0469
marine water	= 0.0044 mg/L	EUSES v2.1	= 0.00557
marine sediment	= 0.0044 mg/kg dry weight	EUSES v2.1	= 0.00557
soil	= 0.0003 mg/kg dry weight	EUSES v2.1	= 0.00476
wastewater treatment plant microbes	= 0.34 mg/L	EUSES v2.1	= 0.000586

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

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

inhalative, systemic, long-term	= 198.08 mg/m ³	ECETOC TRA worker v2.0	= 0.202
dermal, systemic, long-term	= 27.42 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.177

1.3. CS3: 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	= 345.75 mg/m ³	ECETOC TRA worker v2.0	= 0.364
dermal, systemic, long-term	= 21.42 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.138

1.3. CS4: Worker Contributing Scenario: Handling and dilution of concentrates (PROC19)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 115.25 mg/m ³	ECETOC TRA worker v2.0	= 0.1213
dermal, systemic, long-term	= 84.86 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.547

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

Guidance to check compliance with the exposure scenario:

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

Exposure Scenario

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

Exposure Scenario, 08/06/2021

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

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

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

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

Personal protection

Wear suitable gloves tested to EN374.

Wear a respirator conforming to EN140.

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/m ³	ECETOC TRA worker v2.0	= 0.674
dermal, systemic, long-term	= 0.007 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.002

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

Additional information on exposure estimation:

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

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

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

Additional information on exposure estimation:

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

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

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

Additional information on exposure estimation:

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

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

Guidance to check compliance with the exposure scenario:

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



Exposure Scenario

Cashew, nutshell liq.

Exposure Scenario, 08/06/2021

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

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

1. ES 1		Widespread use by professional workers; Various products (PC9b, PC9a, PC1)	
1.1 TITLE SECTION			
Exposure Scenario name	Dye - Professional application of coatings and inks by brush or roller - Use in rigid foams, coatings, adhesives and sealants		
Date - Version	21/05/2021 - 1.0		
Life Cycle Stage	Widespread use by professional workers		
Main user group	Professional uses		
Sector(s) of use	Professional uses (SU22)		
Product Categories	Fillers, putties, plasters, modelling clay (PC9b) - Coatings and paints, thinners, paint removers (PC9a) - Adhesives, sealants (PC1)		
Article Category(ies)	Stone, plaster, cement, glass and ceramic articles: Large surface area articles (AC4a) - Other articles made of stone, plaster, cement, glass or ceramic (AC4g)		
Environment Contributing Scenario			
CS1	ERC8c - ERC8f		
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)		
<i>Product (article) characteristics</i>			
Physical form of product: Liquid			
Concentration of substance in product: Covers percentage substance in the product up to 1 %.			
<i>Amount used, frequency and duration of use (or from service life)</i>			
Amounts used: < 50 t(tonnes)/year < 167 kg/day			
Release type: Intermittent release			
Emission days: 365 days per year			
<i>Conditions and measures related to sewage treatment plant</i>			
STP type: Municipal Sewage Treatment Plant Water - minimum efficiency of: = 93.2 %			
<i>Conditions and measures related to treatment of waste (including article waste)</i>			
Waste treatment Residues which cannot be recycled are disposed off as chemical waste			
<i>Other conditions affecting environmental exposure</i>			
Local marine water dilution factor: 100 Local freshwater dilution factor: 10			

Receiving surface water flow: 18000 m ³ /day Covers indoor and outdoor use	
1.2. CS2: Worker Contributing Scenario: Mixing operations (PROC19)	
Process Categories	Manual activities involving hand contact (PROC19)
<i>Product (article) characteristics</i>	
Physical form of product: Liquid	
Concentration of substance in product: Covers percentage substance in the product up to 1 %.	
<i>Amount used, frequency and duration of use/exposure</i>	
Amounts used: < 50 t(tonnes)/year	
Duration: Covers daily exposures up to 8 hours	
<i>Technical and organisational conditions and measures</i>	
Technical and organisational measures Ensure operatives are trained to minimise exposures. Avoid direct eye contact with product, also via contamination on hands.	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
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.	
<i>Other conditions affecting worker exposure</i>	
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)
<i>Product (article) characteristics</i>	
Physical form of product: Liquid, vapour pressure < 0,5 kPa at STP	
Concentration of substance in product: Covers percentage substance in the product up to 25 %.	
<i>Amount used, frequency and duration of use/exposure</i>	
Duration: Covers daily exposures up to 8 hours	
Frequency: Avoid using product more than = 4 h/event	
<i>Technical and organisational conditions and measures</i>	
Technical and organisational measures Ensure operatives are trained to minimise exposures. Avoid direct eye contact with product, also via contamination on hands.	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
Personal protection Wear suitable gloves tested to EN374.	
<i>Other conditions affecting worker exposure</i>	

Indoor use

Professional use

Temperature: Covers use at ambient temperatures.

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

Process Categories Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Avoid using product more than = 4 h/event

Technical and organisational conditions and measures

Technical and organisational measures

Ensure operatives are trained to minimise exposures.

Provide extract ventilation to points where emissions occur.

Avoid direct eye contact with product, also via contamination on hands.

Use long handled brushes and rollers.

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

Personal protection

Wear suitable gloves tested to EN374.

Wear a respirator conforming to EN140.

Other conditions affecting worker exposure

Indoor use

Professional use

Temperature: Covers use at ambient temperatures.

1.3 Exposure estimation and reference to its source

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

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

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

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

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

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

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, local, short-term	= 2.325 mg/m ³	ECETOC TRA worker v2.0	= 0.168
dermal, systemic, long-term	= 0.137 mg/m ³	ECETOC TRA worker v2.0	= 0.035

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

Guidance to check compliance with the exposure scenario:

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