Safety Data Sheet

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

KERAREP (A)

Date of first edition: 4/18/2021

Safety Data Sheet dated 21/10/2025

version 7

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

1.1. Product identifier

Mixture identification:

Trade name: KERAREP (A)

Trade code: 12112020

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

Recommended use: Adhesives, sealants

Uses advised against: All uses other than recommended ones

1.3. Details of the supplier of the safety data sheet

Company: KERAKOLL S.p.A.

Via dell'Artigianato, 9

41049 Sassuolo (MODENA) - ITALY

Tel.+39 0536 816511 Fax. +39 0536816581

safety@kerakoll.com

1.4. Emergency telephone number

European emergency phone number 112

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

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

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

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

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. 2	Suspected of damaging fertility or the unborn child if inhaled and in contact with skin.
STOT RE 1	Causes damage to organs (hearing organs) through prolonged or repeated exposure if inhaled.

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.

H361	Suspected of damaging fertility or the unborn child if inhaled and in contact with skin.
H372	Causes damage to organs (hearing organs) through prolonged or repeated exposure if inhaled.

Precautionary statements

P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe vapours.
P280	Wear protective gloves and eye protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P370+P378	In case of fire, use a CO2 fire extinguisher to extinguish.
P501	Dispose of contents/container in accordance with applicable regulations.

Contains

maleic anhydride

styrene

Fatty acids, C14-18 and C16-18-unsatd., maleated

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: KERAREP (A)

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

Qty	Name	Ident. Numb.	Classification	Registration Number
≥10-<20 %	styrene	CAS:100-42-5 EC:202-851-5 Index:601-026-00-0	Flam. Liq. 3, H226; Repr. 2, H361; Acute Tox. 4, H332; STOT RE 1, H372; Asp. Tox. 1, H304; Eye Irrit. 2, H319; Skin Irrit. 2, H315; STOT SE 3, H335; Aquatic Chronic 3, H412	
≥0.3-<0.5 %	Fatty acids, C14-18 and C16-18-unsatd., maleated	CAS:85711-46-2 EC:288-306-2	Skin Irrit. 2, H315; Skin Sens. 1, H317	01-2119976378-19
≥0.20-<0.25 %	1,1'-(p-tolylimino)dipropan-2-ol	CAS:38668-48-3 EC:254-075-1	Acute Tox. 2, H300; Eye Irrit. 2, H319; Aquatic Chronic 3, H412	01- 2119980937- 17
≥0.20-<0.25 %	xylene	CAS:1330-20-7 EC:215-535-7 Index:601-022-00-9	Flam. Liq. 3, H226; Acute Tox. 4, H332; Acute Tox. 4, H312; Skin Irrit. 2, H315; STOT SE 3, H335; STOT RE 2, H373; Asp. Tox. 1, H304; Aquatic Chronic 3, H412; Eye Irrit. 2, H319, M-Chronic:1	01-2119488216-32
≥0.05-<0.1 %	maleic anhydride	CAS:108-31-6 EC:203-571-6 Index:607-096-00-9	Acute Tox. 4, H302; STOT RE 1, H372; Skin Corr. 1B, H314; Eye Dam. 1, H318; Resp. Sens. 1, H334; Skin Sens. 1A, H317, EUH071 Specific Concentration Limits: C ≥ 0.001%: Skin Sens. 1A H317	

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

Wash thoroughly the body (shower or bath).

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:

If breathing is irregular or stopped, administer artificial respiration.

In case of inhalation, consult a doctor immediately and show him packing or label.

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:

In case of fire, use a CO_2 fire extinguisher to extinguish.

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.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Provide adequate ventilation.

Use appropriate respiratory protection.

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.

Use localized ventilation system.

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

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

Contamined clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

7.2. Conditions for safe storage, including any incompatibilities

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
styrene CAS: 100-42-5	ACGIH		Long Term: 10 ppm (8h); Short Term: 20 ppm OTO, A3, BEI - CNS and hearing impair, URT irr, peripheral neuropathy, visual disorders
	NATIONAL	AUSTRIA	Long Term: 85 mg/m3 - 20 ppm; Short Term: 340 mg/m3 - 80 ppm 15(Miw), 4x, MAK, d Source: BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 85 mg/m3; Short Term: 215 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 100 mg/m3; Short Term: Ceiling - 400 mg/m3 B, I, P Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Short Term: Ceiling - 105 mg/m3 - 25 ppm LHK Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 90 mg/m3 - 20 ppm; Short Term: 200 mg/m3 - 50 ppm A Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Long Term: 86 mg/m3 - 20 ppm; Short Term: 430 mg/m3 - 100 ppm melu Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Long Term: 100 mg/m3 - 23.3 ppm; Short Term: 200 mg/m3 - 46.6 ppm Toxique pour la reproduction de catégorie 2, Risque de pénétration percutanée Source: INRS outil65, article R. 4412-149 du Code du travail
	NATIONAL	GREECE	Long Term: 425 mg/m3 - 100 ppm; Short Term: 1050 mg/m3 - 250 ppm Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	HUNGARY	Long Term: 86 mg/m3; Short Term: 172 mg/m3 i, BEM, R+T Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL	LATVIA	Long Term: 10 mg/m3; Short Term: 30 mg/m3 Ietekme uz dzirdi Source: KN325P1
	NATIONAL	LITHUANIA	Long Term: 90 mg/m3 - 20 ppm; Short Term: 200 mg/m3 - 50 ppm O, Projektuojant naujus objektus ar keičiant senus, reikia stengtis užtikrinti, kad stireno poveikis per darbo dieną būtų priimtinas laikantis IPRD 10 ppm koncentracijos. Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	NORWAY	Long Term: 105 mg/m3 - 25 ppm

			M Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 50 mg/m3; Short Term: 100 mg/m3 Source: Dz.U. 2018 poz. 1286
	NATIONAL	SLOVAKIA	Long Term: 90 mg/m3 - 20 ppm; Short Term: 200 mg/m3 - 50 ppm 1) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	NATIONAL	SWEDEN	Long Term: 43 mg/m3 - 10 ppm; Short Term: 86 mg/m3 - 20 ppm B, H, V Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 85 mg/m3 - 20 ppm; Short Term: 170 mg/m3 - 40 ppm SSC, OB, B, VRS Yeux SN / OAW Auge NS, HSE NIOSH DFG OSHA Source: suva.ch/valeurs-limites
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 430 mg/m3 - 100 ppm; Short Term: 1080 mg/m3 - 250 ppm Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	NATIONAL	BELGIUM	Long Term: 108 mg/m3 - 25 ppm; Short Term: 216 mg/m3 - 50 ppm D Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	CROATIA	Long Term: 430 mg/m3 - 100 ppm; Short Term: 1080 mg/m3 - 250 ppm koža Source: NN 1/2021
	NATIONAL	GERMANY	Long Term: 86 mg/m3 - 20 ppm DFG, Y, 2(II) Source: TRGS 900
	NATIONAL	IRELAND	Long Term: 85 mg/m3 - 20 ppm; Short Term: 170 mg/m3 - 40 ppm Source: 2021 Code of Practice
	NATIONAL	SLOVENIA	Long Term: 86 mg/m3 - 20 ppm; Short Term: 172 mg/m3 - 40 ppm Y, BAT, RD2 Source: UL št. 72, 11. 5. 2021
	NATIONAL	SPAIN	Long Term: 86 mg/m3 - 20 ppm; Short Term: 172 mg/m3 - 40 ppm VLB®, ae Source: LEP 2022
ethanol; ethyl alcohol CAS: 64-17-5	ACGIH		Short Term: 1000 ppm A3 - URT irr
	NATIONAL	AUSTRIA	Long Term: 1900 mg/m3 - 1000 ppm; Short Term: Ceiling - 3800 mg/m3 - 2000 ppm 60(Mow), 3x, MAK Source: GKV, BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 1000 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 1000 mg/m3; Short Term: Ceiling - 3000 mg/m3 Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Long Term: 1900 mg/m3 - 1000 ppm Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 1000 mg/m3 - 500 ppm; Short Term: 1900 mg/m3 - 1000 ppm Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Long Term: 1900 mg/m3 - 1000 ppm; Short Term: 2500 mg/m3 - 1300 ppm Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Long Term: 1900 mg/m3 - 1000 ppm; Short Term: 9500 mg/m3 - 5000 ppm Source: INRS outil65
	NATIONAL	GREECE	Long Term: 1900 mg/m3 - 1000 ppm Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	HUNGARY	Long Term: 1900 mg/m3; Short Term: 3800 mg/m3 N Source: 5/2020. (II. 6.) ITM rendelet

	NATIONAL	LATVIA	Long Term: 1000 mg/m3 Source: KN325P1
	NATIONAL	LITHUANIA	Long Term: 1000 mg/m3 - 500 ppm; Short Term: 1900 mg/m3 - 1000 ppm Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	NETHERLANDS	Long Term: 260 mg/m3; Short Term: 1900 mg/m3 H Source: Arbeidsomstandighedenregeling - Lijst B2
	NATIONAL	NORWAY	Long Term: 950 mg/m3 - 500 ppm Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 1900 mg/m3 Source: Dz.U. 2018 poz. 1286
	NATIONAL	SLOVAKIA	Long Term: 960 mg/m3 - 500 ppm; Short Term: 1920 mg/m3 - 1000 ppm Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	NATIONAL	SWEDEN	Long Term: 1000 mg/m3 - 500 ppm; Short Term: 1900 mg/m3 - 1000 ppm V Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 960 mg/m3 - 500 ppm; Short Term: 1920 mg/m3 - 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/m3 - 1000 ppm Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	NATIONAL	BELGIUM	Long Term: 1907 mg/m3 - 1000 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	CROATIA	Long Term: 1900 mg/m3 - 1000 ppm Source: NN 1/2021
	NATIONAL	GERMANY	Long Term: 380 mg/m3 - 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/m3 - 1000 ppm; Short Term: 9500 mg/m3 - 5000 ppm Source: Republicarea 1 - nr. 743 din 29 iulie 2021
	NATIONAL	SLOVENIA	Long Term: 960 mg/m3 - 500 ppm; Short Term: 1920 mg/m3 - 1000 ppm Y Source: UL št. 72, 11. 5. 2021
	NATIONAL	SPAIN	Short Term: 1910 mg/m3 - 1000 ppm s Source: LEP 2022
xylene CAS: 1330-20-7	ACGIH		Long Term: 20 ppm (8h) A4, BEI - URT and eye irr; hematologic eff; CNS impair
	NATIONAL	AUSTRIA	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm 15(Miw), 4x, MAK Source: BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm Кожа Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 200 mg/m3; Short Term: Ceiling - 400 mg/m3 B, D, I Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Long Term: 109 mg/m3 - 25 ppm EH Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 200 mg/m3 - 50 ppm; Short Term: 450 mg/m3 - 100 ppm A Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105

NATIONAL	FINLAND	Long Term: 220 mg/m3 - 50 ppm; Short Term: 440 mg/m3 - 100 ppm iho Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm Risque de pénétration percutanée Source: INRS outil65, article R. 4412-149 du Code du travail
NATIONAL	GREECE	Long Term: 435 mg/m3 - 100 ppm; Short Term: 650 mg/m3 - 150 ppm Δ Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	HUNGARY	Long Term: 221 mg/m3; Short Term: 442 mg/m3 b, BEM, EU1, R Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	LITHUANIA	Long Term: 200 mg/m3 - 50 ppm; Short Term: 450 mg/m3 - 100 ppm O Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NETHERLANDS	Long Term: 210 mg/m3; Short Term: 442 mg/m3 H Source: Arbeidsomstandighedenregeling - Lijst A
NATIONAL	NORWAY	Long Term: 108 mg/m3 - 25 ppm H E Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 100 mg/m3; Short Term: 200 mg/m3 skóra Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm K, 7) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm H Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 220 mg/m3 - 50 ppm; Short Term: 440 mg/m3 - 100 ppm R/H, B, SNC / ZNS, NIOSH INRS Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 220 mg/m3 - 50 ppm; Short Term: 441 mg/m3 - 100 ppm Sk, BMGV Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
NATIONAL	BELGIUM	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm D Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm koža Source: 2000/39/EZ
NATIONAL	CYPRUS	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm δέρμα Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
NATIONAL	GERMANY	Long Term: 220 mg/m3 - 50 ppm DFG, EU, H, 2(II) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm Sk, IOELV Source: 2021 Code of Practice
NATIONAL	ITALY	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm Cute Source: D.lgs. 81/2008, Allegato XXXVIII
NATIONAL	LATVIA	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm Āda Source: KN325P1

	NATIONAL	LUXEMBOURG	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm Peau Source: Mémorial A n.226 du 22 mars 2021
	NATIONAL	MALTA	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm skin Source: S.L.424.24
	NATIONAL	PORTUGAL	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm Cutânea Source: Decreto-Lei n.º 1/2021
	NATIONAL	ROMANIA	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm P, Dir. 2000/39 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
	NATIONAL	SLOVENIA	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm K, BAT, EU1 Source: UL št. 72, 11. 5. 2021
	NATIONAL	SPAIN	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm vía dérmica, VLB®, VLI Source: LEP 2022
	EU		Long Term: 221 mg/m3 - 50 ppm (8h); Short Term: 442 mg/m3 - 100 ppm Skin
maleic anhydride CAS: 108-31-6	ACGIH		Long Term: 0.01 mg/m3 (8h) IFV, DSEN, RSEN, A4 - Resp sens
	NATIONAL	AUSTRIA	Long Term: 0.4 mg/m3 - 0.1 ppm; Short Term: Ceiling - 0.8 mg/m3 - 0.2 ppm 5(Mow), 8x, MAK, Sah Source: BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 1 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 1 mg/m3; Short Term: Ceiling - 2 mg/m3 I, S Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Long Term: 0.4 mg/m3 - 0.1 ppm Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 1.2 mg/m3 - 0.3 ppm; Short Term: 2.5 mg/m3 - 0.6 ppm S Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Long Term: 0.41 mg/m3 - 0.1 ppm; Short Term: Ceiling - 0.81 mg/m3 - 0.2 ppm kattoarvo Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Short Term: 1 mg/m3 Risque d'allergie Source: INRS outil65
	NATIONAL	GREECE	Long Term: 1 mg/m3 - 0.25 ppm Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	HUNGARY	Long Term: 0.08 mg/m3; Short Term: 0.08 mg/m3 m, sz, R+T Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL	LATVIA	Long Term: 1 mg/m3 Source: KN325P1
	NATIONAL	LITHUANIA	Long Term: 1.2 mg/m3 - 0.3 ppm; Short Term: 2.5 mg/m3 - 0.6 ppm J Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	NORWAY	Long Term: 0.8 mg/m3 - 0.2 ppm A Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 0.5 mg/m3; Short Term: 1 mg/m3 skóra Source: Dz.U. 2018 poz. 1286
	NATIONAL	SLOVAKIA	Long Term: 0.41 mg/m3 - 0.1 ppm S

		Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 0.2 mg/m3 - 0.05 ppm; Short Term: 0.4 mg/m3 - 0.1 ppm M, S Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 0.4 mg/m3 - 0.1 ppm; Short Term: 0.4 mg/m3 - 0.1 ppm S, SSC, VR / AW, NIOSH OSHA, La substance peut être présente sous forme de vapeur et d'aérosol en même temps / Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 1 mg/m3; Short Term: 3 mg/m3 Sen Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
NATIONAL	BELGIUM	Long Term: 0.01 mg/m3 - 0.003 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 0.41 mg/m3 - 0.1 ppm; Short Term: 0.8 mg/m3 - 0.2 ppm alergen (koža i udisanje) Source: NN 1/2021
NATIONAL	GERMANY	Long Term: 0.081 mg/m3 - 0.02 ppm DFG, Sah, Y, 11, 1;=2, 5=(I) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 0.01 ppm Sens., IFV Source: 2021 Code of Practice
NATIONAL	ROMANIA	Long Term: 1 mg/m3 - 0.25 ppm; Short Term: 3 mg/m3 - 0.75 ppm Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SLOVENIA	Long Term: 0.41 mg/m3 - 0.1 ppm; Short Term: 0.41 mg/m3 - 0.1 ppm Y Source: UL št. 72, 11. 5. 2021
NATIONAL	SPAIN	Long Term: 0.4 mg/m3 - 0.1 ppm FIV, Sen Source: LEP 2022

Biological limit values

styrene CAS: 100-42-5	Biological Indicator: Mandelic acid in urine and fenilgliossilico; Sampling Period: End of turn Value: 600 mg/g; Medium: Urine
xylene CAS: 1330-20-7	Biological Indicator: Methyl hippuric acid in urine; Sampling Period: End of turn Value: 2000 mg/L; Medium: Urine

Predicted No Effect Concentration (PNEC) values

styrene CAS: 100-42-5	Exposure Route: Fresh Water; PNEC Limit: 34 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 40 µg/l
	Exposure Route: Marine water; PNEC Limit: 27 µg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 5 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 516 µg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 362.5 µg/kg
	Exposure Route: Soil; PNEC Limit: 173 µg/kg
xylene CAS: 1330-20-7	Exposure Route: Fresh Water; PNEC Limit: 327 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 327 µg/l
	Exposure Route: Marine water; PNEC Limit: 327 µg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 6.58 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 12.46 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 12.46 mg/kg
	Exposure Route: Soil; PNEC Limit: 2.31 mg/kg
maleic anhydride CAS: 108-31-6	Exposure Route: Fresh Water; PNEC Limit: 87.5 µg/l

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 589.5 µg/l

Exposure Route: Marine water; PNEC Limit: 8.75 µg/l

Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 24.53 mg/l

Exposure Route: Freshwater sediments; PNEC Limit: 197 µg/kg

Exposure Route: Marine water sediments; PNEC Limit: 19.7 µg/kg

Exposure Route: Soil; PNEC Limit: 25.75 µg/kg

Exposure Route: Secondary poisoning; PNEC Limit: 6.67 mg/kg

Derived No Effect Level (DNEL) values

styrene CAS: 100-42-5	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 85 mg/m³; Consumer: 1 mg/m³ Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Worker Professional: 100 mg/m³; Consumer: 10 mg/m³ Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 100 mg/m³; Consumer: 1 mg/m³ Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Worker Professional: 100 mg/m³; Consumer: 10 mg/m³ Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 406 mg/kg; Consumer: 343 mg/kg Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 7.7 µg/kg
xylene CAS: 1330-20-7	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 221 mg/m³; Consumer: 65.3 mg/m³ Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Worker Professional: 442 mg/m³; Consumer: 260 mg/m³ Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 221 mg/m³; Consumer: 65.3 mg/m³ Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Worker Professional: 442 mg/m³; Consumer: 260 mg/m³ Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 212 mg/kg; Consumer: 125 mg/kg Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 12.5 mg/kg
maleic anhydride CAS: 108-31-6	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 190 µg/m³; Consumer: 50 µg/m³ Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Worker Professional: 800 µg/m³ Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 320 µg/m³; Consumer: 80 µg/m³ Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 200 µg/kg; Consumer: 100 µg/kg Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects Worker Professional: 200 µg/kg; Consumer: 100 µg/kg Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 60 µg/kg Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects Consumer: 100 µg/kg

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.(EN166)

Protection for skin:

Chemical protection clothing. Safety shoes.

Protection for hands:

Protection for hands:

Suitable materials for safety gloves; EN 374:

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

Respiratory protection:

Gas filter type A .

Thermal Hazards:

Not expected if used as intended

Environmental exposure controls:

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Colour: Grey

Odour: Characteristic

Odour threshold: N.A.

pH: N.A.

Kinematic viscosity: > 20,5 mm2/sec (40 °C)

Melting point/freezing point: -31 °C (-24 °F)

Boiling point or initial boiling point and boiling range: 145 °C (293 °F)

Flash point: 32 °C (90 °F)

Lower and upper explosion limit: N.A.

Relative vapour density: 3.6

Vapour pressure: 6.67 hPa

Density and/or relative density: 1.67 g/cm3

Solubility in water: Insoluble

Solubility in oil: N.A.

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

Auto-ignition temperature: 490.00 °C

Decomposition temperature: N.A.

Flammability: The product is classified Flam. Liq. 3 H226

Volatile Organic compounds - VOCs = 17.71 % ; 295.72 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

Carbon monoxide and carbon dioxide. Hydrocarbons

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. 2(H361)
h) STOT-single exposure	Not classified
	Based on available data, the classification criteria are not met
i) STOT-repeated exposure	The product is classified: STOT RE 1(H372)
j) aspiration hazard	Not classified
	Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

styrene	a) acute toxicity	LD50 Oral Rat = 5000 mg/kg	
		LC50 Inhalation Vapour Rat = 11.8 mg/l 4h	
		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 Guineapig Negative	
	f) carcinogenicity	Genotoxicity Negative	Mouse inhalation route
	g) reproductive toxicity	No Observed Adverse Effect Level Inhalation Rat = 0.64	mg/L
xylene	a) acute toxicity	LD50 Oral Rat = 3523 ml/Kg	
		LC50 Inhalation Vapour Rat = 29000 mg/m3 4h	
		LD50 Skin Rabbit = 12126 mg/kg 24h	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Negative 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes 1h	
	f) carcinogenicity	Genotoxicity Negative	Mouse subcutaneous route
	g) reproductive toxicity	No Observed Adverse Effect Level Inhalation Rat = 2171 mg/kg	
maleic anhydride	a) acute toxicity	LD50 Oral Rat = 1090 mg/kg	
		LC50 Inhalation Rat > 4.35 mg/l 1h	
		LD50 Skin Rabbit = 2620 mg/kg	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive 4h	
	c) serious eye damage/irritation	Eye Corrosive Rabbit Positive	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
		Respiratory Sensitization Rat Positive	
	f) carcinogenicity	Genotoxicity Rat Negative 6h	Inhalation route
		Carcinogenicity Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 55 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:

List of Eco-Toxicological properties of the product

Not classified for environmental hazards.

No data available for the product

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
styrene	CAS: 100-42-5 - EINECS: 202-851-5 - INDEX: 601-026-00-0	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 4.02 mg/L 96h
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 4.7 mg/L 48h
		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 1.01 mg/L OECD Guideline 211 - 21days
		a) Aquatic acute toxicity : EC50 Algae = 4.9 mg/L 72h
		a) Aquatic acute toxicity : EC50 Sludge activated sludge = 500 mg/L
xylene	CAS: 1330-20-7 - EINECS: 215-535-7 - INDEX: 601-022-00-9	a) Aquatic acute toxicity : LC50 Fish freshwater fish = 2.6 mg/L 96h OECD 203
		b) Aquatic chronic toxicity : NOEC Fish freshwater fish = 1.3 mg/L - 56days
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 1 mg/L 24h OECD 202
		b) Aquatic chronic toxicity : NOEC Daphnia Ceriodaphnia dubia = 0.96 mg/L - 7days
		a) Aquatic acute toxicity : EC50 Algae freshwater algae = 1.3 mg/L 48h OECD 201
		a) Aquatic acute toxicity : EC50 microorganisms = 96 mg/L OECD 301F
		d) Terrestrial toxicity : NOEC Worm earthworms = 16 mg/kg - 14days
		e) Plant toxicity : LC50 terrestrial plants = 1 mg/kg - 14days
maleic anhydride	CAS: 108-31-6 - EINECS: 203-571-6 - INDEX: 607-096-00-9	a) Aquatic acute toxicity : LC50 Fish rainbow trout = 75 mg/L 96h
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 42.81 mg/L 48h
		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 10 mg/L - 21days
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 74.32 mg/L
		a) Aquatic acute toxicity : NOEC Sludge activated sludge = 44.6 mg/L - 18h

12.2. Persistence and degradability

Component	Persitence/Degradability:	Test	Value	Notes:
styrene	Readily biodegradable	Biochemical oxigen demand	80.000	28days
xylene	Readily biodegradable			
maleic anhydride	Readily biodegradable		90.000	28days

12.3. Bioaccumulative potential

Component	Bioaccumulation	Test	Value
xylene	Bioaccumulative	BCF - Bioconcentrantion factor	25.900

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

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

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

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

N.A.

SECTION 14: Transport information

14.1. UN number or ID number

3269

14.2. UN proper shipping name

ADR-Shipping Name: POLYESTER RESIN KIT

IATA-Shipping Name: POLYESTER RESIN KIT liquid base material

IMDG-Shipping Name: POLYESTER RESIN KIT, liquid base material

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: 236 340

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

ADR Limited Quantities: 5 L

ADR Excepted Quantities: See SP 340

Air (IATA):

IATA-Passenger Aircraft: 370

IATA-Cargo Aircraft: 370

IATA-Label: 3

IATA-Subsidiary hazards: -

IATA-Erg: 3L

IATA-Special Provisions: A66 A163

Sea (IMDG):

IMDG-Stowage and handling: Category A

IMDG-Segregation: -

IMDG-Subsidiary hazards: -

IMDG-Special Provisions: 236 340

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

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

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

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

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

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

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

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

Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)
Regulation (EU) n. 2020/217 (ATP 14 CLP)
Regulation (EU) n. 2020/1182 (ATP 15 CLP)
Regulation (EU) n. 2021/643 (ATP 16 CLP)
Regulation (EU) n. 2021/849 (ATP 17 CLP)
Regulation (EU) n. 2022/692 (ATP 18 CLP)
Regulation (EU) n. 2023/707
Regulation (EU) n. 2023/1434 (ATP 19 CLP)
Regulation (EU) n. 2023/1435 (ATP 20 CLP)
Regulation (EU) n. 2024/197 (ATP 21 CLP)
Regulation (EU) n. 2020/878
Regulation (EC) nr 648/2004 (Detergents).

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

Restrictions related to the product: 3, 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)
Product belongs to category: P5c	5000	50000

Explosives precursors – Regulation 2019/1148

No substances listed

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

No substances listed

German Water Hazard Class.

NWG: Not hazardous for water

German Lagerklasse according to TRGS 510:

LGK 3

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.

SECTION 16: Other information

Code	Description
EUH071	Corrosive to the respiratory tract.
H226	Flammable liquid and vapour.
H300	Fatal if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
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.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335	May cause respiratory irritation.
H361	Suspected of damaging fertility or the unborn child.
H361	Suspected of damaging fertility or the unborn child if inhaled and in contact with skin.
H372	Causes damage to organs through prolonged or repeated exposure.
H372	Causes damage to organs through prolonged or repeated exposure if inhaled.
H372	Causes damage to organs (hearing organs) through prolonged or repeated exposure if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
2.6/3	Flam. Liq. 3	Flammable liquid, Category 3
3.1/2/Oral	Acute Tox. 2	Acute toxicity (oral), Category 2
3.1/4/Dermal	Acute Tox. 4	Acute toxicity (dermal), Category 4
3.1/4/Inhal	Acute Tox. 4	Acute toxicity (inhalation), Category 4
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.10/1	Asp. Tox. 1	Aspiration hazard, Category 1
3.2/1B	Skin Corr. 1B	Skin corrosion, Category 1B
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
3.4.1/1	Resp. Sens. 1	Respiratory Sensitisation, Category 1
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.4.2/1A	Skin Sens. 1A	Skin Sensitisation, Category 1A
3.7/2	Repr. 2	Reproductive toxicity, Category 2
3.8/3	STOT SE 3	Specific target organ toxicity — single exposure, Category 3
3.9/1	STOT RE 1	Specific target organ toxicity — repeated exposure, Category 1
3.9/2	STOT RE 2	Specific target organ toxicity — repeated exposure, Category 2
4.1/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. 2, H361	Calculation method
STOT RE 1, H372	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 4: First aid measures
- SECTION 7: Handling and storage
- SECTION 8: Exposure controls/personal protection
- SECTION 9: Physical and chemical properties
- SECTION 10: Stability and reactivity
- SECTION 11: Toxicological information
- SECTION 12: Ecological information
- SECTION 13: Disposal considerations
- SECTION 14: Transport information

- SECTION 15: Regulatory information
- SECTION 16: Other information

Safety Data Sheet

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

KERAREP (B)

Date of first edition: 5/19/2021

Safety Data Sheet dated 21/10/2025

version 7

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

1.1. Product identifier

Mixture identification:

Trade name: KERAREP (B)

Trade code: 27062018

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

Recommended use: hardener

Uses advised against: All uses other than recommended ones

1.3. Details of the supplier of the safety data sheet

Company: KERAKOLL S.p.A.

Via dell'Artigianato, 9

41049 Sassuolo (MODENA) - ITALY

Tel.+39 0536 816511 Fax. +39 0536816581

safety@kerakoll.com

1.4. Emergency telephone number

European emergency phone number 112

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

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

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

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Org. Perox. F	Heating may cause a fire.
Eye Irrit. 2	Causes serious eye irritation.
Skin Sens. 1	May cause an allergic skin reaction.
Aquatic Acute 1	Very toxic to aquatic life.
Aquatic Chronic 1	Very toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

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

Hazard pictograms and Signal Word

Warning

Hazard statements

H242	Heating may cause a fire.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
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.
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container in accordance with applicable regulations.

Contains

Dibenzoyl peroxide

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: KERAREP (B)

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

Qty	Name	Ident. Numb.	Classification	Registration Number
≥50-<70 %	Dibenzoyl peroxide	CAS:94-36-0 EC:202-327-6 Index:617-008-00-0	Self-react. B, H241; Eye Irrit. 2, H319; Skin Sens. 1, H317; Aquatic Acute 1, H400; Aquatic Chronic 1, H410, M-Chronic:10, M-Acute:10	01-2119511472-50
≥5-<10 %	ethanediol; ethylene glycol	CAS:107-21-1 EC:203-473-3 Index:603-027-00-1	Acute Tox. 4, H302; STOT RE 2, H373	01-2119456816-28

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

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

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO2).

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 persons to safety.

See protective measures under point 7 and 8.

For emergency responders:

Wear personal protection equipment.

6.2. Environmental precautions

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

Retain contaminated washing water and dispose it.

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

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

6.3. Methods and material for containment and cleaning up

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

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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

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

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

Contamined clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

7.2. Conditions for safe storage, including any incompatibilities

Always keep in a well ventilated place.

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
Dibenzoyl peroxide CAS: 94-36-0	ACGIH		Long Term: 5 mg/m3 (8h) A4 - URT and skin irr
	NATIONAL	AUSTRIA	Long Term: 5 mg/m3; Short Term: Ceiling - 10 mg/m3 5(Mow), 8x, MAK, Sh, E Source: GKV, BGBl. II Nr. 156/2021

	NATIONAL	CZECHIA	Long Term: 5 mg/m3; Short Term: Ceiling - 10 mg/m3 I, S Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Long Term: 5 mg/m3 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	FINLAND	Long Term: 5 mg/m3; Short Term: 10 mg/m3 Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Long Term: 5 mg/m3 Source: INRS outil65
	NATIONAL	GREECE	Long Term: 5 mg/m3 Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	HUNGARY	Long Term: 5 mg/m3; Short Term: 5 mg/m3 b, i, sz, N Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL	NORWAY	Long Term: 5 mg/m3 A Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 5 mg/m3; Short Term: 10 mg/m3 Source: Dz.U. 2018 poz. 1286
	NATIONAL	SLOVAKIA	Long Term: 5 mg/m3 Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	SUVA	SWITZERLAND	Long Term: 5 mg/m3; Short Term: 5 mg/m3 TWA mg/m3: (i), VRS Peau / OAW Haut, NIOSH Source: suva.ch/valeurs-limites
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 5 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	NATIONAL	BELGIUM	Long Term: 5 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	CROATIA	Long Term: 5 mg/m3 alergen koža Source: NN 1/2021
	NATIONAL	GERMANY	Long Term: 5 mg/m3 DFG, E, 1(I) Source: TRGS 900
	NATIONAL	IRELAND	Long Term: 5 mg/m3 Sens. Source: 2021 Code of Practice
	NATIONAL	SLOVENIA	Long Term: 5 mg/m3; Short Term: 5 mg/m3 (I) Source: UL št. 72, 11. 5. 2021
	NATIONAL	SPAIN	Long Term: 5 mg/m3 Sen Source: LEP 2022
Dimethyl phthalate CAS: 131-11-3	ACGIH		Long Term: 5 mg/m3 (8h) Eye and URT irr
	NATIONAL	BELGIUM	Long Term: 5 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	CROATIA	Long Term: 5 mg/m3; Short Term: 10 mg/m3 Source: NN 1/2021
	NATIONAL	IRELAND	Long Term: 5 mg/m3; Short Term: 10 mg/m3 Source: 2021 Code of Practice
	NATIONAL	SPAIN	Long Term: 5 mg/m3

			Source: LEP 2022
	NATIONAL	BULGARIA	Long Term: 5 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	DENMARK	Long Term: 3 mg/m3 Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 3 mg/m3; Short Term: 5 mg/m3 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Long Term: 5 mg/m3; Short Term: 10 mg/m3 Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Long Term: 5 mg/m3 Source: INRS outil65
	NATIONAL	GREECE	Long Term: 5 mg/m3; Short Term: 10 mg/m3 Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	LATVIA	Long Term: 0.3 mg/m3 Source: KN325P1
	NATIONAL	LITHUANIA	Long Term: 3 mg/m3; Short Term: 5 mg/m3 Tas pats RD, išreikštas mg/m3, yra taikomas ftalatams, kurių RD šioje normoje nenustatyti. Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	NORWAY	Long Term: 3 mg/m3 Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 5 mg/m3 4) Source: Dz.U. 2018 poz. 1286
	NATIONAL	SWEDEN	Long Term: 3 mg/m3; Short Term: 5 mg/m3 V, 12 Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 5 mg/m3 TWA mg/m3: (i), VRS Yeux / OAW Auge, OSHA Source: suva.ch/valeurs-limites
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 5 mg/m3; Short Term: 10 mg/m3 Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
ethanediol; ethylene glycol CAS: 107-21-1	ACGIH		Short Term: 10 mg/m3 I, H, A4 - URT irr
	NATIONAL	AUSTRIA	Long Term: 26 mg/m3 - 10 ppm; Short Term: Ceiling - 52 mg/m3 - 20 ppm 5(Mow), 8x, MAK, H Source: BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm Кожа Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 50 mg/m3; Short Term: Ceiling - 100 mg/m3 D Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Long Term: 26 mg/m3 - 10 ppm EH Source: BEK nr 2203 af 29/11/2021
	NATIONAL	DENMARK	Long Term: 10 mg/m3 Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm A, 18 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Long Term: 50 mg/m3 - 20 ppm; Short Term: 100 mg/m3 - 40 ppm iho Source: HTP-ARVOT 2020

NATIONAL	FRANCE	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm Risque de pénétration percutanée Source: INRS outil65, arrêté du 30-06-2004 modifié
NATIONAL	GREECE	Long Term: 125 mg/m3 - 50 ppm; Short Term: 125 mg/m3 - 50 ppm Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	HUNGARY	Long Term: 52 mg/m3; Short Term: 104 mg/m3 b, i, EU1, N Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	LITHUANIA	Long Term: 25 mg/m3 - 10 ppm; Short Term: 50 mg/m3 - 20 ppm O, Šis RD taikomas bendrai garų ir aerozolio koncentracijai. Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NETHERLANDS	Long Term: 52 mg/m3; Short Term: 104 mg/m3 H Source: Arbeidsomstandighedenregeling - Lijst A
NATIONAL	NETHERLANDS	Long Term: 10 mg/m3; Short Term: 104 mg/m3 H Source: Arbeidsomstandighedenregeling - Lijst A
NATIONAL	NORWAY	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm H E 5 S Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 15 mg/m3; Short Term: 50 mg/m3 skóra Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm K Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 25 mg/m3 - 10 ppm; Short Term: 104 mg/m3 - 40 ppm H, 26 Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 26 mg/m3 - 10 ppm; Short Term: 52 mg/m3 - 20 ppm R/H, SSC, VRS Yeux / OAW Auge, La substance peut être présente sous forme de vapeur et d'aérosol en même temps / Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m3 Sk Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm Sk Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
NATIONAL	BELGIUM	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm D, M Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CYPRUS	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm δέρμα Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
NATIONAL	GERMANY	Long Term: 26 mg/m3 - 10 ppm DFG, EU, H, Y, 11, 2(I) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm Sk, IOELV Source: 2021 Code of Practice
NATIONAL	ITALY	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm Cute Source: D.lgs. 81/2008, Allegato XXXVIII

NATIONAL	LATVIA	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm Āda Source: KN325P1
NATIONAL	LUXEMBOURG	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm Peau Source: Mémorial A n.226 du 22 mars 2021
NATIONAL	MALTA	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm skin Source: S.L.424.24
NATIONAL	PORTUGAL	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm Cutânea Source: Decreto-Lei n.º 1/2021
NATIONAL	ROMANIA	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm P, Dir. 2000/39 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SLOVENIA	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm K, Y, EU1 Source: UL št. 72, 11. 5. 2021
NATIONAL	SPAIN	Long Term: 52 mg/m3 - 20 ppm; Short Term: 104 mg/m3 - 40 ppm vía dérmica, VLI Source: LEP 2022
EU		Long Term: 52 mg/m3 - 20 ppm (8h); Short Term: 104 mg/m3 - 40 ppm Skin

Predicted No Effect Concentration (PNEC) values

ethanediol; ethylene glycol CAS: 107-21-1	Exposure Route: Fresh Water; PNEC Limit: 10 mg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 10 mg/l
	Exposure Route: Marine water; PNEC Limit: 1 mg/l
	Exposure Route: Intermittent releases (marine water); PNEC Limit: 10 mg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 199.5 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 37 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 3.7 mg/kg
	Exposure Route: Soil; PNEC Limit: 1.53 mg/kg

Derived No Effect Level (DNEL) values

ethanediol; ethylene glycol CAS: 107-21-1	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 35 mg/m³; Consumer: 7 mg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 106 mg/kg; Consumer: 53 mg/kg

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.(EN166)

Protection for skin:

Chemical protection clothing. Safety shoes.

Protection for hands:

Protection for hands:

Suitable materials for safety gloves; EN 374:

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

Respiratory protection:

Gas filter type A .

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: Solid
Colour: Red
Odour: Characteristic
Odour threshold: N.A.
pH: >4.00<5.00
Kinematic viscosity: N.A.
Melting point/freezing point: 0 °C (32 °F)
Boiling point or initial boiling point and boiling range: N.A.
Flash point: 195 °C (383 °F)
Lower and upper explosion limit: N.A.
Relative vapour density: N.A.
Vapour pressure: N.A.
Density and/or relative density: 1.20 g/cm3
Solubility in water: Insoluble
Solubility in oil: N.A.
Partition coefficient n-octanol/water (log value): N.A.
Auto-ignition temperature: N.A.
Decomposition temperature: 50.00 °C
Flammability: N.A.
Volatile Organic compounds - VOCs = 9.9 % ; 118.8 g/l
Particle characteristics:
Particle size: N.A.

9.2. Other information

Explosive properties: SADT 50°C
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	Not classified
	Based on available data, the classification criteria are not met
c) serious eye damage/irritation	The product is classified: Eye Irrit. 2(H319)
d) respiratory or skin sensitisation	The product is classified: Skin Sens. 1(H317)
e) germ cell mutagenicity	Not classified
	Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified
	Based on available data, the classification criteria are not met
g) reproductive toxicity	Not classified
	Based on available data, the classification criteria are not met
h) STOT-single exposure	Not classified
	Based on available data, the classification criteria are not met
i) STOT-repeated exposure	Not classified
	Based on available data, the classification criteria are not met

j) aspiration hazard	Not classified	
	Based on available data, the classification criteria are not met	

Toxicological information on main components of the mixture:

ethanediol; ethylene glycol	a) acute toxicity	LD50 Oral Rat = 7712 mg/kg	
		LC50 Inhalation of aerosol Rat > 2.5 mg/l 6h	
		LD50 Skin Mouse > 3500 mg/kg	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative	
	c) serious eye damage/irritation	Eye Irritant Rabbit No 24h	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	f) carcinogenicity	Genotoxicity Rat Negative	Oral route
		Carcinogenicity Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat > 1000 mg/kg	

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:

Very toxic to aquatic organisms.

Very toxic to aquatic life with long lasting effects.

List of Eco-Toxicological properties of the product

The product is classified: Aquatic Acute 1(H400), Aquatic Chronic 1(H410)

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
ethanediol; ethylene glycol	CAS: 107-21-1 - EINECS: 203-473-3 - INDEX: 603-027-00-1	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 72860 mg/L 96h
		b) Aquatic chronic toxicity : NOEC Fish = 15380 mg/L - 7 days
		b) Aquatic chronic toxicity : NOEC Ceriodaphnia dubia = 8590 mg/L - 7days
		a) Aquatic acute toxicity : NOEC Algae Pseudokirchnerella subcapitata = 100 mg/L 72h OECD guideline 201

12.2. Persistence and degradability

Component	Persitence/Degradability:	Test	Value	Notes:
ethanediol; ethylene glycol	Readily biodegradable	Dissolved organic carbon	90.000	10days

12.3. Bioaccumulative potential

N.A.

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

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

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

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

N.A.

SECTION 14: Transport information

14.1. UN number or ID number

3108

14.2. UN proper shipping name

ADR-Shipping Name: ORGANIC PEROXIDE TYPE E, SOLID

IATA-Shipping Name: ORGANIC PEROXIDE TYPE E, SOLID

IMDG-Shipping Name: ORGANIC PEROXIDE TYPE E, SOLID

14.3. Transport hazard class(es)

ADR-Class: 5.2

IATA-Class: 5.2

IMDG-Class: 5.2

14.4. Packing group

ADR-Packing Group: -

IATA-Packing group: -

IMDG-Packing group: -

14.5. Environmental hazards

Most important toxic component: Dibenzoyl peroxide

Marine pollutant: Yes

Environmental Pollutant: Yes

IMDG-EMS: F-J, S-R

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: 5.2

ADR - Hazard identification number: -

ADR-Special Provisions: 122 274

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

ADR Limited Quantities: 500 g

ADR Excepted Quantities: E0

Air (IATA):

IATA-Passenger Aircraft: 570

IATA-Cargo Aircraft: 570

IATA-Label: 5.2 + KAFH

IATA-Subsidiary hazards: -

IATA-Erg: 5L

IATA-Special Provisions: A20 A802

Sea (IMDG):

IMDG-Stowage and handling: Category D SW1

IMDG-Segregation: SG35 SG36 SG72

IMDG-Subsidiary hazards: -

IMDG-Special Provisions: 122 274

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

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

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

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

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

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

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

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

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

Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)
Regulation (EU) n. 2020/217 (ATP 14 CLP)
Regulation (EU) n. 2020/1182 (ATP 15 CLP)
Regulation (EU) n. 2021/643 (ATP 16 CLP)
Regulation (EU) n. 2021/849 (ATP 17 CLP)
Regulation (EU) n. 2022/692 (ATP 18 CLP)
Regulation (EU) n. 2023/707
Regulation (EU) n. 2023/1434 (ATP 19 CLP)
Regulation (EU) n. 2023/1435 (ATP 20 CLP)
Regulation (EU) n. 2024/197 (ATP 21 CLP)
Regulation (EU) n. 2020/878
Regulation (EC) nr 648/2004 (Detergents).

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

Restrictions related to the product: None.

Restrictions related to the substances contained: 75

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

Seveso III category according to Annex 1, part 1	Lower-tier threshold (tonnes)	Upper-tier threshold (tonnes)
Product belongs to category: P6b	50	200
Product belongs to category: E1	100	200

Explosives precursors – Regulation 2019/1148

No substances listed

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

No substances listed

German Water Hazard Class.

Class 3: extremely hazardous.

German Lagerklasse according to TRGS 510:

LGK 5.2

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:

ethanediol; ethylene glycol

SECTION 16: Other information

Code	Description
H241	Heating may cause a fire or explosion.
H242	Heating may cause a fire.
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
2.15/F	Org. Perox. F	Organic peroxide, Type F

2.8/B	Self-react. B	Self-reactive substance or mixture, Type B
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.9/2	STOT RE 2	Specific target organ toxicity — repeated exposure, Category 2
4.1/A1	Aquatic Acute 1	Acute aquatic hazard, category 1
4.1/C1	Aquatic Chronic 1	Chronic (long term) aquatic hazard, category 1

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
Org. Perox. F, H242	On basis of test data
Eye Irrit. 2, H319	Calculation method
Skin Sens. 1, H317	Calculation method
Aquatic Acute 1, H400	Calculation method
Aquatic Chronic 1, H410	Calculation method

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

Main bibliographic sources:

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

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

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

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

This MSDS cancels and replaces any preceding release.

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

ACGIH: American Conference of Governmental Industrial Hygienists

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

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

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

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

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging.

CMR: Carcinogenic, Mutagenic and Reprotoxic

COD: Chemical Oxygen Demand

COV: Volatile Organic Compound

CSA: Chemical Safety Assessment

CSR: Chemical Safety Report

DMEL: Derived Minimal Effect Level

DNEL: Derived No Effect Level.

DPD: Dangerous Preparations Directive

DSD: Dangerous Substances Directive

EC50: Half Maximal Effective Concentration

ECHA: European Chemicals Agency

EINECS: European Inventory of Existing Commercial Chemical Substances.

ES: Exposure Scenario

GefStoffVO: Ordinance on Hazardous Substances, Germany.

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

IARC: International Agency for Research on Cancer

IATA: International Air Transport Association.

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

IC50: half maximal inhibitory concentration

ICAO: International Civil Aviation Organization.

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

IMDG: International Maritime Code for Dangerous Goods.

INCI: International Nomenclature of Cosmetic Ingredients.

IRCCS: Scientific Institute for Research, Hospitalization and Health Care
KAFH: Keep Away From Heat
KSt: Explosion coefficient.
LC50: Lethal concentration, for 50 percent of test population.
LD50: Lethal dose, for 50 percent of test population.
LDLo: Leathal Dose Low
N.A.: Not Applicable
N/A: Not Applicable
N/D: Not defined/ Not available
NA: Not available
NIOSH: National Institute for Occupational Safety and Health
NOAEL: No Observed Adverse Effect Level
OSHA: Occupational Safety and Health Administration
PBT: Persistent, Bioaccumulative and Toxic
PGK: Packaging Instruction
PNEC: Predicted No Effect Concentration.
PSG: Passengers
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.
TLV: Threshold Limiting Value.
TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
vPvB: Very Persistent, Very Bioaccumulative.
WGK: German Water Hazard Class.

Paragraphs modified from the previous revision:

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

Exposure Scenario
Ethane-1,2-diol

Exposure Scenario, 09/08/2021

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

Table of contents

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

1.1 TITLE SECTION

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

Environment Contributing Scenario

CS1	ERC8d

Worker Contributing Scenario

CS2 Material transfers	PROC8a
CS3 Rolling, Brushing	PROC10
CS4 Roller, spreader, flow application	PROC11
CS5 Handling and dilution of concentrates	PROC19

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8d)

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

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 1 %.

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

Amounts used:

Daily amount per site = 5479 kg

Release type: Continuous release

Emission days: 365 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Municipal sewage treatment plant is assumed.	Air - minimum efficiency of: = 95 % Water - minimum efficiency of: = 87 %

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

Waste treatment

Contain and dispose of waste according to local regulations.

Other conditions affecting environmental exposure

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

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

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

Product (article) characteristics

Physical form of product:
Liquid

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

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration < 8 h

Frequency:
Use frequency < 240 days per year

Technical and organisational conditions and measures

Technical and organisational measures

Provide extract ventilation to points where emissions occur. Ensure operatives are trained to minimise exposures. Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed.	Inhalation - minimum efficiency of: 80 %

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

Personal protection
Wear suitable respiratory protection.

Other conditions affecting worker exposure

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

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

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:
Liquid

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

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration < 8 h

Frequency:
Use frequency < 240 days per year

Technical and organisational conditions and measures

Technical and organisational measures

Provide extract ventilation to points where emissions occur. Ensure operatives are trained to minimise exposures. Supervision in place to check that the risk management measures in place are being used correctly and	Inhalation - minimum efficiency of: 80 %

operation conditions followed.	

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

Personal protection

Wear suitable respiratory protection. Wear chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training.	Dermal - minimum efficiency of: 90 %

Other conditions affecting worker exposure

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

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

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:
Liquid

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

Amount used, frequency and duration of use/exposure

Amounts used:
Application rate 0.05 L/min

Duration:
Exposure duration < 150 min

Frequency:
Use frequency < 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Ensure operatives are trained to minimise exposures.
Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed.

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

Personal protection

Wear suitable respiratory protection. Wear chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training. Wear suitable coveralls to prevent exposure to the skin.	Dermal - minimum efficiency of: 80 % Inhalation - minimum efficiency of: 40 %

Other conditions affecting worker exposure

Indoor use
Professional use
Room size: Covers use in room size of < 1000 m³
Temperature: Assumes use at not more than 20 °C above ambient temperature.
Body parts exposed:
Assumes that potential dermal contact is limited to hands and forearms.

1.2. CS5: Worker Contributing Scenario: Handling and dilution of concentrates (PROC19)

Process Categories	Manual activities involving hand contact (PROC19)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 1 %.

Amount used, frequency and duration of use/exposure

Duration:

Exposure duration < 15 min

Frequency:

Use frequency < 240 days per year

Technical and organisational conditions and measures

Technical and organisational measures

Provide extract ventilation to points where emissions occur. Ensure operatives are trained to minimise exposures. Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed.	Inhalation - minimum efficiency of: 80 %

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

Personal protection

Wear suitable respiratory protection. Wear chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training.	Dermal - minimum efficiency of: 90 %

Other conditions affecting worker exposure

Indoor use

Professional use

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

Body parts exposed:

Assumes that potential dermal contact is limited to hands.

1.3 Exposure estimation and reference to its source

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, long-term	= 12.94 mg/m³	ECETOC TRA worker v2.0	= 0.37
dermal, systemic, long-term	= 13.71 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.01

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, long-term	= 12.94 mg/m³	ECETOC TRA worker v2.0	= 0.37
dermal, systemic, long-term	= 2.74 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.03

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, long-term	= 14.05 mg/m³	ECETOC TRA worker v2.0	= 0.4
dermal, systemic, long-term	= 53.75 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.51

1.3. CS5: Worker Contributing Scenario: Handling and dilution of concentrates (PROC19)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, long-term	= 6.47 mg/m³	ECETOC TRA worker v2.0	= 0.18
dermal, systemic, long-term	= 14.14 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.13

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

Guidance to check compliance with the exposure scenario:

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