Safety Data Sheet

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

FUGA-SHOCK

Safety Data Sheet dated 20/02/2026

version 11

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

1.1. Product identifier

Mixture identification:

Trade name: FUGA-SHOCK

Trade code: S100B0183 21

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

Recommended use: detergent

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)

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

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

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

Hazard pictograms and Signal Word

Danger

Hazard statements

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.

Precautionary statements

P102	Keep out of reach of children.
P260	Do not breathe vapours.

P280	Wear protective gloves and eye protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501	Dispose of contents/container in accordance with applicable regulations.

Contains

benzyl alcohol

formic acid

Sodium sulfate

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

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

Product contents:

anionic surfactants < 5%

Allergens:

Benzyl Alcohol

Citral

Preservatives:

Methylchloroisothiazolinone and methylisothiazolinone

2-bromo-2-nitropropane-1,3-diol

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: Contains biocidal product: C(M)IT/MIT (3:1); The product is identified as an article treated pursuant to art. 58 of Regulation (EU) no. 528/2012 and subsequent amendments. Possible skin exposure must be avoided. Protective gloves and work clothes are required. Avoid releasing product into the environment. When washing work equipment, water must not be dispersed in the soil or on surface water

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: FUGA-SHOCK

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

Qty	Name	Ident. Numb.	Classification	Registration Number
≥10-<20 %	benzyl alcohol	CAS:100-51-6 EC:202-859-9 Index:603-057-00-5	Acute Tox. 4, H302; Eye Irrit. 2, H319; Skin Sens. 1B, H317 Acute Toxicity Estimate : ATE - Oral : 1200 mg/kg bw	01-2119492630-38
≥10-<20 %	formic acid	CAS:64-18-6 EC:200-579-1 Index:607-001-00-0	Flam. Liq. 3, H226; Met. Corr. 1, H290; Acute Tox. 3, H331; Acute Tox. 4, H302; Skin Corr. 1A, H314; Eye Dam. 1, H318, EUH071 Specific Concentration Limits: C ≥ 85%: Flam. Liq. 3 H226 C ≥ 90%: Skin Corr. 1A H314 10% ≤ C < 90%: Skin Corr. 1B H314 2% ≤ C < 10%: Skin Irrit. 2 H315 C ≥ 10%: Eye Dam. 1 H318 2% ≤ C < 10%: Eye Irrit. 2 H319 Acute Toxicity Estimate: ATE - Oral: 500mg/kg bw ATE - Inhalation (Vapours): 7.4mg/l	01-2119491174-37

≥10-<20 %	1-methoxy-2-propanol; monopropylene glycol methyl ether	CAS:107-98-2 EC:203-539-1 Index:603-064-00-3	Flam. Liq. 3, H226; STOT SE 3, H336	01-2119457435-35
≥1-<3 %	Sodium sulfate	CAS:126-92-1 EC:204-812-8	Skin Irrit. 2, H315; Eye Dam. 1, H318	01-2119971586-23
<0.01 %	bronopol (INN); 2-bromo-2-nitropropane-1,3-diol	CAS:52-51-7 EC:200-143-0 Index:603-085-00-8	STOT SE 3, H335; Skin Irrit. 2, H315; Eye Dam. 1, H318; Aquatic Acute 1, H400; Acute Tox. 4, H312; Aquatic Chronic 1, H410; Acute Tox. 3, H301; Acute Tox. 3, H331, M-Chronic:10, M-Acute:100	
<0.0015 %	reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	CAS:55965-84-9 Index:613-167-00-5	Acute Tox. 2, H330; Acute Tox. 2, H310; Acute Tox. 3, H301; Skin Corr. 1C, H314; Eye Dam. 1, H318; Skin Sens. 1A, H317; Aquatic Acute 1, H400; Aquatic Chronic 1, H410, M-Chronic:100, M-Acute:100, EUH071 Specific Concentration Limits: C ≥ 0.6%: Skin Corr. 1C H314 0.06% ≤ C < 0.6%: Skin Irrit. 2 H315 C ≥ 0.6%: Eye Dam. 1 H318 0.06% ≤ C < 0.6%: Eye Irrit. 2 H319 C ≥ 0.0015%: 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.

OBTAIN IMMEDIATE MEDICAL ATTENTION.

Remove contaminated clothing immediatley and dispose off safely.

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

In case of eyes contact:

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

Protect uninjured eye.

In case of Ingestion:

Give nothing to eat or drink.

In case of Inhalation:

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

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

Eye irritation

Eye damages

Skin Irritation

Erythema

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

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO_2).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

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

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non emergency personnel:

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

For emergency responders:

Wear personal protection equipment.

6.2. Environmental precautions

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

Retain contaminated washing water and dispose it.

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

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

6.3. Methods and material for containment and cleaning up

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

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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

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

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

Contamined clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

7.2. Conditions for safe storage, including any incompatibilities

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

	OEL Type	Country	Occupational Exposure Limit
benzyl alcohol CAS: 100-51-6	NATIONAL	BULGARIA	Long Term: 5 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 40 mg/m3; Short Term: Ceiling - 80 mg/m3 Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	FINLAND	Long Term: 45 mg/m3 - 10 ppm Source: HTP-ARVOT 2020
	NATIONAL	LATVIA	Long Term: 5 mg/m3 Source: KN325P1
	NATIONAL	LITHUANIA	Long Term: 5 mg/m3 O Ū Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	POLAND	Long Term: 240 mg/m3

			Source: Dz.U. 2018 poz. 1286
	SUVA	SWITZERLAND	Long Term: 22 mg/m3 - 5 ppm R/H, SSC, VR / AW, NIOSH, La substance peut être présente sous forme de vapeur et d'aérosol en même temps / Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen Source: suva.ch/valeurs-limites
	NATIONAL	GERMANY	Long Term: 22 mg/m3 DFG, H, Y, 11, 2 (I) Source: TRGS 900
	NATIONAL	SLOVENIA	Long Term: 22 mg/m3 - 5 ppm; Short Term: 44 mg/m3 - 10 ppm K, Y Source: UL št. 72, 11. 5. 2021
formic acid CAS: 64-18-6	ACGIH		Long Term: 5 ppm (8h); Short Term: 10 ppm URT, eye, and skin irr
	NATIONAL	AUSTRIA	Long Term: 9 mg/m3 - 5 ppm; Short Term: Ceiling - 9 mg/m3 - 5 ppm Mow, MAK Source: GKV, BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 9 mg/m3 - 5 ppm Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 9 mg/m3; Short Term: Ceiling - 18 mg/m3 Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Long Term: 9 mg/m3 - 5 ppm E Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 9 mg/m3 - 5 ppm Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Long Term: 5 mg/m3 - 3 ppm; Short Term: 19 mg/m3 - 10 ppm Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Long Term: 9 mg/m3 - 5 ppm Source: INRS outil65, arrêté du 30-06-2004 modifié
	NATIONAL	GREECE	Long Term: 9 mg/m3 - 5 ppm Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	HUNGARY	Long Term: 9 mg/m3 m, EU2, N Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL	LITHUANIA	Long Term: 9 mg/m3 - 5 ppm Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	NETHERLANDS	Short Term: 5 mg/m3 Source: Arbeidsomstandighedenregeling - Lijst A
	NATIONAL	NORWAY	Long Term: 9 mg/m3 - 5 ppm E Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 5 mg/m3; Short Term: 15 mg/m3 Source: Dz.U. 2018 poz. 1286
	NATIONAL	SLOVAKIA	Long Term: 9 mg/m3 - 5 ppm Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	NATIONAL	SWEDEN	Long Term: 5 mg/m3 - 3 ppm; Short Term: 9 mg/m3 - 5 ppm V Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 9.5 mg/m3 - 5 ppm; Short Term: 19 mg/m3 - 10 ppm SSC, VRS Peau Yeux / OAW Haut auge, NIOSH OSHA Source: suva.ch/valeurs-limites
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 9.6 mg/m3 - 5 ppm Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	NATIONAL	BELGIUM	Long Term: 9.5 mg/m3 - 5 ppm; Short Term: 19 mg/m3 - 10 ppm

			Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	CROATIA	Long Term: 9 mg/m3 - 5 ppm Source: 2006/15/EZ
	NATIONAL	CYPRUS	Long Term: 9 mg/m3 - 5 ppm Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
	NATIONAL	GERMANY	Long Term: 9.5 mg/m3 - 5 ppm DFG, EU, Y, 2(I) Source: TRGS 900
	NATIONAL	IRELAND	Long Term: 9 mg/m3 - 5 ppm IOELV Source: 2021 Code of Practice
	NATIONAL	ITALY	Long Term: 9 mg/m3 - 5 ppm Source: D.lgs. 81/2008, Allegato XXXVIII
	NATIONAL	LATVIA	Long Term: 9 mg/m3 - 5 ppm Source: KN325P1
	NATIONAL	LUXEMBOURG	Long Term: 9 mg/m3 - 5 ppm Source: Mémorial A n.226 du 22 mars 2021
	NATIONAL	MALTA	Long Term: 9 mg/m3 - 5 ppm Source: S.L.424.24
	NATIONAL	PORTUGAL	Long Term: 9 mg/m3 - 5 ppm Source: Decreto-Lei n.º 1/2021
	NATIONAL	ROMANIA	Long Term: 9 mg/m3 - 5 ppm Dir. 2006/15 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
	NATIONAL	SLOVENIA	Long Term: 9 mg/m3 - 5 ppm; Short Term: 18 mg/m3 - 10 ppm Y, EU2 Source: UL št. 72, 11. 5. 2021
	NATIONAL	SPAIN	Long Term: 9 mg/m3 - 5 ppm VLI, s Source: LEP 2022
	EU		Long Term: 9 mg/m3 - 5 ppm (8h)
1-methoxy-2-propanol; monopropylene glycol methyl ether CAS: 107-98-2	ACGIH		Long Term: 50 ppm (8h); Short Term: 100 ppm A4 - Eye and URT irr
	NATIONAL	AUSTRIA	Long Term: 187 mg/m3 - 50 ppm; Short Term: Ceiling - 187 mg/m3 - 50 ppm Mow, MAK, H Source: BGBl. II Nr. 156/2021
	NATIONAL	BULGARIA	Long Term: 375 mg/m3 - 100 ppm; Short Term: 568 mg/m3 - 150 ppm Кожа Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 270 mg/m3; Short Term: Ceiling - 550 mg/m3 D Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Long Term: 185 mg/m3 - 50 ppm EH Source: BEK nr 2203 af 29/11/2021
	NATIONAL	ESTONIA	Long Term: 375 mg/m3 - 100 ppm; Short Term: 568 mg/m3 - 150 ppm A, S Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Long Term: 370 mg/m3 - 100 ppm; Short Term: 560 mg/m3 - 150 ppm iho Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Long Term: 188 mg/m3 - 50 ppm; Short Term: 375 mg/m3 - 100 ppm Risque de pénétration percutanée Source: INRS outil65, article R. 4412-149 du Code du travail
	NATIONAL	GREECE	Long Term: 360 mg/m3 - 100 ppm; Short Term: 1080 mg/m3 - 300 ppm Δ

		Source: ΦΕΚ 94/Α` 13.5.1999
NATIONAL	HUNGARY	Long Term: 375 mg/m3; Short Term: 568 mg/m3 b, EU1, R+T Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	LITHUANIA	Long Term: 190 mg/m3 - 50 ppm; Short Term: 300 mg/m3 - 75 ppm Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	NETHERLANDS	Long Term: 375 mg/m3; Short Term: 563 mg/m3 H Source: Arbeidsomstandighedenregeling - Lijst A
NATIONAL	NORWAY	Long Term: 180 mg/m3 - 50 ppm H E Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 180 mg/m3; Short Term: 360 mg/m3 skóra Source: Dz.U. 2018 poz. 1286
NATIONAL	SLOVAKIA	Long Term: 375 mg/m3 - 100 ppm; Short Term: 568 mg/m3 - 150 ppm K Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SWEDEN	Long Term: 190 mg/m3 - 50 ppm; Short Term: 568 mg/m3 - 150 ppm H Source: AFS 2021:3
SUVA	SWITZERLAND	Long Term: 360 mg/m3 - 100 ppm; Short Term: 720 mg/m3 - 200 ppm SSC, B, VRS Yeux / OAW Auge Source: suva.ch/valeurs-limites
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 375 mg/m3 - 100 ppm; Short Term: 560 mg/m3 - 150 ppm Sk Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
NATIONAL	BELGIUM	Long Term: 184 mg/m3 - 50 ppm; Short Term: 369 mg/m3 - 100 ppm D Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATIONAL	CROATIA	Long Term: 375 mg/m3 - 100 ppm; Short Term: 568 mg/m3 - 150 ppm Source: 2000/39/EZ
NATIONAL	CYPRUS	Long Term: 375 mg/m3 - 100 ppm; Short Term: 568 mg/m3 - 150 ppm δέρμα Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
NATIONAL	GERMANY	Long Term: 370 mg/m3 - 100 ppm DFG, EU, Y, 2(I) Source: TRGS 900
NATIONAL	IRELAND	Long Term: 375 mg/m3 - 100 ppm; Short Term: 568 mg/m3 - 150 ppm IOELV Source: 2021 Code of Practice
NATIONAL	ITALY	Long Term: 375 mg/m3 - 100 ppm; Short Term: 568 mg/m3 - 150 ppm Cute Source: D.lgs. 81/2008, Allegato XXXVIII
NATIONAL	LATVIA	Long Term: 375 mg/m3 - 100 ppm; Short Term: 568 mg/m3 - 150 ppm Āda Source: KN325P1
NATIONAL	LUXEMBOURG	Long Term: 375 mg/m3 - 100 ppm; Short Term: 568 mg/m3 - 150 ppm Peau Source: Mémorial A n.226 du 22 mars 2021
NATIONAL	MALTA	Long Term: 375 mg/m3 - 100 ppm; Short Term: 568 mg/m3 - 150 ppm skin Source: S.L.424.24
NATIONAL	PORTUGAL	Long Term: 375 mg/m3 - 100 ppm; Short Term: 568 mg/m3 - 150 ppm Source: Decreto-Lei n.º 1/2021
NATIONAL	ROMANIA	Long Term: 375 mg/m3 - 100 ppm; Short Term: 568 mg/m3 - 150 ppm

			P, Dir. 2000/39 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
	NATIONAL	SLOVENIA	Long Term: 375 mg/m3 - 100 ppm; Short Term: 568 mg/m3 - 150 ppm K, Y, BAT, EU1 Source: UL št. 72, 11. 5. 2021
	NATIONAL	SPAIN	Long Term: 375 mg/m3 - 100 ppm; Short Term: 568 mg/m3 - 150 ppm vía dérmica, VLI Source: LEP 2022
	EU		Long Term: 375 mg/m3 - 100 ppm (8h); Short Term: 563 mg/m3 - 150 ppm Skin
2-methoxypropanol CAS: 1589-47-5	NATIONAL	AUSTRIA	Long Term: 75 mg/m3 - 20 ppm; Short Term: 300 mg/m3 - 80 ppm 15(Miw), 8x, MAK, D, H Source: BGBl. II Nr. 156/2021
	NATIONAL	DENMARK	Long Term: 75 mg/m3 - 20 ppm Source: BEK nr 2203 af 29/11/2021
	NATIONAL	NORWAY	Long Term: 75 mg/m3 - 20 ppm H R Source: FOR-2021-06-28-2248
	NATIONAL	SLOVAKIA	Long Term: 19 mg/m3 - 5 ppm K Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	SUVA	SWITZERLAND	Long Term: 19 mg/m3 - 5 ppm; Short Term: 152 mg/m3 - 40 ppm R/H, R1BD, R1BF, SSB, Irritation / Reizung Source: suva.ch/valeurs-limites
	NATIONAL	GERMANY	Long Term: 19 mg/m3 - 5 ppm DFG, H, Z, 2(I) Source: TRGS 900
	NATIONAL	SLOVENIA	Long Term: 19 mg/m3 - 5 ppm; Short Term: 152 mg/m3 - 40 ppm K, RD1B Source: UL št. 72, 11. 5. 2021
	NATIONAL	SPAIN	Long Term: 19 mg/m3 - 5 ppm TR1B, r Source: LEP 2022
sodium chloride CAS: 7647-14-5	NATIONAL	LATVIA	Long Term: 5 mg/m3 Source: KN325P1
	NATIONAL	LITHUANIA	Long Term: 5 mg/m3 Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
citral CAS: 5392-40-5	ACGIH		Long Term: 5 ppm (8h) IFV, Skin, DSEN, A4 - Body weight eff, URT irr, eye dam
	NATIONAL	POLAND	Long Term: 27 mg/m3; Short Term: 54 mg/m3 Source: Dz.U. 2018 poz. 1286
	NATIONAL	BELGIUM	Long Term: 32 mg/m3 - 5 ppm D Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	IRELAND	Long Term: 5 ppm IFV Source: 2021 Code of Practice
(R)-p-mentha-1,8-diene CAS: 5989-27-5	NATIONAL	FINLAND	Long Term: 140 mg/m3 - 25 ppm; Short Term: 280 mg/m3 - 50 ppm Source: HTP-ARVOT 2020
	NATIONAL	NORWAY	Long Term: 140 mg/m3 - 25 ppm A Source: FOR-2021-06-28-2248
	SUVA	SWITZERLAND	Long Term: 40 mg/m3 - 7 ppm; Short Term: 80 mg/m3 - 14 ppm S, SSC, Foie / Leber Source: suva.ch/valeurs-limites
	NATIONAL	GERMANY	Long Term: 28 mg/m3 - 5 ppm DFG, H, Sh, Y, 4(II) Source: TRGS 900

	NATIONAL	SLOVENIA	Long Term: 28 mg/m3 - 5 ppm; Short Term: 112 mg/m3 - 20 ppm K, Y Source: UL št. 72, 11. 5. 2021
	NATIONAL	SPAIN	Long Term: 168 mg/m3 - 30 ppm Sen, vía dérmica Source: LEP 2022
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1) CAS: 55965-84-9	NATIONAL	GERMANY	Long Term: 0.2 mg/m3; Short Term: 0.4 mg/m3 DFG; Long term and short term: inhalable fraction Source: TRGS900
	NATIONAL	AUSTRIA	Long Term: 0.05 mg/m3 MAK, Sh Source: GKV, BGBl. II Nr. 156/2021
	SUVA	SWITZERLAND	Long Term: 0.2 mg/m3; Short Term: 0.4 mg/m3 TWA mg/m3: (i), S, SSC, VRS Peau Yeux / OAW Haut Auge Source: suva.ch/valeurs-limites

Biological limit values

1-methoxy-2-propanol; monopropylene glycol methyl ether CAS: 107-98-2	Biological Indicator: 1-Methoxypropanol-2; Sampling Period: End of turn Value: 20 mg/L; Medium: Urine

Predicted No Effect Concentration (PNEC) values

benzyl alcohol CAS: 100-51-6	Exposure Route: Fresh Water; PNEC Limit: 1 mg/l
	Exposure Route: Marine water; PNEC Limit: 0.1 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 5.27 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 0.527 mg/kg
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 2.3 mg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 39 mg/l
	Exposure Route: Soil; PNEC Limit: 0.456 mg/kg
formic acid CAS: 64-18-6	Exposure Route: Fresh Water; PNEC Limit: 2 mg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 1 mg/l
	Exposure Route: Marine water; PNEC Limit: 200 µg/kg
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 7.2 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 13.4 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 1.34 mg/kg
	Exposure Route: Soil; PNEC Limit: 1.5 mg/kg
1-methoxy-2-propanol; monopropylene glycol methyl ether CAS: 107-98-2	Exposure Route: Fresh Water; PNEC Limit: 10 mg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 100 mg/l
	Exposure Route: Marine water; PNEC Limit: 1 mg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 100 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 52.3 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 5.2 mg/kg
	Exposure Route: Soil; PNEC Limit: 4.59 mg/kg
bronopol (INN); 2-bromo-2-nitropropane-1,3-diol CAS: 52-51-7	Exposure Route: Fresh Water; PNEC Limit: 10 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 2.5 µg/l
	Exposure Route: Marine water; PNEC Limit: 800 ng/L
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 430 µg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 41 µg/l
	Exposure Route: Marine water sediments; PNEC Limit: 3.28 µg/kg

	Exposure Route: Soil; PNEC Limit: 500 µg/kg
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1) CAS: 55965-84-9	Exposure Route: Fresh Water; PNEC Limit: 3.39 µg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 3.39 µg/l
	Exposure Route: Marine water; PNEC Limit: 3.39 µg/l
	Exposure Route: Intermittent releases (marine water); PNEC Limit: 3.39 µg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 230 µg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 27 µg/l
	Exposure Route: Marine water sediments; PNEC Limit: 27 µg/l
	Exposure Route: Soil; PNEC Limit: 10 µg/l

Derived No Effect Level (DNEL) values

benzyl alcohol CAS: 100-51-6	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 22 mg/m³; Consumer: 8.1 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Worker Professional: 450 mg/m³; Consumer: 40.5 mg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 9.5 mg/kg; Consumer: 5.7 mg/kg
	Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects Worker Professional: 47 mg/kg; Consumer: 28.5 mg/kg
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 5 mg/kg
	Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects Consumer: 25 mg/kg
formic acid CAS: 64-18-6	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 9.5 mg/m³; Consumer: 3 mg/m³
1-methoxy-2-propanol; monopropylene glycol methyl ether CAS: 107-98-2	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 369 mg/m³; Consumer: 43.9 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Worker Professional: 553.5 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Worker Professional: 553.5 mg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 183 mg/kg; Consumer: 78 mg/kg
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 33 mg/kg
bronopol (INN); 2-bromo-2-nitropropane-1,3-diol CAS: 52-51-7	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 4.1 mg/m³; Consumer: 1.2 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Worker Professional: 12.3 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 4.2 mg/m³; Consumer: 1.3 mg/m³
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Worker Professional: 4.2 mg/m³; Consumer: 1.3 mg/m³
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 2.3 mg/kg; Consumer: 1.4 mg/kg
	Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects Worker Professional: 7 mg/kg
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 350 µg/kg

	Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects Consumer: 1.1 mg/kg Exposure Route: Human Dermal; Exposure Frequency: Long Term, local effects Worker Professional: 0.013 mg/cm²; Consumer: 0.008 mg/cm² Exposure Route: Human Dermal; Exposure Frequency: Short Term, local effects Worker Professional: 0.013 mg/cm²; Consumer: 0.008 mg/cm²
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1) CAS: 55965-84-9	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 20 µg/m³; Consumer: 20 µg/m³ Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Worker Professional: 40 µg/m³; Consumer: 20 µg/m³ Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 90 µg/kg Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects Consumer: 110 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:

Nitrile rubber .

Respiratory protection:

Gas filter type ABEK .

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: Colourless

Odour: Characteristic

Odour threshold: N.A. (Data not available)

pH: =1.40 (OECD 122)

Kinematic viscosity: N.A.

Melting point/freezing point: N.A.

Boiling point or initial boiling point and boiling range: 100 °C (212 °F)

Flash point: 66 °C (151 °F)

Lower and upper explosion limit: N.A. (Not applicable as the mixture is not flammable)

Relative vapour density: N.A.

Vapour pressure: N.A.

Density and/or relative density: 1.05 g/cm3 (ISO 2811)

Solubility in water: Soluble

Solubility in oil: N.A. (Not determined, as it is not required for CLP classification)

Partition coefficient n-octanol/water (log value): N.A. (Not applicable to mixtures)

Auto-ignition temperature: 435.00 °C

Decomposition temperature: N.A.

Flammability: ; Not applicable as the mixture is not flammable

Volatile Organic compounds - VOCs = 52.25 % ; 547.57 g/l

Particle characteristics:

Particle size: N.A.

9.2. Other information

(Not applicable, the mixture contains no explosive groups)

(Not applicable as the mixture is not flammable)

No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Data not available.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

None in particular.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

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

Toxicological Information of the Preparation

a) acute toxicity	The product is classified: Acute Tox. 4(H302)
b) skin corrosion/irritation	The product is classified: Skin Corr. 1A(H314)
c) serious eye damage/irritation	The product is classified: Eye Dam. 1(H318)
d) respiratory or skin sensitisation	The product is classified: Skin Sens. 1B(H317)
e) germ cell mutagenicity	Not classified
	Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified
	Based on available data, the classification criteria are not met
g) reproductive toxicity	Not classified
	Based on available data, the classification criteria are not met
h) STOT-single exposure	Not classified
	Based on available data, the classification criteria are not met
i) STOT-repeated exposure	Not classified
	Based on available data, the classification criteria are not met
j) aspiration hazard	Not classified
	Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

benzyl alcohol	a) acute toxicity	ATE - Oral : 1200 mg/kg bw	
		LD50 Oral Rat = 1620 mg/kg	
		LC50 Inhalation of aerosol Rat > 4178 mg/m3 4h	
		LD50 Skin Rabbit > 2000 mg/kg 24h	
		LC50 Inhalation Mist Rat = 4.18 mg/l 4h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes 24h	
	d) respiratory or skin sensitisation	Skin Sensitization Negative	Mouse
	f) carcinogenicity	Genotoxicity Negative	Mouse
		Carcinogenicity Oral Rat Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Oral = 200 mg/kg	Mouse
formic acid	a) acute toxicity	ATE - Oral : 500 mg/kg bw	
		ATE - Inhalation (Vapours) : 7.4 mg/l	
		LD50 Oral Rat = 730 mg/kg	
		LC50 Inhalation Vapour Rat = 7.85 mg/l 4h	
		LD50 Skin Rat > 2000 mg/kg	
	b) skin corrosion/irritation	Skin Corrosive Positive	
	c) serious eye	Eye Irritant Yes	

	damage/irritation		
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	f) carcinogenicity	Genotoxicity Negative	Drosophila melanogaster o route
		Carcinogenicity Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 650 mg/kg	
1-methoxy-2-propanol; monopropylene glycol methyl ether	a) acute toxicity	LD50 Oral Rat = 4016 mg/kg	
		LC50 Inhalation Vapour Rat Negative 6h	No mortalities observed
		LD50 Skin Rat > 2000 mg/kg	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit No	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	f) carcinogenicity	Genotoxicity	Mouse intraperitoneal rout
		Carcinogenicity Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Inhalation Rat = 300	ppm
bronopol (INN); 2-bromo-2-nitropropane-1,3-diol	a) acute toxicity	LD50 Oral Rat = 305 mg/kg	
		LC50 Inhalation of aerosol Rat >= 0.59 mg/l 4h	
		LD50 Skin Rat > 2000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
		Carcinogenicity Oral Rat Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat 200	
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	a) acute toxicity	LD50 Oral Rat = 69 mg/kg	
		LD50 Skin Rabbit = 141 mg/kg	
		LC50 Inhalation Rat = 0.33 mg/l 4h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive	
	c) serious eye damage/irritation	Eye Corrosive Rabbit Positive	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	
	f) carcinogenicity	Genotoxicity Negative	
		Carcinogenicity Skin Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 22.7 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
benzyl alcohol	CAS: 100-51-6 - EINECS: 202-859-9 - INDEX: 603-057-00-5	a) Aquatic acute toxicity : LC50 Fish Oryzias latipes = 460 mg/L 96h OECD SIDS (2001)
		b) Aquatic chronic toxicity : NOEC Fish = 48.897 mg/L ECOSAR QSAR
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 230 mg/L 48h OECD SIDS (2001)
		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 51 mg/L OECD Guideline 211
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchnerella subcapitata = 770 mg/L 72h OECD SIDS on Benzoates (2001)
		c) Bacteria toxicity : EC50 Nitrosomonas = 390 mg/L
formic acid	CAS: 64-18-6 - EINECS: 200-579-1 - INDEX: 607-001-00-0	a) Aquatic acute toxicity : LC50 Fish Danio rerio = 130 mg/L 96h OECD guideline 203
		a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 365 mg/L 48h OECD guideline 202
		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 100 mg/L OECD guideline 211 - 21days
		a) Aquatic acute toxicity : EC50 Algae freshwater algae = 1000 mg/L 72h
		a) Aquatic acute toxicity : NOEC Algae freshwater algae = 100 mg/L 72h
		b) Aquatic chronic toxicity : NOEC Sludge activated sludge = 72 mg/L EU method C.3
1-methoxy-2-propanol; monopropylene glycol methyl ether	CAS: 107-98-2 - EINECS: 203-539-1 - INDEX: 603-064-00-3	a) Aquatic acute toxicity : LC50 Fish Leuciscus idus = 6812 mg/L OECD guideline 203
		a) Aquatic acute toxicity : LC50 Daphnia = 23300 mg/L 48h OECD guideline 202
		a) Aquatic acute toxicity : EC50 Algae = 1000 mg/L OECD guideline 201 - 7days
		a) Aquatic acute toxicity : NOEC Sludge = 1000 mg/L OECD guideline 201
bronopol (INN); 2-bromo-2-nitropropane-1,3-diol	CAS: 52-51-7 - EINECS: 200-143-0 - INDEX: 603-085-00-8	a) Aquatic acute toxicity : LC50 Fish Lepomis macrochirus = 37.5 mg/L 96h US EPA Guideline OPP 72 -1
		b) Aquatic chronic toxicity : NOEC Fish Oncorhynchus mykiss = 21.5 mg/L OECD guideline 210 - 49days
		a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 1.4 mg/L 48h OECD guideline 202
		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 0.27 mg/L OECD guideline 202 - 21days
		a) Aquatic acute toxicity : NOEC Algae Skeletonema costatum = 0.08 mg/L 72h ISO 10253

		a) Aquatic acute toxicity : EC20 Sludge activated sludge = 2 mg/L OECD 209 d) Terrestrial toxicity : LC50 Worm Eisenia foetida > 500 mg/kg OECD 207 d) Terrestrial toxicity : EC50 soil microorganisms = 679 mg/kg OECD guideline 216 - 28days
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	CAS: 55965-84-9 - INDEX: 613-167-00-5	a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss = 0.19 mg/L 96h EPA OPP 72-1 (Fish Acute Toxicity Test) b) Aquatic chronic toxicity : NOEC Fish Danio rerio = 0.02 mg/L ,,OECD Guideline 210 (Fish, Early-Life Stage Toxicity Test) - 35days a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 0.16 mg/L 48h EPA OPP 72-2 (Aquatic Invertebrate Acute Toxicity Test) b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 0.1 mg/L EPA OPP 72-4 (Fish Early Life-Stage and Aquatic Invertebrate Life-Cycle Studies) - 21days a) Aquatic acute toxicity : EC50 Algae Skeletonema costatum = 0 mg/L 96h ,,OECD Guideline 201 (Alga, Growth Inhibition Test) a) Aquatic acute toxicity : EC50 Sludge activated sludge = 4.5 mg/L 3h ,,OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) d) Terrestrial toxicity : LC50 Worm Eisenia fetida = 613 mg/kg ,,OECD Guideline 207 (Earthworm, Acute Toxicity Tests) - 14days e) Plant toxicity : NOEC Trifolium pratense, Oryza sativa, Brassica napus = 1000 mg/L OECD Guideline 208 (Terrestrial Plants Test: Seedling Emergence and Seedling Growth Test) - 21days

12.2. Persistence and degradability

Component	Persitence/Degradability:	Test	Duration	Value	Notes:
benzyl alcohol	Readily biodegradable	Dissolved organic carbon		96.000	%; OECD Guideline 3
formic acid	Readily biodegradable	Biochemical oxigen demand			
1-methoxy-2-propanol; monopropylene glycol methyl ether	Readily biodegradable			69.000	28days
Sodium sulfate	Readily biodegradable		28d		>60% (OECD tg 301
bronopol (INN); 2-bromo-2-nitropropane-1,3-diol	Readily biodegradable				OECD guideline 301B
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	Non-readily biodegradable				

The surfactant(s) contained in this preparation complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.

12.3. Bioaccumulative potential

Component	Bioaccumulation	Test	Value	Notes:
benzyl alcohol	Bioaccumulative	BCF - Bioconcentrantion factor	1.000	L/kg ww
bronopol (INN); 2-bromo-2-nitropropane-1,3-diol	Bioaccumulative	BCF - Bioconcentrantion factor		
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	Bioaccumulative	BCF - Bioconcentrantion factor	54.000	≤ 54

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

2571

14.2. UN proper shipping name

ADR-Shipping Name: ALKYLSULPHURIC ACIDS

IATA-Shipping Name: ALKYLSULPHURIC ACIDS

IMDG-Shipping Name: ALKYLSULPHURIC ACIDS

14.3. Transport hazard class(es)

ADR-Class: 8

IATA-Class: 8

IMDG-Class: 8

14.4. Packing group

ADR-Packing Group: II

IATA-Packing group: II

IMDG-Packing group: II

14.5. Environmental hazards

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: F-A, S-B

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: 8

ADR - Hazard identification number: 80

ADR-Special Provisions: -

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

ADR Limited Quantities: 1 L

ADR Excepted Quantities: E2

Air (IATA):

IATA-Passenger Aircraft: 851

IATA-Cargo Aircraft: 855

IATA-Label: 8

IATA-Subsidiary hazards: -

IATA-Erg: 8L

IATA-Special Provisions: -

Sea (IMDG):

IMDG-Stowage and handling: Category C SW15

IMDG-Segregation: SGG1 SG36 SG49

IMDG-Subsidiary hazards: -

IMDG-Special Provisions: -

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

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

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

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

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

Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
Regulation (EU) n. 286/2011 (ATP 2 CLP)
Regulation (EU) n. 618/2012 (ATP 3 CLP)
Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)
Regulation (EU) n. 2020/217 (ATP 14 CLP)
Regulation (EU) n. 2020/1182 (ATP 15 CLP)
Regulation (EU) n. 2021/643 (ATP 16 CLP)
Regulation (EU) n. 2021/849 (ATP 17 CLP)
Regulation (EU) n. 2022/692 (ATP 18 CLP)
Regulation (EU) n. 2023/707
Regulation (EU) n. 2023/1434 (ATP 19 CLP)
Regulation (EU) n. 2023/1435 (ATP 20 CLP)
Regulation (EU) n. 2024/197 (ATP 21 CLP)
Regulation (EU) n. 2020/878
Regulation (EC) nr 648/2004 (Detergents).

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

Restrictions related to the product: 3

Restrictions related to the substances contained: 30, 40, 75

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

None

Explosives precursors – Regulation 2019/1148

No substances listed

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

No substances listed

German Water Hazard Class.

Class 1: slightly hazardous for water.

German Lagerklasse according to TRGS 510:

LGK 8A

SVHC Substances:

No SVHC substances present in concentration >= 0.1%

REGULATION (EU) No 528/2012

The product is identified as an article treated pursuant to art. 58 of Regulation (EU) no. 528/2012 and subsequent amendments.

Substances included in Regulation (EU) n. 528/2012 (concerning the making available on the market and use of biocidal products): Nomenclature IUPAC: Mixture of 5-chloro-2-methyl-2H- isothiazol-3-one (EINECS 247-500-7) and 2-methyl-2H-isothiazol-3-one (EINECS 220-239-6) (Mixture of CMIT/MIT)

Nomenclature BPR: C(M)IT/MIT (3:1)

CAS number: 55965-84-9

Product-type 6: Preservatives for products during storage

Assessment status: Approved

Commission Implementing Regulation (EU) 2016/131

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:

benzyl alcohol

formic acid

Sodium sulfate

SECTION 16: Other information

Code	Description
EUH071	Corrosive to the respiratory tract.
H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H336	May cause drowsiness or dizziness.

Code	Hazard class and hazard category	Description
2.16/1	Met. Corr. 1	Substance or mixture corrosive to metals, Category 1
2.6/3	Flam. Liq. 3	Flammable liquid, Category 3
3.1/3/Inhal	Acute Tox. 3	Acute toxicity (inhalation), Category 3
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/1A	Skin Corr. 1A	Skin corrosion, Category 1A
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
3.4.2/1B	Skin Sens. 1B	Skin Sensitisation, Category 1B
3.8/3	STOT SE 3	Specific target organ toxicity — single exposure, Category 3

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Acute Tox. 4, H302	Calculation method
Skin Corr. 1A, H314	On basis of test data (pH)
Eye Dam. 1, H318	On basis of test data (pH)
Skin Sens. 1B, H317	Calculation method

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

Main bibliographic sources:

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

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

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

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

This MSDS cancels and replaces any preceding release.

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

ACGIH: American Conference of Governmental Industrial Hygienists

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

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

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

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

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging.

CMR: Carcinogenic, Mutagenic and Reprotoxic

COD: Chemical Oxygen Demand

COV: Volatile Organic Compound

CSA: Chemical Safety Assessment

CSR: Chemical Safety Report

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

Paragraphs modified from the previous revision:

- SECTION 2: Hazards identification
- SECTION 3: Composition/information on ingredients
- SECTION 8: Exposure controls/personal protection
- SECTION 9: Physical and chemical properties
- SECTION 14: Transport information
- SECTION 15: Regulatory information

Exposure Scenario
Benzyl alcohol

Exposure Scenario, 30/06/2021

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

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

1.1 TITLE SECTION

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

Environment Contributing Scenario

CS1	ERC8a - ERC8d

Worker Contributing Scenario

CS2	PROC8a - PROC10

1.2 Conditions of use affecting exposure

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

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

Product (article) characteristics

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

Vapour pressure:
= 7 Pa

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

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

Release type: Continuous release

Emission days: 365 days per year

Conditions and measures related to sewage treatment plant

STP type:
Municipal Sewage Treatment Plant
Water - minimum efficiency of: = 87.36 %

STP effluent (m³/day): 2000

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

Waste treatment
Product residual disposal complies with applicable regulations.

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

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

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:

< 7 Pa

Amount used, frequency and duration of use/exposure

Duration:

Covers use up to = 8 h/day

Technical and organisational conditions and measures

Technical and organisational measures

Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed.
Provide a basic standard of general ventilation (1 to 3 air changes per hour).

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

Personal protection

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

Other conditions affecting worker exposure

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

Assumes that potential dermal contact is limited to hands.

1.3 Exposure estimation and reference to its source

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

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

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

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

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

Guidance to check compliance with the exposure scenario:

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

Exposure Scenario
Sodium sulfate

Exposure Scenario, 21/03/2023

Substance identity	
	Sodium sulfate
CAS No.	126-92-1
EINECS No.	204-812-8
Registration number	01-2119971586-23

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1. ES 1 Widespread use by professional workers; Washing and cleaning products (PC35)

1.1 TITLE SECTION

Exposure Scenario name	Professional use of general surface cleaning products
Date - Version	21/03/2023 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Washing and cleaning products (PC35)

Environment Contributing Scenario	
CS1	ERC8a

Worker Contributing Scenario	
CS2 Rolling, Brushing	PROC10
CS3 Hand held spraying	PROC11

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8a)

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

Product (article) characteristics

Physical form of product:
Liquid

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 1000 t(onnes)/year
Daily amount per site 0.082192 kg/day

Emission days: 365 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

	Water - minimum efficiency of: 100 %

Conditions and measures related to sewage treatment plant

STP type:
Municipal Sewage Treatment Plant
STP effluent (m³/day): 2000

Other conditions affecting environmental exposure

Local marine water dilution factor: 100
Local freshwater dilution factor: 10
Receiving surface water flow: 18000 m³/day
Indoor use

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

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers use up to > 4 h

Frequency:

Covers use up to = 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures

No specific measures identified.

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

Personal protection

No specific measures identified.

Other conditions affecting worker exposure

Indoor use

Professional use

1.2. CS3: Worker Contributing Scenario: Hand held spraying (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 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers use up to 1 h

Frequency:

Covers use up to = 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures

No specific measures identified.

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

Personal protection

No specific measures identified.

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)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	= 0.000229 mg/L	EASY TRA v4.1	= 0.001689

marine water	= 2.4E-05 mg/L	EASY TRA v4.1	= 0.001756
freshwater sediment	= 0.001003 mg/kg dry weight	EASY TRA v4.1	= 0.000669
marine sediment	= 0.000104 mg/kg dry weight	EASY TRA v4.1	= 0.000695
Agricultural soil	= 4.9E-05 mg/kg dry weight	EASY TRA v4.1	= 0.000224
wastewater treatment plant microbes	= 0.000731 mg/L	EASY TRA v4.1	= 0.000541

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	= 241.948 mg/m³	EASY TRA v4.1	= 0.84894
dermal, systemic, long-term	= 27.429 mg/kg bw/day	EASY TRA v4.1	= 0.006756
combined routes, systemic, long-term	= 61.993 mg/kg bw/day	EASY TRA v4.1	= 0.855696

1.3. CS3: Worker Contributing Scenario: Hand held spraying (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 193.558 mg/m³	EASY TRA v4.1	= 0.679152
dermal, systemic, long-term	= 107.143 mg/kg bw/day	EASY TRA v4.1	= 0.02639
combined routes, systemic, long-term	= 134.794 mg/kg bw/day	EASY TRA v4.1	= 0.705542

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
Formic acid

Exposure Scenario, 24/08/2021

Substance identity	
	Formic acid
CAS No.	64-18-6
INDEX No.	607-001-00-0
EINECS No.	200-579-1
Registration number	01-2119491174-37

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1. ES 1 Widespread use by professional workers

1.1 TITLE SECTION

Exposure Scenario name	Use in cleaning agents
Date - Version	24/08/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

Environment Contributing Scenario

CS1	ERC8d - ERC8e

Worker Contributing Scenario

CS2 Material transfers	PROC8a
CS3 Rolling, Brushing - Casting operations	PROC10 - PROC13
CS4 Roller, spreader, flow application	PROC11
CS5 Mixing operations	PROC19

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8d, ERC8e)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) - Widespread use of reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d, ERC8e)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

= 4270 Pa

Concentration of substance in product:

Covers concentrations up to 19 %

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

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

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

= 4270 Pa

Concentration of substance in product:

Covers concentrations up to 19 %

Amount used, frequency and duration of use/exposure

Duration:

Covers use up to 480 min

Frequency:

Use frequency 5 days per week

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 ''basic'' employee training. Wear suitable respiratory protection.	Inhalation - minimum efficiency of: = 95 %

Other conditions affecting worker exposure

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

1.2. CS3: Worker Contributing Scenario: Rolling, Brushing - Casting operations (PROC10, PROC13)

Process Categories	Roller application or brushing - Treatment of articles by dipping and pouring (PROC10, PROC13)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
= 4270 Pa

Concentration of substance in product:
Covers concentrations up to 19 %

Amount used, frequency and duration of use/exposure

Duration:
Covers use up to 480 min
Frequency:
Use frequency 5 days per week

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 ''basic'' employee training. Wear suitable respiratory protection.	Inhalation - minimum efficiency of: = 95 %

Other conditions affecting worker exposure

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

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

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
= 4270 Pa

Concentration of substance in product:
Covers concentrations up to 19 %

Amount used, frequency and duration of use/exposure

Duration:
Covers use up to 480 min
Frequency:
Use frequency 5 days per week

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 ''basic'' employee training. Wear suitable respiratory protection.	Inhalation - minimum efficiency of: = 95 %

Other conditions affecting worker exposure

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

1.2. CS5: Worker Contributing Scenario: Mixing operations (PROC19)

Process Categories	Manual activities involving hand contact (PROC19)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
= 4270 Pa

Concentration of substance in product:
Covers concentrations up to 19 %

Amount used, frequency and duration of use/exposure

Duration:
Covers use up to < 60 min
Frequency:
Use frequency 5 days per week

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 ''basic'' employee training. Wear suitable respiratory protection.	Inhalation - minimum efficiency of: = 90 %

Other conditions affecting worker exposure

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

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	= 7.717 mg/m³	ECETOC TRA worker v2.0	= 0.812

Additional information on exposure estimation:

Dermal exposure is considered to be not relevant.

1.3. CS3: Worker Contributing Scenario: Rolling, Brushing - Casting operations (PROC10, PROC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, long-term	= 4.823 mg/m³	ECETOC TRA worker v2.0	= 0.508

Additional information on exposure estimation:

Dermal exposure is considered to be not relevant.

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	= 7.234 mg/m³	ECETOC TRA worker v2.0	= 0.762

Additional information on exposure estimation:

Dermal exposure is considered to be not relevant.

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, long-term	= 3.28 mg/m³	ECETOC TRA worker v2.0	= 0.345
inhalative, short-term	= 16.398 mg/m³	ECETOC TRA worker v2.0	= 0.863

Additional information on exposure estimation:

Dermal exposure is considered to be not relevant.

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
Formic acid

Exposure Scenario, 24/08/2021

Substance identity	
	Formic acid
CAS No.	64-18-6
INDEX No.	607-001-00-0
EINECS No.	200-579-1
Registration number	01-2119491174-37

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1. ES 1 Widespread use by professional workers

1.1 TITLE SECTION

Exposure Scenario name	Use in cleaning agents
Date - Version	24/08/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)

Environment Contributing Scenario

CS1	ERC8d - ERC8e

Worker Contributing Scenario

CS2 Material transfers	PROC8a
CS3 Rolling, Brushing - Casting operations	PROC10 - PROC13
CS4 Roller, spreader, flow application	PROC11
CS5 Mixing operations	PROC19

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8d, ERC8e)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) - Widespread use of reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d, ERC8e)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

= 4270 Pa

Concentration of substance in product:

Covers concentrations up to 19 %

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

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

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

= 4270 Pa

Concentration of substance in product:

Covers concentrations up to 19 %

Amount used, frequency and duration of use/exposure

Duration:

Covers use up to 480 min

Frequency:

Use frequency 5 days per week

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 ''basic'' employee training. Wear suitable respiratory protection.	Inhalation - minimum efficiency of: = 95 %

Other conditions affecting worker exposure

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

1.2. CS3: Worker Contributing Scenario: Rolling, Brushing - Casting operations (PROC10, PROC13)

Process Categories	Roller application or brushing - Treatment of articles by dipping and pouring (PROC10, PROC13)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
= 4270 Pa

Concentration of substance in product:
Covers concentrations up to 19 %

Amount used, frequency and duration of use/exposure

Duration:
Covers use up to 480 min
Frequency:
Use frequency 5 days per week

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 ''basic'' employee training. Wear suitable respiratory protection.	Inhalation - minimum efficiency of: = 95 %

Other conditions affecting worker exposure

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

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

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
= 4270 Pa

Concentration of substance in product:
Covers concentrations up to 19 %

Amount used, frequency and duration of use/exposure

Duration:
Covers use up to 480 min
Frequency:
Use frequency 5 days per week

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 ''basic'' employee training. Wear suitable respiratory protection.	Inhalation - minimum efficiency of: = 95 %

Other conditions affecting worker exposure

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

1.2. CS5: Worker Contributing Scenario: Mixing operations (PROC19)

Process Categories	Manual activities involving hand contact (PROC19)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
= 4270 Pa

Concentration of substance in product:
Covers concentrations up to 19 %

Amount used, frequency and duration of use/exposure

Duration:
Covers use up to < 60 min
Frequency:
Use frequency 5 days per week

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 ''basic'' employee training. Wear suitable respiratory protection.	Inhalation - minimum efficiency of: = 90 %

Other conditions affecting worker exposure

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

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	= 7.717 mg/m³	ECETOC TRA worker v2.0	= 0.812

Additional information on exposure estimation:

Dermal exposure is considered to be not relevant.

1.3. CS3: Worker Contributing Scenario: Rolling, Brushing - Casting operations (PROC10, PROC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, long-term	= 4.823 mg/m³	ECETOC TRA worker v2.0	= 0.508

Additional information on exposure estimation:

Dermal exposure is considered to be not relevant.

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	= 7.234 mg/m³	ECETOC TRA worker v2.0	= 0.762

Additional information on exposure estimation:

Dermal exposure is considered to be not relevant.

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, long-term	= 3.28 mg/m³	ECETOC TRA worker v2.0	= 0.345
inhalative, short-term	= 16.398 mg/m³	ECETOC TRA worker v2.0	= 0.863

Additional information on exposure estimation:

Dermal exposure is considered to be not relevant.

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.