Safety Data Sheet
Conforms to – Regulation (EC) No. 1907/2006 (REACH), Article 31, Annex II,
as amended by UK SI 2021/904
FUGA-SHOCK
Date of first edition: 1/5/2026
Safety Data Sheet dated 05/01/2026 version 1

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

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

Kerakoll UK Ltd
Tomlinson Road, Leyland, Lancashire, PR25 2DY,
United Kingdom
Tel. 01772 456831
safety@kerakoll.co.uk

1.4. Emergency telephone number

UK National Poisons Information Service.
E-mail: npis.birmingham@nhs.net; Tel: +44 (0)344 892 0111

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GB CLP regulation:

Skin Corr. 1A	Causes severe skin burns and eye damage.
Eye Dam. 1	Causes serious eye damage.
Acute Tox. 4	Harmful if swallowed.
Resp. Sens. 1B	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

GB CLP regulation:

Hazard pictograms and Signal Word

Danger

Hazard statements

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statements

P102	Keep out of reach of children.
P260	Do not breathe vapours.
P280	Wear protective gloves and eye protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER.
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.

Contains

formic acid

Sodium sulfate

benzyl alcohol

Detergents (Amendment) (EU Exit) Regulations

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 UK REACH:

None.

2.3. Other hazards

When mixtures containing cement react with water, for instance when making concrete or mortar, or when the cement becomes wet, a strong alkaline solution is produced (high pH caused by the formation of calcium, sodium and potassium hydroxides).

Cement and mixtures containing cement may irritate the eyes, the mucous system, the throat and the respiratory system and cause coughing. Frequent inhalation of cement dust or mixtures containing cement over a long period of time increases the risk of developing lung diseases.

In case of prolonged contact with the skin, both cement and mixtures containing cement, including pastes, may cause skin sensitisation due to the presence of trace amounts of chromium VI salts. Where necessary, such an effect can be minimized by incorporating a special reducing agent to maintain the water-soluble chromium VI content to concentration rates below 0.0002% (2 ppm) on the total dry weight of cement.

No PBT or vPvB 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: FUGA-SHOCK

Hazardous components within the meaning of GB 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; Acute Tox. 4, H332; Eye Irrit. 2, H319	
≥10-<20 %	formic acid	CAS:64-18-6 EC:200-579-1 Index:607-001-00-0	Skin Corr. 1A, H314	
≥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	
≥1-<3 %	Sodium sulfate	CAS:126-92-1 EC:204-812-8	Skin Irrit. 2, H315; Eye Dam. 1, H318	
<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	

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.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

Contamined clothing should be changed before entering eating areas.

Do not eat or drink while working.

7.2. Conditions for safe storage, including any incompatibilities

The product must be stored in waterproof, dry, clean conditions and protected from contamination. Do not use aluminium containers due to incompatibility of the materials.

The product contains cement with an addition of a Chromium reducing agent (VI) and its effectiveness decreases with time. Consequently, packaging's of the material indicate information about the production date, storing conditions and the appropriate storage period for the maintaining of the activity of the reducing agent and for maintaining the soluble Chromium (VI) amount under 2ppm over the total dry weight referred to cement (BS EN 196-10).

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
formic acid CAS: 64-18-6	ACGIH		Long Term: 5 ppm (8h); Short Term: 10 ppm URT, eye, and skin irr
	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)
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
	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)
citral CAS: 5392-40-5	ACGIH		Long Term: 5 ppm (8h) IFV, Skin, DSEN, A4 - Body weight eff, URT irr, eye dam

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
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

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.

Hygienic and Technical measures

N.A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid

Appearance and colour: Liquid Colourless

Odour: Characteristic

Odour threshold: N.A.

pH: 1.40 (OECD 122)

Melting point / freezing point: N.A.

Initial boiling point and boiling range: 100 °C (212 °F)

Flash point: 66 °C (151 °F)

Evaporation rate: N.A.

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

Vapour density: N.A.

Vapour pressure: N.A.

Relative density: 1.05 g/cm3 (ISO 2811)

Solubility in water: Soluble

Solubility in oil: N.A.

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

Auto-ignition temperature: 435.00 °C

Decomposition temperature: N.A.

Viscosity: N.A.

Explosive properties: N.A.

Oxidizing properties: N.A.

Solid/gas flammability: N.A.

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

9.2. Other information

Substance Groups relevant properties N.A.

Miscibility: N.A.

Conductivity: N.A.

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 toxicological effects

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: Resp. Sens. 1B(H334)
e) germ cell mutagenicity	Not classified
	Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified
	Based on available data, the classification criteria are not met
g) reproductive toxicity	Not classified
	Based on available data, the classification criteria are not met
h) STOT-single exposure	Not classified
	Based on available data, the classification criteria are not met
i) STOT-repeated exposure	Not classified
	Based on available data, the classification criteria are not met
j) aspiration hazard	Not classified
	Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

benzyl alcohol	a) acute toxicity	LD50 Oral Rat = 1620 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	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 damage/irritation	Eye Irritant Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	f) carcinogenicity	Genotoxicity Negative	Drosophila melanogaster c 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
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	

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
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
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
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. 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

SECTION 14: Transport information

14.1. UN 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

Toxic ingredients quantity: 0.00
Very toxic ingredients quantity: 0.00
Marine pollutant: No
Environmental Pollutant: No

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)

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: -
IMDG-EMS: F-A, S-B

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

N.A.

SECTION 15: Regulatory information

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

Workplace exposure limit within the meaning of the Control of Substances Hazardous to Health Regulations 2002 (WEL-EH40)

REACH regulation as changed by the REACH etc. (Amendment etc.) (EU Exit) Regulations (UK REACH)

CLP regulation as changed by the Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations (GB CLP)

GB PIC legislation - (Regulation (EU) No 649/2012 as changed by the Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc) (EU Exit) Regulations

Restrictions related to the product or the substances contained according to Annex XVII of UK REACH:

Restrictions related to the product: 3

Restrictions related to the substances contained: 30, 40

Additional Regulatory Information for Great Britain

No Additional Information

Provisions related to the Control of Major Accident Hazards Regulations 2015 (GB implementation of Seveso III):

None

GB PIC Legislation:

No substances listed

SVHC Substances:

No SVHC substances present in concentration >= 0.1%

UK regulations implementing Dir. 2010/75/EC (VOC directive)

Volatile Organic compounds - VOCs = 19.00 %

Volatile Organic compounds - VOCs = 199.12 g/L

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
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
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.
H336	May cause drowsiness or dizziness.

Code	Hazard class and hazard category	Description
2.6/3	Flam. Liq. 3	Flammable liquid, Category 3
3.1/4/Inhal	Acute Tox. 4	Acute toxicity (inhalation), Category 4
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/1A	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
3.4.1/1B	Resp. Sens. 1B	Respiratory 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 GB CLP regulation:

Classification according to GB CLP	Classification procedure
Skin Corr. 1A, H314	On basis of test data (pH)
Eye Dam. 1, H318	On basis of test data (pH)

Acute Tox. 4, H302	Calculation method
Resp. Sens. 1B, H334	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

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.

Exposure Scenario
Benzyl alcohol

Exposure Scenario, 30/06/2021

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

Table of contents

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

1.1 TITLE SECTION

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

Environment Contributing Scenario

CS1	ERC8a - ERC8d

Worker Contributing Scenario

CS2	PROC8a - PROC10

1.2 Conditions of use affecting exposure

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

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

Product (article) characteristics

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

Vapour pressure:
= 7 Pa

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

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

Release type: Continuous release

Emission days: 365 days per year

Conditions and measures related to sewage treatment plant

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

STP effluent (m^3/day): 2000

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

Waste treatment
Product residual disposal complies with applicable regulations.

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

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

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:

< 7 Pa

Amount used, frequency and duration of use/exposure

Duration:

Covers use up to = 8 h/day

Technical and organisational conditions and measures

Technical and organisational measures

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

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

Personal protection

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

Other conditions affecting worker exposure

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

Assumes that potential dermal contact is limited to hands.

1.3 Exposure estimation and reference to its source

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

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

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

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

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

Guidance to check compliance with the exposure scenario:

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

Exposure Scenario
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

Table of contents

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.