Safety Data Sheet
Conforms to Regulation (EC) No. 1907/2006 (REACH), Article 31, Annex II, as amended by Commission Regulation (EU) 2020/878
KERABUILD EPOFILL (B)
Date of first edition: 10/12/2021
Safety Data Sheet dated 10/3/2022
version 8

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

1.1. Product identifier

Mixture identification:

Trade name: KERABUILD EPOFILL (B)

Trade code: B0021 .041

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

Recommended use: hardener

Uses advised against: Data not available.

1.3. Details of the supplier of the safety data sheet

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

1.4. Emergency telephone number

European emergency phone number 112
Kerakoll Italy - +39-0536-816511
Ireland
Poison information centre: 01 809 2166 (Daily 8am-10pm)
In case of emergency call 999 or 112
Malta
In case of emergency call: +356 2395 2000 (24h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Acute Tox. 4	Harmful if swallowed.
Skin Corr. 1B	Causes severe skin burns and eye damage.
Skin Sens. 1A	May cause an allergic skin reaction.
Aquatic Chronic 2	Toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:
No other hazards

2.2. Label elements

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

Pictograms and Signal Words

Danger

Hazard statements

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P260	Do not breathe dust.
P273	Avoid release to the environment.
P280	Wear protective gloves and eye protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501	Dispose of contents/container in accordance with applicable regulations.

Contains

3-aminomethyl-3,5,5-trimethylcyclohexylamine

Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine

benzyl alcohol

2,4,6-tris(dimethylaminomethyl)phenol

M-phenylenebis(methylamine)

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with ethylenediamine

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration >= 0.1%.

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: KERABUILD EPOFILL (B)

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

Qty	Name	Ident. Numb.	Classification	Registration Number
25-50 %	benzyl alcohol	CAS:100-51-6 EC:202-859-9 Index:603-057-00-5	Acute Tox. 4, H302; Acute Tox. 4, H332; Eye Irrit. 2, H319	01-2119492630-38
10-19,9 %	Formaldehyde, oligomeric reaction products with phenol and m-phenylenebis(methylamine)	CAS:57214-10-5 EC:500-137-0	Aquatic Acute 1, H400; Aquatic Chronic 1, H410	
10-19,9 %	3-aminomethyl-3,5,5-trimethylcyclohexylamine	CAS:2855-13-2 EC:220-666-8 Index:612-067-00-9	Skin Corr. 1B, H314; Aquatic Chronic 3, H412; Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1A, H317	01-2119514687-32
10-19,9 %	Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and tetraethylenepentamine	CAS:103758-98-1 EC:500-289-8	Skin Irrit. 2, H315	
5-9,9 %	2,4,6-tris(dimethylaminomethyl)phenol	CAS:90-72-2 EC:202-013-9 Index:603-069-00-0	Acute Tox. 4, H302; Skin Corr. 1C, H314; Eye Dam. 1, H318	01-2119560597-27
5-9,9 %	M-phenylenebis(methylamine)	CAS:1477-55-0 EC:216-032-5	Acute Tox. 4, H302; Acute Tox. 4, H332; Aquatic Chronic 3, H412; Eye Dam. 1, H318; Skin Sens. 1, H317; Skin Corr. 1B, H314, EUH071	01-2119480150-50
5-9,9 %	Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	CAS:68082-29-1 EC:500-191-5	Skin Irrit. 2, H315; Eye Dam. 1, H318; Aquatic Chronic 2, H411; Skin Sens. 1A, H317, M-Chronic:1	01-2119972320-44

2,5-4,9 %	4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with ethylenediamine	CAS:72480-18-3 EC:500-253-1	Acute Tox. 4, H302; Skin Sens. 1, H317; Eye Dam. 1, H318; Aquatic Acute 1, H400; Aquatic Chronic 1, H410	01-2120766318-46

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 (CO2).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

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

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

6.2. Environmental precautions

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

Retain contaminated washing water and dispose it.

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

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

6.3. Methods and material for containment and cleaning up

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

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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

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

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

Contamined clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

Component	OEL Type	Country	Ceiling	Long Term mg/m3	Long Term ppm	Short Term mg/m3	Short Term ppm	Notes
benzyl alcohol	NATIONAL	FINLAND		45.000	10.000			
	NATIONAL	GERMANY		22.000	5.000	44.000	10.000	AGS; Long term and short term: inhalable fraction
	NATIONAL	GERMANY		22.000	5.000	44.000	10.000	DFG; Long term and short term: inhalable fraction
	NATIONAL	LATVIA		5.000				
	NATIONAL	SWITZERLAND		5.000	22.000			
	NATIONAL	BULGARIA		5.000				
	NATIONAL	CZECHIA		40.000		80.000		
	NATIONAL	LITHUANIA		5.000				
	NATIONAL	POLAND		240.000				
	NATIONAL	RUSSIAN FEDERATION					5.000	
	NATIONAL	SLOVENIA		22.000	5.000	44.000	10.000	
	NATIONAL	UNITED STATES OF AMERICA			10.000			
M-phenylenebis (methylamine)	NATIONAL	AUSTRALIA	C			0.100		
	NATIONAL	AUSTRIA		0.100				
	NATIONAL	BELGIUM	C			0.100		
	NATIONAL	CANADA	C			0.100		Ontario
	NATIONAL	CANADA	C			0.100		Quebec
	NATIONAL	DENMARK		0.100	0.020	0.100	0.020	
	NATIONAL	FINLAND	C			0.100		
	NATIONAL	FRANCE				0.100		
	NATIONAL	NEW ZEALAND	C				0.100	
	NATIONAL	SINGAPORE				0.100		
	NATIONAL	KOREA, REPUBLIC	C	0.100				

		OF					
	NATIONAL	SWITZERLAND		0.100			
	NATIONAL	UNITED STATES OF AMERICA	C		0.100		
	NATIONAL	ITALY	C		0.100		
	NATIONAL	ARGENTINA	C		0.100		
	NATIONAL	INDONESIA	C		0.100		
	NATIONAL	IRELAND		0.100			
	NATIONAL	ICELAND			0.100	0.020	
	NATIONAL	MEXICO	C		0.100		
	NATIONAL	NORWAY	C		0.100		
	NATIONAL	PORTUGAL		0.100	0.100		
	NATIONAL	PORTUGAL	C		0.100		
	NATIONAL	SLOVENIA		0.100			
	ACGIH	NNN	C			0.018	Skin - Eye, skin, and GI irr

Predicted No Effect Concentration (PNEC) values

Component	CAS-No.	PNEC Limit	Exposure Route	Exposure Frequency
benzyl alcohol	100-51-6	1.000 mg/l	Freshwater	
		0.100 mg/l	Marine water	
		5.270 mg/kg	Freshwater sediments	
		0.527 mg/kg	Marine water sediments	
		2.300 mg/l	Intermittent releases (freshwater)	
		39.000 mg/l	Microorganisms in sewage treatments	
		0.456 mg/kg	Soil	
3-aminomethyl-3,5,5-trimethylcyclohexylamine	2855-13-2	60.000 µg/l	Freshwater	
		6.000 µg/l	Marine water	
		5.784 mg/kg	Freshwater sediments	
		578.000 µg/kg	Marine water sediments	
		1.121 mg/kg	Soil (agricultural)	
		0.230 mg/l	Intermittent releases (freshwater)	
		3.180 mg/l	Microorganisms in sewage treatments	
2,4,6-tris (dimethylaminomethyl) phenol	90-72-2	84.000 µg/l	Freshwater	
		840.000 µg/l	Intermittent releases (freshwater)	
		8.400 µg/l	Marine water	
		200.000 µg/l	Microorganisms in sewage treatments	
M-phenylenebis (methylamine)	1477-55-0	94.000 µg/l	Freshwater	
		152.000 µg/l	Intermittent releases (freshwater)	
		9.400 µg/l	Marine water	
		10.000 mg/l	Microorganisms in sewage treatments	

		430.000 µg/kg	Freshwater sediments
		43.000 µg/kg	Marine water sediments
		45.000 µg/kg	Soil
Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	68082-29-1	4.340 µg/l	Freshwater
		43.400 µg/l	Intermittent releases (freshwater)
		434.000 ng/L	Marine water
		3.840 mg/l	Microorganisms in sewage treatments
		434.020 mg/kg	Freshwater sediments
		43.400 mg/kg	Marine water sediments
		86.780 mg/kg	Soil

Derived No Effect Level (DNEL) values

Component	CAS-No.	Worker Industry	Worker Professional	Consumer	Exposure Route	Exposure Frequency
benzyl alcohol	100-51-6		22.000 mg/m³	8.100 mg/m³	Human Inhalation	Long Term, systemic effects
			450.000 mg/m³	40.500 mg/m³	Human Inhalation	Short Term, systemic effects
			9.500 mg/kg	5.700 mg/kg	Human Dermal	Long Term, systemic effects
			47.000 mg/kg	28.500 mg/kg	Human Dermal	Short Term, systemic effects
				5.000 mg/kg	Human Oral	Long Term, systemic effects
				25.000 mg/kg	Human Oral	Short Term, systemic effects
3-aminomethyl-3,5,5-trimethylcyclohexylamine	2855-13-2		20.100 mg/m³		Human Inhalation	Short Term, systemic effects
			20.100 mg/m³		Human Inhalation	Short Term, local effects
				526.000 µg/kg	Human Oral	Long Term, systemic effects
M-phenylenebis (methylamine)	1477-55-0		1.200 mg/m³		Human Inhalation	Long Term, systemic effects
			200.000 µg/m³		Human Inhalation	Long Term, local effects
			330.000 µg/kg		Human Dermal	Long Term, systemic effects
Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	68082-29-1		3.900 mg/m³	970.000 µg/m³	Human Inhalation	Long Term, systemic effects
			1.100 mg/kg	560.000 µg/kg	Human Dermal	Long Term, systemic effects
				560.000 µg/kg	Human Oral	Long Term, systemic effects

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.

Protection for skin:

Safety shoes.; Chemical protection clothing.

Protection for hands:

Nitrile rubber .

Respiratory protection:

Gas filter type A .

Thermal Hazards:

N.A.

Environmental exposure controls:

N.A.

Hygienic and Technical measures

N.A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State Liquid

Color: Light yellow

Odour: Like: Amines

Odour threshold: N.A.

pH: =11.00

Kinematic viscosity: N.A.

Melting point / freezing point: N.A.

Initial boiling point and boiling range: N.A.

Flash point: 93 °C (199 °F)

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

Vapour density: N.A.

Vapour pressure: N.A.

Relative density: 1.05 g/cm3

Solubility in water: Soluble

Solubility in oil: N.A.

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

Auto-ignition temperature: N.A.

Decomposition temperature: N.A.

Flammability: N.A.

Volatile Organic compounds - VOCs = 30.25 % ; 317.63 g/l

Particle characteristics:

Particle size: N.A.

9.2. Other information

Miscibility: N.A.

Conductivity: N.A.

Evaporation rate: N.A.

Viscosity: 265.00 cPo

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

Toxicological information on main components of the mixture:

benzyl alcohol	a) acute toxicity	LD50 Oral Rat = 1620.00 mg/kg	
		LC50 Inhalation of aerosol Rat > 4178.00000 mg/m3 4h	
		LD50 Skin Rabbit > 2000.00000 mg/kg 24h	
		LC50 Inhalation Mist Rat = 4.18 mg/l 4h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes 24h	
	d) respiratory or skin sensitisation	Skin Sensitization Negative	Mouse
	f) carcinogenicity	Genotoxicity Negative	Mouse
		Carcinogenicity Oral Rat Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Oral = 200.00000 mg/kg	Mouse
3-aminomethyl-3,5,5-trimethylcyclohexylamine	a) acute toxicity	LD50 Oral Rat = 1030.00000 mg/kg	
		LC50 Inhalation of aerosol Rat > 5.01000 mg/l 4h	
		LD50 Skin Rat > 2000.00000 mg/kg	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Positive	
	f) carcinogenicity	Genotoxicity Negative	Mouse, oral route
		Carcinogenicity Negative	
2,4,6-tris (dimethylaminomethyl) phenol	a) acute toxicity	LD50 Oral Rat = 2169.00000 mg/kg	
		LD50 Skin Rat > 1.00000 ml/Kg 6h	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	

	g) reproductive toxicity	No Observed Effect Level Oral Rat = 15.00000 mg/kg	
M-phenylenebis (methylamine)	a) acute toxicity	LD50 Oral Rat = 1001.00 mg/kg	
		LC50 Inhalation Mist Rat = 1.34 mg/l 4h	
		LD50 Skin Rat > 3100.00000 mg/kg	
	b) skin corrosion/irritation	Skin Irritant Rat Positive 4h	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
	f) carcinogenicity	Genotoxicity Negative	Mouse
	g) reproductive toxicity	No Observed Effect Level Oral Rat = 450.00000 mg/kg	
Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	a) acute toxicity	LD50 Oral Rat > 2000.00000 mg/kg	
		LD50 Skin Rat > 2000.00000 mg/kg 24h	
	c) serious eye damage/irritation	Eye Irritant Yes 1h	
		Eye Corrosive Rabbit Positive	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 1000.00000 mg/kg	

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:

Toxic to aquatic life with long lasting effects.

List of Eco-Toxicological properties of the product

The product is classified: Aquatic Chronic 2(H411)

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
benzyl alcohol	CAS: 100-51-6 - EINECS: 202-859-9 - INDEX: 603-057-00-5	a) Aquatic acute toxicity : LC50 Fish Oryzias latipes = 460.00000 mg/L 96h OECD SIDS (2001)
		b) Aquatic chronic toxicity : NOEC Fish = 48.89700 mg/L ECOSAR QSAR
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 230.00000 mg/L 48h OECD SIDS (2001)
		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 51.00000 mg/L OECD Guideline 211
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchnerella subcapitata = 770.00000 mg/L 72h OECD SIDS on Benzoates (2001)
		c) Bacteria toxicity : EC50 Nitrosomonas = 390.00000 mg/L
3-aminomethyl-3,5,5-trimethylcyclohexylamine	CAS: 2855-13-2 - EINECS: 220-	a) Aquatic acute toxicity : LC50 Fish Leuciscus idus = 110.00000 mg/L 96h ,,according to 84/449/EEC, C.1, 1984

	666-8 - INDEX: 612-067-00-9	
		a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 23.00000 mg/L 48h OECD 202
		a) Aquatic acute toxicity : EC50 Algae Scenedesmus subspicatus > 50.00 mg/L 72h
		b) Aquatic chronic toxicity : NOEC Daphnia = 3.00000 mg/L 504h
		c) Bacteria toxicity : EC10 Pseudomonas putida = 1120.00 mg/L 18h
2,4,6-tris(dimethylaminomethyl)phenol	CAS: 90-72-2 - EINECS: 202-013-9 - INDEX: 603-069-00-0	a) Aquatic acute toxicity : LC50 Fish Cyorinus carpio = 175.00000 mg/L 96h
		a) Aquatic acute toxicity : LC50 Salmo gairdneri < 240.00 mg/L 96h
		a) Aquatic acute toxicity : LC50 Daphnia Palemonetes vulgaris = 718.00 mg/L 96h
		a) Aquatic acute toxicity : EC50 Algae freshwater algae = 84.00 mg/L
M-phenylenebis(methylamine)	CAS: 1477-55-0 - EINECS: 216-032-5	a) Aquatic acute toxicity : LC50 Fish Oryzias latipes = 87.60000 mg/L 96h OECD 203
		a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 15.20000 mg/L 48h OECD 202
		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 4.70000 mg/L OECD 211 - 21days
		a) Aquatic acute toxicity : EC50 Algae Selenastrum capricornutum = 32.10000 mg/L 72h OECD 201
		a) Aquatic acute toxicity : EC50 Sludge activated sludge > 1000.00000 mg/L OECD 209
Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	CAS: 68082-29-1 - EINECS: 500-191-5	a) Aquatic acute toxicity : LC50 Fish = 10.00 mg/L 96h
		a) Aquatic acute toxicity : EC100 Daphnia = 10.00 mg/L 24h
		a) Aquatic acute toxicity : EC50 Algae = 4.34 mL/L 72h

12.2. Persistence and degradability

Component	Persitence/Degradability:	Test	Value	Notes
benzyl alcohol	Readily biodegradable	Dissolved organic carbon	96.000	%; OECD Guideline 301A
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Non-readily biodegradable	Dissolved organic carbon	8.000	%; EU-method C.4-A
2,4,6-tris(dimethylaminomethyl)phenol	Non-readily biodegradable			
M-phenylenebis(methylamine)	Non-readily biodegradable	Oxygen consumption		OECD 301B
Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Non-readily biodegradable			OECD 301 D

12.3. Bioaccumulative potential

Component	Bioaccumulation	Test	Value	Notes
benzyl alcohol	Bioaccumulative	BCF - Bioconcentrantion factor	1.000	L/kg ww
M-phenylenebis(methylamine)	Not bioaccumulative	BCF - Bioconcentrantion factor		OECD Guideline 305 (Bioconcentration: Flow-through Fish Test)
Fatty acids, c18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and	Bioaccumulative	BCF - Bioconcentrantion factor	77.400	L/kg ww; QSAR

triethylenetetramine

12.4. Mobility in soil

Component	Mobility in soil
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Not mobile

12.5. Results of PBT and vPvB assessment

No PBT/vPvB Ingredients are present

12.6 Endocrine disrupting properties

No endocrine disruptor substances present in concentration >= 0.1%

12.7 Other adverse effects

N.A.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

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

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

HP 4: Irritant — skin irritation and eye damage; HP 6: Acute Toxicity; HP 8: Corrosive; HP 14: Ecotoxic; HP 13: Sensitising

SECTION 14: Transport information

14.1. UN number or ID number

2735

14.2. UN proper shipping name

ADR-Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine - 2,4,6-tris(dimethylaminomethyl)phenol)

IATA-Technical name: AMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine - 2,4,6-tris(dimethylaminomethyl)phenol)

IMDG-Technical name: AMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine - 2,4,6-tris(dimethylaminomethyl)phenol)

14.3. Transport hazard class(es)

ADR-Class: 8

IATA-Class: 8

IMDG-Class: 8

14.4. Packing group

ADR-Packing Group: III

IATA-Packing group: III

IMDG-Packing group: III

14.5. Environmental hazards

Toxic Component most present: 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with ethylenediamine

Marine pollutant: Yes

Environmental Pollutant: Yes

IMDG-EMS: F-A, S-B

14.6. Special precautions for user

Road and Rail (ADR-RID) :

ADR-Label: 8

ADR - Hazard identification number: 80

ADR-Special Provisions: 274

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

ADR Limited Quantities: 5 L

ADR Excepted Quantities: E1

Air (IATA) :

IATA-Passenger Aircraft: 852

IATA-Cargo Aircraft: 856

IATA-Label: 8

IATA-Subsidiary hazards: -

IATA-Erg: 8L

IATA-Special Provisioning: A3 A803

Sea (IMDG) :

IMDG-Stowage Code: Category A

IMDG-Stowage Note: SG35 SGG18

IMDG-Subsidiary hazards: -

IMDG-Special Provisioning: 223 274

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

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

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

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

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

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

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

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

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

Regulation (EU) n. 944/2013 (ATP 5 CLP)

Regulation (EU) n. 605/2014 (ATP 6 CLP)

Regulation (EU) n. 2015/1221 (ATP 7 CLP)

Regulation (EU) n. 2016/918 (ATP 8 CLP)

Regulation (EU) n. 2016/1179 (ATP 9 CLP)

Regulation (EU) n. 2017/776 (ATP 10 CLP)

Regulation (EU) n. 2018/669 (ATP 11 CLP)

Regulation (EU) n. 2018/1480 (ATP 13 CLP)

Regulation (EU) n. 2019/521 (ATP 12 CLP)

Regulation (EU) n. 2020/217 (ATP 14 CLP)

Regulation (EU) n. 2020/1182 (ATP 15 CLP)

Regulation (EU) n. 2021/643 (ATP 16 CLP)

Regulation (EU) n. 2020/878

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

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

Restrictions related to the product: 3

Restrictions related to the substances contained: 75

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

Seveso III category according to Annex 1, part 1	Lower-tier threshold (tonnes)	Upper-tier threshold (tonnes)
Product belongs to category: E2	200	500

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

No Substance Listed

German Water Hazard Class.

Class 2: hazardous for water.

SVHC Substances:

No data available

15.2. Chemical safety assessment

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

SECTION 16: Other information

Code	Description
EUH071	Corrosive to the respiratory tract.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
3.1/4/Dermal	Acute Tox. 4	Acute toxicity (dermal), Category 4
3.1/4/Inhal	Acute Tox. 4	Acute toxicity (inhalation), Category 4
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/1B	Skin Corr. 1B	Skin corrosion, Category 1B
3.2/1C	Skin Corr. 1C	Skin corrosion, Category 1C
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/1	Eye Dam. 1	Serious eye damage, Category 1
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.4.2/1A	Skin Sens. 1A	Skin Sensitisation, Category 1A
4.1/A1	Aquatic Acute 1	Acute aquatic hazard, category 1
4.1/C1	Aquatic Chronic 1	Chronic (long term) aquatic hazard, category 1
4.1/C2	Aquatic Chronic 2	Chronic (long term) aquatic hazard, category 2
4.1/C3	Aquatic Chronic 3	Chronic (long term) aquatic hazard, category 3

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

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
3.1/4/Oral	Calculation method
3.2/1B	Calculation method
3.4.2/1A	Calculation method
4.1/C2	Calculation method

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

Main bibliographic sources:

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

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

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

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

This MSDS cancels and replaces any preceding release.

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

ACGIH: American Conference of Governmental Industrial Hygienists

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

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

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

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

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging.

CMR: Carcinogenic, Mutagenic and Reprotoxic

COD: Chemical Oxygen Demand

COV: Volatile Organic Compound

CSA: Chemical Safety Assessment

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

Paragraphs modified from the previous revision:

- 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING
- 2. HAZARDS IDENTIFICATION
- 3. COMPOSITION/INFORMATION ON INGREDIENTS
- 4. FIRST AID MEASURES
- 6. ACCIDENTAL RELEASE MEASURES
- 7. HANDLING AND STORAGE
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 9. PHYSICAL AND CHEMICAL PROPERTIES
- 11. TOXICOLOGICAL INFORMATION
- 12. ECOLOGICAL INFORMATION
- 13. DISPOSAL CONSIDERATIONS
- 14. TRANSPORT INFORMATION
- 15. REGULATORY INFORMATION
- 16. OTHER INFORMATION

Exposure Scenario
Benzyl alcohol

Exposure Scenario, 30/06/2021

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

Table of contents

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

1.1 TITLE SECTION

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

Environment Contributing Scenario

CS1	ERC8a - ERC8d

Worker Contributing Scenario

CS2	PROC8a - PROC10

1.2 Conditions of use affecting exposure

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

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

Product (article) characteristics

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

Vapour pressure:
= 7 Pa

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

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

Release type: Continuous release

Emission days: 365 days per year

Conditions and measures related to sewage treatment plant

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

STP effluent (m^3/day): 2000

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

Waste treatment
Product residual disposal complies with applicable regulations.

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

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

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:

< 7 Pa

Amount used, frequency and duration of use/exposure

Duration:

Covers use up to = 8 h/day

Technical and organisational conditions and measures

Technical and organisational measures

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

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

Personal protection

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

Other conditions affecting worker exposure

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

Assumes that potential dermal contact is limited to hands.

1.3 Exposure estimation and reference to its source

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

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

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

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

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

Guidance to check compliance with the exposure scenario:

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

Exposure Scenario

3-aminomethyl-3,5,5-trimethylcyclohexylamine

Exposure Scenario, 01/06/2022

Substance identity	
	3-aminomethyl-3,5,5-trimethylcyclohexylamine
CAS No.	2855-13-2
INDEX No.	612-067-00-9
EINECS No.	220-666-8
Registration number	01-2119514687-32

Table of contents

1. ES 1 Widespread use by professional workers; Various products (PC9b, PC9a, PC1, PC32)

1.1 TITLE SECTION

Exposure Scenario name	Use in rigid foams, coatings, adhesives and sealants
Date - Version	01/06/2022 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Fillers, putties, plasters, modelling clay (PC9b) - Coatings and paints, thinners, paint removers (PC9a) - Adhesives, sealants (PC1) - Polymer preparations and compounds (PC32)

Environment Contributing Scenario	
CS1	ERC8c
CS2	ERC8f

Worker Contributing Scenario	
CS3 Material transfers	PROC8a
CS4 Rolling, Brushing	PROC10
CS5 Material transfers	PROC8a
CS6 Rolling, Brushing	PROC10

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8c)

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

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Technical and organisational conditions and measures

Control measures to prevent releases

	Water - minimum efficiency of: 0.015 %

1.2. CS2: Environment Contributing Scenario (ERC8f)

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

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Technical and organisational conditions and measures

Control measures to prevent releases

	Water - minimum efficiency of: 0.015 %

1.2. CS3: Worker Contributing Scenario: Material transfers (PROC8a)

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

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers use up to 4 h/day

Frequency:

Covers use up to <= 240 days per year

Technical and organisational conditions and measures

Technical and organisational measures

Local exhaust ventilation	Inhalation - minimum efficiency of: 80 %

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

Personal protection

Wear suitable respiratory protection.	Inhalation - minimum efficiency of: 95 %
Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: 98 %
Wear suitable coveralls to prevent exposure to the skin.	
Use suitable eye protection.	

Other conditions affecting worker exposure

Indoor use

Professional use

Body parts exposed:

Assumes that potential dermal contact is limited to hands.

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

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers use up to 4 h/day

Frequency:

Covers use up to <= 240 days per year

Technical and organisational conditions and measures

Technical and organisational measures

Local exhaust ventilation	Inhalation - minimum efficiency of: 80 %

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

Personal protection

Wear suitable respiratory protection.	Inhalation - minimum efficiency of: 95 %
Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: 98 %
Wear suitable coveralls to prevent exposure to the skin.	
Use suitable eye protection.	

Other conditions affecting worker exposure

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

1.2. CS5: Worker Contributing Scenario: Material transfers (PROC8a)

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

Product (article) characteristics

Physical form of product:
Liquid

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

Amount used, frequency and duration of use/exposure

Duration:
Covers use up to 1 h
Frequency:
Covers use up to <= 240 days per year

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

Personal protection

Wear suitable respiratory protection.	Inhalation - minimum efficiency of: 98 %
Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: 98 %
Wear suitable coveralls to prevent exposure to the skin.	
Use suitable eye protection.	

Other conditions affecting worker exposure

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

1.2. CS6: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers use up to 1 h

Frequency:

Covers use up to <= 240 days per year

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

Personal protection

Wear suitable respiratory protection.	Inhalation - minimum efficiency of: 98 %
Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: 98 %
Wear suitable coveralls to prevent exposure to the skin.	
Use suitable eye protection.	

Other conditions affecting worker exposure

Outdoor use

Professional use

Body parts exposed:

Assumes that potential dermal contact is limited to hands.

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario (ERC8c)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	0.0004855 mg/L	N/A	< 0.01
freshwater sediment	0.047 mg/kg dry weight	N/A	< 0.01
marine water	4.85E-05 mg/L	N/A	< 0.01
marine sediment	0.005 mg/kg dry weight	N/A	< 0.01
marine water	4.85E-05 mg/L	N/A	< 0.01
Sewage treatment plant	1.48E-05 mg/L	N/A	< 0.01
Agricultural soil	0.017 mg/kg dry weight	N/A	< 0.01
Man via environment - Oral	0.000188 mg/kg bw/day	N/A	< 0.01

1.3. CS2: Environment Contributing Scenario (ERC8f)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	0.000487 mg/L	N/A	< 0.01
freshwater sediment	0.047 mg/kg dry weight	N/A	< 0.01
marine water	4.815E-05 mg/L	N/A	< 0.01
marine sediment	0.005 mg/kg dry weight	N/A	< 0.01
Sewage treatment plant	2.96E-05 mg/L	N/A	< 0.01
Agricultural soil	0.017 mg/kg dry weight	N/A	= 0.015
Man via environment - Oral	0.0001193 mg/kg bw/day	N/A	< 0.01

1.3. CS3: Worker Contributing Scenario: Material transfers (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal	13.714 mg/kg bw/day	N/A	0.274
inhalative	106.438 mg/m³	N/A	N/A

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal	27.429 mg/kg bw/day	N/A	0.549
inhalative	106.438 mg/m³	N/A	N/A

1.3. CS5: Worker Contributing Scenario: Material transfers (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal	13.714 mg/kg bw/day	N/A	0.274
inhalative	24.835 mg/m³	N/A	0.497

1.3. CS6: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal	27.429 mg/kg bw/day	N/A	0.549
inhalative	24.835 mg/m³	N/A	0.497

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

Guidance to check compliance with the exposure scenario:

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

Exposure Scenario
2,4,6-tris(dimethylaminomethyl)phenol

Exposure Scenario, 05/11/2021

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

Table of contents

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

1.1 TITLE SECTION

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

Environment Contributing Scenario

CS1	ERC8b - ERC8e

Worker Contributing Scenario

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

1.2 Conditions of use affecting exposure

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

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

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
0.197 Pa

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

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

Amounts used:
Amount per use <= 0.0014 tonnes/day

Release type: Continuous release

Conditions and measures related to sewage treatment plant

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

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

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

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

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

	(PROC8a)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
= 0.197 Pa

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

Amount used, frequency and duration of use/exposure

Duration:
Duration of contact < 30 min

Technical and organisational conditions and measures

Technical and organisational measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).	Inhalation - minimum efficiency of: 30 %
Local exhaust ventilation	Inhalation - minimum efficiency of: 80 %

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

Personal protection

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

Other conditions affecting worker exposure

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

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

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
= 0.197 Pa

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

Amount used, frequency and duration of use/exposure

Duration:
Duration of contact < 440 min

Technical and organisational conditions and measures

Technical and organisational measures

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

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

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

Personal protection

Wear chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training. Wear a full face respirator conforming to EN136. Wear suitable respiratory protection. Wear an impervious suit.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 99 %
Use suitable eye protection.	

Other conditions affecting worker exposure

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

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

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
= 0.197 Pa

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

Amount used, frequency and duration of use/exposure

Duration:
Duration of contact < 440 min

Technical and organisational conditions and measures

Technical and organisational measures

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

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

Personal protection

Wear chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training. Wear a full face respirator conforming to EN136. Wear suitable respiratory protection. Wear an impervious suit.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 99 %

Use suitable eye protection.

Other conditions affecting worker exposure

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

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

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
= 0.197 Pa

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

Amount used, frequency and duration of use/exposure

Duration:
Duration of contact < 4 h

Technical and organisational conditions and measures

Technical and organisational measures

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

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

Personal protection

Wear chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training. Wear a full face respirator conforming to EN136. Wear suitable respiratory protection. Wear an impervious suit.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 99 %
Use suitable eye protection.	

Other conditions affecting worker exposure

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

1.2. CS6: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

= 0.197 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Duration of contact < 4 h

Technical and organisational conditions and measures

Technical and organisational measures

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

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

Personal protection

Wear chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training. Wear a full face respirator conforming to EN136. Wear suitable respiratory protection. Wear an impervious suit.	Dermal - minimum efficiency of: 90 % Inhalation - minimum efficiency of: 99 %
Use suitable eye protection.	

Other conditions affecting worker exposure

Outdoor use

Professional use

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

Body parts exposed:

Assumes that potential dermal contact is limited to hands.

1.3 Exposure estimation and reference to its source

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

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

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

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.023 mg/m³	EASY TRA v3.6	0.004
inhalative, systemic, short-term	0.464 mg/m³	EASY TRA v3.6	0.211
combined routes, systemic, long-term	N/A	N/A	0.247
dermal, systemic, long-term	0.03 mg/kg bw/day	RISKOFDERM v2.1	0.203

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.31 mg/m³	ECETOC TRA worker v3	0.584
inhalative, systemic, short-term	0.4641238 mg/m³	EASY TRA v3.6	0.59
combined routes, systemic, long-term	N/A	N/A	0.854
dermal, systemic, long-term	0.041 mg/kg bw/day	RISKOFDERM v2.1	0.27

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

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

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.367 mg/m³	ART v1.5	0.022
inhalative, systemic, short-term	0.023 mg/m³	ART v1.5	0.011
combined routes, systemic, long-term	N/A	N/A	0.827
dermal, systemic, long-term	0.121 mg/kg bw/day	RISKOFDERM v2.1	0.805

1.3. CS6: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.019 mg/m³	ART v1.5	0.037
inhalative, systemic, short-term	0.039 mg/m³	ART v1.5	0.019
combined routes, systemic, long-term	N/A	N/A	0.101
dermal, systemic, long-term	0.05 mg/kg bw/day	RISKOFDERM v2.1	0.33

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

Guidance to check compliance with the exposure scenario:

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