

Safety Data Sheet

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

CEMENTORESINA GEL (A)

Date of first edition: 11/12/2021

Safety Data Sheet dated 1/18/2023

version 2

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

1.1. Product identifier

Mixture identification:

Trade name: CEMENTORESINA GEL (A)

Trade code: B0325 .020

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

Recommended use: resin

Uses advised against: All uses other than recommended ones

1.3. Details of the supplier of the safety data sheet

Company: KERAKOLL S.p.A.

Via dell'Artigianato, 9

41049 Sassuolo (MODENA) - ITALY

Tel.+39 0536 816511 Fax. +39 0536816581

safety@kerakoll.com

1.4. Emergency telephone number

European emergency phone number 112

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)

Flam. Liq. 2 Highly flammable liquid and vapour.

Skin Irrit. 2 Causes skin irritation.

Eye Irrit. 2 Causes serious eye irritation.

Skin Sens. 1 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

H225 Highly flammable liquid and vapour.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves and eye protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/container in accordance with applicable regulations.

Contains

bis-[4-(2,3-epoxipropoxy)phenyl]propane
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane

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: CEMENTORESINA GEL (A)

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

Qty	Name	Ident. Numb.	Classification	Registration Number
25-50 %	bis-[4-(2,3-epoxipropoxy)phenyl]propane	CAS:1675-54-3 EC:216-823-5 Index:603-073-00-2	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411, M-Chronic:1 Specific Concentration Limits: C ≥ 5%: Eye Irrit. 2 H319 C ≥ 5%: Skin Irrit. 2 H315	01-2119456619-26
25-50 %	Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane	EC:701-263-0	Skin Irrit. 2, H315; Skin Sens. 1, H317; Aquatic Chronic 2, H411, M-Chronic:1	01-2119454392-40
10-19,9 %	ethanol; ethyl alcohol	CAS:64-17-5 EC:200-578-6 Index:603-002-00-5	Flam. Liq. 2, H225 Eye Irrit. 2, H319 Specific Concentration Limits: C ≥ 50%: Eye Irrit. 2 H319	01-2119457610-43
2,5-4,9 %	propan-2-ol; isopropyl alcohol; isopropanol	CAS:67-63-0 EC:200-661-7 Index:603-117-00-0	Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	01-2119457558-25

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:
Immediately take off all contaminated clothing.
Remove contaminated clothing immediatley and dispose off safely.

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

In case of eyes contact:

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

Protect uninjured eye.

In case of Ingestion:

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

In case of Inhalation:

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

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

Eye irritation

Eye damages

Skin Irritation

Erythema

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

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

CO2 or Dry chemical fire extinguisher.

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

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

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove all sources of ignition.

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, 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.

Contaminated 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

Store at below 20 °C. Keep away from unguarded flame and heat sources. Avoid direct exposure to sunlight.

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

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Cool and adequately ventilated.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

Component	OEL Type	Country	Ceiling	Long Term mg/m3	Long Term ppm	Short Term mg/m3	Short Term ppm	Notes
bis-[4-(2,3-epoxipropoxy)phenyl] propane	NATIONAL	NETHERLANDS		5.000				respirable fraction
	NATIONAL	NETHERLANDS		10.000				Inhalable fraction
ethanol; ethyl alcohol	ACGIH	NNN					1000	A3 - URT irr
propan-2-ol; isopropyl alcohol; isopropanol	NATIONAL	AUSTRALIA		983.000	400.000	1230.000	500.000	
	NATIONAL	AUSTRIA		500.000	200.000	2000.000	800.000	
	NATIONAL	BELGIUM		500.000	200.000	1000.000	400.000	
	NATIONAL	CANADA			200.000		400.000	Ontario
	NATIONAL	CANADA		983.000	400.000	1230.000	500.000	Quebec
	NATIONAL	DENMARK		490.000	200.000	980.000	400.000	
	NATIONAL	FINLAND		500.000	200.000	620.000	250.000	
	NATIONAL	FRANCE				980.000	400.000	
	NATIONAL	GERMANY		500.000	200.000	1000.000	400.000	AGS
	NATIONAL	GERMANY		500.000	200.000	1000.000	400.000	DFG
	NATIONAL	HUNGARY		500.000		2000.000		
	NATIONAL	IRELAND			200.000		400.000	
	NATIONAL	LATVIA		350.000		600.000		
	NATIONAL	NEW ZEALAND		983.000	400.000	1230.000	500.000	
	NATIONAL	CHINA		350.000		700.000		
	NATIONAL	POLAND		900.000		1200.000		
	NATIONAL	ROMANIA		200.000	81.000	500.000	203.000	
	NATIONAL	SINGAPORE		983.000	400.000	1230.000	500.000	
	NATIONAL	KOREA, REPUBLIC OF		480.000	200.000	980.000	400.000	
	NATIONAL	SPAIN		500.000	200.000	1000.000	400.000	
	NATIONAL	SWEDEN		350.000	150.000	600.000	250.000	
	NATIONAL	SWITZERLAND		500.000	200.000	1000.000	400.000	
	NATIONAL	UNITED STATES OF AMERICA		980.000	400.000	1225.000	500.000	NIOSH
	NATIONAL	UNITED STATES OF AMERICA		980.000	400.000			OSHA
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND		999.000	400.000	1250.000	500.000	

		NORTHERN IRELAND					
	NATIONAL	ARGENTINA	400.000		500.000		
	NATIONAL	BULGARIA	980.000		1225.000		
	NATIONAL	CZECHIA	500.000		1000.000		
	NATIONAL	CHILE	858.000	358.000	1230.000	500.000	
	NATIONAL	CROATIA	999.000	400.000	1250.000	500.000	
	NATIONAL	ESTONIA	350.000	150.000	600.000	250.000	
	NATIONAL	GREECE	980.000	400.000	1225.000	500.000	
	NATIONAL	INDONESIA	983.000	400.000	1230.000	500.000	
	NATIONAL	ICELAND	490.000	200.000			
	NATIONAL	LITHUANIA	350.000	150.000	600.000	250.000	
	NATIONAL	NORWAY	245.000	100.000			
	NATIONAL	NETHERLANDS	650.000	250.000			
	NATIONAL	PORTUGAL		200.000		400.000	
	NATIONAL	RUSSIAN FEDERATION	10.000		50.000		
	NATIONAL	SLOVAKIA	500.000	200.000	1000.000	400.000	
	NATIONAL	SLOVENIA	500.000	200.000	1000.000	400.000	
	ACGIH	NNN		200.000		400.000	A4, BEI - Eye and URT irr, CNS impair
Distillates (petroleum), hydro-treated light; Kerosine — unspecified	NATIONAL	GERMANY	350.000	50.000	700.000	100.000	DFG; Long term and short term: vapour
	NATIONAL	GERMANY	5.000		20.000		DFG; Long term and short term: airborne particles, inhalable fraction
	NATIONAL	SWITZERLAND	350.000	50.000	700.000	100.000	
	NATIONAL	SWITZERLAND	1.000				Inhalable fraction
	NATIONAL	CANADA	200.000				
	NATIONAL	RUSSIAN FEDERATION	100.000		200.000		
2,6-dimethylheptan-4-one; di-isobutyl ketone	NATIONAL	AUSTRALIA	145.000	25.000			
	NATIONAL	BELGIUM	147.000	25.000			
	NATIONAL	CANADA		25.000			Ontario
	NATIONAL	CANADA	145.000	25.000			Québec
	NATIONAL	DENMARK	150.000	25.000	300.000	50.000	
	NATIONAL	FINLAND	150.000	25.000	240.000	40.000	
	NATIONAL	FRANCE	250.000	25.000			
	NATIONAL	IRELAND	150.000	25.000			
	NATIONAL	NEW ZEALAND	145.000	25.000			
	NATIONAL	CHINA	145.000				
	NATIONAL	POLAND	150.000		300.000		
	NATIONAL	ROMANIA	150.000	26.000	250.000	43.000	
	NATIONAL	SINGAPORE	145.000	26.000			
	NATIONAL	KOREA, REPUBLIC	150.000	25.000			

		OF			
	NATIONAL	SPAIN	148.000	25.000	
	NATIONAL	UNITED STATES OF AMERICA	150.000	25.000	NIOSH
	NATIONAL	UNITED STATES OF AMERICA	290.000	50.000	OSHA
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	148.000	25.000	
	NATIONAL	ARGENTINA		25.000	
	NATIONAL	CROATIA	148.000	25.000	
	NATIONAL	GREECE	290.000	50.000	
	NATIONAL	INDONESIA	145.000	25.000	
	NATIONAL	ICELAND	150.000	25.000	
	NATIONAL	NORWAY	120.000	20.000	
	NATIONAL	PORTUGAL		25.000	
	NATIONAL	SLOVENIA	290.000	50.000	
	NATIONAL	SOUTH AFRICA	150.000	25.000	
	NATIONAL	TAIWAN, PROVINCE OF CHINA	150.000	25.000	
	ACGIH	NNN		25.000	URT and eye irr
octamethylcyclotetrasiloxane	NATIONAL	UNITED STATES OF AMERICA		10.000	OARS WEEL
2,6-di-tert-butyl-p-cresol	NATIONAL	AUSTRALIA	10.000		
	NATIONAL	AUSTRIA	10.000		
	NATIONAL	BELGIUM	2.000		Inhalable fraction and vapour
	NATIONAL	CANADA	2.000		Ontario; Inhalable fraction and vapour
	NATIONAL	CANADA	10.000		Quebec
	NATIONAL	DENMARK	10.000	20.000	
	NATIONAL	FINLAND	10.000	20.000	
	NATIONAL	FRANCE	10.000		
	NATIONAL	GERMANY	10.000	40.000	ASG; Long term and short term: inhalable aerosol and vapour
	NATIONAL	GERMANY	10.000	40.000	DFG; Long term and short term: inhalable fraction and vapour
	NATIONAL	IRELAND	10.000		
	NATIONAL	NEW ZEALAND	10.000		
	NATIONAL	SINGAPORE	10.000		
	NATIONAL	KOREA, REPUBLIC OF	2.000		
	NATIONAL	SWITZERLAND	10.000		Inhalable aerosol

NATIONAL	SWITZERLAND		40.000	
NATIONAL	UNITED STATES OF AMERICA	10.000		NIOSH
NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	10.000		
NATIONAL	BULGARIA	10.000	50.000	
NATIONAL	CROATIA	10.000		
NATIONAL	ICELAND	10.000		
NATIONAL	PORTUGAL	2.000		
NATIONAL	SLOVENIA	10.000	40.000	
NATIONAL	SPAIN	10.000		
NATIONAL	SOUTH AFRICA	10.000		
ACGIH	NNN	2.000		(IFV), A4 - URT irr

Biological limit values

CAS-No.	Component	Value	UoM	Medium	Biological Indicator	Sampling Period
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol	25	mg/L	Urine	Acetone	End of turn
		25	mg/L	Blood	Acetone	End of turn

Predicted No Effect Concentration (PNEC) values

Component	CAS-No.	PNEC Limit	Exposure Route	Exposure Frequency
bis-[4-(2,3-epoxipropoxy)phenyl] propane	1675-54-3	0.006 mg/l	Freshwater	
		600.000 ng/L	Marine water	
		0.996 mg/kg	Freshwater sediments	
		0.099 mg/kg	Marine water sediments	
		0.196 mg/kg	Soil	
		10.000 mg/l	Microorganisms in sewage treatments	
		0.018 mg/l	Intermittent releases (freshwater)	
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)] bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)] bis(oxirane) and 2-(2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane		3.000 µg/l	Freshwater	
		25.400 µg/l	Intermittent releases (freshwater)	
		300.000 ng/L	Marine water	
		10.000 mg/l	Microorganisms in sewage treatments	
		294.000 µg/kg	Freshwater sediments	
		29.400 µg/kg	Marine water sediments	
		237.000 µg/kg	Soil	

ethanol; ethyl alcohol	64-17-5	960.000 µg/l	Freshwater
		2.750 mg/l	Intermittent releases (freshwater)
		790.000 µg/l	Marine water
		580.000 mg/l	Microorganisms in sewage treatments
		3.600 mg/kg	Freshwater sediments
		2.900 mg/kg	Marine water sediments
		630.000 µg/kg	Soil
		550.000 mg/kg	Secondary poisoning
propan-2-ol; isopropyl alcohol; isopropanol	67-63-0	140.900 mg/l	Freshwater
		140.900 mg/l	Intermittent releases (freshwater)
		140.900 mg/l	Marine water
		2251.000 mg/l	Microorganisms in sewage treatments
		552.000 mg/kg	Freshwater sediments
		552.000 mg/kg	Marine water sediments
		28.000 mg/kg	Soil
		160.000 mg/kg	Secondary poisoning

Derived No Effect Level (DNEL) values

Component	CAS-No.	Worker Industry	Worker Professional	Consumer	Exposure Route	Exposure Frequency
bis-[4-(2,3-epoxipropoxy)phenyl] propane	1675-54-3		0.750 mg/kg		Human Oral	Long Term, local effects
			0.750 mg/kg		Human Oral	Long Term, systemic effects
			3.571 mg/kg		Human Dermal	Long Term, systemic effects
			3.571 mg/kg		Human Dermal	Long Term, local effects
			12.250 mg/m ³		Human Inhalation	Long Term, systemic effects
			12.250 mg/m ³		Human Inhalation	Long Term, local effects
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)] bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)] bis(oxirane) and 2-(2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane			29.390 mg/m ³	8.700 mg/m ³	Human Inhalation	Long Term, systemic effects
			104.150 mg/kg	62.500 mg/kg	Human Dermal	Long Term, systemic effects
				6.250 mg/kg	Human Oral	Long Term, systemic effects
ethanol; ethyl alcohol	64-17-5		950.000 mg/m ³	114.000 mg/m ³	Human Inhalation	Long Term, systemic effects
			1900.000 mg/m ³	950.000 mg/m ³	Human Inhalation	Short Term, local effects
			343.000 mg/kg	206.000 mg/kg	Human Dermal	Long Term, systemic effects

propan-2-ol; isopropyl alcohol; isopropanol	67-63-0	87.000 mg/kg	Human Oral	Long Term, systemic effects
		89.000 mg/m ³	Human Inhalation	Long Term, systemic effects
		319.000 mg/kg	Human Dermal	Long Term, systemic effects
		26.000 mg/kg	Human Oral	Long Term, systemic effects

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.; EN 166

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

Respiratory protection:

Gas filter type AX + particle filter P2 .

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: Whitish

Odour: N.A.

Odour threshold: N.A.

pH: N.A.

Kinematic viscosity: N.A.

Melting point / freezing point: N.A.

Initial boiling point and boiling range: 78 °C (172 °F)

Flash point: 21 °C (70 °F)

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

Vapour density: N.A.

Vapour pressure: N.A.

Relative density: 1.31 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: The product is classified Flam. Liq. 2 H225

Volatile Organic compounds - VOCs = 16.27 % ; 213.24 g/l

Particle characteristics:

Particle size: N.A.

9.2. Other information

Miscibility: N.A.

Conductivity: N.A.

Evaporation rate: N.A. No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Data not available.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

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

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

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

Toxicological Information of the Preparation

a) acute toxicity	Not classified
	Based on available data, the classification criteria are not met
b) skin corrosion/irritation	The product is classified: Skin Irrit. 2(H315)
c) serious eye damage/irritation	The product is classified: Eye Irrit. 2(H319)
d) respiratory or skin sensitisation	The product is classified: Skin Sens. 1(H317)
e) germ cell mutagenicity	Not classified
	Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified
	Based on available data, the classification criteria are not met
g) reproductive toxicity	Not classified
	Based on available data, the classification criteria are not met
h) STOT-single exposure	Not classified
	Based on available data, the classification criteria are not met
i) STOT-repeated exposure	Not classified
	Based on available data, the classification criteria are not met
j) aspiration hazard	Not classified
	Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

bis-[4-(2,3-epoxipropoxy)phenyl]propane	a) acute toxicity	LD50 Oral Rabbit = 19800.00000 mg/kg	
		LD50 Skin Rabbit > 20.00000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive	epoxy resin with an average molecular mass <= 700 d irritate skin of rabbits
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
	f) carcinogenicity	Genotoxicity Negative	Mouse, oral
		Carcinogenicity Oral Rat = 15.00000 mg/kg	NOAEL
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane	g) reproductive toxicity	No Observed Effect Level Oral Rat = 750.00000 mg/kg	NOAEL
	a) acute toxicity	LD50 Oral Rat > 5000.00 mg/kg	
		LD50 Skin Rat > 2000.00 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive 4h	
	c) serious eye	Eye Irritant Rabbit No	

	damage/irritation		
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
	f) carcinogenicity	Genotoxicity Negative	Hamster oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 750.00 mg/kg	
ethanol; ethyl alcohol	a) acute toxicity	LD50 Oral Rat = 10470.00 mg/kg LC50 Inhalation Vapour Rat = 117.00 mg/l 4h LD50 Skin Rabbit = 17100.00 mg/kg	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative	
	c) serious eye damage/irritation	Eye Irritant Rabbit No	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral = 20700.00 mg/kg	Mouse
propan-2-ol; isopropyl alcohol; isopropanol	a) acute toxicity	LD50 Oral Rat = 5840.00 mg/kg LC50 Inhalation Vapour Rat > 10000.00 Ppm 6h LD50 Skin Rabbit = 16.40 ml/Kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	f) carcinogenicity	Genotoxicity Negative Carcinogenicity = 5000.00 Ppm	Mouse intraperitoneal route NOEC for mouse

11.2 Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration $\geq 0.1\%$

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
bis-[4-(2,3-epoxipropoxy)phenyl]propane	CAS: 1675-54-3 - EINECS: 216-823-5 - INDEX: 603-073-00-2	a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss = 2.00000 mg/L 96h a) Aquatic acute toxicity : LC50 Daphnia magna = 1.80000 mg/L 48h a) Aquatic acute toxicity : EC50 Algae Scenedesmus capricornutum = 11.00000 mg/L 72h EPA-660/3-75-009 c) Bacteria toxicity : EC50 Sludge activated sludge = 100.00000 mg/L 3h
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-	EINECS: 701-263-0	a) Aquatic acute toxicity : LC50 Fish Leuciscus idus = 2.54 mg/L 96h

[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane

ethanol; ethyl alcohol

CAS: 64-17-5 -
EINECS: 200-578-6 - INDEX:
603-002-00-5

a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 2.55 mg/L 48h
b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 0.30 mg/L - 21days

a) Aquatic acute toxicity : EC50 Algae Selenastrum capricornutum = 1.80 mg/L 72h

a) Aquatic acute toxicity : NOEC Sludge activated sludge = 100.00 mg/L 3h

a) Aquatic acute toxicity : LC50 Fish S. gairdneri > 11.20 g/L 96h

b) Aquatic chronic toxicity : NOEC Fish Oryzias latipes = 250.00 mg/L OECD212

a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 5012.00 mg/L 48h

a) Aquatic acute toxicity : NOEC Daphnia Ceriodaphnia dubia = 9.60 mg/L - 10days

a) Aquatic acute toxicity : EC50 Algae Chlorella vulgaris = 275.00 mg/L 72h

a) Aquatic acute toxicity : LC50 Paramaecium caudatum = 5800.00 mg/L - 16hr

d) Terrestrial toxicity : LC50 Worm Eisenia foetida = 0.10 mg/cm2

e) Plant toxicity : EC50 = 633.00 mg/kg

propan-2-ol; isopropyl alcohol; isopropanol

CAS: 67-63-0 -
EINECS: 200-661-7 - INDEX:
603-117-00-0

a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 9640.00 mg/L 96h

a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 10000.00 mg/L 24h OECD guideline 202

d) Terrestrial toxicity : LC50 Drosophila melanogaster = 25.10 g/L 24h

e) Plant toxicity : IC50 Lactuca sativa = 2104.00 mg/kg 72h

12.2. Persistence and degradability

Component	Persitence/Degradability:	Test	Value	Notes
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Non-readily biodegradable	Oxygen consumption		OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane	Non-readily biodegradable		16.000	28days
ethanol; ethyl alcohol	Readily biodegradable	CO2 production	75.000	
propan-2-ol; isopropyl alcohol; isopropanol	Readily biodegradable	Biochemical oxygen demand		

12.3. Bioaccumulative potential

Component	Bioaccumulation	Test	Value
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Bioaccumulative	BCF - Bioconcentration factor	31.000
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane	Bioaccumulative	BCF - Bioconcentration factor	150.000

[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane

ethanol; ethyl alcohol

Bioaccumulative

BCF - Bioconcentration factor 4.500

12.4. Mobility in soil

N.A.

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 $\geq 0.1\%$

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 3: Flammable; HP 4: Irritant — skin irritation and eye damage; HP 14: Ecotoxic; HP 13: Sensitising

SECTION 14: Transport information

14.1. UN number or ID number

1866

14.2. UN proper shipping name

ADR-Shipping Name: RESIN SOLUTION, flammable

IATA-Technical name: RESIN SOLUTION flammable

IMDG-Technical name: RESIN SOLUTION flammable

14.3. Transport hazard class(es)

ADR-Class: 3

IATA-Class: 3

IMDG-Class: 3

14.4. Packing group

ADR-Packing Group: II

IATA-Packing group: II

IMDG-Packing group: II

14.5. Environmental hazards

Toxic Component most present: bis-[4-(2,3-epoxipropoxy)phenyl]propane

Marine pollutant: Yes

Environmental Pollutant: Yes

IMDG-EMS: F-E, S-E

14.6. Special precautions for user

Road and Rail (ADR-RID) :

ADR-Label: 3

ADR - Hazard identification number: 33

ADR-Special Provisions: 640C

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

ADR Limited Quantities: 5 L

ADR Excepted Quantities: E2

Air (IATA) :

IATA-Passenger Aircraft: 353

IATA-Cargo Aircraft: 364

IATA-Label: 3

IATA-Subsidiary hazards: -

IATA-Erg: 3L

IATA-Special Provisioning: A3

Sea (IMDG) :

IMDG-Stowage Code: Category B

IMDG-Stowage Note: -

IMDG-Subsidiary hazards: -

IMDG-Special Provisioning: -

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, 40

Restrictions related to the substances contained: 70, 75

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

Seveso III category according to Annex 1, part 1	Lower-tier threshold (tonnes)	Upper-tier threshold (tonnes)
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Product belongs to category: P5c	5000	50000
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Product belongs to category: E2	200	500
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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
H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.

H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
2.6/2	Flam. Liq. 2	Flammable liquid, Category 2
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.8/3	STOT SE 3	Specific target organ toxicity — single exposure, Category 3
4.1/C2	Aquatic Chronic 2	Chronic (long term) aquatic hazard, category 2

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
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2.6/2	On basis of test data
3.2/2	Calculation method
3.3/2	Calculation method
3.4.2/1	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
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 11. TOXICOLOGICAL INFORMATION
- 12. ECOLOGICAL INFORMATION

Exposure Scenario

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

Exposure Scenario, 07/06/2021

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

Table of contents

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

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

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

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

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

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

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

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

Personal protection

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

Other conditions affecting worker exposure

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

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

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

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

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

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

Personal protection

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

Other conditions affecting worker exposure

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

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

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

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

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

Covers daily exposures up to 8 hours

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

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

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

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

Wear suitable face shield.

Wear an impervious suit.

Wear a respirator conforming to EN140.

Other conditions affecting worker exposure

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

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

Manual activities involving hand contact (PROC19)

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

Liquid, vapour pressure < 0,5 kPa at STP

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

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

Covers daily exposures up to 8 hours

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

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

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

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

Other conditions affecting worker exposure

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

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

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

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

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

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

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

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

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

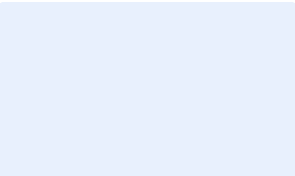
1.3. CS5: Worker Contributing Scenario: Mixing operations - Manual (PROC19)

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

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

Guidance to check compliance with the exposure scenario:

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



Exposure Scenario

Ethanol

Exposure Scenario, 29/07/2021

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

Table of contents

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

1. ES 1		Widespread use by professional workers; Various products (PC9a, PC1)	
1.1 TITLE SECTION			
Exposure Scenario name	Professional application of coatings and inks		
Date - Version	29/07/2021 - 1.0		
Life Cycle Stage	Widespread use by professional workers		
Main user group	Professional uses		
Sector(s) of use	Professional uses (SU22)		
Product Categories	Coatings and paints, thinners, paint removers (PC9a) - Adhesives, sealants (PC1)		
Environment Contributing Scenario			
CS1	ERC8a - ERC8d		
Worker Contributing Scenario			
CS2 Rolling, Brushing	PROC10		
CS3 Roller, spreader, flow application	PROC11		
CS4 Handling and dilution of concentrates	PROC19		
1.2 Conditions of use affecting exposure			
1.2. CS1: Environment Contributing Scenario (ERC8a, ERC8d)			
Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)		
<i>Product (article) characteristics</i>			
Physical form of product: Liquid			
Concentration of substance in product: Covers concentrations up to 80 %			
<i>Amount used, frequency and duration of use (or from service life)</i>			
Amounts used: Annual site tonnage = 10000 t			
Release type: Continuous release			
Emission days: 300 days per year			
<i>Technical and organisational conditions and measures</i>			
Control measures to prevent releases			
Prevent discharge of undissolved substance to or recover from onsite wastewater.		Air - minimum efficiency of: 100 % Soil - minimum efficiency of: 20 % Water - minimum efficiency of: 100 %	
<i>Conditions and measures related to sewage treatment plant</i>			
STP type: Municipal Sewage Treatment Plant Water - minimum efficiency of: = 90 %			
STP effluent (m ³ /day): 2000			

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

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

Indoor use
Professional use

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

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

Physical form of product:
Liquid

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

Amount used, frequency and duration of use/exposure

Duration:
Covers use up to > 4 h

Frequency:
Use frequency 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures
Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Provide a basic standard of general ventilation (1 to 3 air changes per hour).

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

Personal protection
For further specification, refer to section 8 of the SDS.

Other conditions affecting worker exposure

Indoor use
Professional use

1.3 Exposure estimation and reference to its source

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

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	= 0.045 mg/L	EUSES v2.1	= 0.0469
freshwater sediment	= 0.045 mg/kg dry weight	EUSES v2.1	= 0.0469
marine water	= 0.0044 mg/L	EUSES v2.1	= 0.00557
marine sediment	= 0.0044 mg/kg dry weight	EUSES v2.1	= 0.00557
soil	= 0.0003 mg/kg dry weight	EUSES v2.1	= 0.00476
wastewater treatment plant microbes	= 0.34 mg/L	EUSES v2.1	= 0.000586

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

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

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

1.3. CS3: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 345.75 mg/m ³	ECETOC TRA worker v2.0	= 0.364
dermal, systemic, long-term	= 21.42 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.138

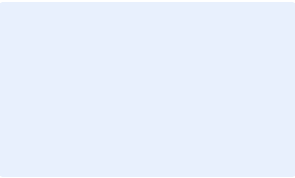
1.3. CS4: Worker Contributing Scenario: Handling and dilution of concentrates (PROC19)

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

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

Guidance to check compliance with the exposure scenario:

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



Exposure Scenario

Propan-2-ol

Exposure Scenario, 29/07/2021

Substance identity	
	Propan-2-ol
CAS No.	67-63-0
INDEX No.	603-117-00-0
EINECS No.	200-661-7
Registration number	01-2119457558-25

Table of contents

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

1. ES 1		Widespread use by professional workers; Various products (PC9a, PC1)
1.1 TITLE SECTION		
Exposure Scenario name	Professional application of coatings and inks	
Date - Version	29/07/2021 - 1.0	
Life Cycle Stage	Widespread use by professional workers	
Main user group	Professional uses	
Sector(s) of use	Professional uses (SU22)	
Product Categories	Coatings and paints, thinners, paint removers (PC9a) - Adhesives, sealants (PC1)	
Environment Contributing Scenario		
CS1	ERC8a - ERC8d	
Worker Contributing Scenario		
CS2 Material transfers	PROC8a	
CS3 Rolling, Brushing	PROC10	
CS4 Roller, spreader, flow application	PROC11	
CS5 Handling and dilution of concentrates	PROC19	
1.2 Conditions of use affecting exposure		
1.2. CS1: Environment Contributing Scenario (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		
Concentration of substance in product: Covers concentrations up to 35 %		
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: < 100000 Pa		
Concentration of substance in product: Covers concentrations up to 35 %		
Amount used, frequency and duration of use/exposure		
Duration: Covers daily exposures up to 8 hours		
Conditions and measures related to personal protection, hygiene and health evaluation		
Personal protection		
For further specification, refer to section 8 of the SDS.		

Other conditions affecting worker exposure	
Covers indoor and outdoor use Professional use Temperature: Assumes use at not more than 20 °C above ambient temperature.	
1.2. CS3: Worker Contributing Scenario: Rolling, Brushing (PROC10)	
Process Categories	Roller application or brushing (PROC10)
Product (article) characteristics	
Physical form of product: Liquid	
Vapour pressure: < 100000 Pa	
Concentration of substance in product: Covers concentrations up to 35 %	
Amount used, frequency and duration of use/exposure	
Duration: Covers daily exposures up to 8 hours	
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection For further specification, refer to section 8 of the SDS.	
Other conditions affecting worker exposure	
Covers indoor and outdoor use Professional use Temperature: Assumes use at not more than 20 °C above ambient temperature.	
1.2. CS4: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)	
Process Categories	Non industrial spraying (PROC11)
Product (article) characteristics	
Physical form of product: Liquid	
Vapour pressure: < 100000 Pa	
Concentration of substance in product: Covers concentrations up to 35 %	
Amount used, frequency and duration of use/exposure	
Duration: Covers daily exposures up to 8 hours	
Technical and organisational conditions and measures	
Technical and organisational measures Carry out in a vented booth or extracted enclosure.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection For further specification, refer to section 8 of the SDS.	
Other conditions affecting worker exposure	
Covers indoor and outdoor use Professional use Temperature: Assumes use at not more than 20 °C above ambient temperature.	
1.2. CS5: Worker Contributing Scenario: Handling and dilution of concentrates (PROC19)	
Process Categories	Manual activities involving hand contact (PROC19)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

< 100000 Pa

Concentration of substance in product:

Covers concentrations up to 35 %

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

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

Personal protection

For further specification, refer to section 8 of the SDS.

Other conditions affecting worker exposure

Covers indoor and outdoor use

Professional use

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

1.3 Exposure estimation and reference to its source

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

Additional information on exposure estimation:

As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative	= 100 ppm	ECETOC TRA worker v2.0	= 0.5
dermal	= 13.71 mg/kg bw/day	ECETOC TRA worker v2.0	= 0

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative	= 100 ppm	ECETOC TRA worker v2.0	= 0.5
dermal	= 27.43 mg/kg bw/day	ECETOC TRA worker v2.0	= 0

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)
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inhalative	= 150 ppm	ECETOC TRA worker v2.0	= 0.7
dermal	= 107.14 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.1

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative	= 150 ppm	ECETOC TRA worker v2.0	= 0.5
dermal	= 141.43 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.2

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.

Safety Data Sheet

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

CEMENTORESINA GEL (B)

Date of first edition: 11/3/2021

Safety Data Sheet dated 1/18/2023

version 2

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

1.1. Product identifier

Mixture identification:

Trade name: CEMENTORESINA GEL (B)

Trade code: B0326 .020

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

Recommended use: hardener

Uses advised against: All uses other than recommended ones

1.3. Details of the supplier of the safety data sheet

Company: KERAKOLL S.p.A.

Via dell'Artigianato, 9

41049 Sassuolo (MODENA) - ITALY

Tel.+39 0536 816511 Fax. +39 0536816581

safety@kerakoll.com

1.4. Emergency telephone number

European emergency phone number 112

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)

Flam. Liq. 3	Flammable liquid and vapour.
Acute Tox. 4	Harmful if swallowed.
Skin Corr. 1A	Causes severe skin burns and eye damage.
Eye Dam. 1	Causes serious eye damage.
Skin Sens. 1	May cause an allergic skin reaction.
Aquatic Acute 1	Very toxic to aquatic life.
Aquatic Chronic 1	Very toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

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

Pictograms and Signal Words



Danger

Hazard statements

H226 Flammable liquid and vapour.

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves and eye protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501	Dispose of contents/container in accordance with applicable regulations.

Contains

1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether

Polyoxpropylenediamine

1,3-Cyclohexanedimethanamine

2,2'-iminodiethylamine; diethylenetriamine

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 $\geq 0.1\%$.

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: CEMENTORESINA GEL (B)

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

Qty	Name	Ident. Numb.	Classification	Registration Number
50-75 %	1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether	CAS:84144-79-6 EC:282-199-6	Acute Tox. 4, H302; Skin Corr. 1C, H314; Eye Dam. 1, H318; Skin Sens. 1, H317; Aquatic Acute 1, H400; Aquatic Chronic 1, H410, M-Chronic:1, M-Acute:1	01-2120762088-49
10-19,9 %	Polyoxpropylenediamine	CAS:9046-10-0 EC:618-561-0	Skin Corr. 1C, H314; Eye Dam. 1, H318; Aquatic Chronic 3, H412	01-2119557899-12
5-9,9 %	ethanol; ethyl alcohol	CAS:64-17-5 EC:200-578-6 Index:603-002-00-5	Flam. Liq. 2, H225 Eye Irrit. 2, H319 Specific Concentration Limits: C $\geq 50\%$: Eye Irrit. 2 H319	01-2119457610-43
5-9,9 %	1,3-Cyclohexanedimethanamine	CAS:2579-20-6 EC:219-941-5	Acute Tox. 4, H302; Acute Tox. 4, H312; Aquatic Chronic 3, H412; Skin Corr. 1A, H314	01-2119543741-41
2,5-4,9 %	Alcohols, C10-16	CAS:67762-41-8 EC:267-019-6	Aquatic Acute 1, H400, M-Acute:1	
2,5-4,9 %	propan-2-ol; isopropyl alcohol; isopropanol	CAS:67-63-0 EC:200-661-7 Index:603-117-00-0	Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	01-2119457558-25
1-2,4 %	p-toluenesulphonic acid (containing a maximum of 5 % H2SO4)	CAS:6192-52-5 EC:203-180-0 Index:016-030-00-2	Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Specific Concentration Limits: C $\geq 20\%$: STOT SE 3 H335	01-2119538811-39

< 1 %	2,2'-iminodiethylamine; diethylenetriamine	CAS:111-40-0 EC:203-865-4 Index:612-058-00-X	Skin Corr. 1B, H314; Skin Sens. 1, 01-2119473793-27 H317; Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 2, H330; STOT SE 3, H335
< 0,5 %	2,6-di-tert-butyl-p-cresol	CAS:128-37-0 EC:204-881-4	Aquatic Chronic 1, H410; Aquatic Acute 1, H400, M-Acute:1, M- Chronic:1 01-2119555270-46/01- 2119565113-46

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 immediately and dispose off safely.
- After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

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

In case of Ingestion:

- 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:

- CO2 or Dry chemical fire extinguisher.

Extinguishing media which must not be used for safety reasons:

- None in particular.

5.2. Special hazards arising from the substance or mixture

- Do not inhale explosion and combustion gases.
- Burning produces heavy smoke.

5.3. Advice for firefighters

- Use suitable breathing apparatus .
- Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- Wear personal protection equipment.
- Remove all sources of ignition.
- 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, 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.

Contaminated 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

Store at below 20 °C. Keep away from unguarded flame and heat sources. Avoid direct exposure to sunlight.

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

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Cool and adequately ventilated.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

Component	OEL Type	Country	Ceiling	Long Term mg/m3	Long Term ppm	Short Term mg/m3	Short Term ppm	Notes
ethanol; ethyl alcohol	ACGIH	NNN					1000	A3 - URT irr
propan-2-ol; isopropyl alcohol; isopropanol	NATIONAL	AUSTRALIA		983.000	400.000	1230.000	500.000	
	NATIONAL	AUSTRIA		500.000	200.000	2000.000	800.000	
	NATIONAL	BELGIUM		500.000	200.000	1000.000	400.000	
	NATIONAL	CANADA			200.000		400.000	Ontario
	NATIONAL	CANADA		983.000	400.000	1230.000	500.000	Quebec
	NATIONAL	DENMARK		490.000	200.000	980.000	400.000	
	NATIONAL	FINLAND		500.000	200.000	620.000	250.000	
	NATIONAL	FRANCE				980.000	400.000	
	NATIONAL	GERMANY		500.000	200.000	1000.000	400.000	AGS
	NATIONAL	GERMANY		500.000	200.000	1000.000	400.000	DFG
	NATIONAL	HUNGARY		500.000		2000.000		
	NATIONAL	IRELAND			200.000		400.000	
	NATIONAL	LATVIA		350.000		600.000		
	NATIONAL	NEW ZEALAND		983.000	400.000	1230.000	500.000	
	NATIONAL	CHINA		350.000		700.000		
	NATIONAL	POLAND		900.000		1200.000		
	NATIONAL	ROMANIA		200.000	81.000	500.000	203.000	
	NATIONAL	SINGAPORE		983.000	400.000	1230.000	500.000	
	NATIONAL	KOREA, REPUBLIC OF		480.000	200.000	980.000	400.000	
	NATIONAL	SPAIN		500.000	200.000	1000.000	400.000	
	NATIONAL	SWEDEN		350.000	150.000	600.000	250.000	
	NATIONAL	SWITZERLAND		500.000	200.000	1000.000	400.000	
	NATIONAL	UNITED STATES OF		980.000	400.000	1225.000	500.000	NIOSH

2,2'-iminodiethylamine; diethylenetriamine	AMERICA					
	NATIONAL	UNITED STATES OF AMERICA	980.000	400.000		OSHA
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	999.000	400.000	1250.000	500.000
	NATIONAL	ARGENTINA		400.000		500.000
	NATIONAL	BULGARIA	980.000		1225.000	
	NATIONAL	CZECHIA	500.000		1000.000	
	NATIONAL	CHILE	858.000	358.000	1230.000	500.000
	NATIONAL	CROATIA	999.000	400.000	1250.000	500.000
	NATIONAL	ESTONIA	350.000	150.000	600.000	250.000
	NATIONAL	GREECE	980.000	400.000	1225.000	500.000
	NATIONAL	INDONESIA	983.000	400.000	1230.000	500.000
	NATIONAL	ICELAND	490.000	200.000		
	NATIONAL	LITHUANIA	350.000	150.000	600.000	250.000
	NATIONAL	NORWAY	245.000	100.000		
	NATIONAL	NETHERLANDS	650.000	250.000		
	NATIONAL	PORTUGAL		200.000		400.000
	NATIONAL	RUSSIAN FEDERATION	10.000		50.000	
	NATIONAL	SLOVAKIA	500.000	200.000	1000.000	400.000
	NATIONAL	SLOVENIA	500.000	200.000	1000.000	400.000
	ACGIH	NNN		200.000		400.000
	A4, BEI - Eye and URT irr, CNS impair					
	NATIONAL	AUSTRALIA	4.200	1.000		
	NATIONAL	BELGIUM	4.300	1.000		
	NATIONAL	CANADA		1.000		Ontario
	NATIONAL	CANADA	4.200	1.000		Québec
	NATIONAL	DENMARK	4.000	1.000	8.000	2.000
	NATIONAL	FINLAND	4.300	1.000	13.000	3.000
	NATIONAL	FRANCE	4.000	1.000		
	NATIONAL	HUNGARY	4.000		4.000	
	NATIONAL	IRELAND	4.000	1.000		
	NATIONAL	NEW ZEALAND	4.200	1.000		
	NATIONAL	CHINA	4.200			
	NATIONAL	POLAND	4.200		15.000	
	NATIONAL	ROMANIA	2.000	0.500	4.000	1.000
	NATIONAL	SINGAPORE	4.200	1.000		
	NATIONAL	KOREA, REPUBLIC OF	4.000	1.000		
	NATIONAL	SPAIN	4.300	1.000		
	NATIONAL	SWEDEN	4.500	1.000	10.000	2.000
	NATIONAL	UNITED STATES OF AMERICA	4.000	1.000		NIOSH

2,6-di-tert-butyl-p-cresol	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	4.300	1.000		
	NATIONAL	ARGENTINA		1.000		
	NATIONAL	BULGARIA	4.000			
	NATIONAL	CZECHIA	4.000		8.000	
	NATIONAL	CROATIA	4.300	1.000		
	NATIONAL	ESTONIA	4.500	1.000	10.000	2.000
	NATIONAL	GREECE	4.000	1.000		
	NATIONAL	INDONESIA	4.200	1.000		
	NATIONAL	ICELAND	4.500	1.000		
	NATIONAL	LITHUANIA	4.500	1.000	10.000	2.000
	NATIONAL	NORWAY	4.000	1.000		
	NATIONAL	PORTUGAL		1.000		
	NATIONAL	RUSSIAN FEDERATION			0.300	
	NATIONAL	SOUTH AFRICA	4.000	1.000		
	NATIONAL	TAIWAN, PROVINCE OF CHINA	4.200	1.000		
	ACGIH	NNN		1.000		Skin - URT and eye irr
	NATIONAL	AUSTRALIA	10.000			
	NATIONAL	AUSTRIA	10.000			
	NATIONAL	BELGIUM	2.000			Inhalable fraction and vapour
	NATIONAL	CANADA	2.000			Ontario; Inhalable fraction and vapour
	NATIONAL	CANADA	10.000			Quebec
	NATIONAL	DENMARK	10.000		20.000	
	NATIONAL	FINLAND	10.000		20.000	
	NATIONAL	FRANCE	10.000			
	NATIONAL	GERMANY	10.000		40.000	ASG; Long term and short term: inhalable aerosol and vapour
	NATIONAL	GERMANY	10.000		40.000	DFG; Long term and short term: inhalable fraction and vapour
	NATIONAL	IRELAND	10.000			
	NATIONAL	NEW ZEALAND	10.000			
	NATIONAL	SINGAPORE	10.000			
	NATIONAL	KOREA, REPUBLIC OF	2.000			
	NATIONAL	SWITZERLAND	10.000			Inhalable aerosol
	NATIONAL	SWITZERLAND			40.000	
	NATIONAL	UNITED STATES OF AMERICA	10.000			NIOSH

NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	10.000	
NATIONAL	BULGARIA	10.000	50.000
NATIONAL	CROATIA	10.000	
NATIONAL	ICELAND	10.000	
NATIONAL	PORTUGAL	2.000	
NATIONAL	SLOVENIA	10.000	40.000
NATIONAL	SPAIN	10.000	
NATIONAL	SOUTH AFRICA	10.000	
ACGIH	NNN	2.000	(IFV), A4 - URT irr

Biological limit values

CAS-No.	Component	Value	UoM	Medium	Biological Indicator	Sampling Period
67-63-0	propan-2-ol; isopropyl alcohol; isopropanol	25	mg/L	Urine	Acetone	End of turn
		25	mg/L	Blood	Acetone	End of turn

Predicted No Effect Concentration (PNEC) values

Component	CAS-No.	PNEC Limit	Exposure Route	Exposure Frequency
1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether	84144-79-6	170.000 ng/L	Freshwater	
		17.000 ng/L	Marine water	
		660.000 µg/l	Microorganisms in sewage treatments	
		524.000 µg/kg	Freshwater sediments	
		52.400 mg/kg	Marine water sediments	
		524.000 µg/kg	Soil	
Polyoxpropylenediamine	9046-10-0	15.000 µg/l	Freshwater	
		150.000 µg/l	Intermittent releases (freshwater)	
		14.200 µg/l	Marine water	
		7.500 mg/l	Microorganisms in sewage treatments	
		132.000 µg/kg	Freshwater sediments	
		125.000 µg/kg	Marine water sediments	
		17.600 µg/kg	Soil	
		6.930 mg/kg	Secondary poisoning	
ethanol; ethyl alcohol	64-17-5	960.000 µg/l	Freshwater	
		2.750 mg/l	Intermittent releases (freshwater)	
		790.000 µg/l	Marine water	
		580.000 mg/l	Microorganisms in sewage treatments	
		3.600 mg/kg	Freshwater sediments	
		2.900 mg/kg	Marine water sediments	
		630.000 µg/kg	Soil	
		550.000 mg/kg	Secondary poisoning	
1,3-	2579-20-6	33.100 µg/l	Freshwater	

Cyclohexanedimethanamine

		331.000 µg/l	Intermittent releases (freshwater)
		3.310 µg/l	Marine water
		10.000 mg/l	Microorganisms in sewage treatments
propan-2-ol; isopropyl alcohol; isopropanol	67-63-0	140.900 mg/l	Freshwater
		140.900 mg/l	Intermittent releases (freshwater)
		140.900 mg/l	Marine water
		2251.000 mg/l	Microorganisms in sewage treatments
		552.000 mg/kg	Freshwater sediments
		552.000 mg/kg	Marine water sediments
		28.000 mg/kg	Soil
		160.000 mg/kg	Secondary poisoning
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4)	6192-52-5	73.000 µg/l	Freshwater
		730.000 µg/l	Intermittent releases (freshwater)
		1.300 µg/l	Marine water
		58.000 mg/l	Microorganisms in sewage treatments
		57.700 µg/kg	Freshwater sediments
		5.770 µg/kg	Marine water sediments
		16.000 µg/kg	Soil
2,2'-iminodiethylamine; diethylenetriamine	111-40-0	560.000 µg/l	Freshwater
		320.000 µg/l	Intermittent releases (freshwater)
		56.000 µg/l	Marine water
		6.000 mg/l	Microorganisms in sewage treatments
		1072.000 mg/kg	Freshwater sediments
		107.200 mg/kg	Marine water sediments
		7.970 mg/kg	Soil
2,6-di-tert-butyl-p-cresol	128-37-0	199.000 ng/L	Freshwater
		1.990 µg/l	Intermittent releases (freshwater)
		19.900 ng/L	Marine water
		170.000 µg/l	Microorganisms in sewage treatments
		99.600 µg/kg	Freshwater sediments
		9.960 µg/kg	Marine water sediments
		47.690 µg/kg	Soil
		8.330 mg/kg	Secondary poisoning

Derived No Effect Level (DNEL) values

Component	CAS-No.	Worker Industry	Worker Professional	Consumer	Exposure Route	Exposure Frequency
1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl	84144-79-6		2.350 mg/m³		Human Inhalation	Long Term, systemic effects

tolyl ether		666.000 µg/kg		Human Dermal	Long Term, systemic effects
Polyoxpropylenediamine	9046-10-0	1.360 mg/m ³		Human Inhalation	Long Term, systemic effects
		2.500 mg/kg		Human Dermal	Long Term, systemic effects
ethanol; ethyl alcohol	64-17-5	950.000 mg/m ³	114.000 mg/m ³	Human Inhalation	Long Term, systemic effects
		1900.000 mg/m ³	950.000 mg/m ³	Human Inhalation	Short Term, local effects
		343.000 mg/kg	206.000 mg/kg	Human Dermal	Long Term, systemic effects
			87.000 mg/kg	Human Oral	Long Term, systemic effects
1,3-Cyclohexanedimethanamine	2579-20-6	9.470 µg/m ³		Human Inhalation	Long Term, local effects
propan-2-ol; isopropyl alcohol; isopropanol	67-63-0		89.000 mg/m ³	Human Inhalation	Long Term, systemic effects
			319.000 mg/kg	Human Dermal	Long Term, systemic effects
			26.000 mg/kg	Human Oral	Long Term, systemic effects
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4)	6192-52-5	53.600 mg/m ³	8.700 mg/m ³	Human Inhalation	Long Term, systemic effects
		7.600 mg/kg	2.500 mg/kg	Human Dermal	Long Term, systemic effects
			2.500 mg/kg	Human Oral	Long Term, systemic effects
2,2'-iminodiethylamine; diethylenetriamine	111-40-0	15.400 mg/m ³	4.600 mg/m ³	Human Inhalation	Long Term, systemic effects
		91.100 mg/m ³	25.500 mg/m ³	Human Inhalation	Short Term, systemic effects
		870.000 µg/m ³		Human Inhalation	Long Term, local effects
		2.600 mg/m ³		Human Inhalation	Short Term, local effects
		11.400 mg/kg	4.880 mg/kg	Human Dermal	Long Term, systemic effects
		1.100 mg/cm ²		Human Dermal	Long Term, local effects
2,6-di-tert-butyl-p-cresol	128-37-0	4.400 mg/m ³	780.000 µg/m ³	Human Inhalation	Long Term, systemic effects
		4.700 mg/kg	1.700 mg/kg	Human Dermal	Long Term, systemic effects
			0.250 mg/kg	Human Oral	Long Term, systemic effects

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.; EN 166

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

Respiratory protection:

Gas filter type AX + particle filter P2 .

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: Colourless

Odour: Like: Amines

Odour threshold: N.A.

pH: N.A.

Kinematic viscosity: N.A.

Melting point / freezing point: N.A.

Initial boiling point and boiling range: 78 °C (172 °F)

Flash point: 26 °C (79 °F)

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

Vapour density: N.A.

Vapour pressure: N.A.

Relative density: 1.22 g/cm³

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.

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

Volatile Organic compounds - VOCs = 13.18 % ; 160.78 g/l

Particle characteristics:

Particle size: N.A.

9.2. Other information

Miscibility: N.A.

Conductivity: N.A.

Evaporation rate: N.A. No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Data not available.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

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

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

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

Toxicological Information of the Preparation

a) acute toxicity The product is classified: Acute Tox. 4(H302)

b) skin corrosion/irritation The product is classified: Skin Corr. 1A(H314)

c) serious eye damage/irritation The product is classified: Eye Dam. 1(H318)

d) respiratory or skin sensitisation The product is classified: Skin Sens. 1(H317)

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

Toxicological information on main components of the mixture:

1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether	a) acute toxicity	LD50 Oral Rat < 301.00 mg/kg	
Polyoxpropylenediamine	a) acute toxicity	LD50 Oral Rat = 2885.00000 mg/kg LC50 Inhalation Vapour Rat > 0.74000 mg/l 8h LD50 Skin Rabbit = 2980.00000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive 4h	
	c) serious eye damage/irritation	Eye Corrosive Rabbit Positive	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Skin Rat = 30.00000 mg/kg	
ethanol; ethyl alcohol	a) acute toxicity	LD50 Oral Rat = 10470.00 mg/kg LC50 Inhalation Vapour Rat = 117.00 mg/l 4h LD50 Skin Rabbit = 17100.00 mg/kg	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative	
	c) serious eye damage/irritation	Eye Irritant Rabbit No	
	d) respiratory or skin sensitisation	Skin Sensitization Guinea pig Negative	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral = 20700.00 mg/kg	Mouse
1,3-Cyclohexanedimethanamine	a) acute toxicity	LD50 Oral Rat > 300.00000 mg/kg LD50 Skin Rabbit = 1700.00000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive	
	d) respiratory or skin sensitisation	Skin Sensitization Guinea pig Negative	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
	g) reproductive toxicity	No Observed Effect Level Oral Rat = 300.00000 mg/kg	
propan-2-ol; isopropyl alcohol; isopropanol	a) acute toxicity	LD50 Oral Rat = 5840.00 mg/kg LC50 Inhalation Vapour Rat > 10000.00 Ppm 6h LD50 Skin Rabbit = 16.40 ml/Kg 24h	

p-toluenesulphonic acid (containing a maximum of 5 % H2SO4)	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Guinea pig Negative	
	f) carcinogenicity	Genotoxicity Negative Carcinogenicity = 5000.00 Ppm	Mouse intraperitoneal route NOEC for mouse
	a) acute toxicity	LD50 Oral Rat >= 1104.00 mg/kg	
		LC50 Inhalation Vapour Rat >= 50.00 mg/l 8h	
		LD50 Skin Rabbit > 2000.00 mg/kg	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive 4h	
	c) serious eye damage/irritation	Eye Corrosive Rabbit Positive	
	d) respiratory or skin sensitisation	Skin Sensitization Guinea pig Negative	
2,2'-iminodiethylamine; diethylenetriamine	f) carcinogenicity	Genotoxicity Negative Carcinogenicity Negative	Mouse oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 1000.00 mg/kg	
	a) acute toxicity	LD50 Oral Rat = 1.62 ml/Kg	
		LC50 Inhalation Rat Negative 4h	No mortality
		LD50 Skin Rabbit = 1.09 ml/Kg	
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive	
	c) serious eye damage/irritation	Eye Corrosive Rabbit Positive	
	d) respiratory or skin sensitisation	Skin Sensitization Positive	Mouse
		Respiratory Sensitization Negative	Mouse
	f) carcinogenicity	Genotoxicity Negative Carcinogenicity Skin Negative	Mouse oral route
2,6-di-tert-butyl-p-cresol	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 30.00 mg/kg	
	a) acute toxicity	LD50 Oral Rat > 5000.00000 mg/kg 24h	
		LD50 Skin Rat > 2000.00000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit No	
	f) carcinogenicity	Genotoxicity Negative Carcinogenicity Negative	Mouse intraperitoneal route
	g) reproductive toxicity	Reproductive Toxicity Oral Rat = 100.00000 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:

Very toxic to aquatic organisms.

Very toxic to aquatic life with long lasting effects.

List of Eco-Toxicological properties of the product

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

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether	CAS: 84144-79-6 - EINECS: 282-199-6	a) Aquatic acute toxicity : LC50 Fish = 660.00 µg/L 96h OECD Guideline 203 a) Aquatic acute toxicity : LC50 Daphnia = 14.00 mg/L 24h OECD Guideline 202 a) Aquatic acute toxicity : EC50 Algae = 0.17 mg/L 72h OECD Guideline 201 a) Aquatic acute toxicity : EC50 Sludge = 66.00 mg/L 3h OECD Guideline 209
Polyoxpropylenediamine	CAS: 9046-10-0 - EINECS: 618-561-0	a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss > 15.00000 mg/L 96h OECD Guideline 203 a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 80.00000 mg/L 48h OECD Guideline 202 a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 15.00000 mg/L 72h OECD Guideline 201 a) Aquatic acute toxicity : NOEC Algae Pseudokirchneriella subcapitata = 1.40000 mg/L 72h OECD Guideline 201 a) Aquatic acute toxicity : EC50 Sludge Activated Sludge = 750.00000 mg/L 3h OECD Guideline 209 a) Aquatic acute toxicity : NOEC Sludge Activated Sludge = 310.00000 mg/L 3h OECD Guideline 209
ethanol; ethyl alcohol	CAS: 64-17-5 - EINECS: 200-578-6 - INDEX: 603-002-00-5	a) Aquatic acute toxicity : LC50 Fish S. gairdneri > 11.20 g/L 96h b) Aquatic chronic toxicity : NOEC Fish Oryzias latipes = 250.00 mg/L OECD212 a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 5012.00 mg/L 48h a) Aquatic acute toxicity : NOEC Daphnia Ceriodaphnia dubia = 9.60 mg/L - 10days a) Aquatic acute toxicity : EC50 Algae Chlorella vulgaris = 275.00 mg/L 72h a) Aquatic acute toxicity : LC50 Paramecium caudatum = 5800.00 mg/L - 16hr d) Terrestrial toxicity : LC50 Worm Eisenia foetida = 0.10 mg/cm2 e) Plant toxicity : EC50 = 633.00 mg/kg
1,3-Cyclohexanedimethanamine	CAS: 2579-20-6 - EINECS: 219-941-5	a) Aquatic acute toxicity : LC50 Fish Golden orfe = 130.00000 mg/L 96h OECD test guideline 203 a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 33.10000 mg/L 48h OECD test guideline 202 a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 56.70000 mg/L 72h OECD test guideline 201
propan-2-ol; isopropyl alcohol; isopropanol	CAS: 67-63-0 - EINECS: 200-661-7 - INDEX: 603-117-00-0	a) Aquatic acute toxicity : EC50 microorganisms > 1000.00000 mg/L a) Aquatic acute toxicity : LC50 Fish Pimephales promelas = 9640.00 mg/L 96h a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 10000.00 mg/L 24h OECD guideline 202 d) Terrestrial toxicity : LC50 Drosophila melanogaster = 25.10 g/L 24h

p-toluenesulphonic acid (containing a maximum of 5 % H2SO4)	CAS: 6192-52-5 - EINECS: 203- 180-0 - INDEX: 016-030-00-2	e) Plant toxicity : IC50 Lactuca sativa = 2104.00 mg/kg 72h
		a) Aquatic acute toxicity : LC50 Fish Goldorfen = 325.00 mg/L 96h OECD Guideline 203
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia Magna = 100.00 mg/L 48h OECD 202
2,2'-iminodiethylamine; diethylenetriamine	CAS: 111-40-0 - EINECS: 203- 865-4 - INDEX: 612-058-00-X	a) Aquatic acute toxicity : NOEC Algae Selenastrum capricornutum = 44.80 mg/L 72h OECD Guideline 201
		a) Aquatic acute toxicity : NOEC Sludge activated sludge = 580.00 mg/L 3h
		a) Aquatic acute toxicity : LC50 Fish Poecilia reticulata = 430.00 mg/L 96h
2,6-di-tert-butyl-p-cresol	CAS: 128-37-0 - EINECS: 204- 881-4	b) Aquatic chronic toxicity : NOEC Fish Gasterosteus aculeatus = 10.00 mg/L - 28days
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 32.00 mg/L 48h
		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 5.60 mg/L - 21days
		a) Aquatic acute toxicity : EC50 Algae Pseudokirchnerella subcapitata = 1164.00 mg/L 72h OECD 201
		c) Bacteria toxicity : EC50 nitrifying bacteria = 32.70 mg/L - 17h
		d) Terrestrial toxicity : LC50 Worm = 797.00 mg/kg
		a) Aquatic acute toxicity : LC50 Fish Danio rerio > 0.57000 mg/L 96h
		b) Aquatic chronic toxicity : EC10 Fish Oryzias latipes = 0.05300 mg/L „OECD Guideline 210 (Fish, Early-Life Stage Toxicity Test)
		a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 0.48000 mg/L 48h OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
		a) Aquatic acute toxicity : EC50 Algae > 0.40000 mg/L 72h
		c) Bacteria toxicity : EC50 Tetrahymena pyriformis = 1.70000 mg/L

12.2. Persistence and degradability

Component	Persistence/Degradability:	Test	Value	Notes
Polyoxpropylenediamine	Non-readily biodegradable	CO2 production	9.800	%; OECD Guideline 301B
ethanol; ethyl alcohol	Readily biodegradable	CO2 production	75.000	
1,3-Cyclohexanedimethanamine	Non-readily biodegradable	CO2 production		OECD Guideline No 301 B.
propan-2-ol; isopropyl alcohol; isopropanol	Readily biodegradable	Biochemical oxygen demand		
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4)	Readily biodegradable	CO2 production		
2,2'-iminodiethylamine; diethylenetriamine	Readily biodegradable		87.000	21days
2,6-di-tert-butyl-p-cresol	Non-readily biodegradable	Biochemical oxygen demand	4.500	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))

12.3. Bioaccumulative potential

Component	Bioaccumulation	Test	Value	Notes
ethanol; ethyl alcohol	Bioaccumulative	BCF - Bioconcentration factor	4.500	
p-toluenesulphonic acid (containing a maximum of 5 % H2SO4)	Not bioaccumulative			

2,2'-iminodiethylamine; diethylenetriamine	Bioaccumulative	BCF - Bioconcentration factor	6.300
2,6-di-tert-butyl-p-cresol	Bioaccumulative	BCF - Bioconcentration factor	598.400 L/kg ww

12.4. Mobility in soil

N.A.

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 $\geq 0.1\%$

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

SECTION 14: Transport information

14.1. UN number or ID number

2734

14.2. UN proper shipping name

ADR-Shipping Name: AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether - ethanol; ethyl alcohol)

IATA-Technical name: AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether - ethanol; ethyl alcohol)

IMDG-Technical name: AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether - ethanol; ethyl alcohol)

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 Component most present: 1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with glycidyl tolyl ether

Marine pollutant: Yes

Environmental Pollutant: Yes

IMDG-EMS: F-E, S-C

14.6. Special precautions for user

Road and Rail (ADR-RID) :

ADR-Label: 8 + 3

ADR - Hazard identification number: 83

ADR-Special Provisions: 274

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

ADR Limited Quantities: 1 L

ADR Excepted Quantities: E2

Air (IATA) :

IATA-Passenger Aircraft: 851

IATA-Cargo Aircraft: 855

IATA-Label: 8 + 3
IATA-Subsidiary hazards: 3
IATA-Erg: 8F
IATA-Special Provisioning: -

Sea (IMDG) :

IMDG-Stowage Code: Category A
IMDG-Stowage Note: SG35 SGG18
IMDG-Subsidiary hazards: 3
IMDG-Special Provisioning: 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, 40

Restrictions related to the substances contained: 75

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

Seveso III category according to Annex 1, part 1	Lower-tier threshold (tonnes)	Upper-tier threshold (tonnes)
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Product belongs to category: P5c	5000	50000
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Product belongs to category: E1	100	200
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Regulation (EU) 649/2012 (PIC regulation):

No Substance Listed

German Water Hazard Class.

Class 1: slightly 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
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.

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.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
2.6/2	Flam. Liq. 2	Flammable liquid, Category 2
2.6/3	Flam. Liq. 3	Flammable liquid, Category 3
3.1/2/Inhal	Acute Tox. 2	Acute toxicity (inhalation), Category 2
3.1/4/Dermal	Acute Tox. 4	Acute toxicity (dermal), Category 4
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/1A	Skin Corr. 1A	Skin corrosion, Category 1A
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
3.8/3	STOT SE 3	Specific target organ toxicity — single exposure, Category 3
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/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
2.6/3	On basis of test data
3.1/4/Oral	Calculation method
3.2/1A	Calculation method
3.3/1	Calculation method
3.4.2/1	Calculation method
4.1/A1	Calculation method
4.1/C1	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

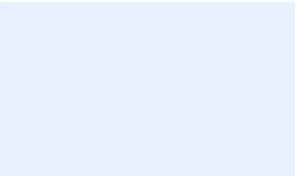
ATE: Acute Toxicity Estimate

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
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 13. DISPOSAL CONSIDERATIONS
- 15. REGULATORY INFORMATION



Exposure Scenario

2,6-di-tert-butyl-p-cresol

Exposure Scenario, 25/06/2021

Substance identity	
	2,6-di-tert-butyl-p-cresol
CAS No.	128-37-0
EINECS No.	204-881-4
Registration number	01-2119555270-46/01-2119565113-46

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

1. ES 1

Widespread use by professional workers; Various products (PC9a, PC1)

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks
Date - Version	25/06/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Coatings and paints, thinners, paint removers (PC9a) - Adhesives, sealants (PC1)

Environment Contributing Scenario

CS1	ERC8c - ERC8f
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1.2 Conditions of use affecting exposure

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

Environmental release categories	Widespread use leading to inclusion into/onto article (indoor) - Widespread use leading to inclusion into/onto article (outdoor) (ERC8c, ERC8f)
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Amount used, frequency and duration of use (or from service life)

Amounts used:

Annual amount per site <= 27.5 t(tonnes)/year

Conditions and measures related to sewage treatment plant

STP type:

Onsite Sewage Treatment Plant

STP effluent (m³/day): 2000*Conditions and measures related to treatment of waste (including article waste)*

Waste treatment

Hazardous waste incineration
No specific measures identified.*Other conditions affecting environmental exposure*

Local marine water dilution factor: 100

Local freshwater dilution factor: 10

Receiving surface water flow: 18000 m³/day*Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.*

Additional Good Practice Advice:

Ensure control measures are regularly inspected and maintained.

1.3 Exposure estimation and reference to its source

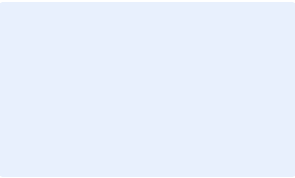
1.3. CS1: Environment Contributing Scenario (ERC8c, ERC8f)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
N/A	N/A	ECETOC TRA environment v3	< 1

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

1,3-Cyclohexanedimethanamine

Exposure Scenario, 29/12/2021

Substance identity	
	1,3-Cyclohexanedimethanamine
CAS No.	2579-20-6
EINECS No.	219-941-5
Registration number	01-2119543741-41

Table of contents

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

1. ES 1 Widespread use by professional workers	
1.1 TITLE SECTION	
Exposure Scenario name	Professional application of coatings and inks
Date - Version	29/12/2021 - 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 Wet formulation	ERC8a - ERC8c
Worker Contributing Scenario	
CS2 Rolling, Brushing - Material transfers	PROC8a - PROC10
1.2 Conditions of use affecting exposure	
1.2. CS1: Environment Contributing Scenario: Wet formulation (ERC8a, ERC8c)	
Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use leading to inclusion into/onto article (indoor) (ERC8a, ERC8c)
<i>Product (article) characteristics</i>	
Physical form of product: Liquid	
Vapour pressure: 34 Pa	
<i>Technical and organisational conditions and measures</i>	
Control measures to prevent releases No specific measures identified.	
<i>Conditions and measures related to sewage treatment plant</i>	
STP type: No specific measures identified.	
<i>Conditions and measures related to treatment of waste (including article waste)</i>	
Waste treatment This material and its container must be disposed of as hazardous. Dispose of this material and its container at hazardous or special waste collection point. Dispose of waste cans and containers according to local regulations.	
1.2. CS2: Worker Contributing Scenario: Rolling, Brushing - Material transfers (PROC8a, PROC10)	
Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities - Roller application or brushing (PROC8a, PROC10)
<i>Product (article) characteristics</i>	
Physical form of product: Liquid	
Vapour pressure: 34 Pa	
Concentration of substance in product: Covers percentage substance in the product up to 25 %.	
<i>Amount used, frequency and duration of use/exposure</i>	
Duration: Covers daily exposures up to 8 hours	

Technical and organisational conditions and measures

Technical and organisational measures

Ensure operatives are trained to minimise exposures.

Local exhaust ventilation

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

Personal protection

Wear suitable gloves tested to EN374.

Wear suitable face shield.

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

Use suitable eye protection.

Wear suitable coveralls to prevent exposure to the skin.

Wear suitable respiratory protection.

Other conditions affecting worker exposure

Indoor use

Professional use

Body parts exposed:

Assumes that potential dermal contact is limited to hands.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:

Clear spills immediately.

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario: Wet formulation (ERC8a, ERC8c)

Additional information on exposure estimation:

As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

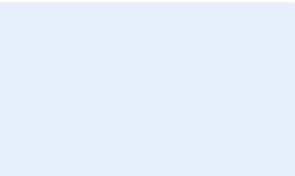
1.3. CS2: Worker Contributing Scenario: Rolling, Brushing - Material transfers (PROC8a, PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, short-term	N/A	ECETOC TRA worker v2.0	0.992
dermal, systemic, short-term	N/A	ECETOC TRA worker v2.0	0.005
combined routes, systemic, short-term	N/A	ECETOC TRA worker v2.0	0.998

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

Guidance to check compliance with the exposure scenario:

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



Exposure Scenario

Ethanol

Exposure Scenario, 29/07/2021

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

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

1. ES 1		Widespread use by professional workers; Various products (PC9a, PC1)	
1.1 TITLE SECTION			
Exposure Scenario name	Professional application of coatings and inks		
Date - Version	29/07/2021 - 1.0		
Life Cycle Stage	Widespread use by professional workers		
Main user group	Professional uses		
Sector(s) of use	Professional uses (SU22)		
Product Categories	Coatings and paints, thinners, paint removers (PC9a) - Adhesives, sealants (PC1)		
Environment Contributing Scenario			
CS1	ERC8a - ERC8d		
Worker Contributing Scenario			
CS2 Rolling, Brushing	PROC10		
CS3 Roller, spreader, flow application	PROC11		
CS4 Handling and dilution of concentrates	PROC19		
1.2 Conditions of use affecting exposure			
1.2. CS1: Environment Contributing Scenario (ERC8a, ERC8d)			
Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)		
<i>Product (article) characteristics</i>			
Physical form of product: Liquid			
Concentration of substance in product: Covers concentrations up to 80 %			
<i>Amount used, frequency and duration of use (or from service life)</i>			
Amounts used: Annual site tonnage = 10000 t			
Release type: Continuous release			
Emission days: 300 days per year			
<i>Technical and organisational conditions and measures</i>			
Control measures to prevent releases			
Prevent discharge of undissolved substance to or recover from onsite wastewater.		Air - minimum efficiency of: 100 % Soil - minimum efficiency of: 20 % Water - minimum efficiency of: 100 %	
<i>Conditions and measures related to sewage treatment plant</i>			
STP type: Municipal Sewage Treatment Plant Water - minimum efficiency of: = 90 %			
STP effluent (m ³ /day): 2000			

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

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

Indoor use
Professional use

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

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

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers use up to > 4 h

Frequency:

Use frequency 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures

Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Provide a basic standard of general ventilation (1 to 3 air changes per hour).

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

Personal protection

For further specification, refer to section 8 of the SDS.

Other conditions affecting worker exposure

Indoor use
Professional use

1.3 Exposure estimation and reference to its source

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

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	= 0.045 mg/L	EUSES v2.1	= 0.0469
freshwater sediment	= 0.045 mg/kg dry weight	EUSES v2.1	= 0.0469
marine water	= 0.0044 mg/L	EUSES v2.1	= 0.00557
marine sediment	= 0.0044 mg/kg dry weight	EUSES v2.1	= 0.00557
soil	= 0.0003 mg/kg dry weight	EUSES v2.1	= 0.00476
wastewater treatment plant microbes	= 0.34 mg/L	EUSES v2.1	= 0.000586

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
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inhalative, systemic, long-term	= 198.08 mg/m ³	ECETOC TRA worker v2.0	= 0.202
dermal, systemic, long-term	= 27.42 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.177

1.3. CS3: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 345.75 mg/m ³	ECETOC TRA worker v2.0	= 0.364
dermal, systemic, long-term	= 21.42 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.138

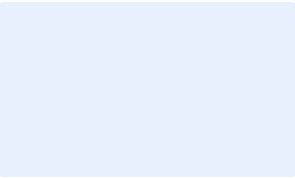
1.3. CS4: Worker Contributing Scenario: Handling and dilution of concentrates (PROC19)

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

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

Guidance to check compliance with the exposure scenario:

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



Exposure Scenario

Propan-2-ol

Exposure Scenario, 29/07/2021

Substance identity	
	Propan-2-ol
CAS No.	67-63-0
INDEX No.	603-117-00-0
EINECS No.	200-661-7
Registration number	01-2119457558-25

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

1. ES 1		Widespread use by professional workers; Various products (PC9a, PC1)
1.1 TITLE SECTION		
Exposure Scenario name	Professional application of coatings and inks	
Date - Version	29/07/2021 - 1.0	
Life Cycle Stage	Widespread use by professional workers	
Main user group	Professional uses	
Sector(s) of use	Professional uses (SU22)	
Product Categories	Coatings and paints, thinners, paint removers (PC9a) - Adhesives, sealants (PC1)	
Environment Contributing Scenario		
CS1	ERC8a - ERC8d	
Worker Contributing Scenario		
CS2 Material transfers	PROC8a	
CS3 Rolling, Brushing	PROC10	
CS4 Roller, spreader, flow application	PROC11	
CS5 Handling and dilution of concentrates	PROC19	
1.2 Conditions of use affecting exposure		
1.2. CS1: Environment Contributing Scenario (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		
Concentration of substance in product: Covers concentrations up to 35 %		
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: < 100000 Pa		
Concentration of substance in product: Covers concentrations up to 35 %		
Amount used, frequency and duration of use/exposure		
Duration: Covers daily exposures up to 8 hours		
Conditions and measures related to personal protection, hygiene and health evaluation		
Personal protection		
For further specification, refer to section 8 of the SDS.		

Other conditions affecting worker exposure	
Covers indoor and outdoor use Professional use Temperature: Assumes use at not more than 20 °C above ambient temperature.	
1.2. CS3: Worker Contributing Scenario: Rolling, Brushing (PROC10)	
Process Categories	Roller application or brushing (PROC10)
Product (article) characteristics	
Physical form of product: Liquid	
Vapour pressure: < 100000 Pa	
Concentration of substance in product: Covers concentrations up to 35 %	
Amount used, frequency and duration of use/exposure	
Duration: Covers daily exposures up to 8 hours	
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection For further specification, refer to section 8 of the SDS.	
Other conditions affecting worker exposure	
Covers indoor and outdoor use Professional use Temperature: Assumes use at not more than 20 °C above ambient temperature.	
1.2. CS4: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)	
Process Categories	Non industrial spraying (PROC11)
Product (article) characteristics	
Physical form of product: Liquid	
Vapour pressure: < 100000 Pa	
Concentration of substance in product: Covers concentrations up to 35 %	
Amount used, frequency and duration of use/exposure	
Duration: Covers daily exposures up to 8 hours	
Technical and organisational conditions and measures	
Technical and organisational measures Carry out in a vented booth or extracted enclosure.	
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection For further specification, refer to section 8 of the SDS.	
Other conditions affecting worker exposure	
Covers indoor and outdoor use Professional use Temperature: Assumes use at not more than 20 °C above ambient temperature.	
1.2. CS5: Worker Contributing Scenario: Handling and dilution of concentrates (PROC19)	
Process Categories	Manual activities involving hand contact (PROC19)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

< 100000 Pa

Concentration of substance in product:

Covers concentrations up to 35 %

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

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

Personal protection

For further specification, refer to section 8 of the SDS.

Other conditions affecting worker exposure

Covers indoor and outdoor use

Professional use

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

1.3 Exposure estimation and reference to its source

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

Additional information on exposure estimation:

As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative	= 100 ppm	ECETOC TRA worker v2.0	= 0.5
dermal	= 13.71 mg/kg bw/day	ECETOC TRA worker v2.0	= 0

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative	= 100 ppm	ECETOC TRA worker v2.0	= 0.5
dermal	= 27.43 mg/kg bw/day	ECETOC TRA worker v2.0	= 0

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)
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inhalative	= 150 ppm	ECETOC TRA worker v2.0	= 0.7
dermal	= 107.14 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.1

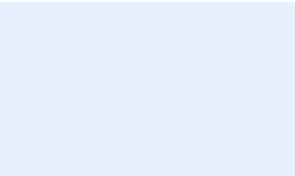
1.3. CS5: Worker Contributing Scenario: Handling and dilution of concentrates (PROC19)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative	= 150 ppm	ECETOC TRA worker v2.0	= 0.5
dermal	= 141.43 mg/kg bw/day	ECETOC TRA worker v2.0	= 0.2

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

Polyoxpropylenediamine

Exposure Scenario, 17/06/2021

Substance identity	
	Polyoxpropylenediamine
CAS No.	9046-10-0
EINECS No.	618-561-0
Registration number	01-2119557899-12

Table of contents

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

1. ES 1		Widespread use by professional workers; Various products (PC9b, PC32)	
1.1 TITLE SECTION			
Exposure Scenario name	Use in coatings - Use in rigid foams, coatings, adhesives and sealants - Waterproofing agent		
Date - Version	17/06/2021 - 1.0		
Life Cycle Stage	Widespread use by professional workers		
Main user group	Professional uses		
Sector(s) of use	Professional uses (SU22)		
Product Categories	Fillers, putties, plasters, modelling clay (PC9b) - Polymer preparations and compounds (PC32)		
Environment Contributing Scenario			
CS1	ERC8c		
Worker Contributing Scenario			
CS2 Rolling, Brushing	PROC10		
CS3 Mixing operations - Manual	PROC19		
1.2 Conditions of use affecting exposure			
1.2. CS1: Environment Contributing Scenario (ERC8c)			
Environmental release categories	Widespread use leading to inclusion into/onto article (indoor) (ERC8c)		
<i>Product (article) characteristics</i>			
Physical form of product: Liquid			
Vapour pressure: = 90 Pa			
Concentration of substance in product: Covers percentage substance in the product up to 25 %.			
<i>Amount used, frequency and duration of use (or from service life)</i>			
Emission days: 365 days per year			
<i>Technical and organisational conditions and measures</i>			
Control measures to prevent releases			
Municipal sewage treatment plant is assumed.		Water - minimum efficiency of: = 1.5 %	
<i>Conditions and measures related to sewage treatment plant</i>			
STP type: Municipal Sewage Treatment Plant			
STP effluent (m³/day): 2000			
<i>Other conditions affecting environmental exposure</i>			
Local marine water dilution factor: 100 Local freshwater dilution factor: 10 Receiving surface water flow: 18000 m³/day Indoor use			
1.2. CS2: Worker Contributing Scenario: Rolling, Brushing (PROC10)			

Process Categories	Roller application or brushing (PROC10)	
<i>Product (article) characteristics</i>		
Physical form of product: Liquid		
Vapour pressure: = 90 Pa		
Concentration of substance in product: Covers percentage substance in the product up to 25 %.		
<i>Amount used, frequency and duration of use/exposure</i>		
Duration: Covers use up to = 480 min		
Frequency: Covers use up to = 5 days per week		
<i>Technical and organisational conditions and measures</i>		
Technical and organisational measures Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Avoid direct eye contact with product, also via contamination on hands.		
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>		
Personal protection		
Wear chemically resistant gloves (tested to EN374) in combination with "basic" employee training. Wear respiratory protection when its use is identified for certain contributing scenarios. Wear suitable respiratory protection. Wear suitable face shield.		Dermal - minimum efficiency of: = 90 %
<i>Other conditions affecting worker exposure</i>		
Indoor use Professional use Temperature: Assumes use at not more than 20 °C above ambient temperature.		
1.2. CS3: Worker Contributing Scenario: Mixing operations - Manual (PROC19)		
Process Categories	Manual activities involving hand contact (PROC19)	
<i>Product (article) characteristics</i>		
Physical form of product: Liquid		
Vapour pressure: = 90 Pa		
Concentration of substance in product: Covers percentage substance in the product up to 25 %.		
<i>Amount used, frequency and duration of use/exposure</i>		
Duration: Covers use up to = 240 min		
Frequency: Covers use up to = 5 days per week		
<i>Technical and organisational conditions and measures</i>		
Technical and organisational measures Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Avoid direct eye contact with product, also via contamination on hands.		
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>		

Personal protection

Wear chemically resistant gloves (tested to EN374) in combination with "basic" employee training.
Wear respiratory protection when its use is identified for certain contributing scenarios.
Wear suitable respiratory protection.
Wear suitable face shield.

Dermal - minimum efficiency of: = 95 %

Other conditions affecting worker exposure

Indoor use

Professional use

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

1.3 Exposure estimation and reference to its source

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	= 0.6857 mg/kg bw/day	ECETOC TRA worker v3	= 0.274286

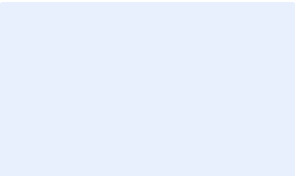
1.3. CS3: Worker Contributing Scenario: Mixing operations - Manual (PROC19)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	= 1.7697 mg/kg bw/day	ECETOC TRA worker v3	= 0.707143

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

Polyoxpropylenediamine

Exposure Scenario, 17/06/2021

Substance identity	
	Polyoxpropylenediamine
CAS No.	9046-10-0
EINECS No.	618-561-0
Registration number	01-2119557899-12

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

1. ES 1		Widespread use by professional workers; Various products (PC9b, PC32)	
1.1 TITLE SECTION			
Exposure Scenario name	Use in coatings - Use in rigid foams, coatings, adhesives and sealants - Waterproofing agent		
Date - Version	17/06/2021 - 1.0		
Life Cycle Stage	Widespread use by professional workers		
Main user group	Professional uses		
Sector(s) of use	Professional uses (SU22)		
Product Categories	Fillers, putties, plasters, modelling clay (PC9b) - Polymer preparations and compounds (PC32)		
Environment Contributing Scenario			
CS1	ERC8c		
Worker Contributing Scenario			
CS2 Rolling, Brushing	PROC10		
CS3 Mixing operations - Manual	PROC19		
1.2 Conditions of use affecting exposure			
1.2. CS1: Environment Contributing Scenario (ERC8c)			
Environmental release categories	Widespread use leading to inclusion into/onto article (indoor) (ERC8c)		
<i>Product (article) characteristics</i>			
Physical form of product: Liquid			
Vapour pressure: = 90 Pa			
Concentration of substance in product: Covers percentage substance in the product up to 25 %.			
<i>Amount used, frequency and duration of use (or from service life)</i>			
Emission days: 365 days per year			
<i>Technical and organisational conditions and measures</i>			
Control measures to prevent releases			
Municipal sewage treatment plant is assumed.		Water - minimum efficiency of: = 1.5 %	
<i>Conditions and measures related to sewage treatment plant</i>			
STP type: Municipal Sewage Treatment Plant			
STP effluent (m³/day): 2000			
<i>Other conditions affecting environmental exposure</i>			
Local marine water dilution factor: 100 Local freshwater dilution factor: 10 Receiving surface water flow: 18000 m³/day Indoor use			
1.2. CS2: Worker Contributing Scenario: Rolling, Brushing (PROC10)			

Process Categories	Roller application or brushing (PROC10)	
<i>Product (article) characteristics</i>		
Physical form of product: Liquid		
Vapour pressure: = 90 Pa		
Concentration of substance in product: Covers percentage substance in the product up to 25 %.		
<i>Amount used, frequency and duration of use/exposure</i>		
Duration: Covers use up to = 480 min		
Frequency: Covers use up to = 5 days per week		
<i>Technical and organisational conditions and measures</i>		
Technical and organisational measures Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Avoid direct eye contact with product, also via contamination on hands.		
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>		
Personal protection		
Wear chemically resistant gloves (tested to EN374) in combination with "basic" employee training. Wear respiratory protection when its use is identified for certain contributing scenarios. Wear suitable respiratory protection. Wear suitable face shield.		Dermal - minimum efficiency of: = 90 %
<i>Other conditions affecting worker exposure</i>		
Indoor use Professional use Temperature: Assumes use at not more than 20 °C above ambient temperature.		
1.2. CS3: Worker Contributing Scenario: Mixing operations - Manual (PROC19)		
Process Categories	Manual activities involving hand contact (PROC19)	
<i>Product (article) characteristics</i>		
Physical form of product: Liquid		
Vapour pressure: = 90 Pa		
Concentration of substance in product: Covers percentage substance in the product up to 25 %.		
<i>Amount used, frequency and duration of use/exposure</i>		
Duration: Covers use up to = 240 min		
Frequency: Covers use up to = 5 days per week		
<i>Technical and organisational conditions and measures</i>		
Technical and organisational measures Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Avoid direct eye contact with product, also via contamination on hands.		
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>		

Personal protection

Wear chemically resistant gloves (tested to EN374) in combination with "basic" employee training.
Wear respiratory protection when its use is identified for certain contributing scenarios.
Wear suitable respiratory protection.
Wear suitable face shield.

Dermal - minimum efficiency of: = 95 %

Other conditions affecting worker exposure

Indoor use

Professional use

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

1.3 Exposure estimation and reference to its source

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	= 0.6857 mg/kg bw/day	ECETOC TRA worker v3	= 0.274286

1.3. CS3: Worker Contributing Scenario: Mixing operations - Manual (PROC19)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	= 1.7697 mg/kg bw/day	ECETOC TRA worker v3	= 0.707143

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.