Safety Data Sheet
Conforms to Regulation (EC) No. 1907/2006 (REACH), Article 31, Annex II, as amended by Commission Regulation (EU) 2020/878
TETRA FIX CRYSTAL
Date of first edition: 4/14/2023
Safety Data Sheet dated 4/14/2023
version 1

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

1.1. Product identifier

Mixture identification:

Trade name: TETRA FIX CRYSTAL

Trade code: K50469

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

Recommended use: Adhesives, sealants

Uses advised against: All uses other than recommended ones

1.3. Details of the supplier of the safety data sheet

Company: KERAKOLL France

25, avenue de l'Industrie - 69960 Corbas - France

Tel. +33 472 890 684

safety@kerakoll.com

1.4. Emergency telephone number

European emergency phone number 112

Kerakoll Italy (+39) 0536 816511

Ireland

Poison information centre: (+353) 809 2166 (Daily 8am-10pm)

In case of emergency call 999 or 112

Malta

In case of emergency call: 112 (24h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Eye Irrit. 2	Causes serious eye irritation.
Skin Sens. 1A	May cause an allergic skin reaction.
Aquatic Chronic 3	Harmful 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

Warning

Hazard statements

H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

P273	Avoid release to the environment.
P280	Wear protective gloves and eye protection.

P302+P352 IF ON SKIN: Wash with plenty of water.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501 Dispose of contents/container in accordance with applicable regulations.

Contains

1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate

Trimethoxyvinilsilane

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: TETRA FIX CRYSTAL

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

Qty	Name	Ident. Numb.	Classification	Registration Number
1-2,4 %	3-(trimethoxysilyl)propylamine	CAS:13822-56-5 EC:237-511-5	Skin Irrit. 2, H315; Eye Dam. 1, H318	01-2119510159-45
1-2,4 %	Trimethoxyvinilsilane	CAS:2768-02-7 EC:220-449-8 Index:014-049-00-0	Skin Sens. 1B, H317; Flam. Liq. 2, H225; Acute Tox. 4, H332	01-2119513215-52
< 1 %	1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	CAS:1065336-91-5 EC:915-687-0	Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Repr. 2, H361; Skin Sens. 1A, H317, M-Chronic:1, M-Acute:1	01-2119491304-40-XXXX
< 0,05 %	methanol	CAS:67-56-1 EC:200-659-6 Index:603-001-00-X	Flam. Liq. 2, H225 STOT SE 1, H370 Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 Specific Concentration Limits: C ≥ 10%: STOT SE 1 H370 3% ≤ C < 10%: STOT SE 2 H371	01-2119433307-44

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Remove contaminated clothing immediatley and dispose off safely.

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

In case of eyes contact:

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

Protect uninjured eye.

In case of Ingestion:

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

In case of Inhalation:

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

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

Eye irritation

Eye damages

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

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO_2).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

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

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

6.2. Environmental precautions

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

Retain contaminated washing water and dispose it.

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

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

6.3. Methods and material for containment and cleaning up

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

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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

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

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

Contamined clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

Component	OEL Type	Country	Ceiling	Long Term mg/m3	Long Term ppm	Short Term mg/m3	Short Term ppm	Notes
methanol	EU	NNN		260	200			Skin
	NATIONAL	AUSTRIA		260.000	200.000	1040.000	800.000	

NATIONAL	BELGIUM	266.000	200.000	333.000	250.000	Additional indication "D" means that the absorption of the agent through the skin, mucous membranes or eyes is an important part of the total exposure. It can be the result of both direct contact and its presence in the air
NATIONAL	DENMARK	260.000	200.000	328.000	250.000	
NATIONAL	FINLAND	270.000	200.000	330.000	250.000	
NATIONAL	FRANCE	260.000	200.000			Bold type: Restrictive statutory limit values Skin
NATIONAL	GERMANY	270.000	200.000	1080.000	800.000	AGS
NATIONAL	GERMANY	130.000	100.000	260.000	200.000	DFG
NATIONAL	HUNGARY	260.000				
NATIONAL	IRELAND	260.000	200.000			
NATIONAL	ITALY	260.000	200.000			Cute
NATIONAL	LATVIA	260.000	200.000			
NATIONAL	POLAND	100.000		300.000		
NATIONAL	ROMANIA	260.000	200.000			
NATIONAL	SPAIN	266.000	200.000	333.000	250.000	
NATIONAL	SWEDEN	250.000	200.000	350.000	250.000	
NATIONAL	SWITZERLAND	260.000	200.000	1040.000	800.000	
NATIONAL	NETHERLANDS	133.000				
NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	266.000	200.000	333.000	250.000	
NATIONAL	ITALY	262.000	200.000	328.000	250.000	TWA
NATIONAL	ITALY	260.000	200.000	1040.000	800.000	TLV
NATIONAL	BULGARIA	260.000	200.000			
NATIONAL	CZECHIA	250.000		1000.000		
NATIONAL	CROATIA	260.000	200.000			
NATIONAL	ESTONIA	250.000	200.000	350.000	250.000	
NATIONAL	GREECE	260.000	200.000	325.000	250.000	
NATIONAL	IRELAND	260.000	200.000			
NATIONAL	LITHUANIA	260.000	200.000			
NATIONAL	PORTUGAL		200.000		250.000	
ACGIH	NNN		200.000		250.000	Skin, BEI - Headache, eye dam, dizziness, nausea
EU	NNN	260.000	200.000			Skin

Biological limit values

CAS-No.	Component	Value	UoM	Medium	Biological Indicator	Sampling Period
67-56-1	methanol	30	mg/L	Urine	Methyl alcohol	End of turn; End of working week

Predicted No Effect Concentration (PNEC) values

Component	CAS-No.	PNEC Limit	Exposure Route	Exposure Frequency
3-(trimethoxysilyl) propylamine	13822-56-5	500.000 µg/l	Freshwater	
		2.050 mg/l	Freshwater	
		50.000 µg/l	Marine water	
		810.000 µg/l	Microorganisms in sewage	

			treatments
		1.800 mg/kg	Freshwater sediments
		180.000 µg/kg	Marine water sediments
		69.000 µg/kg	Soil
		11.100 mg/kg	Secondary poinsoning
Trimethoxyvinilsilane	2768-02-7	400.000 µg/l	Freshwater
		2.400 mg/l	Intermittent releases (freshwater)
		40.000 µg/l	Marine water
		6.600 mg/l	Microorganisms in sewage treatments
		1.500 mg/kg	Freshwater sediments
		150.000 µg/kg	Marine water sediments
		60.000 µg/kg	Soil
1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	1065336-91-5	2.200 µg/l	Freshwater
		9.000 µg/l	Intermittent releases (freshwater)
		220.000 ng/L	Marine water
		1.000 mg/l	Microorganisms in sewage treatments
		1.050 mg/kg	Freshwater sediments
		110.000 µg/kg	Marine water sediments
		210.000 µg/kg	Soil
methanol	67-56-1	20.800 mg/l	Freshwater
		1540.000 mg/l	Intermittent releases (freshwater)
		2.080 mg/l	Marine water
		100.000 mg/l	Microorganisms in sewage treatments
		77.000 mg/kg	Freshwater sediments
		7.700 mg/kg	Marine water sediments
		100.000 mg/kg	Soil

Derived No Effect Level (DNEL) values

Component	CAS-No.	Worker Industry	Worker Professional	Consumer	Exposure Route	Exposure Frequency
3-(trimethoxysilyl) propylamine	13822-56-5		7.100 mg/m³	1.700 mg/m³	Human Inhalation	Long Term, systemic effects
			260.000 mg/m³	50.000 mg/m³	Human Inhalation	Short Term, systemic effects
			1.000 mg/kg	500.000 µg/kg	Human Dermal	Long Term, systemic effects
				8.000 mg/kg	Human Oral	Long Term, systemic effects
Trimethoxyvinilsilane	2768-02-7		27.600 mg/m³	6.700 mg/m³	Human Inhalation	Long Term, systemic effects
			260.000 mg/m³	50.000 mg/m³	Human Inhalation	Short Term, systemic effects
			3.900 mg/kg	7.800 mg/kg	Human Dermal	Short Term, systemic effects

			300.000 µg/kg	Human Oral	Long Term, systemic effects
1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	1065336-91-5	680.000 µg/m³	170.000 µg/m³	Human Inhalation	Long Term, systemic effects
		500.000 µg/kg	250.000 µg/kg	Human Dermal	Long Term, systemic effects
			50.000 µg/kg	Human Oral	Long Term, systemic effects
methanol	67-56-1	130.000 mg/m³	26.000 mg/m³	Human Inhalation	Long Term, systemic effects
		130.000 mg/m³	26.000 mg/m³	Human Inhalation	Short Term, systemic effects
		130.000 mg/m³	26.000 mg/m³	Human Inhalation	Long Term, local effects
		130.000 mg/m³	26.000 mg/m³	Human Inhalation	Short Term, local effects
		20.000 mg/kg	4.000 mg/kg	Human Dermal	Long Term, systemic effects
		20.000 mg/kg	4.000 mg/kg	Human Dermal	Short Term, systemic effects
			4.000 mg/kg	Human Oral	Long Term, systemic effects
			4.000 mg/kg	Human Oral	Short Term, systemic effects

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.

Protection for skin:

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

Protection for hands:

Protection for hands:

Suitable materials for safety gloves; EN 374:

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

Respiratory protection:

N.A.

Thermal Hazards:

N.A.

Environmental exposure controls:

N.A.

Hygienic and Technical measures

N.A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State Liquid

Color: Transparent

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: N.A.

Flash point: > 93°C

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

Vapour density: N.A.

Vapour pressure: N.A.
Relative density: 1.04 g/cm3
Solubility in water: Insoluble
Solubility in oil: N.A.
Partition coefficient (n-octanol/water): N.A.
Auto-ignition temperature: N.A.
Decomposition temperature: N.A.
Flammability: N.A.
Volatile Organic compounds - VOCs = 0.02 % ; 0.25 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

None in particular.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

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

Toxicological Information of the Preparation

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

Toxicological information on main components of the mixture:

3-(trimethoxysilyl) propylamine	a) acute toxicity	LD50 Oral Rat = 2.97 ml/Kg	
		LC50 Inhalation Vapour Rat Negative 6h	No deaths
		LD50 Skin Rabbit = 11.30 ml/Kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive 4h	

	c) serious eye damage/irritation	Eye Irritant Rabbit Yes	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 300.00 mg/kg	
Trimethoxyvinilsilane	a) acute toxicity	LD50 Oral Rat = 7.34000 ml/Kg	
		LC50 Inhalation Vapour Rat = 2773.00000 Ppm 4h	
		LD50 Skin Rabbit = 3.36000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 24h	
	c) serious eye damage/irritation	Eye Irritant Rabbit No 24h	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Positive	
	f) carcinogenicity	Genotoxicity Rat Negative	Inhalation route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 250.00000 mg/kg	
1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	a) acute toxicity	LD50 Oral Rat = 3230.00 mg/kg	
		LD50 Skin Rat > 3170.00 mg/kg	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 24h	
	c) serious eye damage/irritation	Eye Irritant Rabbit No	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Positive	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 30.00 mg/kg	
methanol	a) acute toxicity	LD50 Oral Rat >= 2528.00000 mg/kg	
		LC50 Inhalation = 43.68000 mg/l 6h	Cat
		LD50 Skin Rabbit = 17100.00000 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 intraperitoneal rout
		Carcinogenicity Rat Negative	
	g) reproductive toxicity	Lowest Observed Adverse Effect Level Oral = 1000.00000 mg/kg	Mouse

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:

Harmful to aquatic life with long lasting effects.

List of Eco-Toxicological properties of the product

The product is classified: Aquatic Chronic 3(H412)

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
3-(trimethoxysilyl)propylamine	CAS: 13822-56-5 - EINECS: 237-511-5	a) Aquatic acute toxicity : LC50 Fish Danio rerio > 579.00 mg/L 96h ,,OECD Guideline 203 (Fish, Acute Toxicity Test) a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 205.00 mg/L 48h OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 1.00 ppm - 21days a) Aquatic acute toxicity : EC50 Algae Scenedesmus subspicatus = 620.00 mg/L 72h ISO 10253 c) Bacteria toxicity : EC50 Pseudomonas putida = 43.00 mg/L
Trimethoxyvinilsilane	CAS: 2768-02-7 - EINECS: 220-449-8 - INDEX: 014-049-00-0	a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss = 137.00000 mg/L 96h a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 121.00000 mg/L 48h b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 20.00000 mg/L - 21days a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata > 89.00000 mg/L 72h a) Aquatic acute toxicity : EC10 microorganisms > 100.00000 mg/L 3h OECD 209
1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	CAS: 1065336-91-5 - EINECS: 915-687-0	a) Aquatic acute toxicity : LC50 Fish Danio rerio = 0.90 mg/L 96h OECD Guideline 203 b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 1.00 mg/L OECD guideline 211 a) Aquatic acute toxicity : EC50 Algae Desmodesmus subspicatus = 1.68 mg/L 72h OECD Guideline 201 a) Aquatic acute toxicity : EC20 Sludge activated sludge >= 100.00 mg/L 3h OECD guideline 209
methanol	CAS: 67-56-1 - EINECS: 200-659-6 - INDEX: 603-001-00-X	a) Aquatic acute toxicity : LC50 Fish Lepomis macrochirus = 15400.00000 mg/L 96h b) Aquatic chronic toxicity : NOEC Fish = 450.00000 mg/L a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna = 22200.00000 mg/L 48h b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 208.00000 mg/L a) Aquatic acute toxicity : EC50 Algae Selenastrum capricornutum = 22000.00000 mg/L 96h OECD 201 Guideline. d) Terrestrial toxicity : NOEC Worm Eisenia andrei = 10000.00000 mg/kg d) Terrestrial toxicity : NOEC Folsomia candida = 1000.00000 mg/kg OECD Guideline 232

12.2. Persistence and degradability

Component	Persitence/Degradability:	Value	Notes
3-(trimethoxysilyl)propylamine	Non-readily biodegradable		

Trimethoxyvinilsilane	Readily biodegradable		
1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	Non-readily biodegradable	38.000	28days
methanol	Readily biodegradable		

12.3. Bioaccumulative potential

Component	Bioaccumulation	Test	Notes
1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	Not bioaccumulative		
methanol	Not bioaccumulative	BCF - Bioconcentrantion factor	< 10

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 >= 0.1%

12.7 Other adverse effects

N.A.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover if possible. 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):

N.A.

SECTION 14: Transport information

Not classified as dangerous in the meaning of transport regulations.

14.1. UN number or ID number

N.A.

14.2. UN proper shipping name

N.A.

14.3. Transport hazard class(es)

N.A.

14.4. Packing group

N.A.

14.5. Environmental hazards

N.A.

14.6. Special precautions for user

N.A.

Road and Rail (ADR-RID) :

N.A.

Air (IATA) :

N.A.

Sea (IMDG) :

N.A.

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

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

Dir. 2000/39/EC (Occupational exposure limit values)
Regulation (EC) n. 1907/2006 (REACH)
Regulation (EC) n. 1272/2008 (CLP)
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
Regulation (EU) n. 286/2011 (ATP 2 CLP)
Regulation (EU) n. 618/2012 (ATP 3 CLP)
Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)
Regulation (EU) n. 2020/217 (ATP 14 CLP)
Regulation (EU) n. 2020/1182 (ATP 15 CLP)
Regulation (EU) n. 2021/643 (ATP 16 CLP)
Regulation (EU) n. 2020/878
Regulation (EC) nr 648/2004 (Detergents).

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

Restrictions related to the product: 3

Restrictions related to the substances contained: 40, 69, 75

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

N.A.

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

No Substance Listed

German Water Hazard Class.

Class 3: extremely hazardous.

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.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H361	Suspected of damaging fertility or the unborn child.
H370	Causes damage to organs.
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
3.1/3/Dermal	Acute Tox. 3	Acute toxicity (dermal), Category 3
3.1/3/Inhal	Acute Tox. 3	Acute toxicity (inhalation), Category 3

3.1/3/Oral	Acute Tox. 3	Acute toxicity (oral), Category 3
3.1/4/Inhal	Acute Tox. 4	Acute toxicity (inhalation), Category 4
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
3.4.2/1A	Skin Sens. 1A	Skin Sensitisation, Category 1A
3.4.2/1B	Skin Sens. 1B	Skin Sensitisation, Category 1B
3.7/2	Repr. 2	Reproductive toxicity, Category 2
3.8/1	STOT SE 1	Specific target organ toxicity — single exposure, Category 1
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
3.3/2	Calculation method
3.4.2/1A	Calculation method
4.1/C3	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.

Exposure Scenario

1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate

Exposure Scenario, 20/04/2022

Substance identity	
	1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate
CAS No.	1065336-91-5
EINECS No.	915-687-0

Table of contents

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

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks - Use in rigid foams, coatings, adhesives and sealants
Date - Version	20/04/2022 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Coatings and paints, thinners, paint removers (PC9a) - Fillers, putties, plasters, modelling clay (PC9b)

Environment Contributing Scenario

CS1	ERC8c

Worker Contributing Scenario

CS2 Material transfers	PROC8a
CS3 Rolling, Brushing	PROC10

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8c)

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

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
Vapour pressure < 0.01 Pa at standard temperature and pressure 0.0001 Pa

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

Emission days: 365 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

	Air - minimum efficiency of: 15 % Water - minimum efficiency of: 1 %

Conditions and measures related to sewage treatment plant

STP type:
Municipal Sewage Treatment Plant
Water - minimum efficiency of: = 88.9 %
STP effluent (m³/day): 2000

Other conditions affecting environmental exposure

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

1.2. CS2: Worker Contributing Scenario: 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:
Vapour pressure < 0.01 Pa at standard temperature and pressure 0.0001 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Duration:
Covers use up to 480 min

Frequency:
Covers use up to 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures
Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed.
Ensure operatives are trained to minimise exposures.

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.	Dermal - minimum efficiency of: = 90 %
Wear suitable face shield. Wear suitable coveralls to prevent exposure to the skin.	

Other conditions affecting worker exposure

Indoor use
Professional use

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

Additional Good Practice Advice:
Ensure no splashing occurs during transfer.

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:
Vapour pressure < 0.01 Pa at standard temperature and pressure 0.0001 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 5 %.

Amount used, frequency and duration of use/exposure

Duration:
Covers use up to 480 min

Frequency:
Covers use up to 5 days per week

Technical and organisational conditions and measures

Technical and organisational measures

Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed.
Ensure operatives are trained to minimise exposures.

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.	Dermal - minimum efficiency of: = 90 %
Wear suitable face shield. Wear suitable coveralls to prevent exposure to the skin.	

Other conditions affecting worker exposure

Indoor use
Professional use

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

Additional Good Practice Advice:

Ensure no splashing occurs during transfer.

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario (ERC8c)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
soil	N/A	ECETOC TRA environment v2.0	0.0579

Additional information on exposure estimation:

Risk from environmental exposure is driven by soil.

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	= 0.2743 mg/kg bw/day	ECETOC TRA worker v3	= 0.137143
inhalative, systemic, long-term	= 0.4233 mg/m³	ECETOC TRA worker v3	= 0.119924

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	= 0.5486 mg/kg bw/day	ECETOC TRA worker v3	= 0.274286
inhalative, systemic, long-term	= 0.274286 mg/m³	ECETOC TRA worker v3	= 0.097

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

Guidance to check compliance with the exposure scenario:

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

Exposure Scenario
3-(trimethoxysilyl)propylamine

Exposure Scenario, 25/08/2021

Substance identity	
	3-(trimethoxysilyl)propylamine
CAS No.	13822-56-5
EINECS No.	237-511-5
Registration number	01-2119510159-45

Table of contents

1. ES 1 Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a)

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks
Date - Version	25/08/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Coatings and paints, thinners, paint removers (PC9a)

Environment Contributing Scenario

CS1	ERC8c - ERC8f

Worker Contributing Scenario

CS2 Rolling, Brushing	PROC10
CS3 Roller, spreader, flow application	PROC11

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)

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers concentrations up to 2 %

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

Amounts used:
Annual site tonnage = 0.004 t(onnes)/year

Release type: Continuous release

Emission days: 365 days per year

Conditions and measures related to sewage treatment plant

STP type:
Municipal Sewage Treatment Plant
STP effluent (m^3/day): 2000

Other conditions affecting environmental exposure

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

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

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:

Covers concentrations up to 2 %

Amount used, frequency and duration of use/exposure

Amounts used:

Application rate = 0.011 kg/day
Annual site tonnage = 0.004 t(onnes)/year

Duration:

Exposure duration > 4 h

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

Personal protection

Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: 80 %

Other conditions affecting worker exposure

Covers indoor and outdoor use
Professional use
Room size: 20 m³
Ventilation rate: 0.6 ach (air changes per hour)

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

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers concentrations up to 2 %

Amount used, frequency and duration of use/exposure

Amounts used:

Application rate = 0.011 kg/day
Annual site tonnage = 0.004 t(onnes)/year

Duration:

Exposure duration > 4 h

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

Personal protection

Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: 80 %

Other conditions affecting worker exposure

Covers indoor and outdoor use
Professional use
Room size: 20 m³
Ventilation rate: 0.6 ach (air changes per hour)

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	= 0.00132 mg/L	EUSES v2.1	N/A

soil	= 0.000325 mg/kg dry weight	EUSES v2.1	N/A
freshwater sediment	= 0.00105 mg/kg dry weight	EUSES v2.1	N/A
marine water	= 0.000129 mg/L	EUSES v2.1	N/A
marine sediment	= 0.000102 mg/kg dry weight	EUSES v2.1	N/A
Sewage treatment plant	= 5.51E-05 mg/L	EUSES v2.1	N/A

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

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative	= 37.35 mg/m³	ECETOC TRA worker v2.0	N/A

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)
dermal, long-term	= 0.21 mg/kg bw/day	ECETOC TRA worker v2.0	N/A

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
Trimethoxyvinilsilane

Exposure Scenario, 08/06/2021

Substance identity	
	Trimethoxyvinilsilane
CAS No.	2768-02-7
INDEX No.	014-049-00-0
EINECS No.	220-449-8
Registration number	01-2119513215-52

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1. ES 1

1.1 TITLE SECTION

Exposure Scenario name	Use in rigid foams, coatings, adhesives and sealants - Barrier (Sealant)
Date - Version	18/05/2021 - 1.0
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22) - Building and construction work (SU19)
Product Categories	Adhesives, sealants (PC1)

Environment Contributing Scenario

CS1 Low environmental release	ERC8c - ERC8f

Worker Contributing Scenario

CS2 Wiping - Hand application - finger paints, pastels, adhesives - Preparation of material for application	PROC0
CS3 Wiping - Hand application - finger paints, pastels, adhesives - Preparation of material for application	PROC1

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario: Low environmental release (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)

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Concentration after dilution for use maximum [%]: 0.7 %

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

Amounts used:
Daily amount per site = 0.28 kg/day

Release type: Continuous release

Emission days: 365 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

	Water - minimum efficiency of: 1.5 %

Conditions and measures related to sewage treatment plant

STP type:
Onsite Sewage Treatment Plant
Water - minimum efficiency of: = 0.013 %

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

Waste treatment
Dispose of waste product or used containers according to local regulations.

Other conditions affecting environmental exposure

Local marine water dilution factor: 100
Local freshwater dilution factor: 10
Receiving surface water flow: 20000 m³/day

Covers indoor and outdoor use

1.2. CS2: Worker Contributing Scenario: Wiping - Hand application - finger paints, pastels, adhesives - Preparation of material for application (PROC0)

Process Categories	Other (PROC0)

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers concentrations up to 0.7 %

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration <= 6 h

Frequency:
Use frequency = 250 days per year

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 good standard of general ventilation (not less than 3 to 5 air changes per hour).
For further specification, refer to section 8 of the SDS.

Other conditions affecting worker exposure

Covers indoor and outdoor use
Professional use
Room size: Covers use in room size of = 20 m³
Temperature: Covers use at ambient temperatures. 25°C

1.2. CS3: Worker Contributing Scenario: Wiping - Hand application - finger paints, pastels, adhesives - Preparation of material for application (PROC1)

Process Categories	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers concentrations up to 2 %

Amount used, frequency and duration of use/exposure

Duration:
Exposure duration = 8 h

Frequency:
Use frequency = 1 days per year

Duration:
Covers use up to = 6 h

Frequency:
Use frequency = 1 days per year

Other conditions affecting worker exposure

Covers indoor and outdoor use
Professional use
Room size: Covers use in room size of = 20 m³
Ventilation rate: = 0.6 ach (air changes per hour)

1.3 Exposure estimation and reference to its source

1.3. CS2: Worker Contributing Scenario: Wiping - Hand application - finger paints, pastels, adhesives - Preparation of material for application (PROC0)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, long-term	= 1.9 mg/m³	N/A	= 0.069
dermal, long-term	= 4.53 mg/kg bw/day	ConsExpo	= 0.038
combined routes, long-term	N/A	N/A	0.107

1.3. CS3: Worker Contributing Scenario: Wiping - Hand application - finger paints, pastels, adhesives - Preparation of material for application (PROC1)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, long-term	= 4.57 mg/m³	N/A	= 0.682
dermal, long-term	= 0.044 mg/kg bw/day	ConsExpo	< 0.01
combined routes, short-term	N/A	N/A	0.682

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.