SAFETY DATA SHEET

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) No 2015/830 and upon the Swiss Chemicals Regulation SR 813.11

290mL Mungo MMK-U transparent

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

1.1. Product identifier

Product name : 290mL Mungo MMK-U transparent
Registration number REACH : Not applicable (mixture)
Product type REACH : Mixture

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

1.2.1 Relevant identified uses

Sealant
Moisture-repellent compound

1.2.2 Uses advised against

No uses advised against known

1.3. Details of the supplier of the safety data sheet

Supplier of the safety data sheet

Mungo Befestigungstechnik AG
Bornfeldstrasse 2
CH-4600
Olten
☎ +41 62 206 75 75
🖷 +41 62 206 75 85
mungo@mungo.swiss
www.mungo.swiss

Distributor of the product

Mungo Befestigungstechnik AG
Bornfeldstrasse 2
CH-4600
Olten
☎ +41 62 206 75 75
🖷 +41 62 206 75 85
mungo@mungo.swiss
www.mungo.swiss

1.4. Emergency telephone number

Emergency telephone number (Switzerland) - Swiss Toxicological Information Centre (Zürich):
145 (24h/24h)
Emergency telephone number (International):
+41 44 251 51 51 (24h/24h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Aquatic Chronic	category 3	H412: Harmful to aquatic life with long lasting effects.

2.2. Label elements

Hazard pictograms

No pictogram is used

Signal word No signal word

H-statements

H412 Harmful to aquatic life with long lasting effects.

P-statements

P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P273 Avoid release to the environment.
P501 Dispose of contents/container in accordance with local/regional/national/international regulation.

2.3. Other hazards

No other hazards known

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark
trimethoxyvinylsilane 01-2119513215-52	2768-02-7 220-449-8	1%<C<10%	Flam. Liq. 3; H226 Acute Tox. 4; H332	(1)(10)	Constituent
3-(trimethoxysilyl)propylamine 01-2119510159-45	13822-56-5 237-511-5	1%<C<3%	Eye Dam. 1; H318 Skin Irrit. 2; H315	(1)(10)	Constituent
bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butylmalonate 01-2119978231-37	63843-89-0 264-513-3	0.1% <C<0.25%	STOT RE 1; H372 Acute Tox. 4; H302 Aquatic Chronic 1; H410	(1)(9)	Constituent
dioctylbis(pentane-2,4-dionato-O,O')tin 01-0000020199-67	54068-28-9 483-270-6	0.1%<C<1%	Skin Sens. 1; H317 STOT SE 2; H371	(1)(8)(10)	Constituent
pyrithione zinc	13463-41-7 236-671-3	0.01% <C<0.1%	Acute Tox. 3; H301 Acute Tox. 4; H332 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	(1)(9)	Constituent

(1) For H-statements in full: see heading 16
(8) Specific concentration limits, see heading 16
(9) M-factor, see heading 16
(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

SECTION 4: First aid measures

4.1. Description of first aid measures

General:
If you feel unwell, seek medical advice.

After inhalation:
Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:
Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.

After eye contact:
Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Take victim to an ophthalmologist if irritation persists.

After ingestion:
Rinse mouth with water. Consult a doctor/medical service if you feel unwell.

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

4.2.1 Acute symptoms

After inhalation:
No effects known.

After skin contact:
No effects known.

After eye contact:
No effects known.

After ingestion:
No effects known.

4.2.2 Delayed symptoms
No effects known.

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

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.1.1 Suitable extinguishing media:
Adapt extinguishing media to the environment for surrounding fires.

5.1.2 Unsuitable extinguishing media:
Not applicable.

5.2. Special hazards arising from the substance or mixture

On burning: release of silicon oxides, carbon monoxide - carbon dioxide.

5.3. Advice for firefighters

5.3.1 Instructions:

Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.

5.3.2 Special protective equipment for fire-fighters:

Gloves. Protective clothing. Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No naked flames.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gloves. Protective clothing.

Suitable protective clothing

See heading 8.2

6.2. Environmental precautions

Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Use appropriate containment to avoid environmental contamination. Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

Allow product to solidify and remove it by mechanical means. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1. Precautions for safe handling

Keep away from naked flames/heat. Observe normal hygiene standards. Do not discharge the waste into the drain. Keep container tightly closed.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:

Store at room temperature. Keep out of direct sunlight. Protect against frost. Meet the legal requirements. Max. storage time: 1 year(s).

7.2.2 Keep away from:

Heat sources, combustible materials.

7.2.3 Suitable packaging material:

Plastics.

7.2.4 Non suitable packaging material:

No data available

7.3. Specific end use(s)

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

France

Etain (composés organiques d'), en Sn	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	0.1 mg/m³
	Short time value (VL: Valeur non réglementaire indicative)	0.2 mg/m³

UK

Tin compounds, organic, except Cyhexatin (ISO), (as Sn)	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	0.1 mg/m³
	Short time value (Workplace exposure limit (EH40/2005))	0.2 mg/m³

Spain

Estaño: Compuestos orgánicos, como Sn	Time-weighted average exposure limit 8 h	0.1 mg/m³
	Short time value	0.2 mg/m³

Switzerland

Composés de Di-n-octylétain (exprimé en Sn [7440-31-5])	Time-weighted average exposure limit 8 h	0.004 ppm
	Time-weighted average exposure limit 8 h	0.02 mg/m³

Composés de Di-n-octylétain (exprimé en Sn [7440-31-5])	Valeur limite d'exposition calculée sur une courte durée (15 min)	0.004 ppm
	Valeur limite d'exposition calculée sur une courte durée (15 min)	0.02 mg/m³

b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

If applicable and available it will be listed below.

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 Threshold values

DNEL/DMEL - Workers

trimethoxyvinylsilane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	27.6 mg/m³	
	Long-term systemic effects dermal	3.9 mg/kg bw/day	

3-(trimethoxysilyl)propylamine

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	58 mg/m³	
	Long-term systemic effects dermal	8.3 mg/kg bw/day	

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butylmalonate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	0.05 mg/m³	
	Long-term systemic effects dermal	0.07 mg/kg bw/day	

dioctylbis(pentane-2,4-dionato-O,O')tin

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	84 mg/m³	
	Acute systemic effects inhalation	84 mg/m³	
	Long-term local effects inhalation	0.091 mg/m³	
	Acute local effects inhalation	0.091 mg/m³	
	Long-term systemic effects dermal	0.07 mg/kg bw/day	

pyrithione zinc

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects dermal	0.01 mg/kg bw/day	

DNEL/DMEL - General population

trimethoxyvinylsilane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	18.9 mg/m³	
	Long-term systemic effects dermal	7.8 mg/kg bw/day	
	Long-term systemic effects oral	0.3 mg/kg bw/day	

3-(trimethoxysilyl)propylamine

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	17 mg/m³	
	Long-term systemic effects dermal	5 mg/kg bw/day	
	Long-term systemic effects oral	5 mg/kg bw/day	

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butylmalonate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	0.01 mg/m³	
	Long-term systemic effects dermal	33 µg/kg bw/day	
	Long-term systemic effects oral	3 µg/kg bw/day	

PNEC

trimethoxyvinylsilane

Compartments	Value	Remark
Fresh water	0.4 mg/l	
Marine water	0.04 mg/l	
Fresh water (intermittent releases)	2.4 mg/l	
STP	6.6 mg/l	
Fresh water sediment	1.5 mg/kg sediment dw	
Marine water sediment	0.15 mg/kg sediment dw	
Soil	0.06 mg/kg soil dw	

3-(trimethoxysilyl)propylamine

Compartments	Value	Remark
Fresh water	0.33 mg/l	
Marine water	0.033 mg/l	
Aqua (intermittent releases)	3.3 mg/l	
STP	13 mg/l	
Fresh water sediment	1.2 mg/kg sediment dw	
Marine water sediment	0.12 mg/kg sediment dw	
Soil	0.045 mg/kg soil dw	
Oral	44.4 mg/kg food	

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butylmalonate

Compartments	Value	Remark
Fresh water	0 mg/l	
Marine water	0 mg/l	
Aqua (intermittent releases)	0.61 mg/l	
STP	1 mg/l	
Fresh water sediment	504.4 mg/kg sediment dw	
Marine water sediment	50.44 mg/kg sediment dw	
Soil	1 mg/kg soil dw	

dioctylbis(pentane-2,4-dionato-O,O')tin

Compartments	Value	Remark
Fresh water	0.026 mg/l	
Marine water	0.003 mg/l	
Aqua (intermittent releases)	0.26 mg/l	
STP	1 mg/l	
Fresh water sediment	0.155 mg/kg sediment dw	
Marine water sediment	0.015 mg/kg sediment dw	
Soil	0.016 mg/kg soil dw	

pyrithione zinc

Compartments	Value	Remark
Fresh water	90 ng/l	
Marine water	90 ng/l	
STP	0.01 mg/l	
Fresh water sediment	0.009 mg/kg sediment dw	
Marine water sediment	0.009 mg/kg sediment dw	
Soil	1.02 mg/kg soil dw	

8.1.5 Control banding

If applicable and available it will be listed below.

8.2. Exposure controls

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Keep away from naked flames/heat.

8.2.2 Individual protection measures, such as personal protective equipment

Observe normal hygiene standards. Do not eat, drink or smoke during work.

a) Respiratory protection:

Respiratory protection not required in normal conditions.

b) Hand protection:

Gloves.

- materials (good resistance)

Polyethylene.

c) Eye protection:

Eye protection not required in normal conditions.

d) Skin protection:

Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical form	Paste
Odour	Mild odour
	Characteristic odour
Odour threshold	No data available
Colour	Variable in colour, depending on the composition
Particle size	No data available
Explosion limits	No data available
Flammability	Non-flammable
Log Kow	Not applicable (mixture)
Dynamic viscosity	No data available
Kinematic viscosity	No data available
Melting point	No data available
Boiling point	No data available
Evaporation rate	No data available
Relative vapour density	No data available
Vapour pressure	No data available
Solubility	Water ; insoluble
	Organic solvents ; soluble

Relative density	1.053 ; 20 °C
Decomposition temperature	No data available
Auto-ignition temperature	No data available
Flash point	No data available
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	Not classified
pH	No data available

9.2. Other information

Absolute density	1053 kg/m³ ; 20 °C

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Precautionary measures

Keep away from naked flames/heat.

10.5. Incompatible materials

Combustible materials.

10.6. Hazardous decomposition products

On burning: release of silicon oxides, carbon monoxide - carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

11.1.1 Test results

Acute toxicity

290mL Mungo MMK-U transparent

No (test)data on the mixture available

Judgement is based on the relevant ingredients

trimethoxyvinylsilane

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	7120 mg/kg bw - 7236 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50	Equivalent to OECD 402	3259 mg/kg bw - 3880 mg/kg bw	24 h	Rabbit (female)	Converted value	
Inhalation (vapours)	LC50	Equivalent to OECD 403	16.8 mg/l	4 h	Rat (male / female)	Experimental value	

3-(trimethoxysilyl)propylamine

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	2.970 ml/kg bw		Rat (male)	Experimental value	
Dermal	LD50	Equivalent to OECD 402	11.3 ml/kg bw	24 h	Rabbit (male)	Experimental value	
Inhalation (vapours)	LC50	OECD 403	> 5 ppm	6 h	Rat (male)	Read-across	
Inhalation (vapours)	LC50	OECD 403	> 16 ppm	6 h	Rat (female)	Read-across	

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butylmalonate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	1490 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50	Equivalent to OECD 402	> 3170 mg/kg bw	24 h	Rat (male / female)	Experimental value	
Inhalation (aerosol)	LC50	Equivalent to OECD 403	> 460 mg/m³ air	4 h	Rat (male / female)	Experimental value	

dioctylbis(pentane-2,4-dionato-O,O')tin

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 423	2500 mg/kg		Rat (female)	Experimental value	
Dermal	LD50	OECD 402	> 2000 mg/g	24 h	Rat (male / female)	Experimental value	
Inhalation (vapours)	LC50	Equivalent to OECD 403	5.1 mg/l air	4 h	Rat (male / female)	Experimental value	

pyrithione zinc

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 401	269 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50	EPA OPP 81-2	> 2000 mg/kg	24 h	Rat (male / female)	Experimental value	
Inhalation (aerosol)	LC50	OECD 403	1.03 mg/l air	4 h	Rat (male / female)	Experimental value	

Conclusion

Not classified for acute toxicity

Corrosion/irritation

290mL Mungo MMK-U transparent

No (test)data on the mixture available

In the light of practical experience, the classification for this mixture is less stringent than the one based on the calculation set out

trimethoxyvinylsilane

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405	24 h	1; 24; 48; 72 hours	Rabbit	Experimental value	
Skin	Not irritating		24 h	24; 48; 72 hours	Rabbit	Experimental value	

3-(trimethoxysilyl)propylamine

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Serious eye damage	Equivalent to OECD 405		24; 48; 72 hours	Rabbit	Read-across	Single treatment without rinsing
Skin	Irritating	OECD 404	4 h	1; 24; 48; 72; 168 hours	Rat	Experimental value	

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butylmalonate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	Equivalent to OECD 405	30 seconds	24; 48; 72 hours	Rabbit	Experimental value	
Skin	Not irritating	Equivalent to OECD 404	24 h	24; 72 hours	Rabbit	Experimental value	

dioctylbis(pentane-2,4-dionato-O,O')tin

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405		24; 72 hours	Rabbit	Experimental value	
Skin	Not irritating	OECD 404	4 h	1 hour	Rabbit	Experimental value	

pyrithione zinc

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Serious eye damage	OECD 405	24 h	24 hours	Rabbit	Experimental value	
Skin	Not irritating	OECD 404	4 h	1; 24; 48; 72 hours	Rabbit	Experimental value	

Conclusion

Not classified as irritating to the respiratory system

Not classified as irritating to the skin

Not classified as irritating to the eyes

Respiratory or skin sensitisation

290mL Mungo MMK-U transparent

No (test)data on the mixture available

In the light of practical experience, the classification for this mixture is less stringent than the one based on the calculation set out

trimethoxyvinylsilane

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	OECD 406		24; 48 hours	Guinea pig (male / female)	Experimental value	

3-(trimethoxysilyl)propylamine

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	OECD 406	72 h	24; 48 hours	Guinea pig (male / female)	Experimental value	

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butylmalonate

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	Other			Guinea pig (male / female)	Experimental value	

dioctylbis(pentane-2,4-dionato-O,O')tin

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing	OECD 429			Mouse (female)	Experimental value	

pyrithione zinc

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	OECD 406		24; 48 hours	Guinea pig (female)	Experimental value	
Inhalation						Data waiving	

Conclusion

Not classified as sensitizing for skin

Not classified as sensitizing for inhalation

Specific target organ toxicity

290mL Mungo MMK-U transparent

No (test)data on the mixture available

Judgement is based on the relevant ingredients

trimethoxyvinylsilane

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOAEL	OECD 422	62.5 mg/kg bw/day		No effect	6 weeks (daily) - 8 weeks (daily)	Rat (male / female)	Experimental value
Oral (stomach tube)	LOAEL	OECD 422	250 mg/kg bw/day	Bladder	Histopathological changes	6 weeks (daily) - 8 weeks (daily)	Rat (male / female)	Experimental value
Inhalation (vapours)	NOAEC	Subchronic toxicity test	100 ppm		No effect	14 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value

3-(trimethoxysilyl)propylamine

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	LOAEL	OECD 408	600 mg/kg bw/day	Liver	Clinical signs; mortality; body weight; food consumption	92 day(s)	Rat (male / female)	Read-across
Oral (stomach tube)	NOAEL	OECD 408	200 mg/kg bw/day	Liver	No effect	92 day(s)	Rat (male / female)	Read-across
Inhalation (aerosol)	IRT (inhalation risk test)	Equivalent to OECD 412	147 mg/m³ air	Lungs	Lesions in larynx, trachea and lung	4 weeks (6h / day, 5 days / week)	Rat (male)	Read-across

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butylmalonate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	LOAEL	OECD 421	10 mg/kg bw/day	Lymph nodes	Enlargement of the lymph glands	28 day(s)	Rat (male / female)	Experimental value
Oral (stomach tube)	LOAEL	OECD 421	10 mg/kg bw/day	Liver	Enlargement/ affection of the liver	28 day(s)	Rat (male / female)	Experimental value
Oral (stomach tube)	LOAEL	OECD 421	10 mg/kg bw/day	Spleen	Spleen enlargement/ affection	28 day(s)	Rat (male / female)	Experimental value

dioctylbis(pentane-2,4-dionato-O,O')tin

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (diet)	NOAEL	OECD 422	0.3 mg/kg bw/day - 0.5 mg/kg bw/day	Thymus	No effect	28 day(s)	Rat (male / female)	Experimental value
Dermal								Data waiving
Inhalation (vapours)	NOEC	Equivalent to OECD 413	100 ppm		No effect	14 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value
Inhalation (vapours)	LOAEC	Equivalent to OECD 413	650 ppm	Various organs	Histopathology	14 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value

pyrithione zinc

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOAEL	OECD 453	0.5 mg/kg bw/day		No effect	98 weeks (daily) - 104 weeks (daily)	Rat (male / female)	Experimental value
Dermal	NOAEL	EPA OPP 82-3	100 mg/kg bw/day		No effect	13 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value
Dermal	LOAEL	EPA OPP 82-3	1000 mg/kg bw/day		Haematological changes	13 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value
Inhalation (dust)	LOAEL	EPA OPPTS 870.3465	6 mg/m³ air		Respiratory difficulties	3 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value
Inhalation (dust)	NOAEL	EPA OPPTS 870.3465	2 mg/m³ air		No effect	3 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

290mL Mungo MMK-U transparent

No (test)data on the mixture available

Judgement is based on the relevant ingredients

trimethoxyvinylsilane

Result	Method	Test substrate	Effect	Value determination	Remark
Positive with metabolic activation, positive without metabolic activation	OECD 473	CHL/IU cells	Chromosome aberrations	Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 476	Chinese hamster ovary (CHO)		Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	

3-(trimethoxysilyl)propylamine

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 476	Chinese hamster ovary (CHO)	No effect	Read-across	
Negative with metabolic activation, negative without metabolic activation	OECD 473	Chinese hamster lung fibroblasts (V79)	No effect	Read-across	
Negative with metabolic activation, negative without metabolic activation	OECD 471	Escherichia coli	No effect	Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butylmalonate

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	Ames test	Bacteria (S.typhimurium)	No effect	Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 476	Chinese hamster ovary (CHO)	No effect	Experimental value	
Positive with metabolic activation, positive without metabolic activation	OECD 473	Chinese hamster ovary (CHO)		Experimental value	

dioctylbis(pentane-2,4-dionato-O,O')tin

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 476	Chinese hamster lung fibroblasts (V79)	No effect	Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 473	Chinese hamster lung fibroblasts (V79)	No effect	Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	

pyrithione zinc

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	
Negative with metabolic activation	OECD 476	Chinese hamster lung fibroblasts (V79)	No effect	Experimental value	
Negative with metabolic activation	OECD 473	Chinese hamster lung fibroblasts (V79)	Chromosome aberrations	Experimental value	

Mutagenicity (in vivo)

290mL Mungo MMK-U transparent

No (test)data on the mixture available

Judgement is based on the relevant ingredients

trimethoxyvinylsilane

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative (Inhalation (vapours))	OECD 489	3 days (1x / day)	Rat (female)		Experimental value

3-(trimethoxysilyl)propylamine

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	Equivalent to OECD 474		Mouse (male / female)	Bone marrow	Read-across

dioctylbis(pentane-2,4-dionato-O,O')tin

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative (Oral (stomach tube))	OECD 474		Mouse (male)	Bone marrow	Experimental value

pyrithione zinc

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	OECD 474		Mouse (male / female)	Bone marrow	Experimental value

Conclusion

Not classified for mutagenic or genotoxic toxicity

Carcinogenicity

290mL Mungo MMK-U transparent

No (test)data on the mixture available

Judgement is based on the relevant ingredients

3-(trimethoxysilyl)propylamine

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Dermal	NOAEL	Carcinogenic toxicity study	43.8 mg/week	104 weeks (3 times / week)	Mouse (male / female)	No carcinogenic effect	Skin	Inconclusive, insufficient data

pyrithione zinc

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Oral	NOAEL	OECD 453	> 2.1 mg/kg bw	104 weeks (daily)	Rat (male / female)	No carcinogenic effect		Experimental value

Conclusion

Not classified for carcinogenicity

Reproductive toxicity

290mL Mungo MMK-U transparent

No (test)data on the mixture available

Judgement is based on the relevant ingredients

trimethoxyvinylsilane

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Inhalation (vapours))	NOAEL	EPA OTS 798.4350	100 ppm	10 days (gestation, 6h / day)	Rat (female)	No effect		Experimental value
Maternal toxicity (Inhalation (vapours))	NOAEL	EPA OTS 798.4350	25 ppm	10 days (gestation, 6h / day)	Rat (female)	No effect		Experimental value
Effects on fertility (Oral (stomach tube))	NOAEL (P)	OECD 422	1000 mg/kg bw/day	≤ 43 day(s)	Rat (male)	No effect		Experimental value

3-(trimethoxysilyl)propylamine

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEL	EPA OTS 798.4900	100 mg/kg bw/day	14 days (gestation, daily)	Rat	No effect		Read-across
	LOAEL	EPA OTS 798.4900	600 mg/kg bw/day	14 days (gestation, daily)	Rat	Minor skeletal variations	Skeleton	Read-across
Maternal toxicity	NOAEL	Other	100 mg/kg bw/day	14 day(s)	Rat	No effect		Read-across
	LOAEL	Other	600 mg/kg bw/day	14 day(s)	Rat	Clinical signs; mortality; body weight; food consumption	General	Read-across
Effects on fertility	NOAEL	OECD 408	600 mg/kg bw/day	92 day(s)	Rat (male / female)	No effect		Read-across

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butylmalonate

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity								Data waiving
Maternal toxicity								Data waiving
Effects on fertility	NOAEL	Equivalent to OECD 421	≥ 10 mg/kg bw/day	36 day(s) - 50 day(s)	Rat (male / female)	No effect		Experimental value

dioctylbis(pentane-2,4-dionato-O,O')tin

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Inhalation (vapours))	NOAEC	Equivalent to OECD 414	50 ppm	10 days (gestation, 6h / day)	Rat	No effect	Foetus	Experimental value of similar product
Developmental toxicity (Oral (diet))	NOAEL	OECD 414	11.8 mg/kg bw/day	10 days (gestation, 6h / day)	Rat	No effect		Experimental value of similar product
Maternal toxicity (Inhalation (vapours))	NOAEC	Equivalent to OECD 414	200 ppm	10 days (gestation, 6h / day)	Rat (female)	No effect		Experimental value of similar product
Effects on fertility (Oral (stomach tube))	Dose level (P)	OECD 422	50 mg/kg bw/day	6 week(s)	Rat (male / female)	No effect		Experimental value

pyrithione zinc

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	LOAEL	EPA OPP 83-3	1.5 mg/kg bw/day	13 day(s)	Rabbit (female)	Increased post-implantation loss	Foetus	Experimental value
	NOAEL	EPA OPP 83-3	0.5 mg/kg bw/day	13 day(s)	Rabbit (female)	No effect		Experimental value
Maternal toxicity	LOAEL	EPA OPP 83-3	1.5 mg/kg bw/day	13 day(s)	Rabbit (female)	Weight changes		Experimental value
	NOAEL	EPA OPP 83-3	0.5 mg/kg bw/day	13 day(s)	Rabbit (female)	No effect		Experimental value
Effects on fertility	LOAEL (P/F1)	EPA OPPTS 870.3800	1.4 mg/kg bw/day - 2.8 mg/kg bw/day		Rat (male / female)	Reproductive performance		Experimental value
	NOAEL (P/F1)	EPA OPPTS 870.3800	0.7 - 1.4		Rat (male / female)	No effect		Experimental value

Conclusion

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

290mL Mungo MMK-U transparent

No (test)data on the mixture available

Chronic effects from short and long-term exposure

290mL Mungo MMK-U transparent

No effects known.

SECTION 12: Ecological information

12.1. Toxicity

290mL Mungo MMK-U transparent

No (test)data on the mixture available

Classification is based on the relevant ingredients

trimethoxyvinylsilane

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		191 mg/l	96 h	Oncorhynchus mykiss		Fresh water	Experimental value; Nominal concentration
Acute toxicity crustacea	EC50	EU Method C.2	168.7 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; GLP
Toxicity algae and other aquatic plants	ErC50		> 89 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; GLP
	NOEC		> 89 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; GLP
Long-term toxicity fish								Data waiving
Long-term toxicity aquatic crustacea	NOEC	OECD 211	28.1 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; GLP

3-(trimethoxysilyl)propylamine

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	> 934 mg/l	96 h	Danio rerio	Semi-static system	Fresh water	Read-across; GLP
Acute toxicity crustacea	EC50	OECD 202	331 mg/l	48 h	Daphnia magna	Static system	Fresh water	Read-across; GLP
Toxicity algae and other aquatic plants	EC50	EU Method C.3	> 1000 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Read-across; GLP
Toxicity aquatic micro-organisms	EC50	Other	43 mg/l	5.75 h	Pseudomonas putida	Static system	Fresh water	Read-across; GLP

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butylmalonate

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	> 100 mg/l	96 h	Danio rerio	Semi-static system	Fresh water	Experimental value; GLP
Toxicity algae and other aquatic plants	EC50	Other	61 mg/l	72 h	Scenedesmus subspicatus	Static system	Fresh water	Experimental value; Biomass
Long-term toxicity aquatic crustacea	NOEC	OECD 211	2 µg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; GLP
Toxicity aquatic micro-organisms	IC50	OECD 209	> 100 mg/l	3 h	Activated sludge	Static system	Fresh water	Experimental value

dioctylbis(pentane-2,4-dionato-O,O')tin

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		71.1 mg/l	96 h	Salmo gairdneri	Flow-through system	Fresh water	Experimental value; Nominal concentration
Acute toxicity crustacea	EC50		47.6 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Nominal concentration
Toxicity algae and other aquatic plants	ErC50	OECD 201	32 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Experimental value; GLP
Long-term toxicity fish								Data waiving
Long-term toxicity aquatic crustacea								Data waiving

pyrithione zinc

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	0.0104 mg/l	96 h	Brachydanio rerio			Experimental value
Acute toxicity crustacea	EC50	OECD 202	0.051 mg/l	48 h	Daphnia magna			Experimental value
Toxicity algae and other aquatic plants	EC50	OECD 201	0.051 mg/l	72 h	Pseudokirchneriella subcapitata			Experimental value
	NOEC	OECD 201	0.0149 mg/l	72 h	Pseudokirchneriella subcapitata			Experimental value
Long-term toxicity fish	NOEC	OECD 215	0.00125 mg/l		Brachydanio rerio			Experimental value
Long-term toxicity aquatic crustacea	NOEC	OECD 211	0.00213 mg/l	21 day(s)	Daphnia magna			Experimental value
Toxicity aquatic micro-organisms	EC50	OECD 209	2.4 mg/l	3 h	Activated sludge	Static system		Experimental value; GLP

M-factor of this substance is debatable as it does not correspond to the conclusion from the test

Conclusion

Harmful to aquatic life with long lasting effects.

12.2. Persistence and degradability

trimethoxyvinylsilane

Biodegradation water

Method	Value	Duration	Value determination
OECD 301F: Manometric Respirometry Test	51 %; GLP	28 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
	0.56 day(s)	500000 /cm³	Calculated value

Half-life water (t1/2 water)

Method	Value	Primary degradation/mineralisation	Value determination
OECD 111: Hydrolysis as a function of pH	< 2.4 h; pH = 7	Primary degradation	Weight of evidence

3-(trimethoxysilyl)propylamine

Biodegradation water

Method	Value	Duration	Value determination
EU Method C.4	67 %; GLP	28 day(s)	Experimental value

Half-life water (t1/2 water)

Method	Value	Primary degradation/mineralisation	Value determination
	4 h; pH = 7	Primary degradation	QSAR

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butylmalonate

Biodegradation water

Method	Value	Duration	Value determination
OECD 301B: CO2 Evolution Test	2 %	28 day(s)	Experimental value

dioctylbis(pentane-2,4-dionato-O,O')tin

Biodegradation water

Method	Value	Duration	Value determination
OECD 301F: Manometric Respirometry Test	9 %; GLP	28 day(s)	Experimental value

pyrithione zinc

Biodegradation water

Method	Value	Duration	Value determination
OECD 301B: CO2 Evolution Test	39 %; GLP	28 day(s)	Experimental value
OECD 303A: Activated Sludge Units	≥ 98.8 %; Activated sludge	35 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN	8.69 h		Calculated value

Phototransformation water (DT50 water)

Method	Value	Conc. OH-radicals	Value determination
Other	< 7 minutes		Experimental value

Half-life water (t1/2 water)

Method	Value	Primary degradation/mineralisation	Value determination
EPA 161-1	7.4 day(s) - 12.9 day(s); GLP	Primary degradation	Experimental value

Conclusion

Contains non readily biodegradable component(s)

12.3. Bioaccumulative potential

290mL Mungo MMK-U transparent

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

trimethoxyvinylsilane

Log Kow

Method	Remark	Value	Temperature	Value determination
KOWWIN		1.1	20 °C	QSAR

3-(trimethoxysilyl)propylamine

Log Kow

Method	Remark	Value	Temperature	Value determination
		0.2	20 °C	QSAR

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butylmalonate

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF	OECD 305	24.3 - 437.1	60 day(s)	Cyprinus carpio	Experimental value

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 107		3.7	23 °C	Experimental value
OECD 117		> 6.5	23 °C	Experimental value
Other		4.2	23 °C	Experimental value

dioctylbis(pentane-2,4-dionato-O,O')tin

Log Kow

Method	Remark	Value	Temperature	Value determination
		0.6	25 °C	Calculated

pyrithione zinc

BCF other aquatic organisms

Parameter	Method	Value	Duration	Species	Value determination
BCF	OECD 305	7.87 - 11; Fresh weight	30 day(s)	Crassostrea sp.	Experimental value

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 107		0.9	25 °C	Experimental value

Conclusion

Does not contain bioaccumulative component(s)

12.4. Mobility in soil

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butylmalonate

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	3.04 - 8.1	Calculated value

pyrithione zinc

(log) Koc

Parameter	Method	Value	Value determination
Koc	OECD 106	1700 - 25000	Experimental value
log Koc		3.2 - 4.4	Calculated value

Volatility (Henry's Law constant H)

Value	Method	Temperature	Remark	Value determination
< 0.5E-4 Pa.m³/mol				Calculated value

Conclusion

Contains component(s) that adsorb(s) into the soil

12.5. Results of PBT and vPvB assessment

Does not contain component(s) that meet(s) the criteria of PBT and/or vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006.

12.6. Other adverse effects

290mL Mungo MMK-U transparent

Greenhouse gases

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

3-(trimethoxysilyl)propylamine

Groundwater

Groundwater pollutant

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1. Waste treatment methods

13.1.1 Provisions relating to waste

European Union

Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.
Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).
08 04 09* (wastes from MFSU of adhesives and sealants (including waterproofing products): waste adhesives and sealants containing organic solvents or other hazardous substances). Depending on branch of industry and production process, also other waste codes may be applicable.

Switzerland

Sonderabfälle.
Abfallcode entsprechend 814.610.1, Verordnung des UVEK über Listen zum Verkehr mit Abfällen.
Abfälle aus Herstellung, Zubereitung, Vertrieb und Anwendung von Beschichtungen (Farben, Lacke, Email), Klebstoffen, Dichtmassen und Druckfarben: Abfälle aus Herstellung, Zubereitung, Vertrieb und Anwendung von Klebstoffen und Dichtmassen (einschliesslich wasserabweisender Materialien): Klebstoff- und Dichtmassenabfälle, die organische Lösungsmittel oder andere gefährliche Stoffe enthalten (08 04 09 S).

13.1.2 Disposal methods

Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Do not discharge into drains or the environment. Dispose of at authorized waste collection point.

13.1.3 Packaging/Container

European Union

Waste material code packaging (Directive 2008/98/EC).
15 01 10* (packaging containing residues of or contaminated by dangerous substances).

Switzerland

Abfallcode entsprechend 814.610.1, Verordnung des UVEK über Listen zum Verkehr mit Abfällen.
15 01 10 Verpackungsabfall, Aufsaugmassen, Wischtücher, Filtermaterialien und Schutzkleidung (anderswo nicht genannt): Verpackungen (einschliesslich getrennt gesammelter kommunaler Verpackungsabfälle): Verpackungen, die Rückstände von Stoffen oder von Sonderabfällen mit besonders gefährlichen Eigenschaften enthalten oder durch Stoffe oder Sonderabfälle mit besonders gefährlichen Eigenschaften verunreinigt sind (15 01 10 S).

SECTION 14: Transport information

Road (ADR), Rail (RID), Inland waterways (ADN), Sea (IMDG/IMSBC), Air (ICAO-TI/IATA-DGR)

14.1. UN number

Transport	Not subject

14.2. UN proper shipping name

14.3. Transport hazard class(es)

Hazard identification number	
Class	
Classification code	

14.4. Packing group

Packing group	
Labels	

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	
Limited quantities	

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

Annex II of MARPOL 73/78	Not applicable, based on available data

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
4.6 %	
48.4 g/l	

REACH Annex XVII - Restriction

Contains component(s) subject to restrictions of Annex XVII of Regulation (EC) No 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

	Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
· trimethoxyvinylsilane · 3-(trimethoxysilyl)propylamine · dioctylbis(pentane-2,4-dionato-O,O')tin	Liquid substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: (a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F; (b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10; (c) hazard class 4.1; (d) hazard class 5.1.	1. Shall not be used in: — ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, — tricks and jokes, — games for one or more participants, or any article intended to be used as such, even with ornamental aspects, 2. Articles not complying with paragraph 1 shall not be placed on the market. 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they: — can be used as fuel in decorative oil lamps for supply to the general public, and, — present an aspiration hazard and are labelled with H304, 4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN). 5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met: a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: “Keep lamps filled with this liquid out of the reach of children”; and, by 1 December 2010, “Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life- threatening lung damage”; b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: “Just a sip of grill lighter may lead to life threatening lung damage”; c) lamp oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010. 6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled H304, intended for supply to the general public. 7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.'
· dioctylbis(pentane-2,4-dionato-O,O')tin	Organostannic compounds	1. Shall not be placed on the market, or used, as substances or in mixtures where the substance or mixture is acting as biocide in free association paint. 2. Shall not be placed on the market, or used, as substances or in mixtures where the substance or mixture acts as biocide to prevent the fouling by micro-organisms, plants or animals of: (a) all craft irrespective of their length intended for use in marine, coastal, estuarine and inland waterways and lakes; (b) cages, floats, nets and any other appliances or equipment used for fish or shellfish farming; (c) any totally or partly submerged appliance or equipment. 3. Shall not be placed on the market, or used, as substances or in mixtures where the substance or mixture is intended for use in the treatment of industrial waters. 4. Tri-substituted organostannic compounds: a) Tri-substituted organostannic compounds such as tributyltin (TBT) compounds and triphenyltin (TPT) compounds shall not be used after 1 July 2010 in articles where the concentration in the article, or part thereof, is greater than the equivalent of 0,1 % by weight of tin. b) Articles not complying with point (a) shall not be placed on the market after 1 July

		2010, except for articles that were already in use in the Community before that date. 5. Dibutyltin (DBT) compounds: a) Dibutyltin (DBT) compounds shall not be used after 1 January 2012 in mixtures and articles for supply to the general public where the concentration in the mixture or the article, or part thereof, is greater than the equivalent of 0,1 % by weight of tin. b) Articles and mixtures not complying with point (a) shall not be placed on the market after 1 January 2012, except for articles that were already in use in the Community before that date. c) By way of derogation, points (a) and (b) shall not apply until 1 January 2015 to the following articles and mixtures for supply to the general public: — one-component and two-component room temperature vulcanisation sealants (RTV-1 and RTV-2 sealants) and adhesives, — paints and coatings containing DBT compounds as catalysts when applied on articles, — soft polyvinyl chloride (PVC) profiles whether by themselves or coextruded with hard PVC, — fabrics coated with PVC containing DBT compounds as stabilisers when intended for outdoor applications, — outdoor rainwater pipes, gutters and fittings, as well as covering material for roofing and façades, d) By way of derogation, points (a) and (b) shall not apply to materials and articles regulated under Regulation (EC) No 1935/2004. 6. Dioctyltin (DOT) compound: (a) Dioctyltin (DOT) compounds shall not be used after 1 January 2012 in the following articles for supply to, or use by, the general public, where the concentration in the article, or part thereof, is greater than the equivalent of 0,1 % by weight of tin: — textile articles intended to come into contact with the skin, — gloves, — footwear or part of footwear intended to come into contact with the skin, — wall and floor coverings, — childcare articles, — female hygiene products, — nappies, — two-component room temperature vulcanisation moulding kits (RTV-2 moulding kits). (b) Articles not complying with point (a) shall not be placed on the market after 1 January 2012, except for articles that were already in use in the Community before that date.
· trimethoxyvinylsilane	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to that Regulation or not.	1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following: — metallic glitter intended mainly for decoration, — artificial snow and frost, — “whoopee” cushions, — silly string aerosols, — imitation excrement, — horns for parties, — decorative flakes and foams, — artificial cobwebs, — stink bombs. 2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with: “For professional users only”. 3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/ 324/EEC. 4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

National legislation France

290mL Mungo MMK-U transparent

No data available

National legislation United Kingdom

290mL Mungo MMK-U transparent

No data available

dioctylbis(pentane-2,4-dionato-O,O')tin

Skin absorption	Tin compounds, organic, except Cyhexatin (ISO), (as Sn); Sk

National legislation Spain

290mL Mungo MMK-U transparent

No data available

dioctylbis(pentane-2,4-dionato-O,O')tin

La absorción por la vía dérmica	Estaño: Compuestos orgánicos, como Sn; vía dérmica

National legislation Switzerland

290mL Mungo MMK-U transparent

Ordonnance sur la protection de la maternité (RS_822.111.52)	
Ordonnance du DEFR sur les travaux dangereux pour les jeunes (RS_822.115.2)	
Ordonnance sur la protection des jeunes travailleurs, OLT5 (RS_822.115)	
Ordonnance sur la protection de l’air, OPair	

Ordonnance sur la réduction des risques liés aux produits chimiques, ORRChim (RS_814.81)	
Ordonnance PIC, OPICChim (RS_814.82)	
Ordonnance sur les produits chimiques, OChim (RS_813.11)	Non classé dans le groupe 1 ou 2
Classification des liquides dangereux pour les eaux (OFEV)	A
Ordonnance COV, OCOV (RS_814.018)	4.6 %
	48.438 g/l
Ordonnance sur les accidents majeurs, OPAM (RS_814.012)	Not applicable

dioctylbis(pentane-2,4-dionato-O,O')tin

Hautresorption	H; Possibilité d'intoxication par résorption transcutanée
Reproduktionstoxische (fortpflanzungsgefährdende) Arbeitsstoffe [Beeinträchtigung der Fortpflanzungsfähigkeit (Fruchtbarkeit)]	B; On ne peut exclure des atteintes foetales même si la VME a été respectée.

National legislation Poland

290mL Mungo MMK-U transparent

No data available

Other relevant data

290mL Mungo MMK-U transparent

No data available

dioctylbis(pentane-2,4-dionato-O,O')tin

TLV - Carcinogen	Tin organic compounds, as Sn; A4
Skin absorption	Tin organic compounds, as Sn; Skin; Danger of cutaneous absorption

15.2. Chemical safety assessment

No chemical safety assessment has been conducted for the mixture.

SECTION 16: Other information

Full text of any H-statements referred to under heading 3:

H226 Flammable liquid and vapour.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H332 Harmful if inhaled.
H371 May cause damage to organs (immune system) if swallowed.
H372 Causes damage to organs (liver, lymph nodes, spleen) through prolonged or repeated exposure.
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.

(*)	INTERNAL CLASSIFICATION BY BIG
ADI	Acceptable daily intake
AOEL	Acceptable operator exposure level
CLP (EU-GHS)	Classification, labelling and packaging (Globally Harmonised System in Europe)
DMEL	Derived Minimal Effect Level
DNEL	Derived No Effect Level
EC50	Effect Concentration 50 %
ErC50	EC50 in terms of reduction of growth rate
LC50	Lethal Concentration 50 %
LD50	Lethal Dose 50 %
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, Bioaccumulative & Toxic
PNEC	Predicted No Effect Concentration
STP	Sludge Treatment Process
vPvB	very Persistent & very Bioaccumulative

M-factor

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butylmalonate	10	Chronic	ECHA
pyrithione zinc	10	Acute	Customer information THOR (2014-10-27)
pyrithione zinc	1	Chronic	Customer information THOR (2014-10-27)

Specific concentration limits CLP

dioctylbis(pentane-2,4-dionato-O,O')tin	C > 5 %	Skin Sens. 1; H317	ECHA

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.