

Muki AC

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

1.1 Product identifier

Product name : Muki AC
Product code : 2480
Product description : Paint.
Product type : Liquid.
Other means of identification : Not available.

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

Use in coatings - Industrial use

1.3 Details of the supplier of the safety data sheet

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National contact

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Tel: +353 214 965955
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SDSJotun@jotun.com

1.4 Emergency telephone number

Poisons Information Centre of Ireland: +353 1 809 3000 (8am-10pm, 7 days a week)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Aquatic Chronic 2, H411

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Muki AC

SECTION 2: Hazards identification

Hazard pictograms :



Signal word : No signal word.

Hazard statements : H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements

General : Not applicable.

Prevention : P273 - Avoid release to the environment.

Response : P391 - Collect spillage.

Storage : Not applicable.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : EUH208 - Contains 5-decyne-4,7-diol, 2,4,7,9-tetramethyl- and 1,2-benzisothiazol-3(2H)-one (BIT). May produce an allergic reaction.
EUH211 - Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
trizinc bis(orthophosphate)	REACH #: 01-2119485044-40 EC: 231-944-3 CAS: 7779-90-0 Index: 030-011-00-6	≤3	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M [Acute] = 1 M [Chronic] = 1	[1]
propan-2-ol	REACH #: 01-2119457558-25 EC: 200-661-7 CAS: 67-63-0 Index: 603-117-00-0	≤3	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336	-	[1] [2]

Muki AC

SECTION 3: Composition/information on ingredients

2-butoxyethanol	REACH #: 01-2119475108-36 EC: 203-905-0 CAS: 111-76-2 Index: 603-014-00-0	≤3	Acute Tox. 4, H302 Acute Tox. 3, H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319	ATE [Oral] = 1200 mg/kg ATE [Inhalation (vapours)] = 3 mg/l	[1] [2]
zinc oxide	REACH #: 01-2119463881-32 EC: 215-222-5 CAS: 1314-13-2 Index: 030-013-00-7	≤1	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M [Acute] = 1 M [Chronic] = 1	[1]
5-decyne-4,7-diol, 2,4,7,9-tetramethyl-	REACH #: 01-2119954390-39 EC: 204-809-1 CAS: 126-86-3	<1	Eye Dam. 1, H318 Skin Sens. 1B, H317 Aquatic Chronic 3, H412	-	[1]
1,2-benzisothiazol-3(2h)-one (BIT)	EC: 220-120-9 CAS: 2634-33-5 Index: 613-088-00-6	<0.05	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Acute 1, H400 See Section 16 for the full text of the H statements declared above.	ATE [Oral] = 500 mg/kg Skin Sens. 1, H317: C ≥ 0.05% M [Acute] = 1	[1]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

This mixture contains ≥ 1% of titanium dioxide. The Annex VI classification of titanium dioxide does not apply to this mixture according to Note 10.

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures**4.1 Description of first aid measures**

- General** : In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical advice.
- Eye contact** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do NOT induce vomiting.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Muki AC

SECTION 4: First aid measures

There are no data available on the mixture itself. The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Contains 5-decyne-4,7-diol, 2,4,7,9-tetramethyl-, 1,2-benzisothiazol-3(2H)-one (BIT). May produce an allergic reaction.

Over-exposure signs/symptoms

Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: No specific data.
Ingestion	: No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: No specific treatment.

See toxicological information (Section 11)

SECTION 5: Firefighting measures**5.1 Extinguishing media**

Suitable extinguishing media	: Recommended: alcohol-resistant foam, CO ₂ , powders, water spray.
Unsuitable extinguishing media	: Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	: Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.
Hazardous combustion products	: Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

5.3 Advice for firefighters

Special protective actions for fire-fighters	: Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses.
Special protective equipment for fire-fighters	: Appropriate breathing apparatus may be required.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

For non-emergency personnel	: Avoid breathing vapour or mist. Refer to protective measures listed in sections 7 and 8.
For emergency responders	: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

: Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.
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Muki AC

SECTION 6: Accidental release measures

6.3 Methods and material for containment and cleaning up : Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Preferably clean with a detergent. Avoid using solvents.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour, spray or mist.
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.
Put on appropriate personal protective equipment (see Section 8).
Never use pressure to empty. Container is not a pressure vessel.
Always keep in containers made from the same material as the original one.
Comply with the health and safety at work laws.
Do not allow to enter drains or watercourses.

When operators, whether spraying or not, have to work inside the spray booth, ventilation is unlikely to be sufficient to control particulates and solvent vapour in all cases. In such circumstances they should wear a compressed air-fed respirator during the spraying process and until such time as the particulates and solvent vapour concentration has fallen below the exposure limits.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations.

Notes on joint storage

Keep away from: oxidising agents, strong alkalis, strong acids.

Additional information on storage conditions

Store in a dry, cool and well-ventilated area. Keep container tightly closed.

No smoking. Prevent unauthorised access. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Seveso Directive - Reporting thresholds**Danger criteria**

Category	Notification and MAPP threshold	Safety report threshold
E2	200 tonne	500 tonne

See Technical Data Sheet / packaging for further information.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters**Occupational exposure limits**

Muki AC

SECTION 8: Exposure controls/personal protection

Product/ingredient name	Exposure limit values
propan-2-ol	EH40/2005 WELs (United Kingdom (UK), 1/2020). STEL: 1250 mg/m ³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 999 mg/m ³ 8 hours. TWA: 400 ppm 8 hours.
2-butoxyethanol	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. STEL: 50 ppm 15 minutes. TWA: 25 ppm 8 hours. STEL: 246 mg/m ³ 15 minutes. TWA: 123 mg/m ³ 8 hours.

Recommended monitoring procedures : Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
trizinc bis(orthophosphate)	DNEL	Long term Dermal	83 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	5 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	83 mg/kg bw/day	General population [Consumers]	Systemic
	DNEL	Long term Inhalation	2.5 mg/m ³	General population [Consumers]	Systemic
	DNEL	Long term Oral	0.83 mg/kg bw/day	General population [Consumers]	Systemic
	DNEL	Long term Oral	0.83 mg/kg bw/day	General population [Consumers]	Systemic
	DNEL	Long term Inhalation	2.5 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	5 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	83 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	83 mg/kg bw/day	Workers	Systemic
propan-2-ol	DNEL	Long term Dermal	888 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	500 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	319 mg/kg bw/day	General population [Consumers]	Systemic
	DNEL	Long term Inhalation	89 mg/m ³	Workers	Systemic
	DNEL	Long term Oral	26 mg/kg bw/day	General population [Consumers]	Systemic
	DNEL	Long term Oral	26 mg/kg	General	Systemic

Muki AC

SECTION 8: Exposure controls/personal protection

2-butoxyethanol	DNEL	Long term Inhalation	bw/day 89 mg/m ³	population General population	Systemic	
	DNEL	Long term Dermal	319 mg/kg bw/day	General population	Systemic	
	DNEL	Long term Inhalation	500 mg/m ³	Workers	Systemic	
	DNEL	Long term Dermal	888 mg/kg bw/day	Workers	Systemic	
	DNEL	Short term Dermal	89 mg/kg bw/day	Workers	Systemic	
	DNEL	Short term Inhalation	663 mg/m ³	Workers	Systemic	
	DNEL	Short term Inhalation	246 mg/m ³	Workers	Local	
	DNEL	Long term Dermal	75 mg/kg bw/day	Workers	Systemic	
	DNEL	Long term Inhalation	98 mg/m ³	Workers	Systemic	
	DNEL	Short term Dermal	44.5 mg/ kg bw/day	General population [Consumers]	Systemic	
	DNEL	Short term Inhalation	426 mg/m ³	General population [Consumers]	Systemic	
	DNEL	Short term Oral	13.4 mg/ kg bw/day	Workers	Systemic	
	DNEL	Short term Inhalation	123 mg/m ³	General population [Consumers]	Local	
	DNEL	Long term Dermal	38 mg/kg bw/day	General population [Consumers]	Systemic	
	DNEL	Long term Inhalation	49 mg/m ³	General population [Consumers]	Systemic	
	DNEL	Long term Oral	3.2 mg/kg bw/day	General population [Consumers]	Systemic	
	DNEL	Long term Oral	6.3 mg/kg bw/day	General population	Systemic	
	DNEL	Short term Oral	26.7 mg/ kg bw/day	General population	Systemic	
	zinc oxide	DNEL	Long term Inhalation	59 mg/m ³	General population	Systemic
		DNEL	Long term Inhalation	98 mg/m ³	Workers	Systemic
DNEL		Short term Inhalation	147 mg/m ³	General population	Local	
DNEL		Short term Inhalation	246 mg/m ³	Workers	Local	
DNEL		Short term Inhalation	426 mg/m ³	General population	Systemic	
DNEL		Short term Inhalation	1091 mg/ m ³	Workers	Systemic	
DNEL		Long term Dermal	83 mg/kg bw/day	Workers	Systemic	
DNEL		Long term Inhalation	5 mg/m ³	Workers	Systemic	
DNEL		Long term Dermal	83 mg/kg bw/day	General population [Consumers]	Systemic	
DNEL		Long term	2.5 mg/m ³	General	Systemic	

Muki AC

SECTION 8: Exposure controls/personal protection

5-decyne-4,7-diol, 2,4,7,9-tetramethyl-		Inhalation		population [Consumers]	
	DNEL	Long term Oral	0.83 mg/ kg bw/day	General population [Consumers]	Systemic
	DNEL	Long term Inhalation	0.5 mg/m ³	Workers	Local
	DNEL	Long term Oral	0.83 mg/ kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	2.5 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	5 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	83 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	83 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Oral	0.25 mg/ kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.25 mg/ kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.43 mg/m ³	General population	Systemic
	DNEL	Long term Dermal	0.5 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Oral	0.75 mg/ kg bw/day	General population	Systemic
	DNEL	Short term Dermal	0.75 mg/ kg bw/day	General population	Systemic
1,2-benzisothiazol-3(2h)-one (BIT)	DNEL	Short term Inhalation	1.29 mg/m ³	General population	Systemic
	DNEL	Short term Dermal	1.5 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	1.76 mg/m ³	Workers	Systemic
	DNEL	Short term Inhalation	5.28 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	0.345 mg/ kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.966 mg/ kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	1.2 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	6.81 mg/m ³	Workers	Systemic

PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
trizinc bis(orthophosphate)	Fresh water	20.6 µg/l	-
	Marine	6.1 µg/l	-
	Sewage Treatment Plant	52 µg/l	-
propan-2-ol	Fresh water sediment	117.8 mg/kg dwt	-
	Marine water sediment	56.5 mg/kg dwt	-
	Soil	35.6 mg/kg dwt	-
	Fresh water	140.9 mg/l	-
	Marine	140.9 mg/l	-
	Sewage Treatment Plant	2251 mg/l	-
	Fresh water sediment	552 mg/kg dwt	-
	Marine water sediment	552 mg/kg dwt	-
	Soil	28 mg/kg dwt	-

Muki AC

SECTION 8: Exposure controls/personal protection

2-butoxyethanol	Secondary Poisoning	160 mg/kg	-	
	Fresh water	8.8 mg/l	-	
	Marine	0.88 mg/l	-	
	Sewage Treatment Plant	463 mg/l	-	
	Fresh water sediment	34.6 mg/kg dwt	-	
	Marine water sediment	3.46 mg/kg dwt	-	
	Soil	3.13 mg/kg dwt	-	
	Secondary Poisoning	20 mg/kg	-	
	zinc oxide	Fresh water	20.6 µg/l	-
		Marine	6.1 µg/l	-
Sewage Treatment Plant		52 µg/l	-	
Fresh water sediment		117.8 mg/kg dwt	-	
Marine water sediment		56.5 mg/kg dwt	-	
Soil		35.6 mg/kg dwt	-	

8.2 Exposure controls

Appropriate engineering controls : Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying to ISO 16321-1:2022 should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

The breakthrough time must be greater than the end use time of the product.

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Always ensure that gloves are free from defects and that they are stored and used correctly.

The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance.

Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

Gloves

Wear suitable gloves tested to ISO 374-1:2016.

Recommended, gloves(breakthrough time) > 8 hours: Viton® (> 0.7 mm), 4H/Silver Shield® (> 0.07 mm), nitrile rubber (> 0.4 mm), neoprene (> 0.35 mm), butyl rubber (> 0.4 mm), fluor rubber (> 0.35 mm)

May be used, gloves(breakthrough time) 4 - 8 hours: Teflon (> 0.35 mm), PVC (> 0.5 mm), polyvinyl alcohol (PVA) (> 0.3 mm)

For right choice of glove materials, with focus on chemical resistance and time of penetration, seek advice by the supplier of chemical resistant gloves.

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

Body protection : Not applicable.

Muki AC

SECTION 8: Exposure controls/personal protection

- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits. By spraying : particulate filter (FFP2 / N95). In confined spaces, use compressed-air or fresh-air respiratory equipment.
- Environmental exposure controls** : Do not allow to enter drains or watercourses.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties**Appearance**

- Physical state** : Liquid.
- Colour** : Black, Grey, Red
- Odour** : Characteristic.
- Odour threshold** : Not applicable.
- Melting point/freezing point** : 0
- Initial boiling point and boiling range** : Lowest known value: 83°C (181.4°F) (propan-2-ol). Weighted average: 101.75°C (215.2°F)
- Flammability** : Not applicable.
- Lower and upper explosion limit** : 1.1 - 12.7%
- Flash point** : Closed cup: 70°C
- Auto-ignition temperature** : Lowest known value: 230°C (446°F) (2-butoxyethanol).
- Decomposition temperature** : Not available.
- pH** : 9.5 [Conc. (% w/w): 100%]
- Viscosity** : Kinematic (40°C): >20.5 mm²/s
- Solubility in water** : cold water Easily soluble
hot water Easily soluble
- Partition coefficient: n-octanol/ water** : Not available.
- Vapour pressure** : Highest known value: 4.4 kPa (33 mm Hg) (at 20°C) (propan-2-ol). Weighted average: 3.14 kPa (23.55 mm Hg) (at 20°C)
- Evaporation rate** : Highest known value: 1.7 (propan-2-ol) Weighted average: 0.4 compared with butyl acetate
- Density** : 1.2 to 1.225 g/cm³
- Vapour density** : Highest known value: 4.1 (Air = 1) (2-butoxyethanol). Weighted average: 3.08 (Air = 1)
- Explosive properties** : Not available.
- Oxidising properties** : Not available.
- Particle characteristics**
- Median particle size** : Not applicable.

9.2 Other information

No additional information.

Muki AC

SECTION 10: Stability and reactivity

- 10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- 10.2 Chemical stability** : Stable under recommended storage and handling conditions (see Section 7).
- 10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 Conditions to avoid** : When exposed to high temperatures may produce hazardous decomposition products.
- 10.5 Incompatible materials** : Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids.
- 10.6 Hazardous decomposition products** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

SECTION 11: Toxicological information**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

There are no data available on the mixture itself. The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Contains 5-decyne-4,7-diol, 2,4,7,9-tetramethyl-, 1,2-benzisothiazol-3(2H)-one (BIT). May produce an allergic reaction.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
propan-2-ol	LD50 Dermal	Rabbit	12800 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
2-butoxyethanol	LD50 Oral	Guinea pig - Male, Female	1414 mg/kg	-
	LD50 Oral	Rat - Male, Female	1300 mg/kg	-
1,2-benzisothiazol-3(2h)-one (BIT)	LC50 Inhalation Dusts and mists	Rat	40 mg/l	4 hours
	LD50 Oral	Rat	485 mg/kg	-

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Muki AC	76433.1	N/A	N/A	191.1	N/A
propan-2-ol	5000	12800	N/A	N/A	N/A
2-butoxyethanol	1200	N/A	N/A	3	N/A
1,2-benzisothiazol-3(2h)-one (BIT)	500	N/A	N/A	N/A	N/A

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
propan-2-ol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
2-butoxyethanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
zinc oxide	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
5-decyne-4,7-diol,	Eyes - Irritant	Mammal -	-	-	-

Muki AC

SECTION 11: Toxicological information

2,4,7,9-tetramethyl- 1,2-benzisothiazol-3(2h)-one (BIT)	Eyes - Severe irritant Skin - Mild irritant Eyes - Irritant Skin - Mild irritant	species unspecified Rabbit Rabbit Mammal - species unspecified Mammal - species unspecified	- - - -	0.1 Milliliters 0.5 Grams - -	- - - -
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Sensitisation

Product/ingredient name	Route of exposure	Species	Result
5-decyne-4,7-diol, 2,4,7,9-tetramethyl- 1,2-benzisothiazol-3(2h)-one (BIT)	skin	Mammal - species unspecified	Sensitising
	skin	Mouse	Sensitising

Mutagenicity

No known significant effects or critical hazards.

Carcinogenicity

No known significant effects or critical hazards.

Reproductive toxicity**Developmental effects** : No known significant effects or critical hazards.**Fertility effects** : No known significant effects or critical hazards.**Teratogenicity**

No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
propan-2-ol	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2 Information on other hazards**11.2.1 Endocrine disrupting properties**

Not available.

11.2.2 Other information

Not available.

SECTION 12: Ecological information**12.1 Toxicity**There are no data available on the mixture itself.
Do not allow to enter drains or watercourses.

The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is classified for eco-toxicological properties accordingly. See Sections 2 and 3 for details.

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SECTION 12: Ecological information

Product/ingredient name	Result	Species	Exposure
trizinc bis(orthophosphate)	Acute LC50 0.14 mg/l Chronic NOEC 0.1 mg/l	Fish - Oncorhynchus mykiss Micro-organism	96 hours 4 hours
propan-2-ol	Acute EC50 10100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
2-butoxyethanol	Acute LC50 4200 mg/l Fresh water Acute EC50 1000 mg/l Fresh water Acute LC50 1000 mg/l Marine water	Fish - Rasbora heteromorpha Daphnia - Daphnia magna Crustaceans - Chaetogammarus marinus - Young	96 hours 48 hours 48 hours
zinc oxide	Acute LC50 1.1 ppm Fresh water Chronic NOEC 0.02 mg/l Fresh water	Fish - Oncorhynchus mykiss Algae - Pseudokirchneriella subcapitata - Exponential growth phase	96 hours 72 hours
5-decyne-4,7-diol, 2,4,7,9-tetramethyl-	Acute EC50 82 mg/l	Algae	72 hours
1,2-benzisothiazol-3(2h)-one (BIT)	Acute EC50 91 mg/l	Daphnia	48 hours
	Acute LC50 36 mg/l	Fish	96 hours
	Acute EC50 0.15 mg/l	Algae - Slenastrum capricornutum	72 hours
	Acute EC50 1.05 mg/l Acute LC50 1.4 mg/l	Crustaceans - Daphnia magna Fish - Onchorhynchus mykiss	96 hours 96 hours

Conclusion/Summary : Water polluting material. May be harmful to the environment if released in large quantities. This material is toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
trizinc bis(orthophosphate)	-	-	Not readily
zinc oxide	-	-	Not readily
5-decyne-4,7-diol, 2,4,7,9-tetramethyl-	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
trizinc bis(orthophosphate)	-	60960	high
propan-2-ol	0.05	-	low
2-butoxyethanol	0.81	-	low
zinc oxide	-	28960	high

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

Not available.

12.7 Other adverse effects

No known significant effects or critical hazards.

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SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

Disposal considerations : Do not allow to enter drains or watercourses. Dispose of according to all federal, state and local applicable regulations. If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned. For further information, contact your local waste authority.

European waste catalogue (EWC)

The European Waste Catalogue classification of this product, when disposed of as waste, is:

Waste code	Waste designation
08 01 11*	Waste paint and varnish containing organic solvents or other dangerous substances

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Disposal considerations : Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers. Empty containers must be scrapped or reconditioned. Dispose of containers contaminated by the product in accordance with local or national legal provisions.

Type of packaging	European waste catalogue (EWC)
CEPE Guidelines	15 01 10* packaging containing residues of or contaminated by hazardous substances

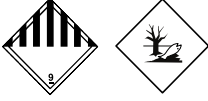
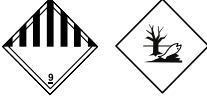
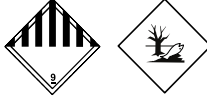

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number or ID number	UN3082	UN3082	UN3082	UN3082
14.2 UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (trizinc bis (orthophosphate), zinc oxide)	Environmentally hazardous substance, liquid, n.o.s. (trizinc bis (orthophosphate), zinc oxide)	Environmentally hazardous substance, liquid, n.o.s. (trizinc bis (orthophosphate), zinc oxide). Marine pollutant (trizinc bis (orthophosphate))	Environmentally hazardous substance, liquid, n.o.s. (trizinc bis (orthophosphate), zinc oxide)

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SECTION 14: Transport information

14.3 Transport hazard class(es)	9 	9 	9 	9 
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	Yes.	Yes.	Yes.	Yes.

Additional information

ADR/RID : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Hazard identification number 90
Tunnel code (-)

ADN : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

IMDG : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Emergency schedules F-A, S-F

IATA : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Maritime transport in bulk according to IMO instruments : Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

VOC : The provisions of Directive 2004/42/EC on VOC apply to this product. Refer to the product label and/or technical data sheet for further information.

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SECTION 15: Regulatory information

VOC for Ready-for-Use Mixture : Not available.

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product may add to the calculation for determining whether a site is within the scope of the Seveso Directive on major accident hazards.

National regulations

Industrial use : The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation. The provisions of the national health and safety at work regulations apply to the use of this product at work.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

15.2 Chemical safety assessment : Not applicable.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms :

- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- N/A = Not available
- PBT = Persistent, Bioaccumulative and Toxic
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number

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SECTION 16: Other information

SGG = Segregation Group

vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Aquatic Chronic 2, H411	Calculation method

Full text of abbreviated H statements

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
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.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

Acute Tox. 3	ACUTE TOXICITY - Category 3
Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1B	SKIN SENSITISATION - Category 1B
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

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