


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

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

1.1 Product identifier

Product name : Hempafire Optima 500
Product identity :  888010000, 000D7DE4
Product type : intumescent. acrylic water-borne paint

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

Field of application : buildings and metal industry.
Identified uses : Industrial applications, Professional applications, Used by spraying.

1.3 Details of the supplier of the safety data sheet

Company details : HEMPEL A/S
Lundtoftegårdsvej 91
DK-2800 Kgs. Lyngby
Denmark
Tel.: + 45 45 93 38 00
hempel@hempel.com
Date of issue : 13 November 2023
Date of previous issue : 18 November 2022.

1.4 Emergency telephone number

Emergency telephone number (with hours of operation)

+45 45 93 38 00 (08.00 - 17.00)
See section 4 First aid measures.

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]
Skin Sens. 1, H317 SKIN SENSITIZATION
Carc. 2, H351 CARCINOGENICITY
Repr. 2, H361f TOXIC TO REPRODUCTION
See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



Signal word : Warning
Hazard statements : H317 - May cause an allergic skin reaction.
H351 - Suspected of causing cancer.
H361f - Suspected of damaging fertility.
Precautionary statements :
Prevention : Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection.
Hazardous ingredients :  Isomelamine
1,2-benzisothiazol-3(2H)-one
2-methylisothiazol-3(2H)-one
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)
Supplemental label elements :  Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

Special packaging requirements


Containers to be fitted with child-resistant fastenings : Not applicable.
Tactile warning of danger : Not applicable.

2.3 Other hazards

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

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
 Titanium dioxide	REACH #: 01-2119489379-17 EC: 236-675-5 CAS: 13463-67-7 Index: 022-006-00-2	≥10 - ≤25	Carc. 2, H351 (inhalation)	[1] [*]
Isomelamine	REACH #: 01-2119485947-16 EC: 203-615-4 CAS: 108-78-1 Index: 613-345-00-2	≥5 - <10	Carc. 2, H351 Repr. 2, H361f STOT RE 2, H373 (urinary system)	[1] [2]
trimethylolpropane	REACH #: 01-2119486799-10 EC: 201-074-9 CAS: 77-99-6	≤0.3	Repr. 2, H361fd	[1]
1,2-benzisothiazol-3(2H)-one	REACH #: 01-2120761540-60 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	[1]
2-methylisothiazol-3(2H)-one	REACH #: 01-2120764690-50 EC: 220-239-6 CAS: 2682-20-4 Index: 613-326-00-9	<0.01	Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 2, H330 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 EUH071	[1]
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	REACH #: 01-2120764691-48 CAS: 55965-84-9 Index: 613-167-00-5	<0.001	Acute Tox. 3, H301 Acute Tox. 2, H310 Acute Tox. 2, H330 Skin Corr. 1C, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 EUH071	[1]

ATE [Oral] = 670 mg/kg
Skin Sens. 1, H317: C ≥ 0.05%
M [Acute] = 1


ATE [Oral] = 183 mg/kg
ATE [Dermal] = 242 mg/kg
ATE [Inhalation (dusts and mists)] = 0.11 mg/l
Skin Sens. 1, H317: C ≥ 0.0015%
M [Acute] = 10
M [Chronic] = 1

ATE [Oral] = 69 mg/kg
ATE [Dermal] = 50 mg/kg
ATE [Inhalation (vapours)] = 0.5 mg/l
Skin Corr. 1C, H314: C ≥ 0.6%
Skin Irrit. 2, H315: 0.06% ≤ C < 0.6%
Eye Dam. 1, H318: C ≥ 0.6%
Eye Irrit. 2, H319: 0.06% ≤ C < 0.6%
Skin Sens. 1, H317: C ≥ 0.0015%
M [Acute] = 100
M [Chronic] = 100

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

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 and hence require reporting in this section.

Type



 Substance classified with a health or environmental hazard

[2] Substance of equivalent concern

[*] The classification as a carcinogen by inhalation applies only to mixtures placed on the market in powder form containing 1% or more of titanium dioxide particles with aerodynamic diameter ≤ 10 µm not bound within a matrix.

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 breathing is irregular, drowsiness, loss of consciousness or cramps: Call 112 and give immediate treatment (first aid).
Eye contact :	 Check for and remove any contact lenses. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. In all cases of doubt, or when symptoms persist, seek medical attention.
Inhalation :	 Remove to fresh air and keep at rest in a position comfortable for breathing. Give nothing by mouth. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately.
Skin contact :	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
Ingestion :	If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do not induce vomiting unless directed to do so by medical personnel. Lower the head so that vomit will not re-enter the mouth and throat.

SECTION 4: First aid measures

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.
Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations
Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations
Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : If gasses have been inhaled, from the decomposition of the product, symptoms may be delayed. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Extinguishing media : Recommended: alcohol resistant foam, CO₂, powders, water spray.
Not to be used: waterjet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products : Decomposition products may include the following materials: carbon oxides nitrogen oxides phosphorus oxides metal oxide/oxides

5.3 Advice for firefighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard. Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

⚠️ Avoid all direct contact with the spilled material. Refer to protective measures listed in sections 7 and 8. No action shall be taken involving any personal risk or without suitable training. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

6.2 Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

⚠️ Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. 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). Contaminated absorbent material may pose the same hazard as the spilled product.

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

7.1 Precautions for safe handling

⚠️ Avoid inhalation of vapour, dust and spray mist. Avoid contact with skin and eyes. Eating, drinking and smoking should be prohibited in area where this material is handled, stored and processed. Appropriate personal protective equipment: see Section 8. Always keep in containers made from the same material as the original one.

7.2 Conditions for safe storage, including any incompatibilities

⚠️ Store in accordance with local regulations. Store in a cool, well-ventilated area away from incompatible materials and ignition sources. Keep out of the reach of children. Keep away from: Oxidizing agents, strong alkalis, strong acids. No smoking. Prevent unauthorized access. Containers that are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

See separate Product Data Sheet for recommendations or industrial sector specific solutions.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Product/ingredient name	Exposure limit values
No exposure limit value known.	

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. 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.

Derived effect levels

Product/ingredient name	Type	Exposure	Value	Population	Effects
Isomelamine	DNEL	Long term Dermal	11.8 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	8.3 mg/m ³	Workers	Systemic
trimethylolpropane	DNEL	Long term Dermal	0.94 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	3.3 mg/m ³	Workers	Systemic
1,2-benzisothiazol-3(2H)-one	DNEL	Long term Dermal	0.966 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	6.81 mg/m ³	Workers	Systemic

Predicted effect concentrations

SECTION 8: Exposure controls/personal protection

Product/ingredient name	Compartment Detail	Value	Method Detail
Isomelamine	Fresh water	0.51 mg/l	Assessment Factors
	Marine water	0.051 mg/l	Assessment Factors
	Sewage Treatment Plant	200 mg/l	Assessment Factors
1,2-benzisothiazol-3(2H)-one	Fresh water sediment	2.524 mg/kg dwt	Assessment Factors
	Marine water sediment	0.252 mg/kg dwt	Assessment Factors
	Soil	0.206 mg/kg dwt	Assessment Factors
	Fresh water	0.00403 mg/l	-
	Marine water	0.000403 mg/l	-
2-methylisothiazol-3(2H)-one	Sewage Treatment Plant	1.03 mg/l	-
	Fresh water sediment	0.0499 mg/kg dwt	-
	Marine water sediment	0.00499 mg/kg dwt	-
	Soil	3 mg/kg dwt	-
	Fresh water	0.0039 mg/l	-
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	Marine water	0.0039 mg/l	-
	Sewage Treatment Plant	0.23 mg/l	-
	Soil	0.047 mg/kg dwt	-
	Fresh water	0.049 µg/l	-
	Marine water	0.0098 µg/l	-
	Sewage Treatment Plant	0.045 µg/l	-
	Soil	0.009 µg/l	-

8.2 Exposure controls

Appropriate engineering controls

Arrange sufficient ventilation by local exhaust ventilation and good general ventilation to keep the airborne concentrations of vapors or dust lowest possible and below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the workstation location.

Individual protection measures

- General :** Gloves must be worn for all work that may result in soiling. Apron/coveralls/protective clothing must be worn when soiling is so great that regular work clothes do not adequately protect skin against contact with the product. Safety eyewear should be used when there is a likelihood of exposure.
- Hygiene measures :** Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.
- Eye/face protection :** Safety eyewear complying with an approved standard 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.
- Hand protection :** Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training. The quality of the chemical-resistant protective gloves must be chosen as a function of the specific workplace concentrations and quantity of hazardous substances.
Since the actual work situation is unknown. Supplier of gloves should be contacted in order to find the appropriate type. Below listed glove(s) should be regarded as generic advice:

Recommended: Silver Shield / Barrier / 4H gloves, nitrile rubber, neoprene rubber, butyl rubber, natural rubber (latex), polyvinyl alcohol (PVA), polyvinyl chloride (PVC), Viton®
- Body protection :** Personal protective equipment for the body should be selected based on the task being performed and the risks involved handling this product.
Wear suitable protective clothing. Always wear protective clothing when spraying.
- Respiratory protection :** Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Wear appropriate respirator when ventilation is inadequate. Be sure to use approved/certified respirator or equivalent. It is not possible to specify precise filter type, since the actual work situation is unknown. Supplier of respirators should be contacted in order to find the appropriate filter.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state :	Liquid.
Color :	White
Odor :	Non-characteristic.
pH :	7 - 9
Melting point/freezing point :	183°C This is based on data for the following ingredient: Ammonium polyphosphate
Boiling point/boiling range :	Testing not relevant or not possible due to nature of the product.
Flash point :	Non-flammable.
Evaporation rate :	Testing not relevant or not possible due to nature of the product.
Flammability :	Non-flammable.
Lower and upper explosive (flammable) limits :	0.6 - 4.2 vol %
Vapor pressure :	0 kPa This is based on data for the following ingredient: Ammonium polyphosphate
Vapor density :	Testing not relevant or not possible due to nature of the product.
Specific gravity :	1.46 g/cm ³
Partition coefficient (LogKow) :	Testing not relevant or not possible due to nature of the product.
Auto-ignition temperature :	Testing not relevant or not possible due to nature of the product.
Decomposition temperature :	Testing not relevant or not possible due to nature of the product.
Viscosity :	Testing not relevant or not possible due to nature of the product.
Explosive properties :	Testing not relevant or not possible due to nature of the product.
Oxidizing properties :	Testing not relevant or not possible due to nature of the product.

9.2 Other information

Solvent(s) % by weight :	Weighted average: 2 %
Water % by weight :	Weighted average: 21 %
VOC content :	0 g/l (Measured)
Solvent Gas :	Weighted average: 0.004 m ³ /l

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

The product is stable.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

No specific data.

10.5 Incompatible materials

10.6 Hazardous decomposition products

When exposed to high temperatures (i.e. in case of fire) harmful decomposition products may be formed:

Decomposition products may include the following materials: carbon oxides nitrogen oxides phosphorus oxides metal oxide/oxides

SECTION 11: Toxicological information

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

Exposure to component solvent vapor concentrations may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Solvents may cause some of the above effects by absorption through the skin. Symptoms and signs include headaches, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. If splashed in the eyes, the liquid may cause irritation and reversible damage. Accidental swallowing may cause stomach pain. Chemical lung inflammation may occur if the product is taken into the lungs via vomiting.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Titanium dioxide Isomelamine trimethylolpropane 1,2-benzisothiazol-3(2H)-one 2-methylisothiazol-3(2H)-one reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	LC50 Inhalation Dusts and mists	Rat	>6.8 mg/l	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	3161 mg/kg	-
	LD50 Skin	Rabbit	>1000 mg/kg	-
	LD50 Oral	Rat	14100 mg/kg	-
	LD50 Oral	Rat - Male	670 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	0.11 mg/l	4 hours
	LD50 Dermal	Rat	242 mg/kg	-
	LD50 Oral	Rat - Female	183 mg/kg	-
LD50 Oral	Rat	69 mg/kg	-	

Acute toxicity estimates

Product/ingredient name	Oral mg/kg	Dermal mg/kg	Inhalation (gases) ppm	Inhalation (vapors) mg/l	Inhalation (dusts and mists) mg/l
Isomelamine trimethylolpropane 1,2-benzisothiazol-3(2H)-one 2-methylisothiazol-3(2H)-one reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	3161 14100 670 183 69	242 50		0.5	0.11

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure
Titanium dioxide Isomelamine 1,2-benzisothiazol-3(2H)-one 2-methylisothiazol-3(2H)-one reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	Skin - Mild irritant	Human	-	72 hours 300 Micrograms Intermittent
	Eyes - Mild irritant	Rabbit	-	-
	Eyes - Severe irritant	Rabbit	-	-
	Skin - Irritant	Rabbit	-	4 hours
	Skin - Mild irritant	Rabbit	-	-
	Skin - Moderate irritant	Rabbit	-	-
	Eyes - Severe irritant	Rabbit	-	-
	Skin - Severe irritant	Human	-	0.01 Percent
	Skin - Severe irritant	Rabbit	-	-

Sensitizer

Product/ingredient name	Route of exposure	Species	Result
1,2-benzisothiazol-3(2H)-one 2-methylisothiazol-3(2H)-one reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	skin	Guinea pig	Sensitizing
	skin	Mouse	Sensitizing
	skin	Guinea pig	Sensitizing
	skin	Guinea pig	Sensitizing

Mutagenic effects

No known significant effects or critical hazards.

Carcinogenicity

Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Reproductive toxicity

Suspected of damaging fertility.

SECTION 11: Toxicological information

Teratogenic effects

No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
No known data available in our database.			

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Isomelamine	Category 2	-	urinary system

Aspiration hazard

Product/ingredient name	Result
No known data available in our database.	

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential chronic health effects

No known significant effects or critical hazards.

11.2 Information on other hazards

Endocrine disrupting properties : See Section 15 for details.

Other information : No additional known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Do not allow to enter drains or watercourses.

Product/ingredient name	Result	Species	Exposure
Titanium dioxide	Acute LC50 >100 mg/l	Daphnia	48 hours
Isomelamine	Acute LC50 >100 mg/l	Fish	96 hours
	Acute EC50 200 mg/l	Algae	96 hours
	Acute EC50 >2000 mg/l	Daphnia	48 hours
1,2-benzisothiazol-3(2H)-one	Acute EC50 >3000 mg/l	Fish	96 hours
	Acute EC50 0.11 mg/l	Algae	72 hours
	Acute EC50 2.94 mg/l	Daphnia	48 hours
	Acute LC50 10 - 20 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia	48 hours
2-methylisothiazol-3(2H)-one	Acute LC50 1.6 mg/l	Fish	96 hours
	Acute EC50 0.158 mg/l	Algae	72 hours
	Acute EC50 0.063 mg/l	Algae	96 hours
	Acute EC50 0.87 mg/l	Daphnia	48 hours
	Acute LC50 0.056 ppm Marine water	Crustaceans - Acartia tonsa	48 hours
	Acute LC50 4.77 mg/l	Fish	96 hours
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	Acute EC50 0.018 mg/l	Algae	72 hours
	Acute EC50 0.1 mg/l	Daphnia	48 hours
	Acute LC50 0.188 mg/l	Fish - Oncorhynchus mykiss	96 hours

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Dimethylpropane	OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test	100 % - Readily - 28 days	-	-
1,2-benzisothiazol-3(2H)-one	-	90 % - Readily - 28 days	-	-
2-methylisothiazol-3(2H)-one	-	98 % - Readily - 48 days	-	-
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	OECD 301B Ready Biodegradability - CO ₂ Evolution Test	62 % - Not readily - 28 days	-	-

SECTION 12: Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Isomelamine	-	-	Not readily
trimethylolpropane	-	-	Readily
1,2-benzisothiazol-3(2H)-one	-	-	Readily
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Isomelamine	-1.22	<3.8	low
trimethylolpropane	-0.47	<1	low
1,2-benzisothiazol-3(2H)-one	1.3	6.95	low
2-methylisothiazol-3(2H)-one	-0.32	3.16	low
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	<3	<100	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}): No known data available in our database.

Mobility: No known data available in our database.

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.							

12.6 Endocrine disrupting properties

See Section 15 for details.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Residues of the product is listed as hazardous waste. Dispose of according to all state and local applicable regulations. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

European waste catalogue no. (EWC) is given below.

European waste catalogue (EWC) : 08 01 11*

Packaging

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

SECTION 14: Transport information

Transport may take place according to national regulation or ADR for transport by road, RID for transport by train, IMDG for transport by sea, IATA for transport by air.

	14.1 UN / ID no.	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	14.5 Env* Env*	Additional information
ADR/RID Class	Not regulated.		-	-	No.	-
IMDG Class	Not regulated.		-	-	No.	-
IATA Class	Not regulated.		-	-	No.	-

PG* : Packing group

Env.* : Environmental hazards

SECTION 14: Transport information

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 applicable.

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 authorization - Substances of very high concern

Annex XIV

None of the components are listed.

Substances of very high concern

Ingredient name	Intrinsic property	Status	Reference number	Date of revision
Isomelamine	Substance of equivalent concern for human health	Candidate	D(2022)9120-DC	1/17/2023
Isomelamine	Substance of equivalent concern for environment	Candidate	D(2022)9120-DC	1/17/2023

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Not applicable.

Other EU regulations

Seveso category

This product is not controlled under the Seveso III Directive.

15.2 Chemical Safety Assessment

SECTION 16: Other information

Abbreviations and acronyms :

ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 EUH statement = CLP-specific Hazard statement
 RRN = REACH Registration Number
 DNEL = Derived No Effect Level
 PNEC = Predicted No Effect Concentration

Full text of abbreviated H statements :

H301 Toxic if swallowed.
 H302 Harmful if swallowed.
 H310 Fatal in contact with skin.
 H311 Toxic in contact with skin.
 H314 Causes severe skin burns and eye damage.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H318 Causes serious eye damage.
 H330 Fatal if inhaled.
 H351 Suspected of causing cancer.
 H361f Suspected of damaging fertility.
 H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.
 EUH071 Corrosive to the respiratory tract.

Full text of classifications [CLP/GHS] :

Acute Tox. 2 ACUTE TOXICITY - Category 2
 Acute Tox. 3 ACUTE TOXICITY - Category 3
 Acute Tox. 4 ACUTE TOXICITY - Category 4
 Aquatic Acute 1 AQUATIC HAZARD (ACUTE) - Category 1
 Aquatic Chronic 1 AQUATIC HAZARD (LONG-TERM) - Category 1
 Carc. 2 CARCINOGENICITY - Category 2
 Eye Dam. 1 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
 Repr. 2 TOXIC TO REPRODUCTION - Category 2
 Skin Corr. 1B SKIN CORROSION/IRRITATION - Category 1B
 Skin Corr. 1C SKIN CORROSION/IRRITATION - Category 1C
 Skin Irrit. 2 SKIN CORROSION/IRRITATION - Category 2
 Skin Sens. 1 SKIN SENSITIZATION - Category 1
 Skin Sens. 1A SKIN SENSITIZATION - Category 1A
 STOT RE 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

SECTION 16: Other information

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

Classification	Justification
SKIN SENSITIZATION CARCINOGENICITY TOXIC TO REPRODUCTION	Calculation method Calculation method Calculation method

Notice to reader

✔ Indicates information that has changed from previously issued version.

The information contained in this safety data sheet is based on the present state of knowledge and EU and national legislation. It provides guidance on health, safety and environmental aspects for handling the product in a safe way and should not be construed as any guarantee of the technical performance or suitability for particular applications.

It is always the duty of the user/employer to ascertain that the work is planned and carried out in accordance with the national regulations.

Safe Use of Mixture Information

Hempafire Optima 500



This document is intended to communicate the conditions of safe use for the product and should always be read in combination with the product's Safety Data Sheet and labels.

General description of the process covered

Indoor or outdoor spray painting by professionals for specialist applications, with good general room ventilation plus respiratory protection

This safe use information is linked to : Professional spray painting, near-industrial setting
Priority

Sector(s) of use : Industrial uses - Professional uses

Product category(ies) : Coatings and paints, thinners, paint removers

Operational conditions

Place of use : Indoor or outdoor use

Range of application/Process conditions : Assumes a good standard of occupational hygiene and safety management has been implemented. Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Others : Depending on actual conditions of application. Please consult your local HEMPEL representative for further advise.

Risk management measures (RMM)

Contributing activity	Process category (ies)	Maximum duration	Ventilation		Respiratory	Eye	Hands
			Type	air changes per hour			
Preparation of material for application	PROC05	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	Wear a respirator conforming to EN140 with an assigned protection factor of at least 10.	Use eye protection according to EN 166.	Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.
Loading of application equipment and handling of coated parts before curing	PROC08b	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	Wear a respirator conforming to EN140 with an assigned protection factor of at least 10.	Use eye protection according to EN 166.	Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.
Industrial application of coatings by spraying	PROC07	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	Use a properly fitted, air-purifying or air-fed respirator. EN 14594 with an assigned protection factor of at least 20.	Use eye protection according to EN 166.	Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.
Film formation - force drying, stoving and other technologies	PROC04	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	None	Use eye protection according to EN 166.	Wear suitable gloves tested to EN374.
Cleaning	PROC05	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	Wear a respirator conforming to EN140 with an assigned protection factor of at least 10.	Use eye protection according to EN 166.	Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.
Waste management	PROC08b	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	Wear a respirator conforming to EN140 with an assigned protection factor of at least 10.	Use eye protection according to EN 166.	Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.

See chapter 8 of this Safety Data Sheet for specifications.

