



# SAFETY DATA SHEET

5110 Verti-Patch-Activator

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

### 1.1 Product identifier

**Product name** : 5110 Verti-Patch-Activator  
**Product description** : repair product  
**Product type** : Liquid.  
**UFI** : 5530-M06E-C00H-V7SX

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

Identified uses	
Industrial uses Professional uses	
Uses advised against	Reason
Consumer use	Product is not intended for consumer use.

### 1.3 Details of the supplier of the safety data sheet

Rust-Oleum Europe - Martin Mathys NV, Kolenbergstraat 23, B-3545 Zelem, Belgium  
 Telephone no.: +32 (0) 13 460 200  
 Fax no.: +32 (0) 13 460 201

**e-mail address of person responsible for this SDS** : rpmeurohas@rustoleum.eu

### 1.4 Emergency telephone number

#### Supplier

**Telephone number** : +44 (0) 207 858 1228  
**Hours of operation** : 24 / 7

## 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 Corr. 1B, H314  
 Eye Dam. 1, H318  
 Skin Sens. 1, H317  
 Repr. 2, H361  
 STOT RE 2, H373  
 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

## SECTION 2: Hazards identification

<b>Hazard pictograms</b>	:	
<b>Signal word</b>	:	Danger
<b>Hazard statements</b>	:	<p>Causes severe skin burns and eye damage.</p> <p>May cause an allergic skin reaction.</p> <p>Suspected of damaging fertility or the unborn child.</p> <p>May cause damage to organs through prolonged or repeated exposure.</p> <p>Toxic to aquatic life with long lasting effects.</p>
<b><u>Precautionary statements</u></b>		
<b>General</b>	:	Not applicable.
<b>Prevention</b>	:	<p>P280 - Wear protective gloves: &gt; 8 hours (breakthrough time): neoprene (0.65mm) , butyl rubber (0.6 mm) or nitrile rubber (0.5mm). Wear eye or face protection: Recommended: safety glasses with side-shields. (EN 166).</p> <p>P273 - Avoid release to the environment.</p> <p>P260 - Do not breathe vapour.</p>
<b>Response</b>	:	<p>P391 - Collect spillage.</p> <p>P310 - Immediately call a POISON CENTER or doctor.</p> <p>P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.</p> <p>P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p>
<b>Storage</b>	:	P405 - Store locked up.
<b>Disposal</b>	:	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Hazardous ingredients</b>	:	Fatty acids, tall oil, reaction products with tetraethylenepentamine; Phenol, styrenated; 2-piperazin-1-ylethylamine and tetraethylenepentamine
<b>Supplemental label elements</b>	:	Not applicable.
		Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.
<b>Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles</b>	:	Not applicable.
<b><u>Special packaging requirements</u></b>		
<b>Containers to be fitted with child-resistant fastenings</b>	:	Not applicable.
<b>Tactile warning of danger</b>	:	Not applicable.
<b>2.3 Other hazards</b>		
<b>Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII</b>	:	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
<b>Other hazards which do not result in classification</b>	:	None known.

**SECTION 3: Composition/information on ingredients****3.2 Mixtures** : Mixture

Product/ingredient name	Identifiers	%	Classification	
			Regulation (EC) No. 1272/2008 [CLP]	Type
titanium dioxide	REACH #: 01-2119489379-17 EC: 236-675-5 CAS: 13463-67-7	≥25 - ≤50	Carc. 2, H351	[1]
Fatty acids, tall oil, reaction products with tetraethylenepentamine	EC: 273-201-6 CAS: 68953-36-6	≥25 - ≤50	Skin Sens. 1, H317 Aquatic Chronic 2, H411	[1]
Phenol, styrenated	REACH #: 01-2119980970-27 EC: 262-975-0 CAS: 61788-44-1	≥10 - ≤25	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411	[1]
2-piperazin-1-ylethylamine	REACH #: 01-2119471486-30 EC: 205-411-0 CAS: 140-31-8 Index: 205-411-0	≤5	Acute Tox. 4, H302 Acute Tox. 3, H311 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Repr. 2, H361 STOT RE 1, H372 Aquatic Chronic 3, H412	[1]
tetraethylenepentamine	REACH #: 01-2119487290-37 EC: 203-986-2 CAS: 112-57-2 Index: 612-060-00-0	≤3	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 2, H411 <b>See Section 16 for the full text of the H statements declared above.</b>	[1]

**Notes**

**The classification as a carcinogen by inhalation applies only to mixtures in powder form containing 1 % or more of titanium dioxide which is in the form of or incorporated in particles with aerodynamic diameter ≤ 10 µm.**

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
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy

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** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

**SECTION 4: First aid measures**

- 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. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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**

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit 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. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.

Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture 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.

Ingestion may cause nausea, diarrhea and vomiting.

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 Fatty acids, tall oil, reaction products with tetraethylenepentamine, Phenol, styrenated, 2-piperazin-1-ylethylamine, tetraethylenepentamine. May produce an allergic reaction.

**Over-exposure signs/symptoms**

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
stomach pains  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations

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

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

## SECTION 4: First aid measures

See toxicological information (Section 11)

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media** : Recommended: alcohol-resistant foam, CO<sub>2</sub>, 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** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
metal oxide/oxides

### 5.3 Advice for firefighters

**Special protective actions for fire-fighters** : 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.

**Special protective equipment for fire-fighters** : 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.

**Additional information** : No unusual hazard if involved in a fire.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**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

: Avoid dispersal of spilt 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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

### 6.3 Methods and material for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## SECTION 6: Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Approach the 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. Dispose of via a licensed waste disposal contractor. 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

The information in this section contains generic advice and guidance.

- 7.1 Precautions for safe handling** : Prevent the creation of flammable or explosive concentrations of vapours in air and avoid vapour concentrations higher than the occupational exposure limits. In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Operators should wear antistatic footwear and clothing and floors should be of the conducting type. Keep away from heat, sparks and flame. No sparking tools should be used. Avoid contact with skin and eyes. Avoid the inhalation of dust, particulates, spray or mist arising from the application of this mixture. Avoid inhalation of dust from sanding. 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.
- Information on fire and explosion protection**  
Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.

### 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**

Observe label precautions. Store in a dry, cool and well-ventilated area. Keep away from heat and direct sunlight. Keep away from sources of ignition. No smoking. Prevent unauthorised access. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

### 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

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.

#### DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
titanium dioxide	DNEL	Long term Inhalation	10 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Oral	700 mg/kg bw/day	General population [Consumers]	Systemic

#### PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
titanium dioxide	Fresh water	0,127 mg/l	-
	Marine	>1 mg/l	-
	Sewage Treatment Plant	>100 mg/l	-
	Fresh water sediment	>1000 mg/kg	-
	Marine water sediment	>100 mg/kg	-
	Soil	100 mg/kg	-

### 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. If these are not sufficient to maintain concentrations of particulates and solvent vapours below the OEL, suitable respiratory protection must be worn.

#### 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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**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: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead. Recommended: safety glasses with side-shields. (EN 166)

#### Skin protection

## SECTION 8: Exposure controls/personal 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** : For prolonged or repeated handling, use the following type of gloves:

Recommended: neoprene (0.65mm) , butyl rubber (0.6 mm) or nitrile rubber (0.5mm)

The recommendation for the type or types of glove to use when handling this product is based on information from the following source:

EN 374

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** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Wear long sleeves and other protective clothing to prevent repeated or prolonged skin contact. (EN 467)

**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** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: organic vapour (Type A) and particulate filter (as filter combination A-P2) (EN 140)

**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

#### Appearance

<b>Physical state</b>	: Liquid.
<b>Colour</b>	: Grey.
<b>Odour</b>	: Ammoniacal.
<b>Odour threshold</b>	: Not available.
<b>pH</b>	: Not available.
<b>Melting point/freezing point</b>	: Not available.
<b>Initial boiling point and boiling range</b>	: Not available.
<b>Flash point</b>	: Closed cup: >100°C
<b>Evaporation rate</b>	: Not available.
<b>Flammability (solid, gas)</b>	: Not available.
<b>Upper/lower flammability or explosive limits</b>	: Not available.



**SECTION 9: Physical and chemical properties**

<b>Vapour pressure</b>	: Not available.
<b>Vapour density</b>	: Not available.
<b>Relative density</b>	: 1,5
<b>Solubility(ies)</b>	: Insoluble in the following materials: cold water and hot water.
<b>Partition coefficient: n-octanol/ water</b>	: Not available.
<b>Auto-ignition temperature</b>	: Not available.
<b>Decomposition temperature</b>	: Not available.
<b>Viscosity</b>	: Not available.
<b>Explosive properties</b>	: Not available.
<b>Oxidising properties</b>	: Not available.

**9.2 Other information**

No additional information.

**SECTION 10: Stability and reactivity**

<b>10.1 Reactivity</b>	: No specific test data related to reactivity available for this product or its ingredients.
<b>10.2 Chemical stability</b>	: Stable under recommended storage and handling conditions (see Section 7).
<b>10.3 Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<b>10.4 Conditions to avoid</b>	: When exposed to high temperatures may produce hazardous decomposition products.
<b>10.5 Incompatible materials</b>	: Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids.
<b>10.6 Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced. If involved in a fire, toxic gases including CO, CO2 and smoke can be generated.

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
titanium dioxide	LC50 Inhalation Dusts and mists	Rat - Male, Female	3,43 to 5,09 mg/l	4 hours
	LD50 Dermal	Rabbit	>10 g/kg	-
	LD50 Oral	Rat	>24 g/kg	-
Phenol, styrenated	LD50 Dermal	Rabbit	>5010 mg/kg	-
	LD50 Oral	Rat	2500 mg/kg	-
2-piperazin-1-ylethylamine	LD50 Dermal	Rat	866 mg/kg	-
	LD50 Oral	Rat	1470 mg/kg	-
tetraethylenepentamine	LD50 Oral	Rat	2140 mg/kg	-

**Conclusion/Summary** : Based on available data, the classification criteria are not met.**Acute toxicity estimates**

Not available.

**Irritation/Corrosion**

**SECTION 11: Toxicological information**

Product/ingredient name	Result	Species	Score	Exposure	Observation
titanium dioxide	Skin - Mild irritant	Human	-	72 hours 300 Micrograms Intermittent	-
Phenol, styrenated	Eyes - Mild irritant	Rabbit	-	0.1 Milliliters	-
2-piperazin-1-ylethylamine	Skin - Mild irritant	Rabbit	-	0.5 Milliliters	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
tetraethylenepentamine	Skin - Severe irritant	Rabbit	-	24 hours 5 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	5 milligrams	-
	Skin - Severe irritant	Rabbit	-	24 hours 5 milligrams	-
	Skin - Severe irritant	Rabbit	-	495 milligrams	-

**Conclusion/Summary**

- Skin** : Causes severe skin burns and eye damage.  
**Eyes** : Causes serious eye damage.  
**Respiratory** : May cause damage to organs through prolonged or repeated exposure if inhaled.

**Sensitisation**

Product/ingredient name	Route of exposure	Species	Result
titanium dioxide	skin skin	Guinea pig Mouse	Not sensitizing Not sensitizing

**Conclusion/Summary**

- Skin** : May cause an allergic skin reaction.  
**Respiratory** : Based on available data, the classification criteria are not met.

**Mutagenicity**

Product/ingredient name	Test	Experiment	Result
titanium dioxide	OECD 471	Experiment: In vitro Subject: Bacteria	Negative
	OECD 476	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OECD 474	Experiment: In vivo Subject: Mammalian-Animal	Negative
	OECD 474	Experiment: In vivo Subject: Mammalian-Animal	Negative

- Conclusion/Summary** : Based on available data, the classification criteria are not met.

**Carcinogenicity**

- Conclusion/Summary** : Based on available data, the classification criteria are not met.

**Reproductive toxicity**

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure
titanium dioxide	Negative	Negative	Negative	Rat - Male, Female	Oral: 100 to 3001000 mg/kg	20 days; 7 days per week

- Conclusion/Summary** : Suspected of damaging fertility.  
Suspected of damaging the unborn child.

**Teratogenicity**

- Conclusion/Summary** : Based on available data, the classification criteria are not met.

**SECTION 11: Toxicological information****Specific target organ toxicity (single exposure)**

Not available.

**Specific target organ toxicity (repeated exposure)**

Product/ingredient name	Category	Route of exposure	Target organs
2-piperazin-1-ylethylamine	Category 1	-	-

**Aspiration hazard**

Not available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Short term exposure****Potential immediate effects** : Not available.**Potential delayed effects** : Not available.**Long term exposure****Potential immediate effects** : Not available.**Potential delayed effects** : Not available.**Potential chronic health effects**

Product/ingredient name	Result	Species	Dose	Exposure
titanium dioxide	Chronic NOAEL Oral Chronic NOAEL Inhalation Dusts and mists	Rat Rat	3500 mg/kg 10 mg/m <sup>3</sup>	- 24 hours

**Conclusion/Summary** : Based on available data, the classification criteria are not met.**General** : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.**Carcinogenicity** : No known significant effects or critical hazards.**Mutagenicity** : No known significant effects or critical hazards.**Teratogenicity** : Suspected of damaging the unborn child.**Developmental effects** : No known significant effects or critical hazards.**Fertility effects** : Suspected of damaging fertility.**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.

Product/ingredient name	Result	Species	Exposure
titanium dioxide	Acute LC50 3 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 6,5 mg/l Fresh water	Daphnia spec. - Daphnia pulex - Neonate	48 hours
	Acute LC50 >1000000 µg/l Marine water	Fish - Fundulus heteroclitus	96 hours
2-piperazin-1-ylethylamine	Acute LC50 2190000 µg/l Fresh water	Fish - Pimephales promelas	96 hours

**Conclusion/Summary** : Toxic to aquatic life with long lasting effects.

**SECTION 12: Ecological information****12.2 Persistence and degradability**

**Conclusion/Summary** : Based on available data, the classification criteria are not met. This product has not been tested for biodegradation.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
titanium dioxide	-	-	Not readily

**12.3 Bioaccumulative potential**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
2-piperazin-1-ylethylamine	-1,48	-	low

**12.4 Mobility in soil**

**Soil/water partition coefficient (K<sub>oc</sub>)** : 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 Other adverse effects** : No known significant effects or critical hazards.

**SECTION 13: Disposal considerations**

The information in this section contains generic advice and guidance.

**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
10 13 11	wastes from cement-based composite materials other than those mentioned in 10 13 09 and 10 13 10

**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.

## SECTION 13: Disposal considerations

**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.

**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 spilt material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
<b>14.1 UN number</b>	UN1760	UN1760	UN1760	UN1760
<b>14.2 UN proper shipping name</b>	CORROSIVE LIQUID, N.O.S. [2-piperazin-1-ylethylamine]	CORROSIVE LIQUID, N.O.S. [2-piperazin-1-ylethylamine]	CORROSIVE LIQUID, N.O.S. [2-piperazin-1-ylethylamine]	CORROSIVE LIQUID, N.O.S. [2-piperazin-1-ylethylamine]
<b>14.3 Transport hazard class(es)</b>	8 	8 	8 	8 
<b>14.4 Packing group</b>	II	II	II	II
<b>14.5 Environmental hazards</b>	No.	No.	No.	No.
<b>Additional information</b>	<p><b>Limited quantity:</b> LQ22</p> <p><b>Remarks:</b> (≤ 1L: ) Limited Quantity - ADR/IMDG 3.4</p> <p>ADR Tunnel code: (E)</p>	-	<p><b>Emergency schedules (EmS):</b> F-A + S-B</p> <p><b>Remarks:</b> (≤ 1L: ) Limited Quantity - ADR/IMDG 3.4.6</p>	<p><b>Passenger and Cargo Aircraft</b> Quantity limitation: 1L Packaging instructions: 851</p> <p><b>Cargo Aircraft Only</b> Quantity limitation: 30 L Packaging instructions: 855</p> <p><b>Limited Quantities - Passenger Aircraft</b> Quantity limitation: 0.5L Packaging instructions: Y 840</p>

**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.

**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.
- VOC for Ready-for-Use Mixture** : 2004/42/EC - IIA/j: 500g/l (2010). <= 10g/l VOC.
- Europe inventory** : All components are listed or exempted.
- Black List Chemicals (76/464/EEC)** :

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
titanium dioxide	Not supported	Not supported	Not supported	Not supported
2-piperazin-1-ylethylamine	Not supported	Not supported	Not supported	Not supported

**Ozone depleting substances (1005/2009/EU)**

Not listed.

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

Not listed.

**Seveso Directive**

This product is not controlled under the Seveso Directive.

**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.

**References** : EH40/2005 Workplace exposure limits  
Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Regulation (EU) No. 2016/918

**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)**

## SECTION 15: Regulatory information

Not listed.

### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

**CN code** : 3214 10 10

### International lists

#### National inventory

<b>Australia</b>	: All components are listed or exempted.
<b>Canada</b>	: All components are listed or exempted.
<b>China</b>	: All components are listed or exempted.
<b>Japan</b>	: <b>Japan inventory (ENCS)</b> : Not determined. <b>Japan inventory (ISHL)</b> : Not determined.
<b>Malaysia</b>	: Not determined
<b>New Zealand</b>	: All components are listed or exempted.
<b>Philippines</b>	: All components are listed or exempted.
<b>Republic of Korea</b>	: All components are listed or exempted.
<b>Taiwan</b>	: All components are listed or exempted.
<b>Turkey</b>	: Not determined.
<b>United States</b>	: Not determined.
<b>Thailand</b>	: Not determined.
<b>Viet Nam</b>	: Not determined.

**15.2 Chemical safety assessment** : No Chemical Safety Assessment has been carried out.

## 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
: PBT = Persistent, Bioaccumulative and Toxic
: PNEC = Predicted No Effect Concentration
: RRN = REACH Registration Number
: vPvB = Very Persistent and Very Bioaccumulative

**Contains TiO2** : Yes

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

Classification	Justification
Skin Corr. 1B, H314	Expert judgment
Eye Dam. 1, H318	Expert judgment
Skin Sens. 1, H317	Expert judgment
Repr. 2, H361	Expert judgment
STOT RE 2, H373	Expert judgment
Aquatic Chronic 2, H411	Expert judgment

### Full text of H-phrases referred to in sections 2 and 3

**SECTION 16: Other information**

<b>Full text of abbreviated H statements</b>	:	H302 H311 H312 H314 H315 H317 H318 H351 H361 H372  H373  H411 H412	Harmful if swallowed. Toxic in contact with skin. Harmful in contact with skin. Causes severe skin burns and eye damage. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Suspected of causing cancer. Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. May cause damage to organs through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects. Harmful to aquatic life with long lasting effects.
<b>Full text of classifications [CLP/GHS]</b>	:	Acute Tox. 3 Acute Tox. 4 Aquatic Chronic 2  Aquatic Chronic 3  Carc. 2 Eye Dam. 1 Repr. 2 Skin Corr. 1B Skin Irrit. 2 Skin Sens. 1 STOT RE 1  STOT RE 2	ACUTE TOXICITY - Category 3 ACUTE TOXICITY - Category 4 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3 CARCINOGENICITY - Category 2 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 REPRODUCTIVE TOXICITY - Category 2 SKIN CORROSION/IRRITATION - Category 1B SKIN CORROSION/IRRITATION - Category 2 SKIN SENSITISATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
<b>Date of printing</b>	:	8/05/2020	
<b>Date of issue/ Date of revision</b>	:	8/05/2020	
<b>Date of previous issue</b>	:	8/05/2020	
<b>Version</b>	:	5	
<b><u>Notice to reader</u></b>			

The information in this Safety Data Sheet is based on the present state of knowledge and current legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications. The product should not be used for purposes other than those shown in Section 1 without first referring to the supplier and obtaining written handling instructions. As the specific conditions of use of the product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant legislation are complied with. 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.