

# **ITW** Engineered Polymers

## SAFETY DATA SHEET PLASTIC STEEL PUTTY(A) RESIN

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

#### 1.1. Product identifier

Product name PLASTIC STEEL PUTTY(A) RESIN  
Product number X0001

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

Identified uses Resin.

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

##### Supplier

ITW Engineered Polymers  
Bay 150  
Shannon Industrial Estate  
Shannon  
Co. Clare

+353 (0)61 471 299  
+353 (0)61 471 285  
mail@itwep.com

#### 1.4. Emergency telephone number

Emergency telephone +44(0)1235 239 670 (24h)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification (EC 1272/2008)

Physical hazards Not Classified  
Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317  
Environmental hazards Aquatic Chronic 3 - H412

Classification (67/548/EEC or 1999/45/EC) Xi;R36/38. R43. R52/53.

Human health The product contains an epoxy resin. May cause sensitisation or allergic reactions in sensitive individuals.

#### 2.2. Label elements

##### Pictogram



Signal word Warning

## PLASTIC STEEL PUTTY(A) RESIN

<b>Hazard statements</b>	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H412 Harmful to aquatic life with long lasting effects.
<b>Precautionary statements</b>	P273 Avoid release to the environment. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P302+P352 IF ON SKIN: Wash with plenty of water. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.
<b>Supplemental label information</b>	EUH205 Contains epoxy constituents. May produce an allergic reaction.
<b>Contains</b>	EPOXY RESIN (Number average MW <= 700 )
<b>Supplementary precautionary statements</b>	P261 Avoid breathing vapour/ spray. P264 Wash contaminated skin thoroughly after handling. P272 Contaminated work clothing should not be allowed out of the workplace. P321 Specific treatment (see medical advice on this label). P332+P313 If skin irritation occurs: Get medical advice/ attention. P337+P313 If eye irritation persists: Get medical advice/ attention. P362+P364 Take off contaminated clothing and wash it before reuse. P501 Dispose of contents/ container in accordance with national regulations.

### 2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

<b>EPOXY RESIN (Number average MW &lt;= 700 )</b>	<b>10-30%</b>
CAS number: 25068-38-6	EC number: 500-033-5
	REACH registration number: 01-2119456619-26-0000
<b>Classification</b>	<b>Classification (67/548/EEC or 1999/45/EC)</b>
Skin Irrit. 2 - H315	R43 Xi;R36/38 N;R51/53
Eye Irrit. 2 - H319	
Skin Sens. 1 - H317	
Aquatic Chronic 2 - H411	
<b>2-METHOXY-1-METHYLETHYL ACETATE</b>	<b>&lt;1%</b>
CAS number: 108-65-6	EC number: 203-603-9
<b>Classification</b>	<b>Classification (67/548/EEC or 1999/45/EC)</b>
Flam. Liq. 3 - H226	R10

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

<b>General information</b>	Avoid contact with skin and eyes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
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## PLASTIC STEEL PUTTY(A) RESIN

<b>Inhalation</b>	Move affected person to fresh air at once. Get medical attention if any discomfort continues.
<b>Ingestion</b>	Rinse mouth thoroughly with water. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention.
<b>Skin contact</b>	Remove affected person from source of contamination. Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing.
<b>Eye contact</b>	Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing.

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

<b>General information</b>	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
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### 4.3. Indication of any immediate medical attention and special treatment needed

<b>Notes for the doctor</b>	No specific recommendations. If in doubt, get medical attention promptly.
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## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

<b>Suitable extinguishing media</b>	Extinguish with foam, carbon dioxide or dry powder.
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### 5.2. Special hazards arising from the substance or mixture

<b>Specific hazards</b>	Irritating gases or vapours.
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### 5.3. Advice for firefighters

<b>Protective actions during firefighting</b>	Avoid breathing fire gases or vapours. Keep up-wind to avoid fumes. Control run-off water by containing and keeping it out of sewers and watercourses.
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<b>Special protective equipment for firefighters</b>	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.
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## SECTION 6: Accidental release measures

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

<b>Personal precautions</b>	Avoid contact with skin and eyes. Wear protective clothing as described in Section 8 of this safety data sheet. Provide adequate ventilation.
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### 6.2. Environmental precautions

<b>Environmental precautions</b>	Avoid the spillage or runoff entering drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.
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### 6.3. Methods and material for containment and cleaning up

<b>Methods for cleaning up</b>	Absorb spillage with sand or other inert absorbent. Collect and place in suitable waste disposal containers and seal securely. Containers with collected spillage must be properly labelled with correct contents and hazard symbol.
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### 6.4. Reference to other sections

<b>Reference to other sections</b>	Wear protective clothing as described in Section 8 of this safety data sheet.
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## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

## PLASTIC STEEL PUTTY(A) RESIN

**Usage precautions** Use only in well-ventilated areas. Handle and open container with care. Avoid contact with skin and eyes. Keep away from heat, sparks and open flame. Do not eat, drink or smoke when using the product. Good personal hygiene procedures should be implemented.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage precautions** Store in tightly-closed, original container in a dry, cool and well-ventilated place. Store away from incompatible materials (see Section 10).

### 7.3. Specific end use(s)

**Specific end use(s)** The identified uses for this product are detailed in Section 1.2.

## SECTION 8: Exposure Controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

#### **2-METHOXY-1-METHYLETHYL ACETATE**

Long-term exposure limit (8-hour TWA): WEL 50 ppm(Sk) 274 mg/m<sup>3</sup>(Sk)

Short-term exposure limit (15-minute): WEL 100 ppm(Sk) 548 mg/m<sup>3</sup>(Sk)

WEL = Workplace Exposure Limit

**Ingredient comments** WEL = Workplace Exposure Limits

#### EPOXY RESIN (Number average MW <= 700 ) (CAS: 25068-38-6)

#### **DNEL**

Workers - Dermal; Short term systemic effects: 8.33 mg/kg/day

Workers - Inhalation; Short term systemic effects: 12.25 mg/m<sup>3</sup>

### 8.2. Exposure controls

#### **Protective equipment**



#### **Appropriate engineering controls**

Provide adequate general and local exhaust ventilation.

#### **Eye/face protection**

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.

#### **Hand protection**

Wear protective gloves made of the following material: Rubber or plastic. To protect hands from chemicals, gloves should comply with European Standard EN374. The selected gloves should have a breakthrough time of at least 8 hours.

#### **Other skin and body protection**

Avoid contact with skin. Wear chemical protective suit.

#### **Hygiene measures**

Provide eyewash station and safety shower. Keep away from food, drink and animal feeding stuffs. Good personal hygiene procedures should be implemented. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Do not eat, drink or smoke when using the product. Change work clothing daily before leaving workplace.

## PLASTIC STEEL PUTTY(A) RESIN

**Respiratory protection** If ventilation is inadequate, suitable respiratory protection must be worn. Respirator selection must be based on exposure levels, the hazards of the product and the safe working limits of the selected respirator. Check that the respirator fits tightly and the filter is changed regularly. Wear a respirator fitted with the following cartridge: Gas filter, type A2. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

### SECTION 9: Physical and Chemical Properties

#### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Paste.
<b>Colour</b>	Dark. Grey.
<b>Odour</b>	Slight.
<b>pH</b>	pH (concentrated solution): 7.0 @ 20 °C
<b>Melting point</b>	n/d°C
<b>Initial boiling point and range</b>	>260°C @
<b>Flash point</b>	> 204°C
<b>Vapour pressure</b>	<0.03 mmHg @ °C
<b>Relative density</b>	2.8 @ 20 °C°C
<b>Solubility(ies)</b>	Slightly soluble in water.
<b>Auto-ignition temperature</b>	>300°C

#### 9.2. Other information

**Other information** Not available.

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

**Reactivity** Strong oxidising agents. Acids. Amines.

#### 10.2. Chemical stability

**Stability** Stable at normal ambient temperatures and when used as recommended.

#### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** Not available.

#### 10.4. Conditions to avoid

**Conditions to avoid** Avoid heat, flames and other sources of ignition. Avoid excessive heat for prolonged periods of time. Avoid exposure to high temperatures or direct sunlight.

#### 10.5. Incompatible materials

**Materials to avoid** Avoid contact with the following materials: Strong oxidising agents. Strong acids. Amines.

#### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Vapours/gases/fumes of: Acids - organic. Aldehydes.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

## PLASTIC STEEL PUTTY(A) RESIN

<b>Skin contact</b>	Irritating to skin. May cause sensitisation by skin contact. The product contains a small amount of sensitising substance. May cause sensitisation or allergic reactions in sensitive individuals.
<b>Eye contact</b>	Irritating to eyes.
<b>Acute and chronic health hazards</b>	The product contains an epoxy resin. May cause sensitisation or allergic reactions in sensitive individuals.
<b>Route of entry</b>	Inhalation Ingestion. Skin and/or eye contact

### SECTION 12: Ecological Information

**Ecotoxicity** Avoid releasing into the environment.

#### 12.1. Toxicity

**Toxicity** The product contains a substance which is harmful to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

#### 12.2. Persistence and degradability

**Persistence and degradability** There are no data on the degradability of this product.

#### 12.3. Bioaccumulative potential

**Bioaccumulative potential** No data available on bioaccumulation.

#### 12.4. Mobility in soil

**Mobility** Do not discharge into drains or watercourses or onto the ground.

#### 12.5. Results of PBT and vPvB assessment

**Results of PBT and vPvB assessment** This product does not contain any substances classified as PBT or vPvB.

#### 12.6. Other adverse effects

**Other adverse effects** Not available.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

**General information** When handling waste, the safety precautions applying to handling of the product should be considered.

**Disposal methods** Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

**Waste class** 08 04 99

### SECTION 14: Transport information

**General** The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

#### 14.1. UN number

No information required.

#### 14.2. UN proper shipping name

No information required.

## PLASTIC STEEL PUTTY(A) RESIN

### 14.3. Transport hazard class(es)

#### Transport labels

No transport warning sign required.

### 14.4. Packing group

No information required.

### 14.5. Environmental hazards

#### Environmentally hazardous substance/marine pollutant

No.

### 14.6. Special precautions for user

No information required.

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

Transport in bulk according to No information required.

Annex II of MARPOL 73/78  
and the IBC Code

## SECTION 15: Regulatory information

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

#### EU legislation

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

## SECTION 16: Other information

Revision date 28/04/2017

Revision 25

Supersedes date 14/05/2015

#### Risk phrases in full

R10 Flammable.  
R36/38 Irritating to eyes and skin.  
R37 Irritating to respiratory system.  
R43 May cause sensitisation by skin contact.  
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R65 Harmful: may cause lung damage if swallowed.

#### Hazard statements in full

H226 Flammable liquid and vapour.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H411 Toxic to aquatic life with long lasting effects.  
H412 Harmful to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

# **ITW** Engineered Polymers

## SAFETY DATA SHEET PUTTY HARDENER

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

#### 1.1. Product identifier

Product name PUTTY HARDENER  
Product number X0013

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

Identified uses Hardener.

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

##### Supplier

ITW Engineered Polymers  
Bay 150  
Shannon Industrial Estate  
Shannon  
Co. Clare

+353 (0)61 471 299  
+353 (0)61 471 285  
mail@itwep.com

#### 1.4. Emergency telephone number

Emergency telephone +44(0)1235 239 670 (24h)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification (EC 1272/2008)

Physical hazards Not Classified  
Health hazards Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Repr. 2 - H361fd  
Environmental hazards Aquatic Chronic 2 - H411

Classification (67/548/EEC or 1999/45/EC) Xn;R21. C;R34. R43. R52/53.

Human health Corrosive. Prolonged contact causes serious eye and tissue damage.

#### 2.2. Label elements

##### Pictogram



Signal word

Danger



## PUTTY HARDENER

<b>Hazard statements</b>	H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H361fd Suspected of damaging fertility. Suspected of damaging the unborn child. H411 Toxic to aquatic life with long lasting effects.
<b>Precautionary statements</b>	P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER/ doctor. P333+P313 If skin irritation or rash occurs: Get medical advice/ attention. P501 Dispose of contents/ container in accordance with national regulations.
<b>Contains</b>	DIMER/TOFA, reaction products with TETA, TRIETHYLENETETRAMINE, 2-PIPERAZIN-1-YLETHYLAMINE, 4-NONYLPHENOL, Branched
<b>Supplementary precautionary statements</b>	P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P260 Do not breathe vapour/ spray. P261 Avoid breathing vapour/ spray. P264 Wash contaminated skin thoroughly after handling. P272 Contaminated work clothing should not be allowed out of the workplace. P273 Avoid release to the environment. P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P302+P352 IF ON SKIN: Wash with plenty of water. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P308+P313 IF exposed or concerned: Get medical advice/ attention. P321 Specific treatment (see medical advice on this label). P362+P364 Take off contaminated clothing and wash it before reuse. P363 Wash contaminated clothing before reuse. P391 Collect spillage. P405 Store locked up.

### 2.3. Other hazards

#### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

<b>DIMER/TOFA, reaction products with TETA</b>	<b>30-60%</b>
CAS number: 68082-29-1	
<b>Classification</b> Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1A - H317 Aquatic Chronic 2 - H411	<b>Classification (67/548/EEC or 1999/45/EC)</b> Xi;R36/38. R43.

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<b>TRIETHYLENETETRAMINE</b>		<b>30-60%</b>
CAS number: 112-24-3	EC number: 203-950-6	REACH registration number: 01-2119487919-13-0000
<b>Classification</b>		<b>Classification (67/548/EEC or 1999/45/EC)</b>
Acute Tox. 4 - H312		C;R34 Xn;R21 R43 R52/53
Skin Corr. 1B - H314		
Eye Dam. 1 - H318		
Skin Sens. 1 - H317		
Aquatic Chronic 3 - H412		
<b>2-PIPERAZIN-1-YLETHYLAMINE</b>		<b>5-10%</b>
CAS number: 140-31-8	EC number: 205-411-0	REACH registration number: 01-2119471486-30-0003
<b>Classification</b>		<b>Classification (67/548/EEC or 1999/45/EC)</b>
Acute Tox. 4 - H302		C;R34 Xn;R21/22 R43 R52/53
Acute Tox. 4 - H312		
Skin Corr. 1B - H314		
Eye Dam. 1 - H318		
Skin Sens. 1 - H317		
Aquatic Chronic 3 - H412		
<b>4-NONYLPHENOL, Branched</b>		<b>5-10%</b>
CAS number: 84852-15-3	EC number: 284-325-5	
M factor (Acute) = 1	M factor (Chronic) = 1	
<b>Classification</b>		<b>Classification (67/548/EEC or 1999/45/EC)</b>
Acute Tox. 4 - H302		Repr. Cat. 3;R62,R63 C;R34 Xn;R22 N;R50/53
Skin Corr. 1B - H314		
Eye Dam. 1 - H318		
Repr. 2 - H361fd		
Aquatic Acute 1 - H400		
Aquatic Chronic 1 - H410		
<b>TITANIUM DIOXIDE</b>		<b>1-5%</b>
CAS number: 13463-67-7	EC number: 236-675-5	REACH registration number: 01-2119489379-17-0000
<b>Classification</b>		<b>Classification (67/548/EEC or 1999/45/EC)</b>
Not Classified		-

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

##### General information

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Do not breathe vapour/spray. Avoid contact with eyes.

##### Inhalation

Move affected person to fresh air at once. Get medical attention if any discomfort continues.

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<b>Ingestion</b>	Do not induce vomiting. Give plenty of water to drink. Get medical attention.
<b>Skin contact</b>	Remove affected person from source of contamination. Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing.
<b>Eye contact</b>	Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes and get medical attention. Get medical attention if irritation persists after washing.

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

<b>General information</b>	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
<b>Inhalation</b>	The product contains a sensitising substance.
<b>Ingestion</b>	This product is corrosive. May cause chemical burns in mouth, oesophagus and stomach. Swallowing concentrated chemical may cause severe internal injury. May cause stomach pain or vomiting.
<b>Skin contact</b>	This product is strongly corrosive. The product contains a sensitising substance. Contact with concentrated chemical may cause severe skin damage. May cause an allergic skin reaction. Prolonged or repeated contact with skin may cause irritation, redness and dermatitis.
<b>Eye contact</b>	This product is strongly corrosive. Contact with concentrated chemical may very rapidly cause severe eye damage, possibly loss of sight. Risk of serious damage to eyes.

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

<b>Notes for the doctor</b>	Treat symptomatically.
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## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

<b>Suitable extinguishing media</b>	Extinguish with the following media: Water. Foam. Dry chemicals. Carbon dioxide (CO <sub>2</sub> ).
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### 5.2. Special hazards arising from the substance or mixture

<b>Specific hazards</b>	Avoid breathing fire gases or vapours.
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### 5.3. Advice for firefighters

<b>Protective actions during firefighting</b>	Keep up-wind to avoid fumes. Do not use water jet as an extinguisher, as this will spread the fire. Control run-off water by containing and keeping it out of sewers and watercourses.
<b>Special protective equipment for firefighters</b>	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

## SECTION 6: Accidental release measures

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

<b>Personal precautions</b>	Avoid contact with skin and eyes. Wear protective clothing as described in Section 8 of this safety data sheet. Provide adequate ventilation.
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### 6.2. Environmental precautions

<b>Environmental precautions</b>	Avoid the spillage or runoff entering drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.
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### 6.3. Methods and material for containment and cleaning up

<b>Methods for cleaning up</b>	Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. Containers with collected spillage must be properly labelled with correct contents and hazard symbol.
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## PUTTY HARDENER

### 6.4. Reference to other sections

**Reference to other sections** Wear protective clothing as described in Section 8 of this safety data sheet.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

**Usage precautions** Use only in well-ventilated areas. Provide adequate ventilation. Avoid inhalation of vapours. Avoid contact with skin and eyes. Do not eat, drink or smoke when using the product. Do not use in confined spaces without adequate ventilation and/or respirator. Good personal hygiene procedures should be implemented.

#### 7.2. Conditions for safe storage, including any incompatibilities

**Storage precautions** Store in tightly-closed, original container in a dry and cool place. Store away from incompatible materials (see Section 10).

#### 7.3. Specific end use(s)

**Specific end use(s)** The identified uses for this product are detailed in Section 1.2.

### SECTION 8: Exposure Controls/personal protection

#### 8.1. Control parameters

##### Occupational exposure limits

##### TITANIUM DIOXIDE

Long-term exposure limit (8-hour TWA): 10 mg/m<sup>3</sup> total dust

##### TRIETHYLENETETRAMINE (CAS: 112-24-3)

**DNEL** Workers - Inhalation; Long term systemic effects: 1 mg/m<sup>3</sup>  
Workers - Inhalation; Short term systemic effects: 5380 mg/m<sup>3</sup>  
Workers - Dermal; Long term systemic effects: 0.57 mg/kg/day

##### 2-PIPERAZIN-1-YLETHYLAMINE (CAS: 140-31-8)

**DNEL** Workers - Inhalation; Long term systemic effects: 3.6 mg/m<sup>3</sup>  
Workers - Inhalation; Short term systemic effects: 21.4 mg/m<sup>3</sup>  
Workers - Dermal; Long term systemic effects: 3.3 mg/kg/day  
Workers - Dermal; Long term systemic effects: 20 mg/kg/day  
Workers - Dermal; Long term local effects: 0.006 mg/cm<sup>2</sup>

#### 8.2. Exposure controls

##### Protective equipment



##### Appropriate engineering controls

Provide adequate general and local exhaust ventilation.

##### Eye/face protection

The following protection should be worn: Chemical splash goggles or face shield. Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.

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<b>Hand protection</b>	Wear protective gloves made of the following material: Rubber or plastic. It is recommended that chemical-resistant, impervious gloves are worn. To protect hands from chemicals, gloves should comply with European Standard EN374. The selected gloves should have a breakthrough time of at least 8 hours. The breakthrough time for any glove material may be different for different glove manufacturers.
<b>Other skin and body protection</b>	Avoid contact with skin. Wear apron or protective clothing in case of contact.
<b>Hygiene measures</b>	Provide eyewash station and safety shower. Keep away from food, drink and animal feeding stuffs. Good personal hygiene procedures should be implemented. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Do not eat, drink or smoke when using the product. Change work clothing daily before leaving workplace.
<b>Respiratory protection</b>	If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Gas filter, type A2. Organic vapour filter. Respirator selection must be based on exposure levels, the hazards of the product and the safe working limits of the selected respirator. Check that the respirator fits tightly and the filter is changed regularly. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

### SECTION 9: Physical and Chemical Properties

#### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Paste.
<b>Colour</b>	Cream.
<b>Odour</b>	Amine.
<b>pH</b>	pH (concentrated solution): 10.5 @ 20 °C
<b>Initial boiling point and range</b>	>232°C @
<b>Flash point</b>	>93°C
<b>Vapour pressure</b>	<0.01 mmHg @ °C
<b>Relative density</b>	0.98 @ 20 °C°C
<b>Solubility(ies)</b>	Soluble in water.

#### 9.2. Other information

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

**Reactivity** Reactions with the following materials may generate heat: Acids. Strong oxidising agents.

#### 10.2. Chemical stability

**Stability** Stable at normal ambient temperatures and when used as recommended.

#### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** Will not polymerise. Under normal conditions of storage and use, no hazardous reactions will occur.

#### 10.4. Conditions to avoid

**Conditions to avoid** Avoid heat, flames and other sources of ignition. Avoid excessive heat for prolonged periods of time. Avoid exposure to high temperatures or direct sunlight.

#### 10.5. Incompatible materials

## PUTTY HARDENER

**Materials to avoid** Avoid contact with the following materials: Acids. Oxidising agents.

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Fire or high temperatures create: Nitrous gases (NO<sub>x</sub>). Oxides of the following substances: Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Vapours/gases/fumes of: Ammonia or amines.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity - oral

**ATE oral (mg/kg)** 4,263.3

#### Acute toxicity - dermal

**ATE dermal (mg/kg)** 2,237.0

**Inhalation** Vapour from this product may be hazardous by inhalation.

**Ingestion** Harmful if swallowed.

**Skin contact** May be absorbed through the skin. Prolonged or repeated exposure may cause severe irritation. May cause sensitisation by skin contact. May cause sensitisation or allergic reactions in sensitive individuals.

**Eye contact** Risk of serious damage to eyes.

**Acute and chronic health hazards** Causes burns.

**Route of entry** Inhalation Skin absorption Ingestion. Skin and/or eye contact

**Target organs** Prolonged or repeated exposure may cause the following adverse effects: Risk of serious damage to eyes. May cause damage to the liver. May cause damage to the kidneys. Central and/or peripheral nervous system damage.

## SECTION 12: Ecological Information

**Ecotoxicity** Avoid release to the environment. The product contains substances which are toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

### 12.1. Toxicity

**Toxicity** Very toxic to aquatic organisms.

### 12.2. Persistence and degradability

**Persistence and degradability** There are no data on the degradability of this product.

### 12.3. Bioaccumulative potential

**Bioaccumulative potential** No data available on bioaccumulation.

### 12.4. Mobility in soil

**Mobility** The product is soluble in water. Do not discharge into drains or watercourses or onto the ground.

### 12.5. Results of PBT and vPvB assessment

**Results of PBT and vPvB assessment** This product does not contain any substances classified as PBT or vPvB.

### 12.6. Other adverse effects

## PUTTY HARDENER

**Other adverse effects** Not available.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

**Disposal methods** Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

**Waste class** 08 04 99

### SECTION 14: Transport information

#### 14.1. UN number

**UN No. (ADR/RID)** 2735

**UN No. (IMDG)** 2735

**UN No. (ICAO)** 2735

**UN No. (ADN)** 2735

#### 14.2. UN proper shipping name

**Proper shipping name (ADR/RID)** AMINES, LIQUID, CORROSIVE, N.O.S. (TRIETHYLENETETRAMINE, NONYLPHENOL)

**Proper shipping name (IMDG)** AMINES, LIQUID, CORROSIVE, N.O.S. (TRIETHYLENETETRAMINE, NONYLPHENOL)

**Proper shipping name (ICAO)** AMINES, LIQUID, CORROSIVE, N.O.S. (TRIETHYLENETETRAMINE, NONYLPHENOL)

**Proper shipping name (ADN)** AMINES, LIQUID, CORROSIVE, N.O.S. (TRIETHYLENETETRAMINE, NONYLPHENOL)

#### 14.3. Transport hazard class(es)

**ADR/RID class** 8

**ADR/RID classification code** C7

**ADR/RID label** 8

**IMDG class** 8

**ICAO class/division** 8

**ADN class** 8

#### Transport labels



#### 14.4. Packing group

**ADR/RID packing group** II

**IMDG packing group** II

**ADN packing group** II

**ICAO packing group** II

#### 14.5. Environmental hazards

**Environmentally hazardous substance/marine pollutant**

**No.**

## PUTTY HARDENER

### 14.6. Special precautions for user

EmS	F-A, S-B
ADR transport category	2
Emergency Action Code	2X
Hazard Identification Number (ADR/RID)	80
Tunnel restriction code	(E)

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

#### SECTION 15: Regulatory information

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

### 15.2. Chemical safety assessment

#### SECTION 16: Other information

Revision date	19/04/2017
Revision	12
Supersedes date	14/10/2015
Risk phrases in full	<p>Not classified.</p> <p>R21 Harmful in contact with skin.</p> <p>R21/22 Harmful in contact with skin and if swallowed.</p> <p>R22 Harmful if swallowed.</p> <p>R34 Causes burns.</p> <p>R43 May cause sensitisation by skin contact.</p> <p>R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</p> <p>R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</p> <p>R62 Possible risk of impaired fertility.</p> <p>R63 Possible risk of harm to the unborn child.</p>
Hazard statements in full	<p>H302 Harmful if swallowed.</p> <p>H312 Harmful in contact with skin.</p> <p>H314 Causes severe skin burns and eye damage.</p> <p>H315 Causes skin irritation.</p> <p>H317 May cause an allergic skin reaction.</p> <p>H318 Causes serious eye damage.</p> <p>H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.</p> <p>H400 Very toxic to aquatic life.</p> <p>H410 Very toxic to aquatic life with long lasting effects.</p> <p>H411 Toxic to aquatic life with long lasting effects.</p> <p>H412 Harmful to aquatic life with long lasting effects.</p>

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.