



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 10112H, 10115H, 10261H, 10611H, 11411H,

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 Performance Polymers
 Bay 150
 Shannon Industrial Estate
 Co. Clare
 Ireland
 V14 DF82
 353(61)771500
 353(61)471285
 mail@itwpp.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

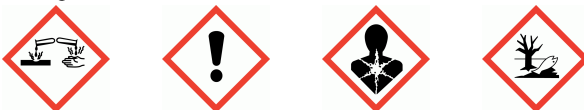
Classification (EC 1272/2008)

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

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

2.2. Label elements

Pictogram



Signal word

Danger

Hazard statements

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.

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Precautionary statements	<p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.</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> <p>P310 Immediately call a POISON CENTER/ doctor.</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>
Contains	DIMER/TOFA, reaction products with TETA, TRIETHYLENETETRAMINE, 2-PIPERAZIN-1-YLETHYLAMINE, 4-NONYLPHENOL, Branched
Supplementary precautionary statements	<p>P201 Obtain special instructions before use.</p> <p>P202 Do not handle until all safety precautions have been read and understood.</p> <p>P260 Do not breathe vapour/ spray.</p> <p>P261 Avoid breathing vapour/ spray.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P272 Contaminated work clothing should not be allowed out of the workplace.</p> <p>P273 Avoid release to the environment.</p> <p>P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P308+P313 IF exposed or concerned: Get medical advice/ attention.</p> <p>P321 Specific treatment (see medical advice on this label).</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P363 Wash contaminated clothing before reuse.</p> <p>P391 Collect spillage.</p> <p>P405 Store locked up.</p>

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.2. Mixtures

DIMER/TOFA, reaction products with TETA		30-60%
CAS number: 68082-29-1		
Classification		
Skin Irrit. 2 - H315		
Eye Dam. 1 - H318		
Skin Sens. 1A - H317		
Aquatic Chronic 2 - H411		
TRIETHYLENETETRAMINE		30-60%
CAS number: 112-24-3	EC number: 203-950-6	REACH registration number: 01-2119487919-13-0000
Classification		
Acute Tox. 4 - H312		
Skin Corr. 1B - H314		
Eye Dam. 1 - H318		
Skin Sens. 1 - H317		
Aquatic Chronic 3 - H412		

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2-PIPERAZIN-1-YLETHYLAMINE	5-10%
CAS number: 140-31-8	EC number: 205-411-0
	REACH registration number: 01-2119471486-30-0003
Classification	
Acute Tox. 4 - H302	
Acute Tox. 4 - H312	
Skin Corr. 1B - H314	
Eye Dam. 1 - H318	
Skin Sens. 1 - H317	
Aquatic Chronic 3 - H412	
4-NONYLPHENOL, Branched	5-10%
CAS number: 84852-15-3	EC number: 284-325-5
M factor (Acute) = 1	M factor (Chronic) = 1
Classification	
Acute Tox. 4 - H302	
Skin Corr. 1B - H314	
Eye Dam. 1 - H318	
Repr. 2 - H361fd	
Aquatic Acute 1 - H400	
Aquatic Chronic 1 - H410	
TITANIUM DIOXIDE	1-5%
CAS number: 13463-67-7	EC number: 236-675-5
	REACH registration number: 01-2119489379-17-0000
Classification	
Not Classified	

The full text for all hazard statements is 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.
Ingestion	Do not induce vomiting. Give plenty of water to drink. Get medical attention.
Skin contact	Remove affected person from source of contamination. Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing.
Eye contact	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

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	The product contains a sensitising substance.

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Ingestion	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.
Skin contact	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.
Eye contact	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

Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with the following media: Water. Foam. Dry chemicals. Carbon dioxide (CO2).

5.2. Special hazards arising from the substance or mixture

Specific hazards Avoid breathing fire gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting 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.

Special protective equipment for firefighters 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

Personal precautions Avoid contact with skin and eyes. Wear protective clothing as described in Section 8 of this safety data sheet. Provide adequate ventilation.

6.2. Environmental precautions

Environmental precautions 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.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up 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.

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

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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/m³ total dust

TRIETHYLENETETRAMINE (CAS: 112-24-3)

DNEL Workers - Inhalation; Long term systemic effects: 1 mg/m³
Workers - Inhalation; Short term systemic effects: 5380 mg/m³
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/m³
Workers - Inhalation; Short term systemic effects: 21.4 mg/m³
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/cm²

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.

Hand protection

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.

Other skin and body protection

Avoid contact with skin. Wear apron or protective clothing in case of contact.

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.

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Respiratory protection 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

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

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 (NOx). Oxides of the following substances: Carbon monoxide (CO). Carbon dioxide (CO2). 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

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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

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

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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.

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

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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	03/04/2018
Revision	13
Supersedes date	19/04/2017
Hazard statements in full	H302 Harmful if swallowed. H312 Harmful 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. H361fd Suspected of damaging fertility. Suspected of damaging the unborn child. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. H411 Toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects.

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.