1. Identification

**Product identifier**

**Product name**  PUTTY HARDENER  
**Product number**  10112H, 10115H, 10261H, 10611H, 11411H,

**Recommended use of the chemical and restrictions on use**

**Application**  Hardener.

**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

**Emergency telephone number**

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

2. Hazard(s) identification

**Classification of the substance or mixture**

<table>
<thead>
<tr>
<th>Physical hazards</th>
<th>Not Classified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health hazards</td>
<td>Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Repr. 2 - H361fd</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>Aquatic Chronic 2 - H411</td>
</tr>
</tbody>
</table>

**Human health**

Corrosive. Prolonged contact causes serious eye and tissue damage.

**Label elements**

**Pictogram**

[![Pictogram](image)]

**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.
PUTTY HARDENER

Precautionary statements

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe vapor/ spray.
P261 Avoid breathing vapor/ spray.
P264 Wash contaminated skin thoroughly after handling.
P272 Contaminated work clothing must not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P302+P352 If on skin: Wash with plenty of water.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse
skin with water/ shower.
P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact
lenses, if present and easy to do. Continue rinsing.
P308+P313 If exposed or concerned: Get medical advice/ attention.
P310 Immediately call a poison center/ doctor.
P321 Specific treatment (see medical advice on this label).
P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.
P405 Store locked up.
P501 Dispose of contents/ container in accordance with national regulations.

Contains

DIMER/TOFA, reaction products with TETA, TRIETHYLENETETRAMINE, 2-PIPERAZIN-1-YLETHYLAMINE, 4-NONYLPHENOL, Branched

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>MIXTURES</th>
<th>CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIMER/TOFA, reaction products with TETA</td>
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<td>CAS number: 68082-29-1</td>
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Classification

Skin Irrit. 2 - H315
Eye Dam. 1 - H318
Skin Sens. 1A - H317
Aquatic Chronic 2 - H411

<table>
<thead>
<tr>
<th>MIXTURES</th>
<th>CONTENTS</th>
</tr>
</thead>
<tbody>
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<td>TRIETHYLENETETRAMINE</td>
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</tr>
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<td>CAS number: 112-24-3</td>
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</tbody>
</table>

Classification

Acute Tox. 4 - H312
Skin Corr. 1B - H314
Eye Dam. 1 - H318
Skin Sens. 1 - H317
Aquatic Chronic 3 - H412
# PUTTY HARDENER

## 2-Piperazine-1-Ylethylamine

**CAS number:** 140-31-8

<table>
<thead>
<tr>
<th>Classification</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 4 - H302</td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 4 - H312</td>
<td></td>
</tr>
<tr>
<td>Skin Corr. 1B - H314</td>
<td></td>
</tr>
<tr>
<td>Eye Dam. 1 - H318</td>
<td></td>
</tr>
<tr>
<td>Skin Sens. 1 - H317</td>
<td></td>
</tr>
<tr>
<td>Aquatic Chronic 3 - H412</td>
<td></td>
</tr>
</tbody>
</table>

5-10%

## 4-Nonylphenol, Branched

**CAS number:** 84852-15-3

<table>
<thead>
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<th>M factor (Chronic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

5-10%

<table>
<thead>
<tr>
<th>Classification</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 4 - H302</td>
<td></td>
</tr>
<tr>
<td>Skin Corr. 1B - H314</td>
<td></td>
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<tr>
<td>Eye Dam. 1 - H318</td>
<td></td>
</tr>
<tr>
<td>Repr. 2 - H361fd</td>
<td></td>
</tr>
<tr>
<td>Aquatic Acute 1 - H400</td>
<td></td>
</tr>
<tr>
<td>Aquatic Chronic 1 - H410</td>
<td></td>
</tr>
</tbody>
</table>

The full text for all hazard statements is displayed in Section 16.

### 4. First-aid measures

#### 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 vapor/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.

#### 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 sensitizing substance.

**Ingestion**

This product is corrosive. May cause chemical burns in mouth, esophagus 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 sensitizing 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.
PUTTY HARDENER

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.

Indication of immediate medical attention and special treatment needed
Notes for the doctor
Treat symptomatically.

5. Fire-fighting measures

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

Special hazards arising from the substance or mixture
Specific hazards
Avoid breathing fire gases or vapors.

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.

6. Accidental release measures

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.

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.

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 labeled with correct contents and hazard symbol.

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

7. Handling and storage

Precautions for safe handling
Usage precautions
Use only in well-ventilated areas. Provide adequate ventilation. Avoid inhalation of vapors. 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.

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).

Specific end uses(s)
Specific end use(s)
The identified uses for this product are detailed in Section 1.

8. Exposure Controls/personal protection

Exposure controls
PUTTY HARDENER

**Protective equipment**

Provide adequate general and local exhaust ventilation.

**Appropriate engineering controls**

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 OSHA 1910.133.

**Eye/face 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 OSHA 1910.138 and be demonstrated to be impervious to the chemical and resist degradation. 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.

**Hand protection**

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

**Other skin and body protection**

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.

**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 vapor 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 OSHA 1910.134.

### 9. Physical and Chemical Properties

**Information on basic physical and chemical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Paste</td>
</tr>
<tr>
<td>Color</td>
<td>Cream</td>
</tr>
<tr>
<td>Odor</td>
<td>Amine</td>
</tr>
<tr>
<td>pH (concentrated solution)</td>
<td>10.5 @ 20 °C</td>
</tr>
<tr>
<td>Initial boiling point and range</td>
<td>&gt;232°C @</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt;93°C</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>&lt;0.01 mmHg @ °C</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.98 @ 20 °C°C</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Soluble in water</td>
</tr>
</tbody>
</table>

### 10. Stability and reactivity

**Reactivity**

Reactions with the following materials may generate heat: Acids. Strong oxidizing agents.

**Stability**

Stable at normal ambient temperatures and when used as recommended.
PUTTY HARDENER

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

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.

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

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.

11. Toxicological information

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
Vapor 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 sensitization 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.

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.

Toxicity
Very toxic to aquatic organisms.

Persistence and degradability

Bioaccumulative potential
No data available on bioaccumulation.

Mobility in soil

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

Other adverse effects


### PUTTY HARDENER

**Other adverse effects**  
Not available.

### 13. Disposal considerations

**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

### 14. Transport information

**UN Number**

- **UN No. (TDG)** 2735
- **UN No. (IMDG)** 2735
- **UN No. (ICAO)** 2735
- **UN No. (DOT)** 2735

**UN proper shipping name**

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

**Transport hazard class(es)**

- **TDG class** 8
- **TDG label(s)** 8
- **IMDG Class** 8
- **ICAO class/division** 8

**Transport labels**

![Transport label](image)

**Packing group**

- **TDG Packing Group** II
- **IMDG packing group** II
- **ICAO packing group** II
- **DOT packing group** II

**Environmental hazards**

- **Environmentally Hazardous Substance No.**

**Special precautions for user**

- **EmS** F-A, S-B
## PUTTY HARDENER

### 15. Regulatory information

### 16. Other information

<table>
<thead>
<tr>
<th>Revision date</th>
<th>4/3/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision</td>
<td>13</td>
</tr>
<tr>
<td>Supersedes date</td>
<td>4/19/2017</td>
</tr>
</tbody>
</table>
| 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.