



SAFETY DATA SHEET LIQUID HARDENER.

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

1.1. Product identifier

Product name LIQUID HARDENER.

Product number X0014

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

Identified uses Hardener. Mix With Resin Component And Pour Onto Application

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)

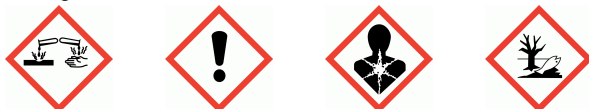
Physical hazards Not Classified

Health hazards Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Repr. 2 - H361fd

Environmental hazards Aquatic Chronic 2 - H411

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>P308+P313 IF exposed or concerned: Get medical advice/ attention.</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	<p>DIMER/TOFA, reaction products with TETA, TRIETHYLENETETRAMINE, 2-PIPERAZIN-1-YLETHYLAMINE, 4-NONYLPHENOL, Branched</p>
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>P310 Immediately call a POISON CENTER/ doctor.</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

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

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	

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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		
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		

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. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. 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.

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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.

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

Notes for the doctor No specific recommendations. If in doubt, get medical attention promptly.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with the following media: Water. Foam, carbon dioxide or dry powder.

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 Provide adequate ventilation. Use only in well-ventilated areas. Avoid contact with skin and eyes. Avoid eating, drinking and smoking when using the product. Do not use in confined spaces without adequate ventilation and/or respirator. Do not eat, drink or smoke when using the product.

Advice on general occupational hygiene Wash promptly with soap and water if skin becomes contaminated. Promptly remove any clothing that becomes wet or contaminated.

7.2. Conditions for safe storage, including any incompatibilities

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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

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. Use approved respirator if air contamination is above an acceptable level. Ensure operatives are trained to minimise exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures.

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. When used with mixtures, the protection time of gloves cannot be accurately estimated. It is recommended that gloves are made of the following material: Butyl rubber. Laminate of polyethylene and ethylene vinyl alcohol (PE/EVOH). Neoprene. The selected gloves should have a breakthrough time of at least 8 hours.

Other skin and body protection

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. Promptly remove any clothing that becomes wet or contaminated.

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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. Wear a respirator fitted with the following cartridge: Combination filter, type A2/P2. 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	Liquid.
Colour	Amber.
Odour	Amine.
pH	pH (concentrated solution): 10.5 @ 20 °C
Melting point	n/a°C
Initial boiling point and range	232°C @
Flash point	>93°C
Evaporation rate	<<1 (butyl acetate =1)
Vapour pressure	<10mmHg @ °C
Vapour density	>1
Relative density	0.98 @ 20 °C°C
Solubility(ies)	Soluble in water.

9.2. Other information

Other information Not available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Strong oxidising agents. Acids.

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 oxidising agents. Avoid contact with acids.

10.6. Hazardous decomposition products

Hazardous decomposition products Fire or high temperatures create: Nitrous gases (NO_x). Oxides of the following substances: Carbon monoxide (CO). Carbon dioxide (CO₂). Vapours/gases/fumes of: Ammonia or amines.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg) 3,901.37

Acute toxicity - dermal

ATE dermal (mg/kg) 2,052.27

Ingestion	Corrosive. Small amounts may cause serious damage.
Skin contact	Causes burns. Corrosive. Prolonged contact causes serious tissue damage. May be absorbed through the skin. May cause sensitisation by skin contact. May cause sensitisation or allergic reactions in sensitive individuals.
Eye contact	Causes burns. Risk of serious damage to eyes.
Acute and chronic health hazards	This product is corrosive. This product is corrosive. This product may cause skin and eye irritation. Prolonged contact may cause burns.
Route of entry	Inhalation Skin absorption Ingestion.
Target organs	Prolonged or repeated exposure may cause the following adverse effects: May cause damage to the liver and kidneys. Respiratory system, lungs Central nervous system

SECTION 12: Ecological Information

Ecotoxicity Avoid releasing into the environment. The product contains a substance which is 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 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.

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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

14.2. UN proper shipping name

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

Proper shipping name (IMDG) AMINES, LIQUID, CORROSIVE, N.O.S. (TRIETHYLENETETRAMINE, NONYL PHENOL)

Proper shipping name (ICAO) AMINES, LIQUID, CORROSIVE, N.O.S. (TRIETHYLENETETRAMINE, NONYL PHENOL)

Proper shipping name (ADN) AMINES, LIQUID, CORROSIVE, N.O.S. (TRIETHYLENETETRAMINE, NONYL PHENOL)

14.3. Transport hazard class(es)

ADR/RID class 8

ADR/RID label 8

IMDG class 8

ICAO class/division 8

Transport labels**14.4. Packing group**

ADR/RID packing group II

IMDG packing group II

ICAO packing group II

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

**14.6. Special precautions for user**

EmS F-A, S-B

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

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 03/04/2018

Revision 17

Supersedes date 05/04/2017

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.