

# **ITW** Engineered Polymers

## SAFETY DATA SHEET ALUMINIUM LIQUID (F2) RESIN

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

#### 1.1. Product identifier

Product name ALUMINIUM LIQUID (F2) RESIN  
Product number X0011

#### 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

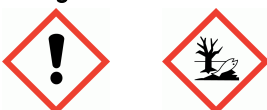
Physical hazards Not Classified  
Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317  
Environmental hazards Aquatic Chronic 2 - H411

Classification (67/548/EEC or 1999/45/EC) Xi;R36/38. R43. N;R51/53.

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

## ALUMINIUM LIQUID (F2) RESIN

<b>Hazard statements</b>	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.
<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 ), OXIRANE, MONO [(C12-14-ALKYLOXY)METHYL] DERIVS
<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. P391 Collect spillage. 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>30-60%</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>OXIRANE, MONO [(C12-14- ALKYLOXY)METHYL] DERIVS</b>	<b>1-5%</b>
CAS number: 68609-97-2	
<b>Classification</b>	<b>Classification (67/548/EEC or 1999/45/EC)</b>
Skin Irrit. 2 - H315	R43 Xi;R38
Skin Sens. 1 - H317	

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

## ALUMINIUM LIQUID (F2) RESIN

<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).
<b>Inhalation</b>	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.
<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 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.
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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. 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.
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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>	Provide adequate ventilation. Avoid contact with skin and eyes. Wear protective clothing as described in Section 8 of this safety data sheet.
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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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### 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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## ALUMINIUM LIQUID (F2) RESIN

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

**Usage precautions** Provide adequate ventilation. Use only in well-ventilated areas. Keep away from heat, sparks and open flame. Open drum carefully as content may be under pressure. 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.

#### 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

**Ingredient comments** WEL = Workplace Exposure Limits

#### 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.

##### Hand protection

Wear protective gloves made of the following material: Rubber or plastic.

##### 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.

##### Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn.

### SECTION 9: Physical and Chemical Properties

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

<b>Appearance</b>	Viscous liquid.
<b>Colour</b>	Light (or pale). 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>	>204.4°C @
<b>Flash point</b>	> 93.3°C

## ALUMINIUM LIQUID (F2) RESIN

Evaporation rate	<<1 ( butyl acetate =1)
Vapour density	>1
Relative density	1.92 @ 20 °C°C
Solubility(ies)	Slightly soluble in water.

### 9.2. Other information

Other information	Not available.
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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reactivity	Strong oxidising agents. Acids. Amines.
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### 10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
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### 10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Not available.
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### 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.
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### 10.5. Incompatible materials

Materials to avoid	Avoid contact with the following materials: Strong oxidising agents. Strong acids. Amines.
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### 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.
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## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Skin contact	Irritating to skin. May cause sensitisation by skin contact. May cause sensitisation or allergic reactions in sensitive individuals. Prolonged contact may cause redness, irritation and dry skin.
Eye contact	Irritating to eyes.
Acute and chronic health hazards	The product contains an epoxy resin. May cause sensitisation or allergic reactions in sensitive individuals.
Route of entry	Inhalation Ingestion.

## 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.
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### 12.1. Toxicity

Toxicity	Very toxic to aquatic organisms.
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### 12.2. Persistence and degradability

## ALUMINIUM LIQUID (F2) RESIN

**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** No other information known.

### 14.1. UN number

**UN No. (ADR/RID)** 3082

**UN No. (IMDG)** 3082

**UN No. (ICAO)** 3082

### 14.2. UN proper shipping name

**Proper shipping name (ADR/RID)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EPOXY RESIN (Number average MW <= 700 ))

**Proper shipping name (IMDG)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EPOXY RESIN (Number average MW <= 700 ))

**Proper shipping name (ICAO)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EPOXY RESIN (Number average MW <= 700 ))

**Proper shipping name (ADN)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EPOXY RESIN (Number average MW <= 700 ))

### 14.3. Transport hazard class(es)

**ADR/RID class** 9

**ADR/RID subsidiary risk**

**ADR/RID label** 9

**IMDG class** 9

**IMDG subsidiary risk**

## ALUMINIUM LIQUID (F2) RESIN

ICAO class/division 9

ICAO subsidiary risk

Transport labels



### 14.4. Packing group

ADR/RID packing group III

IMDG packing group III

ICAO packing group III

### 14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



### 14.6. Special precautions for user

EmS F-A, S-F

Emergency Action Code •3Z

Hazard Identification Number 90  
(ADR/RID)

Tunnel restriction code (E)

### 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information required.

## 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).

**Water hazard classification** WGK 2

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

## SECTION 16: Other information

Revision date 19/05/2015

Revision 14

Supersedes date 12/04/2014

## ALUMINIUM LIQUID (F2) RESIN

**Risk phrases in full**

NC Not classified.  
R36/38 Irritating to eyes and skin.  
R38 Irritating to skin.  
R43 May cause sensitisation by skin contact.  
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Hazard statements in full**

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.

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 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 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

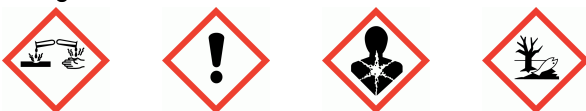
##### Classification

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. N;R51/53.

#### 2.2. Label elements

##### Pictogram



##### Signal word

Danger

##### Hazard statements

H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.  
H317 May cause an allergic skin reaction.  
H314 Causes severe skin burns and eye damage.  
H411 Toxic to aquatic life with long lasting effects.

## LIQUID HARDENER.

**Precautionary statements**

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.  
 P308+P313 IF exposed or concerned: Get medical advice/attention.  
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
 P501 Dispose of contents/container in accordance with national regulations.

**Contains** TRIETHYLENETETRAMINE, 2-PIPERAZIN-1-YLETHYLAMINE, NONYLPHENOL

**Supplementary 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 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.  
 P310 Immediately call a POISON CENTER/doctor.  
 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

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

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

<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			

**LIQUID HARDENER.**

<b>NONYLPHENOL</b>		<b>5-10%</b>
CAS number: 25154-52-3	EC number: 246-672-0	
M factor (Acute) = 1	M factor (Chronic) = 1	
<b>Classification</b> Acute Tox. 4 - H302 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Repr. 2 - H361fd Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410	<b>Classification (67/548/EEC or 1999/45/EC)</b> Repr. Cat. 3;R62,R63 C;R34 Xn;R22 N;R50/53	
<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> Acute Tox. 4 - H302 Acute Tox. 4 - H312 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Aquatic Chronic 3 - H412	<b>Classification (67/548/EEC or 1999/45/EC)</b> C;R34 Xn;R21/22 R43 R52/53	

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>	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.
<b>Inhalation</b>	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.
<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.
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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**

## LIQUID HARDENER.

**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

**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)

## LIQUID HARDENER.

<b>DNEL</b>	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)

<b>DNEL</b>	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. 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. The breakthrough time for any glove material may be different for different glove manufacturers. 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. Frequent changes are recommended. The selected gloves should have a breakthrough time of at least 6 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.

### 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. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked.

## SECTION 9: Physical and Chemical Properties

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

<b>Appearance</b>	Liquid.
<b>Colour</b>	Amber.

## LIQUID HARDENER.

<b>Odour</b>	Amine.
<b>pH</b>	pH (concentrated solution): 10.5 @ 20 °C
<b>Melting point</b>	n/a °C
<b>Initial boiling point and range</b>	232°C @
<b>Flash point</b>	>93°C
<b>Evaporation rate</b>	<<1 (butyl acetate =1)
<b>Vapour pressure</b>	<10mmHg @ °C
<b>Vapour density</b>	>1
<b>Relative density</b>	0.98 @ 20 °C°C
<b>Solubility(ies)</b>	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<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)** 3,121.1

#### Acute toxicity - dermal

**ATE dermal (mg/kg)** 2,540.74

**Ingestion** Corrosive. Small amounts may cause serious damage.

## LIQUID HARDENER.

<b>Skin contact</b>	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.
<b>Eye contact</b>	Causes burns. Risk of serious damage to eyes.
<b>Acute and chronic health hazards</b>	This product is corrosive. This product is corrosive. This product may cause skin and eye irritation. Prolonged contact may cause burns.
<b>Route of entry</b>	Inhalation Skin absorption Ingestion.
<b>Target organs</b>	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.

**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

## LIQUID HARDENER.

### 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 subsidiary risk**

**ADR/RID label** 8

**IMDG class** 8

**IMDG subsidiary risk**

**ICAO class/division** 8

**ICAO subsidiary risk**

**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 MARPOL73/78 and the IBC Code

#### SECTION 15: Regulatory information

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



## LIQUID HARDENER.

**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).

**Water hazard classification** WGK 2

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

### SECTION 16: Other information

**Revision date** 13/05/2015

**Revision** 15

**Supersedes date** 04/12/2014

**Risk phrases in full**

R21 Harmful in contact with skin.  
 R21/22 Harmful in contact with skin and if swallowed.  
 R22 Harmful if swallowed.  
 R34 Causes burns.  
 R43 May cause sensitisation by skin contact.  
 R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
 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.

**Hazard statements in full**

H302 Harmful if swallowed.  
 H312 Harmful in contact with skin.  
 H314 Causes severe skin burns and eye damage.  
 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.