



## Civilox 11 Epoxy Curative

LiquiMix Pty Ltd

Chemwatch: 5225-00

Version No: 2.1.1.1

Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 3

Issue Date: 15/09/2016

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S.GHS.AUS.EN

### SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

#### Product Identifier

Product name	Civilox 11 Epoxy Curative
Proper shipping name	FLAMMABLE LIQUID, N.O.S. (contains xylene)
Other means of identification	Not Available

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

Relevant identified uses	Epoxy flooring primer resin. Mix with Civilox resin
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#### Details of the supplier of the safety data sheet

Registered company name	LiquiMix Pty Ltd
Address	1/29 Collinsvale Road Rocklea QLD 4106 Australia
Telephone	+61 7 3277 6655
Fax	+61 7 3009 0558
Website	Not Available
Email	admin@liquimix.com

#### Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	1800 039 008 (All Hours)
Other emergency telephone numbers	+61 3 9573 3112

### SECTION 2 HAZARDS IDENTIFICATION

#### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. DANGEROUS GOODS.** According to the WHS Regulations and the ADG Code.

Poisons Schedule	S5
Classification <sup>[1]</sup>	Flammable Liquid Category 3, Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 1B, Serious Eye Damage Category 1, Skin Sensitizer Category 1, Germ cell mutagenicity Category 2, Acute Aquatic Hazard Category 3, Chronic Aquatic Hazard Category 3
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

#### Label elements

Continued...

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GHS label elements	   
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## SIGNAL WORD

DANGER

## Hazard statement(s)

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H412	Harmful to aquatic life with long lasting effects.

## Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233	Keep container tightly closed.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Use personal protective equipment as required.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P272	Contaminated work clothing should not be allowed out of the workplace.

## Precautionary statement(s) Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Remove/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.
P310	Immediately call a POISON CENTER or doctor/physician.
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam for extinction.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

## Precautionary statement(s) Storage

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

## Precautionary statement(s) Disposal

Continued...

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**P501** Dispose of contents/container in accordance with local regulations.

### SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

#### Substances

See section below for composition of Mixtures

#### Mixtures

CAS No	%[weight]	Name
8007-24-7	10-30	<u>cashew nutshell liquid</u>
1330-20-7	10-19	<u>xylene</u>
90-72-2	1-3	<u>2,4,6-tris(dimethylamino)methylphenol</u>
1477-55-0	1-3	<u>benzene-1,3-dimethanamine</u>
108-95-2	1-<3	<u>phenol</u>
109-55-7	1-<2	<u>3-dimethylaminopropylamine</u>
	balance	Ingredients determined not to be hazardous

### SECTION 4 FIRST AID MEASURES

#### Description of first aid measures

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>Wash out immediately with fresh running water.</li> <li>Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>Immediately remove all contaminated clothing, including footwear.</li> <li>Flush skin and hair with running water (and soap if available).</li> <li>Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>If fumes or combustion products are inhaled remove from contaminated area.</li> <li>Lay patient down. Keep warm and rested.</li> <li>Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>Transport to hospital, or doctor.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li><b>If swallowed do NOT induce vomiting.</b></li> <li>If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>Observe the patient carefully.</li> <li>Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>Seek medical advice.</li> </ul>

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

For acute or short term repeated exposures to xylene:

- Gastro-intestinal absorption is significant with ingestions. For ingestions exceeding 1-2 ml (xylene)/kg, intubation and lavage with cuffed endotracheal tube is recommended. The use of charcoal and cathartics is equivocal.
- Pulmonary absorption is rapid with about 60-65% retained at rest.
- Primary threat to life from ingestion and/or inhalation, is respiratory failure.
- Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases ( $pO_2 < 50$  mm Hg or  $pCO_2 > 50$  mm Hg) should be intubated.
- Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.

#### BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
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Methylhippu-ric acids in urine

1.5 gm/gm creatinine  
2 mg/minEnd of shift  
Last 4 hrs of shift

### SECTION 5 FIREFIGHTING MEASURES

#### Extinguishing media

- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.
- ▶ Water spray or fog - Large fires only.

#### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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#### Advice for firefighters

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be violently or explosively reactive.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ If safe, switch off electrical equipment until vapour fire hazard removed.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Combustible.</li> <li>▶ Slight fire hazard when exposed to heat or flame.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ On combustion, may emit toxic fumes of carbon monoxide (CO).</li> <li>▶ May emit acrid smoke.</li> <li>▶ Mists containing combustible materials may be explosive.</li> </ul> <p>Combustion products include; carbon dioxide (CO<sub>2</sub>) nitrogen oxides (NO<sub>x</sub>) other pyrolysis products typical of burning organic material</p>
<b>HAZCHEM</b>	•3Y

### SECTION 6 ACCIDENTAL RELEASE MEASURES

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

See section 8

#### Environmental precautions

See section 12

#### Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb small quantities with vermiculite or other absorbent material.</li> <li>▶ Wipe up.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be violently or explosively reactive.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ No smoking, naked lights or ignition sources.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

### SECTION 7 HANDLING AND STORAGE

#### Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></li> <li>▶ Electrostatic discharge may be generated during pumping - this may result in fire.</li> <li>▶ Ensure electrical continuity by bonding and grounding (earthing) all equipment.</li> </ul>
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	<ul style="list-style-type: none"> <li>Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<math>\leq 1</math> m/sec until fill pipe submerged to twice its diameter, then <math>\leq 7</math> m/sec).</li> <li>Avoid splash filling.</li> <li>Do NOT use compressed air for filling discharging or handling operations.</li> <li>Avoid all personal contact, including inhalation.</li> <li>Wear protective clothing when risk of overexposure occurs.</li> <li>Use in a well-ventilated area.</li> <li>Prevent concentration in hollows and sumps.</li> <li><b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> <li>Avoid smoking, naked lights or ignition sources.</li> </ul>
Other information	<ul style="list-style-type: none"> <li>Store in original containers in approved flame-proof area.</li> <li>No smoking, naked lights, heat or ignition sources.</li> <li><b>DO NOT store in pits, depressions, basements or areas where vapours may be trapped.</b></li> <li>Keep containers securely sealed.</li> <li>Store away from incompatible materials in a cool, dry well ventilated area.</li> <li>Protect containers against physical damage and check regularly for leaks.</li> </ul>

### Conditions for safe storage, including any incompatibilities

Suitable container	Plastic container
Storage incompatibility	Avoid storage with oxidisers

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	xylene	Xylene (o-, m-, p-isomers)	350 mg/m <sup>3</sup> / 80 ppm	655 mg/m <sup>3</sup> / 150 ppm	Not Available	Not Available
Australia Exposure Standards	benzene-1,3-dimethanamine	m-Xylene-a,a'-diamine	Not Available	Not Available	0.1 mg/m <sup>3</sup>	Sk
Australia Exposure Standards	phenol	Phenol	4 mg/m <sup>3</sup> / 1 ppm	Not Available	Not Available	Sk

#### EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
xylene	Xylenes	Not Available	Not Available	Not Available
2,4,6-tris[(dimethylamino)methyl]phenol	Tris(dimethylaminomethyl)phenol, 2,4,6-	3.6 mg/m <sup>3</sup>	40 mg/m <sup>3</sup>	240 mg/m <sup>3</sup>
phenol	Phenol	Not Available	Not Available	Not Available
3-dimethylaminopropylamine	Dimethyl-1,3-propanediamine, N,N-; (1-Amino-3-dimethylaminopropane)	0.44 ppm	4.9 ppm	89 ppm


Ingredient	Original IDLH	Revised IDLH
cashew nutshell liquid	Not Available	Not Available
xylene	1,000 ppm	900 ppm
2,4,6-tris[(dimethylamino)methyl]phenol	Not Available	Not Available
benzene-1,3-dimethanamine	Not Available	Not Available
phenol	250 ppm	250 [Unch] ppm
3-dimethylaminopropylamine	Not Available	Not Available

### Exposure controls

Appropriate engineering controls	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p>
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	<p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> <p>Refer also to protective measures for the other component used with the product. Read both SDS before using; store and attach SDS together.</p>
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>Chemical goggles.</li> <li>Full face shield may be required for supplementary but never for primary protection of eyes.</li> <li>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>Wear chemical protective gloves, e.g. PVC.</li> <li>Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.</li> <li>Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly.</p>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>Overalls.</li> <li>P.V.C. apron.</li> <li>Barrier cream.</li> <li>Skin cleansing cream.</li> <li>Eye wash unit.</li> </ul>
<b>Thermal hazards</b>	Not Available

### Respiratory protection

Type AK-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Red brown liquid with amine odour; does not mix with water.		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	1.00
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	>10	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	140
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	27 xylene	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Flammable.	<b>Oxidising properties</b>	Not Available

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Upper Explosive Limit (%)	7.7 xylene	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	1.1 xylene	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water (g/L)	Immiscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

## SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> <li>Unstable in the presence of incompatible materials.</li> <li>Product is considered stable.</li> <li>Hazardous polymerisation will not occur.</li> </ul>
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

## SECTION 11 TOXICOLOGICAL INFORMATION

## Information on toxicological effects

Inhaled	<p>Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.</p> <p>Inhalation hazard is increased at higher temperatures.</p> <p>Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.</p>
Ingestion	<p>Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.</p> <p>The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.</p>
Skin Contact	<p>Skin contact with the material may be harmful; systemic effects may result following absorption.</p> <p>The material can produce chemical burns following direct contact with the skin.</p> <p>The material may accentuate any pre-existing dermatitis condition</p>
Eye	The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.
Chronic	<p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation.</p> <p>Women exposed to xylene in the first 3 months of pregnancy showed a slightly increased risk of miscarriage and birth defects. Evaluation of workers chronically exposed to xylene has demonstrated lack of genetic toxicity.</p>

CiviloX 11 Epoxy Curative	TOXICITY	IRRITATION
	Not Available	Not Available
cashew nutshell liquid	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Strong irritant (unless treated)
xylene	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >1700 mg/kg <sup>[2]</sup>	Eye (human): 200 ppm irritant
	Inhalation (rat) LC50: 5000 ppm/4hr <sup>[2]</sup>	Eye (rabbit): 5 mg/24h SEVERE
	Oral (rat) LD50: 4300 mg/kg <sup>[2]</sup>	Eye (rabbit): 87 mg mild
		Skin (rabbit): 500 mg/24h moderate
2,4,6-tris[(dimethylamino)methyl]phenol	TOXICITY	IRRITATION

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	dermal (rat) LD50: >973 mg/kg <sup>[1]</sup>	[Ciba]
	Inhalation (rat) LC50: >0.5 mg/l/1 hr <sup>[2]</sup>	[Rohm & Haas, Henkel]*
	Oral (rat) LD50: 1200 mg/kg <sup>[2]</sup>	Eye (rabbit): 0.05 mg/24h - SEVERE
		Skin (rabbit): 2 mg/24h - SEVERE
benzene-1,3-dimethanamine	TOXICITY	IRRITATION
	dermal (rat) LD50: >3100 mg/kg <sup>[1]</sup>	Eye (rabbit): 0.05 mg/24h SEVERE
	Inhalation (rat) LC50: 700 ppm/1hr <sup>[2]</sup>	Skin (rabbit): 0.75 mg/24h SEVERE
	Oral (rat) LD50: 987 mg/kg <sup>[1]</sup>	
phenol	TOXICITY	IRRITATION
	dermal (rat) LD50: 662.5 mg/kg <sup>[1]</sup>	Eye(rabbit): 100 mg rinse - mild
	Inhalation (rat) LC50: 0.316 mg/L/4hr <sup>[2]</sup>	Eye(rabbit): 5 mg - SEVERE
	Oral (rat) LD50: 317 mg/kg <sup>[2]</sup>	Skin(rabbit): 500 mg open -SEVERE
3-dimethylaminopropylamine	TOXICITY	IRRITATION
	dermal (rat) LD50: >400-<2000 mg/kg <sup>[1]</sup>	Eye (rabbit): 5 mg - moderate
	Oral (rat) LD50: 377.1 mg/kg <sup>[1]</sup>	Skin (rabbit): 0.1 mg/24h - open
<b>Legend:</b> 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances		

CASHEW NUTSHELL LIQUID	<p>For cashew nutshell liquid (test substance Cardolite NX 4708 (distilled cashew nut shell liquid))</p> <p>No oestrogenic activity was observed at all concentrations tested.</p> <p>The substance was found to be non-mutagenic</p> <p>Skin reactions observed after intradermal induction: Well-defined erythema (grade 2) was commonly noted at the intradermal injection sites at the 24-hour observation. Incidents of moderate to severe erythema were also noted at this time. Well-defined erythema persisted at all intradermal injection sites at the 48-hour observation.</p> <p>Skin reactions observed after topical induction: Very slight or well-defined erythema (grades 1 or 2) with or without very slight oedema (grade 1), was commonly noted at the topical induction sites at the 1-hour observation. Incidents of fissuring of the skin, or bleeding were also noted at this time.</p>
XYLENE	<p>The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.</p> <p>Reproductive effector in rats</p>
BENZENE-1,3-DIMETHANAMINE	<p>Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms. Allergy causing activity is due to interactions with proteins.</p> <p>Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema.</p> <p>Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure.</p> <p>For benzene-1,3-dimethanamine (m-xylene-alpha,alpha'- diamine)</p> <p>The toxicity via oral administration and inhalation was tissue damage in the digestive and respiratory organs, respectively, which are the first contact sites. The chemical is corrosive to rat and mouse skin and a sensitiser in the guinea pig maximisation test.</p> <p>In the 28-day repeated dose toxicity study [OECD TG 407], the chemical was given to rats by gavage at doses of 0, 10, 40, 150 and 600 mg/kg b.w/day. One male and four females died, and salivation, low locomotor activity and piloerection were noted in the 600 mg/kg group. Furthermore, ulceration, acanthosis with hyperkeratosis and submucosal inflammation were observed in the forestomach. No adverse effects were observed in the 150 mg/kg and the lower dose groups.</p>
3-DIMETHYLAMINOPROPYLAMINE	<p>for 3-dimethylaminopropylamine (syn 3-aminopropylidimethylamine, DMPA)</p> <p><b>Acute toxicity:</b> DMPA was been found to be harmful following oral administration to rats.</p> <p>In a field study workers showed impaired respiration (wheezy breath, constricted chest, irritation of mucosa of the eyes, nose and pharynx) as a result of occupational exposure to DMPA (2.34 – 5.87 mg/m<sup>3</sup>= 0.55 – 1.38 ppm).</p> <p>Based on the results of the sensitisation test on the skin DMPA has been classified as having a sensitising effect. DMPA showed strong irritating or corrosive effects.</p> <p><b>Repeat dose toxicity:</b> In a oral 28-day subchronic toxicity study with rats, the no-observed-adverse</p>



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	effect-level (NOAEL) was 50 mg /kg bw/day. In the oral reproduction/developmental toxicity screening test the no-observed-adverse effect-level (NOAEL) was 200 mg/kg bw/day.
<b>CASHEW NUTSHELL LIQUID &amp; BENZENE-1,3-DIMETHANAMINE &amp; 3-DIMETHYLAMINOPROPYLAMINE</b>	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact.
<b>CASHEW NUTSHELL LIQUID &amp; 2,4,6-TRIS[(DIMETHYLAMINO)METHYL]PHENOL</b>	No significant acute toxicological data identified in literature search.
<b>XYLENE &amp; 2,4,6-TRIS[(DIMETHYLAMINO)METHYL]PHENOL &amp; BENZENE-1,3-DIMETHANAMINE &amp; PHENOL</b>	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
<b>XYLENE &amp; PHENOL</b>	The substance is classified by IARC as Group 3: <b>NOT</b> classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.
<b>2,4,6-TRIS[(DIMETHYLAMINO)METHYL]PHENOL &amp; 3-DIMETHYLAMINOPROPYLAMINE</b>	While it is difficult to generalise about the full range of potential health effects posed by exposure to the many different amine compounds, characterised by those used in the manufacture of polyurethane and polyisocyanurate foams, it is agreed that overexposure to the majority of these materials may cause adverse health effects. <ul style="list-style-type: none"> <li>▶ Many amine-based compounds can induce histamine liberation, which, in turn, can trigger allergic and other physiological effects, including bronchoconstriction or bronchial asthma and rhinitis.</li> <li>▶ Systemic symptoms include headache, nausea, faintness, anxiety, a decrease in blood pressure, tachycardia (rapid heartbeat), itching, erythema (reddening of the skin), urticaria (hives), and facial edema (swelling). Systemic effects (those affecting the body) that are related to the pharmacological action of amines are usually transient.</li> </ul> Typically, there are four routes of possible or potential exposure: inhalation, skin contact, eye contact, and ingestion. <b>Inhalation:</b> Inhalation of vapors may, depending upon the physical and chemical properties of the specific product and the degree and length of exposure, result in moderate to severe irritation of the tissues of the nose and throat and can irritate the lungs.
<b>2,4,6-TRIS[(DIMETHYLAMINO)METHYL]PHENOL &amp; BENZENE-1,3-DIMETHANAMINE &amp; PHENOL</b>	The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.
<b>2,4,6-TRIS[(DIMETHYLAMINO)METHYL]PHENOL &amp; BENZENE-1,3-DIMETHANAMINE &amp; PHENOL &amp; 3-DIMETHYLAMINOPROPYLAMINE</b>	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases.

<b>Acute Toxicity</b>	✓	<b>Carcinogenicity</b>	⊖
<b>Skin Irritation/Corrosion</b>	✓	<b>Reproductivity</b>	⊖
<b>Serious Eye Damage/Irritation</b>	✓	<b>STOT - Single Exposure</b>	⊖
<b>Respiratory or Skin sensitisation</b>	✓	<b>STOT - Repeated Exposure</b>	⊖
<b>Mutagenicity</b>	✓	<b>Aspiration Hazard</b>	⊖

**Legend:** ✗ – Data available but does not fill the criteria for classification  
✓ – Data required to make classification available  
⊖ – Data Not Available to make classification

## Civilox 11 Epoxy Curative

### SECTION 12 ECOLOGICAL INFORMATION

#### Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
xylene	LC50	96	Fish	0.0013404mg/L	4
xylene	EC50	48	Crustacea	>3.4mg/L	2
xylene	EC50	72	Algae or other aquatic plants	4.6mg/L	2
xylene	EC50	24	Crustacea	0.711mg/L	4
xylene	NOEC	73	Algae or other aquatic plants	0.44mg/L	2
2,4,6-tris[(dimethylamino)methyl]phenol	LC50	96	Fish	175mg/L	2
2,4,6-tris[(dimethylamino)methyl]phenol	EC50	96	Algae or other aquatic plants	34.812mg/L	3
2,4,6-tris[(dimethylamino)methyl]phenol	EC50	72	Algae or other aquatic plants	84mg/L	2
benzene-1,3-dimethanamine	LC50	96	Fish	75mg/L	2
benzene-1,3-dimethanamine	EC50	48	Crustacea	15.2mg/L	2
benzene-1,3-dimethanamine	EC50	72	Algae or other aquatic plants	12mg/L	2
benzene-1,3-dimethanamine	EC50	504	Crustacea	8.4mg/L	2
benzene-1,3-dimethanamine	NOEC	504	Crustacea	4.7mg/L	2
phenol	LC50	96	Fish	0.00175mg/L	4
phenol	EC50	48	Crustacea	=3.1mg/L	1
phenol	EC50	96	Algae or other aquatic plants	0.0611mg/L	4
phenol	BCF	24	Fish	60mg/L	4
phenol	EC50	24	Crustacea	0.000395mg/L	4
phenol	NOEC	144	Crustacea	0.01mg/L	4
3-dimethylaminopropylamine	LC50	96	Fish	=100mg/L	1
3-dimethylaminopropylamine	EC50	48	Crustacea	59.46mg/L	2
3-dimethylaminopropylamine	EC50	72	Algae or other aquatic plants	30mg/L	2
3-dimethylaminopropylamine	EC0	48	Crustacea	=25mg/L	1
3-dimethylaminopropylamine	NOEC	96	Fish	>=10mg/L	2

#### Legend:

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**DO NOT** discharge into sewer or waterways.

#### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
xylene	HIGH (Half-life = 360 days)	LOW (Half-life = 1.83 days)
2,4,6-tris[(dimethylamino)methyl]phenol	HIGH	HIGH
benzene-1,3-dimethanamine	HIGH	HIGH
phenol	LOW (Half-life = 10 days)	LOW (Half-life = 0.95 days)
3-dimethylaminopropylamine	HIGH	HIGH

#### Bioaccumulative potential

Ingredient	Bioaccumulation
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Continued...

## Civiox 11 Epoxy Curative

xylene	MEDIUM (BCF = 740)
2,4,6-tris[(dimethylamino)methyl]phenol	LOW (LogKOW = 0.773)
benzene-1,3-dimethanamine	LOW (BCF = 2.7)
phenol	LOW (BCF = 17.5)
3-dimethylaminopropylamine	LOW (LogKOW = -0.4502)

## Mobility in soil

Ingredient	Mobility
2,4,6-tris[(dimethylamino)methyl]phenol	LOW (KOC = 15130)
benzene-1,3-dimethanamine	LOW (KOC = 914.6)
phenol	LOW (KOC = 268)
3-dimethylaminopropylamine	LOW (KOC = 73.36)

## SECTION 13 DISPOSAL CONSIDERATIONS

## Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> <li>Recycle wherever possible or consult manufacturer for recycling options.</li> <li>Consult State Land Waste Authority for disposal.</li> <li>Bury or incinerate residue at an approved site.</li> <li>Recycle containers if possible, or dispose of in an authorised landfill.</li> </ul>
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## SECTION 14 TRANSPORT INFORMATION

## Labels Required

	
Marine Pollutant	NO
HAZCHEM	•3Y

## Land transport (ADG)

UN number	1993				
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (contains xylene)				
Transport hazard class(es)	<table> <tr> <td>Class</td><td>3</td></tr> <tr> <td>Subrisk</td><td>Not Applicable</td></tr> </table>	Class	3	Subrisk	Not Applicable
Class	3				
Subrisk	Not Applicable				
Packing group	III				
Environmental hazard	Not Applicable				
Special precautions for user	<table> <tr> <td>Special provisions</td><td>223 274</td></tr> <tr> <td>Limited quantity</td><td>5 L</td></tr> </table>	Special provisions	223 274	Limited quantity	5 L
Special provisions	223 274				
Limited quantity	5 L				

## Air transport (ICAO-IATA / DGR)

UN number	1993						
UN proper shipping name	Flammable liquid, n.o.s. * (contains xylene)						
Transport hazard class(es)	<table> <tr> <td>ICAO/IATA Class</td><td>3</td></tr> <tr> <td>ICAO / IATA Subrisk</td><td>Not Applicable</td></tr> <tr> <td>ERG Code</td><td>3L</td></tr> </table>	ICAO/IATA Class	3	ICAO / IATA Subrisk	Not Applicable	ERG Code	3L
ICAO/IATA Class	3						
ICAO / IATA Subrisk	Not Applicable						
ERG Code	3L						
Packing group	III						

## Civlox 11 Epoxy Curative

<b>Environmental hazard</b>	Not Applicable	
<b>Special precautions for user</b>	Special provisions	A3
	Cargo Only Packing Instructions	366
	Cargo Only Maximum Qty / Pack	220 L
	Passenger and Cargo Packing Instructions	355
	Passenger and Cargo Maximum Qty / Pack	60 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y344
	Passenger and Cargo Limited Maximum Qty / Pack	10 L

## Sea transport (IMDG-Code / GGVSee)

<b>UN number</b>	1993	
<b>UN proper shipping name</b>	FLAMMABLE LIQUID, N.O.S. (contains xylene)	
<b>Transport hazard class(es)</b>	IMDG Class	3
	IMDG Subrisk	Not Applicable
<b>Packing group</b>	III	
<b>Environmental hazard</b>	Not Applicable	
<b>Special precautions for user</b>	EMS Number	F-E, S-E
	Special provisions	223 274 955
	Limited Quantities	5 L

## Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

## SECTION 15 REGULATORY INFORMATION

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

## CASHEW NUTSHELL LIQUID(8007-24-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

## XYLENE(1330-20-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards

Australia Hazardous Substances Information System - Consolidated Lists

Australia Inventory of Chemical Substances (AICS)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

## 2,4,6-TRIS[(DIMETHYLAMINO)METHYL]PHENOL(90-72-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists

Australia Inventory of Chemical Substances (AICS)

## BENZENE-1,3-DIMETHANAMINE(1477-55-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards

Australia Hazardous Substances Information System - Consolidated Lists

Australia Inventory of Chemical Substances (AICS)

## PHENOL(108-95-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards

Australia Hazardous Substances Information System - Consolidated Lists

Australia Inventory of Chemical Substances (AICS)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

## 3-DIMETHYLAMINOPROPYLAMINE(109-55-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists

Australia Inventory of Chemical Substances (AICS)

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (phenol; 3-dimethylaminopropylamine; xylene; 2,4,6-tris[(dimethylamino)methyl]phenol; cashew nutshell liquid; benzene-1,3-dimethanamine)
China - IECSC	Y

Continued...

## Civilox 11 Epoxy Curative

Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	N (cashew nutshell liquid)
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	N (cashew nutshell liquid)
USA - TSCA	Y
<b>Legend:</b>	<i>Y = All ingredients are on the inventory</i> <i>N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)</i>

**SECTION 16 OTHER INFORMATION****Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net](http://www.chemwatch.net)

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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