

Altex AYB 421 Epoxy Resin Part A

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ALTEX COATINGS LTD

Chemwatch: 9-40099

Version No: 1.6

Safety Data Sheet according to HSNO Regulations

Print Date: 11/11/2013

Issue Date: 05/11/2013

S.GHS.NZLEN

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

Product Identifier

Product name:	Altex AYB 421 Epoxy Resin Part A
Chemical Name:	Not Applicable
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Chemical formula:	Not Applicable
Other means of identification:	
CAS number:	Not Applicable

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

Relevant identified uses:	Use according to manufacturer's directions. Part A of a two pack epoxy resin
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Details of the supplier of the safety data sheet

Registered company name:	ALTEX COATINGS LTD
Address:	91-111 Oropi Road 3112 Bay of Plenty New Zealand
Telephone:	+64 7 5411974
Fax:	+64 7 5411310
Website:	
Email:	neil.debenham@carboline.co.nz

Emergency telephone number

Association / Organisation:	NZ Poisons Centre (0800-1630hr Mon-Fri)
Emergency telephone numbers:	0800 764766
Other emergency telephone numbers:	0800 764766

CHEMWATCH EMERGENCY RESPONSE

Primary Number	Alternative Number 1	Alternative Number 2
+800 2436 2255	+612 9186 1132	

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

Classification of the substance or mixture

Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation. Classified as Dangerous Goods for transport purposes.

GHS Classification^[1]:

Acute Toxicity (Inhalation) Category 4, Carcinogen Category 2, Acute Aquatic Hazard Category 2, Chronic Aquatic Hazard Category 2, Acute Toxicity (Dermal) Category 4, Skin Corrosion/Irritation Category 2, Skin Sensitizer Category 1, Eye Irritation Category 2A, Acute Toxicity (Oral) Category 4

Legend: 1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

Determined by Chemwatch using GHS/HSNO criteria :

6.1D (inhalation), 6.7B, 9.1D, 9.1B, 6.1D (dermal), 6.3A, 6.5B (contact), 6.4A, 6.1D (oral)

Label elements

GHS label elements



Signal word: **WARNING**

Hazard statement(s):

H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction

Altex AYB 421 Epoxy Resin Part A

H319	Causes serious eye irritation
H332	Harmful if inhaled
H351	Suspected of causing cancer
H401	Toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

Supplementary statement(s):

Not Applicable

Precautionary statement(s): Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash all exposed external body areas thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s): Response

P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of water and soap
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P321	Specific treatment (see advice on this label).
P330	Rinse mouth.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P333+P313	If skin irritation or rash 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.

Precautionary statement(s): Storage

P405	Store locked up.
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Precautionary statement(s): Disposal

P501	Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration
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SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
25085-99-8	>=65	bisphenol A diglycidyl ether polymer
28064-14-4	<=15	phenyl glycidyl ether/ formaldehyde copolymer
100-51-6	<=20	benzyl alcohol
111-76-2	<=0.3	ethylene glycol monobutyl ether

SECTION 4 First aid measures

NZ Poisons Centre 0800 POISON (0800 764 766) | NZ Emergency Services: 111

Description of first aid measures

Eye Contact:

If this product comes in contact with the eyes:

- Wash out immediately with fresh running water.
- 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.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact:

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

Inhalation:

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prosthesis such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- 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.
- Transport to hospital, or doctor.

Altex AYB 421 Epoxy Resin Part A

Ingestion:

- **IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.**
- For advice, contact a Poisons Information Centre or a doctor.
- Urgent hospital treatment is likely to be needed.
- In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
- If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the MSDS should be provided. Further action will be the responsibility of the medical specialist.
- If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the MSDS.

Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

- **INDUCE** vomiting with fingers down the back of the throat, **ONLY IF CONSCIOUS**. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

NOTE: Wear a protective glove when inducing vomiting by mechanical means.

Indication of any immediate medical attention and special treatment needed

for poisons (where specific treatment regime is absent):

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 L/min.
- Monitor and treat, where necessary, for pulmonary oedema.
- Monitor and treat, where necessary, for shock.
- Anticipate seizures .
- **DO NOT use emetics.** Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

ADVANCED TREATMENT

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

BRONSTEIN, A.C. and CURRANCE, P.L.

EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

Treat symptomatically.

Clinical experience of benzyl alcohol poisoning is generally confined to premature neonates in receipt of preserved intravenous salines.

- Metabolic acidosis, bradycardia, skin breakdown, hypotonia, hepatorenal failure, hypotension and cardiovascular collapse are characteristic.
- High urine benzoate and hippuric acid as well as elevated serum benzoic acid levels are found.
- The so-called "gasping syndrome" describes the progressive neurological deterioration of poisoned neonates.
- Management is essentially supportive.

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

Fire Incompatibility:

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting:

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- **DO NOT** approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

Fire/Explosion Hazard:

- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).
- May emit acrid smoke.
- Mists containing combustible materials may be explosive.

Combustion products include:carbon dioxide (CO₂)aldehydesother pyrolysis products typical of burning organic material

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Altex AYB 421 Epoxy Resin Part A

Minor Spills:

Environmental hazard - contain spillage.

- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable, labelled container for waste disposal.

Major Spills:

Environmental hazard - contain spillage.

Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.

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

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling

- **DO NOT allow clothing wet with material to stay in contact with skin**

The substance accumulates peroxides which may become hazardous only if it evaporates or is distilled or otherwise treated to concentrate the peroxides. The substance may concentrate around the container opening for example.

Purchases of peroxidisable chemicals should be restricted to ensure that the chemical is used completely before it can become peroxidised.

- A responsible person should maintain an inventory of peroxidisable chemicals or annotate the general chemical inventory to indicate which chemicals are subject to peroxidation. An expiration date should be determined. The chemical should either be treated to remove peroxides or disposed of before this date.
- The person or laboratory receiving the chemical should record a receipt date on the bottle. The individual opening the container should add an opening date.

Other information

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storage and handling recommendations contained within this MSDS.

Conditions for safe storage, including any incompatibilities

Suitable container:

- Metal can or drum
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

Storage incompatibility:

Benzyl alcohol:

- may froth in contact with water
- slowly oxidises in air, oxygen forming benzaldehyde
- is incompatible with mineral acids, caustics, aliphatic amines, isocyanates
- reacts violently with strong oxidisers, and explosively with sulfuric acid at elevated temperatures
- corrodes aluminium at high temperatures
- is incompatible with aluminum, iron, steel
- attacks some nonfluorinated plastics; may attack, extract and dissolve polypropylene

Benzyl alcohol contaminated with 1.4% hydrogen bromide and 1.2% of dissolved iron(II) polymerises exothermically above 100 deg. C.

Package Material Incompatibilities:

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	ethylene glycol monobutyl ether	2-Butoxyethanol	121 (mgm3) / 25 (ppm)			Skin absorption

Emergency Limits

Ingredient	TEEL-0	TEEL-1	TEEL-2	TEEL-3
phenyl glycidyl ether/ formaldehyde copolymer	15(ppm)	50(ppm)	350(ppm)	500(ppm)
benzyl alcohol	10(ppm)	60(ppm)	150(ppm)	150(ppm)
ethylene glycol monobutyl ether	50(ppm)	50(ppm)	100(ppm)	700(ppm)

Ingredient	Original IDLH	Revised IDLH
ethylene glycol monobutyl ether	700(ppm)	700 [Unch](ppm)

Altex AYB 421 Epoxy Resin Part A

Exposure controls

Appropriate engineering controls

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.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

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.

Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances.

Personal protection



Eye and face protection:

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens 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. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

Skin protection:

See Hand protection below

Hand protection:

NOTE:

- 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.
- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.

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.

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.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

Body protection:

See Other protection below

Other protection:

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

Thermal hazards:

Recommended material(s):

Respiratory protection:

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state	Liquid	Relative density (Water = 1)	
Odour		Partition coefficient n-octanol / water	
Odour threshold		Auto-ignition temperature (°C)	
pH (as supplied)		Decomposition temperature	
Melting point / freezing point (°C)		Viscosity (cSt)	
Initial boiling point and boiling range (°C)		Molecular weight (g/mol)	
Flash point (°C)		Taste	
Evaporation rate		Explosive properties	
Flammability		Oxidising properties	
Upper Explosive Limit (%)		Surface Tension (dyn/cm or mN/m)	
Lower Explosive Limit (%)		Volatile Component (%vol)	
Vapour pressure (kPa)		Gas group	
Solubility in water (g/L)	Immiscible	pH as a solution(1%)	
Vapour density (Air = 1)			

SECTION 10 Stability and reactivity

Reactivity:

See section 7

Chemical stability:

Altex AYB 421 Epoxy Resin Part A

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

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:

Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.

The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of vapours, fumes or aerosols, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.

Inhalation hazard is increased at higher temperatures.

Inhalation of benzyl alcohol may affect respiration (paralysis of the respiratory center, respiratory depression, gasping respirations), cardiovascular system (hypotension

Ingestion:

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.

In animals the uncured bisphenol A diglycidyl ether resin produces loss of body weight and diarrhoea. Local irritation, inflammation and even death resulting from respiratory system depression are recorded. Higher molecular weight resins generally produce lower toxicity.

Ingestion of large doses of benzyl alcohol may cause abdominal pain, nausea, vomiting, diarrhea. It may affect behavior/central nervous system and cause headache, somnolence, excitement, dizziness, ataxia, coma, convulsions, and other symptoms of central nervous system depression.

Exposure to excessive amounts of benzyl alcohol has been associated with toxicity (hypotension, metabolic acidosis), particularly in neonates, and an increased incidence of kernicterus (a neurological condition that occurs in severe jaundice), particularly in small preterm infants. There have been rare reports of deaths, primarily in preterm infants, associated with exposure to excessive amounts of benzyl alcohol. The amount of benzyl alcohol from medications is usually considered negligible compared to that received in flush solutions containing benzyl alcohol.

Administration of high dosages of medications containing this preservative must take into account the total amount of benzyl alcohol administered.

Skin Contact:

Skin contact with the material may be harmful; systemic effects may result following absorption.

Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.

The material may accentuate any pre-existing dermatitis condition

The lower molecular weight species of bisphenol A diglycidyl ether resins may produce contact dermatitis characterised by erythema and oedema, with weeping followed by crusting and scaling.

Following the initial contact there may be a discrete erythematous lesion, confined to the point of contact, which may persist for 48 hours to 10 days; the erythema may give way to a papular, vesicular rash with scaling.

Sensitisation dermatitis is characterised by a papular, vesicular eczema with considerable itching of the back of the hand, the forearm and face and neck. This lesion may persist for 10-14 days after withdrawal from exposure and recur immediately on re-exposure.

Eye:

Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.

Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

Chronic:

Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals.

Exposure to the material may result in a possible risk of irreversible effects. The material may produce mutagenic effects in man. This concern is raised, generally, on the basis of appropriate studies using mammalian somatic cells in vivo. Such findings are often supported by positive results from in vitro mutagenicity studies.

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Limited evidence shows that inhalation of the material is capable of inducing a sensitisation reaction in a significant number of individuals at a greater frequency than would be expected from the response of a normal population.

Pulmonary sensitisation, resulting in hyperactive airway dysfunction and pulmonary allergy may be accompanied by fatigue, malaise and aching. Significant symptoms of exposure may persist for extended periods, even after exposure ceases.

TOXICITY	IRRITATION
Altex AYB 421 Epoxy Resin Part A	
Oral (Human) LC50: mg/kg	
bisphenol A diglycidyl ether polymer	
Dermal (rabbit) LD50: 6000 mg/kg **	
Oral (rat) LD50: >2400 mg/kg *	
Oral (rat) LD50: 10000 mg/kg **	
phenyl glycidyl ether/ formaldehyde copolymer	
Dermal (Rat) LD50: 4000 mg/kg *	* [Ciba-Geigy]
Oral (Rat) LD50: 4000 mg/kg *	Effects transient
	Eyes * (-) (-) Slight irritant
	May cause allergic response
	Skin * (-) (-) Slight irritant
benzyl alcohol	
Dermal (rabbit) LD50: 2000 mg/kg	Eye (rabbit): 0.75 mg open SEVERE

Altex AYB 421 Epoxy Resin Part A

Inhalation (rat) LC50: >4178 mg/m³/4h

Skin (man): 16 mg/48h-mild

Inhalation (rat) LC50: 1000 ppm/8h

Skin (rabbit): 10 mg/24h open-mild

Oral (rat) LD50: 1230 mg/kg

ethylene glycol monobutyl ether

Dermal (Guinea pig) LD50: 210 mg/kg **

* [Union Carbide]

Dermal (rabbit) LD50: 220 mg/kg

Eye (rabbit): 100 mg SEVERE

Inhalation (Rat) LC50: 2210 mg/m³ **

Eye (rabbit): 100 mg/24h-moderate

Inhalation (Rat) LC50: 450 ppm *

Skin (rabbit): 500 mg, open; mild

Oral (Rat) LD50: 300 mg/kg **

Oral (rat) LD50: 470 mg/kg

BENZYL ALCOHOL

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

For benzyl alkyl alcohols:

Unlike benzylic alcohols, the beta-hydroxyl group of the members of this cluster is unlikely to undergo phase II metabolic activation. Instead, the beta-hydroxyl group is expected to contribute to detoxification via oxidation to hydrophilic acid. Despite structural similarity to carcinogenic ethyl benzene, only a marginal concern has been assigned to phenethyl alcohol due to limited mechanistic analogy.

For benzoates:

Acute toxicity:

ETHYLENE GLYCOL MONOBUTYL ETHER

The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

For ethylene glycol monoalkyl ethers and their acetates (EGMAEs):

Typical members of this category are ethylene glycol propylene ether (EGPE), ethylene glycol butyl ether (EGBE) and ethylene glycol hexyl ether (EGHE) and their acetates.

EGMAEs are substrates for alcohol dehydrogenase isozyme ADH-3, which catalyzes the conversion of their terminal alcohols to aldehydes (which are transient metabolites). Further, rapid conversion of the aldehydes by aldehyde dehydrogenase produces alkoxyacetic acids, which are the predominant urinary metabolites of mono substituted glycol ethers.

Acute Toxicity:

Altex AYB 421 Epoxy Resin Part A, BISPHENOL A DIGLYCIDYL ETHER POLYMER, PHENYL GLYCIDYL ETHER/ FORMALDEHYDE COPOLYMER

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. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.

The chemical structure of hydroxylated diphenylalkanes or bisphenols consists of two phenolic rings joined together through a bridging carbon. This class of endocrine disruptors that mimic oestrogens is widely used in industry, particularly in plastics

Bisphenol A (BPA) and some related compounds exhibit oestrogenic activity in human breast cancer cell line MCF-7, but there were remarkable differences in activity.

Acute Toxicity:	Acute Toxicity (Inhalation) Category 4 Acute Toxicity (Dermal) Category 4 Acute Toxicity (Oral) Category 4	Carcinogenicity:	Carcinogen Category 2
Skin Irritation/Corrosion:	Skin Corrosion/Irritation Category 2	Reproductivity:	Not Applicable
Serious Eye Damage/Irritation:	Eye Irritation Category 2A	STOT - Single Exposure:	Not Applicable
Respiratory or Skin sensitisation:	Skin Sensitizer Category 1	STOT - Repeated Exposure:	Not Applicable
Mutagenicity:	Not Applicable	Aspiration Hazard:	Not Applicable

CMR STATUS

SKIN

ethylene glycol monobutyl ether New Zealand Workplace Exposure Standards (WES) - Skin Skin absorption

SECTION 12 Ecological information

Toxicity

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

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

For bisphenol A and related bisphenols:

In general, studies have shown that bisphenol A can affect growth, reproduction and development in aquatic organisms. Among freshwater organisms, fish appear to be the most sensitive species.

Evidence of endocrine-related effects in fish, aquatic invertebrates, amphibians and reptiles has been reported at environmentally relevant exposure levels lower than those required for acute toxicity. There is a widespread variation in reported values for endocrine-related effects, but many fall in the range of 1 ug/L to 1 mg/L

Bisphenol A, its derivatives and analogues, can be released from polymers, resins and certain substances by metabolic products

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
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Bioaccumulative potential

Ingredient	Bioaccumulation
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Mobility in soil

Ingredient	Mobility
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SECTION 13 Disposal considerations

Altex AYB 421 Epoxy Resin Part A

Waste treatment methods

Product / Packaging disposal:

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Otherwise:

- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- Where possible retain label warnings and MSDS and observe all notices pertaining to the product.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction

Insure that the disposal of material is carried out in accordance with Hazardous Substances (Disposal) Regulations 2001.

SECTION 14 Transport information

Labels Required:



Marine Pollutant



HAZCHEM: *3Z

Land transport (UN)

UN number	3082	Packing group	III
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	Environmental hazard	No relevant data
Transport hazard class(es)	Class: 9 Subrisk:	Special precautions for user	Special provisions 274; 331; 335 limited quantity 5 L

Air transport (ICAO-IATA / DGR)

UN number	3082	Packing group	III
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. *	Environmental hazard	No relevant data
Transport hazard class(es)	ICAO/IATA Class: 9 ICAO / IATA Subrisk: ERG Code: 9L	Special precautions for user	Special provisions: A97A158 Cargo Only Packing Instructions: 964 Cargo Only Maximum Qty / Pack: 450 L Passenger and Cargo Packing Instructions: 964 Passenger and Cargo Maximum Qty / Pack: 450 L Passenger and Cargo Limited Quantity Packing Instructions: Y964 Passenger and Cargo Maximum Qty / Pack: 30 kg G

Sea transport (IMDG-Code / GGVSee)

UN number	3082	Packing group	III
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	Environmental hazard	No relevant data
Transport hazard class(es)	IMDG Class: 9 IMDG Subrisk:	Special precautions for user	EMS Number: F-A,S-F Special provisions: 274 335 Limited Quantities: 5 L

Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC code

Source	Ingredient	Pollution Category	Residual Concentration - Outside Special Area (% w/w)	Residual Concentration
IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances	ethylene glycol monobutyl ether			

SECTION 15 Regulatory information

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

This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard
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Altex AYB 421 Epoxy Resin Part A

HSR002679

Surface Coatings and Colourants (Toxic [6.7]) Group Standard 2006

bisphenol A diglycidyl ether polymer(25085-99-8) is found on the following regulatory lists

"New Zealand Inventory of Chemicals (NZIoC)", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Chemicals (single components)", "OSPAR National List of Candidates for Substitution – United Kingdom", "Sigma-AldrichTransport Information"

phenyl glycidyl ether/ formaldehyde copolymer(28064-14-4) is found on the following regulatory lists

"New Zealand Inventory of Chemicals (NZIoC)", "Sigma-AldrichTransport Information", "Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (English)", "International Maritime Dangerous Goods Requirements (IMDG Code)", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "New Zealand Land Transport Rule: Dangerous Goods 2005 - Schedule 1 Quantity limits", "International Air Transport Association (IATA) Dangerous Goods Regulations"

benzyl alcohol(100-51-6) is found on the following regulatory lists

"New Zealand Cosmetic Products Group Standard - Schedule 5 - Table 1: Components Cosmetic Products Must Not Contain Except Subject to the Restrictions and Conditions Laid Down", "International Fragrance Association (IFRA) Standards Restricted", "International Numbering System for Food Additives", "OECD List of High Production Volume (HPV) Chemicals", "International Fragrance Association IFRA Standards Annex I", "International Fragrance Association (IFRA) Survey: Transparency List", "International Council of Chemical Associations (ICCA) - High Production Volume List", "IOFI Global Reference List of Chemically Defined Substances", "New Zealand Cosmetic Products Group Standard - Schedule 7: Preservatives Cosmetic Products May Contain With Restrictions - Table 1: List of Preservatives Allowed", "New Zealand Inventory of Chemicals (NZIoC)", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Dangerous Goods", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Chemicals (single components)", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "Sigma-AldrichTransport Information", "Acros Transport Information", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (English)", "International Maritime Dangerous Goods Requirements (IMDG Code)", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "New Zealand Land Transport Rule: Dangerous Goods 2005 - Schedule 2 Dangerous Goods in Limited Quantities and Consumer Commodities", "New Zealand Land Transport Rule: Dangerous Goods 2005 - Schedule 4 Quantity Limits for Dangerous Goods in Excepted Quantities", "International Air Transport Association (IATA) Dangerous Goods Regulations"

ethylene glycol monobutyl ether(111-76-2) is found on the following regulatory lists

"New Zealand Cosmetic Products Group Standard - Schedule 5 - Table 1: Components Cosmetic Products Must Not Contain Except Subject to the Restrictions and Conditions Laid Down", "OECD List of High Production Volume (HPV) Chemicals", "International Fragrance Association (IFRA) Survey: Transparency List", "IOFI Global Reference List of Chemically Defined Substances", "New Zealand Inventory of Chemicals (NZIoC)", "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs", "New Zealand Workplace Exposure Standards (WES)", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Dangerous Goods", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Chemicals (single components)", "IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances", "Sigma-AldrichTransport Information", "Acros Transport Information", "Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (English)", "International Maritime Dangerous Goods Requirements (IMDG Code)", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "International Air Transport Association (IATA) Dangerous Goods Regulations", "OSPAR National List of Candidates for Substitution – Norway", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO Provisional Categorization of Liquid Substances - List 3: (Trade-named) mixtures containing at least 99% by weight of components already assessed by IMO, presenting safety hazards", "IMO IBC Code Chapter 17: Summary of minimum requirements"

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/references

The (M)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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Altex AYB 421 Epoxy Resin Part B

Altex AYB 421 Epoxy Resin Part B

ALTEX COATINGS LTD

Chemwatch: 9-40104

Version No: 1.4

Safety Data Sheet according to HSNO Regulations

Print Date: 11/11/2013

Issue Date: 05/11/2013

S.GHS.NZLEN

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

Product Identifier

Product name:	Altex AYB 421 Epoxy Resin Part B
Chemical Name:	Not Applicable
Proper shipping name:	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Chemical formula:	Not Applicable
Other means of identification:	
CAS number:	Not Applicable

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

Relevant identified uses:	The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation. Part B of a two pack epoxy resin
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Details of the supplier of the safety data sheet

Registered company name:	ALTEX COATINGS LTD
Address:	91-111 Oropi Road 3112 Bay of Plenty New Zealand
Telephone:	+64 7 5411974
Fax:	+64 7 5411310
Website:	
Email:	neil.debenham@carboline.co.nz

Emergency telephone number

Association / Organisation:	NZ Poisons Centre (0800-1630hr Mon-Fri)
Emergency telephone numbers:	0800 764766
Other emergency telephone numbers:	0800 764766

CHEMWATCH EMERGENCY RESPONSE

Primary Number	Alternative Number 1	Alternative Number 2
+800 2436 2255	+612 9186 1132	
Once connected and if the message is not in your preferred language then please dial 01		

SECTION 2 Hazards identification

Classification of the substance or mixture

Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation. Classified as Dangerous Goods for transport purposes.

GHS Classification^[1]:

Germ Cell Mutagen Category 2, Reproductive Toxicity Category 2, STOT - RE Category 1, Chronic Aquatic Hazard Category 3, Acute Toxicity (Dermal) Category 3, Skin Corrosion/Irritation Category 1A, Skin Sensitizer Category 1, Metal Corrosion Category 1, Serious Eye Damage Category 1, Acute Toxicity (Oral) Category 4

Legend: 1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

Determined by Chemwatch using GHS/HSNO criteria :

6.6B, 6.8B, 6.9A (dermal), 9.1C, 6.1C (dermal), 8.2A, 6.5B (contact), 8.1A, 8.3A, 6.1D (oral)

Label elements

GHS label elements



Signal word:	DANGER
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Hazard statement(s):

H290	May be corrosive to metals
H302	Harmful if swallowed
H311	Toxic in contact with skin

Altex AYB 421 Epoxy Resin Part B

H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H341	Suspected of causing genetic defects
H361	Suspected of damaging fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H412	Harmful to aquatic life with long lasting effects

Supplementary statement(s):

Not Applicable

Precautionary statement(s): Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P234	Keep only in original container.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash all exposed external body areas thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s): Response

P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with plenty of water and soap
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P310	Immediately call a POISON CENTER/doctor/physician/first aider
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P314	Get medical advice/attention if you feel unwell.
P321	Specific treatment (see advice on this label).
P330	Rinse mouth.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
P362+P364	Take off contaminated clothing and wash it before reuse.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.

Precautionary statement(s): Storage

P405	Store locked up.
P406	Store in corrosive resistant/... container with a resistant inner liner.

Precautionary statement(s): Disposal

(null)	(null)
P501	Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
2855-13-2	<=60	isophorone diamine
32610-77-8	<=30	formaldehyde/ phenol/ triethylenetetramine copolymer
108-95-2	<=5	phenol
112-24-3	<=4	triethylenetetramine
112-57-2	<=1	tetraethylenepentamine

SECTION 4 First aid measures

NZ Poisons Centre 0800 POISON (0800 764 766) | NZ Emergency Services: 111

Description of first aid measures

Eye Contact:

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with running water.
- 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.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.

Altex AYB 421 Epoxy Resin Part B

- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact:

If skin or hair contact occurs:

- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

Inhalation:

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- 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.
- Transport to hospital, or doctor, without delay.
- Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.
- Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).
- As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.
- Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.

This must definitely be left to a doctor or person authorised by him/her. (ICSC13719)

Ingestion:

- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- **If swallowed do NOT induce vomiting.**
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Transport to hospital or doctor without delay.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

For acute or short-term repeated exposures to highly alkaline materials:

- Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
- Oxygen is given as indicated.
- The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
- Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.

Alkalis continue to cause damage after exposure.

INGESTION:

- Milk and water are the preferred diluents

No more than 2 glasses of water should be given to an adult.

- Neutralising agents should never be given since exothermic heat reaction may compound injury.

* Catharsis and emesis are absolutely contra-indicated.

* Activated charcoal does not absorb alkali.

* Gastric lavage should not be used.

Supportive care involves the following:

- Withhold oral feedings initially.
- If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
- Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
- Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

SKIN AND EYE:

- Injury should be irrigated for 20-30 minutes.

Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology]

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

Fire Incompatibility:

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting:

Fire/Explosion Hazard:

- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).
- May emit acrid smoke.
- Mists containing combustible materials may be explosive.

Combustion products include: carbon dioxide (CO₂) aldehydes nitrogen oxides (NO_x)

SECTION 6 Accidental release measures

Altex AYB 421 Epoxy Resin Part B

Personal precautions, protective equipment and emergency procedures

Minor Spills:

Environmental hazard - contain spillage.

- Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.
- Check regularly for spills and leaks.

Small spills should be covered with inorganic absorbents and disposed of properly. Organic absorbents have been known to ignite when contaminated with amines in closed containers. Certain cellulosic materials used for spill cleanup such as wood chips or sawdust have shown reactivity with ethyleneamines and should be avoided. Ethyleneamine leaks will frequently be identified by the odor (ammoniacal) or by the formation of a white, solid, waxy substance (amine carbamates). Inorganic absorbents or water may be used to clean up the amine waste.

- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.

Major Spills:

Environmental hazard - contain spillage.

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

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling

Contains low boiling substance:

Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately.

- Check for bulging containers.
- Vent periodically
- Always release caps or seals slowly to ensure slow dissipation of vapours
- **DO NOT USE brass or copper containers / stirrers**
- **DO NOT allow clothing wet with material to stay in contact with skin**
- Avoid all personal contact, including inhalation.

Other information

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storage and handling recommendations contained within this MSDS.
- **DO NOT store near acids, or oxidising agents**
- No smoking, naked lights, heat or ignition sources.

Conditions for safe storage, including any incompatibilities

Suitable container:

- **DO NOT use aluminium or galvanised containers**
- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

For low viscosity materials

- Drums and jerricans must be of the non-removable head type.
- Where a can is to be used as an inner package, the can must have a screwed enclosure.

Storage incompatibility:

- Reacts with mild steel, galvanised steel / zinc producing hydrogen gas which may form an explosive mixture with air.
- Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.
- Avoid contact with copper, aluminium and their alloys.
- Avoid reaction with oxidising agents

Package Material Incompatibilities:

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	phenol	Phenol	5 (ppm)			Skin absorption

Emergency Limits

Ingredient	TEEL-0	TEEL-1	TEEL-2	TEEL-3
phenol	5(ppm)	15(ppm)	23(ppm)	200(ppm)
triethylenetetramine	1(ppm)	7.5(ppm)	60(ppm)	150(ppm)
tetraethylenepentamine	5(ppm)	15(ppm)	350(ppm)	500(ppm)
Ingredient	Original IDLH		Revised IDLH	
phenol	250(ppm)		250 [Unch](ppm)	

Exposure controls

Appropriate engineering controls

Altex AYB 421 Epoxy Resin Part B

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.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

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.

Employers may need to use multiple types of controls to prevent employee overexposure.

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator.

Personal protection



Eye and face protection:

- Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure
- Chemical goggles whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted
- Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.
- Alternatively a gas mask may replace splash goggles and face shields.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens 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. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly.

Skin protection:

See Hand protection below

Hand protection:

- Elbow length PVC gloves
- When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.

NOTE:

- 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.
- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.

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.

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.

Body protection:

See Other protection below

Other protection:

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.

Thermal hazards:

Recommended material(s):

Respiratory protection:

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state	Liquid	Relative density (Water = 1)	
Odour		Partition coefficient n-octanol / water	
Odour threshold		Auto-ignition temperature (°C)	
pH (as supplied)		Decomposition temperature	
Melting point / freezing point (°C)		Viscosity (cSt)	
Initial boiling point and boiling range (°C)		Molecular weight (g/mol)	
Flash point (°C)		Taste	
Evaporation rate		Explosive properties	
Flammability		Oxidising properties	
Upper Explosive Limit (%)		Surface Tension (dyn/cm or mN/m)	
Lower Explosive Limit (%)		Volatile Component (%vol)	
Vapour pressure (kPa)		Gas group	
Solubility in water (g/L)	Immiscible	pH as a solution(1%)	
Vapour density (Air = 1)			

SECTION 10 Stability and reactivity

Reactivity:

See section 7

Chemical stability:

Altex AYB 421 Epoxy Resin Part B

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

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:

Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.

Inhalation of alkaline corrosives may produce irritation of the respiratory tract with coughing, choking, pain and mucous membrane damage. Pulmonary oedema may develop in more severe cases; this may be immediate or in most cases following a latent period of 5-72 hours. Symptoms may include a tightness in the chest, dyspnoea, frothy sputum, cyanosis and dizziness. Findings may include hypotension, a weak and rapid pulse and moist rales.

Inhalation of epoxy resin amine hardener vapours (including polyamines and amine adducts) may produce bronchospasm and coughing episodes lasting days after cessation of the exposure. Even faint traces of these vapours may trigger an intense reaction in individuals showing "amine asthma".

Ingestion:

Ingestion of alkaline corrosives may produce immediate pain, and circumoral burns. Mucous membrane corrosive damage is characterised by a white appearance and soapy feel; this may then become brown, oedematous and ulcerated. Profuse salivation with an inability to swallow or speak may also result. Even where there is limited or no evidence of chemical burns, both the oesophagus and stomach may experience a burning pain; vomiting and diarrhoea may follow. The vomitus may be thick and may be slimy (mucous) and may eventually contain blood and shreds of mucosa. Epiglottal oedema may result in respiratory distress and asphyxia. Marked hypotension is symptomatic of shock; a weak and rapid pulse, shallow respiration and clammy skin may also be evident. Circulatory collapse may occur and, if uncorrected, may produce renal failure. Severe exposures may result in oesophageal or gastric perforation accompanied by mediastinitis, substernal pain, peritonitis, abdominal rigidity and fever. Although oesophageal, gastric or pyloric stricture may be evident initially, these may occur after weeks or even months and years.

Skin Contact:

Skin contact with the material may produce toxic effects; systemic effects may result following absorption. The material can produce severe chemical burns following direct contact with the skin.

Amine epoxy-curing agents (hardeners) may produce primary skin irritation and sensitisation dermatitis in predisposed individuals. Cutaneous reactions include erythema, intolerable itching and severe facial swelling. Blistering, with weeping of serious fluid, and crusting and scaling may also occur.

Virtually all of the liquid amine curing agents can cause sensitisation or allergic skin reactions.

Individuals exhibiting "amine dermatitis" may experience a dramatic reaction upon re-exposure to minute quantities. Highly sensitive persons may even react to cured resins containing trace amounts of unreacted amine hardener. Minute quantities of air-borne amine may precipitate intense dermatological symptoms in sensitive individuals. Prolonged or repeated exposure may produce tissue necrosis.

Eye:

When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.

Direct contact with alkaline corrosives may produce pain and burns. Oedema, destruction of the epithelium, corneal opacification and iritis may occur. In less severe cases these symptoms tend to resolve. In severe injuries the full extent of the damage may not be immediately apparent with late complications comprising a persistent oedema, vascularisation and corneal scarring, permanent opacity, staphyloma, cataract, symblepharon and loss of sight.

The vapour when concentrated has pronounced eye irritation effects and this gives some warning of high vapour concentrations. If eye irritation occurs seek to reduce exposure with available control measures, or evacuate area.

Vapours of volatile amines cause eye irritation with lachrymation, conjunctivitis and minor transient corneal oedema which results in "halos" around lights (glauropsia, "blue haze", or "blue-grey haze"). Vision may become misty and halos may appear several hours after workers are exposed to the substance

This effect generally disappears spontaneously within a few hours of the end of exposure, and does not produce physiological after-effects.

Chronic:

Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur. Chronic exposures may result in dermatitis and/or conjunctivitis.

Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.

Strong evidence exists that the substance may cause irreversible but non-lethal mutagenic effects following a single exposure.

Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals.

Toxic: danger of serious damage to health by prolonged exposure in contact with skin.

Serious damage (clear functional disturbance or morphological change which may have toxicological significance) is likely to be caused by repeated or prolonged exposure. As a rule the material produces, or contains a substance which produces severe lesions.

TOXICITY	IRRITATION
Altex AYB 421 Epoxy Resin Part B	
Oral (Human) LC50: mg/kg	
isophorone diamine	
Oral (rat) LD50: 1030 mg/kg	[Manufacturer HUE]
formaldehyde/phenol/triethylenetetramine copolymer	
Oral (rat) LD50: >2200 mg/kg	[Manufacturer]
	Eye (rabbit): Severe
	Skin (rabbit): Moderate irritant
phenol	
Dermal (rabbit) LD50: 850 mg/kg	Eye(rabbit): 100 mg rinse - mild
Inhalation (rat) LC50: 316 mg/m ³	Eye(rabbit): 5 mg - SEVERE
Oral (rat) LD50: 317 mg/kg	Skin(rabbit): 500 mg open -SEVERE
	Skin(rabbit): 500 mg/24hr - SEVERE

Altex AYB 421 Epoxy Resin Part B

triethylenetetramine

Dermal (rabbit) LD50: 805 mg/kg	Eye (rabbit): 20 mg/24 h - moderate
Oral (rat) LD50: 2500 mg/kg	Eye (rabbit): 49 mg - SEVERE
	Skin (rabbit): 490 mg open SEVERE
	Skin (rabbit): 5 mg/24 SEVERE

tetraethylenepentamine

Dermal (rabbit) LD50: 660 mg/kg	Eye (rabbit): 100 mg/24h moderate
Oral (rat) LD50: 3990 mg/kg	Eye (rabbit): 5 mg moderate
	Skin (rabbit): 495 mg SEVERE
	Skin (rabbit): 5 mg/24h SEVERE

Altex AYB 421 Epoxy Resin Part 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. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.

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.

ISOPHORONE DIAMINE

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. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.

For isophorone diamine

Based on a limited skin irritation study with rabbits and rats, isophorone diamine is deemed to be a strong irritant (duration of the exposure not reported) and corrosive after repeated application. Isophorone diamine is corrosive to the eyes of rabbits when tested according to OECD TG 405.

FORMALDEHYDE/ PHENOL/ TRIETHYLENETETRAMINE COPOLYMER

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. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.

PHENOL

The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) thickening of the epidermis.

Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. Prolonged contact is unlikely, given the severity of response, but repeated exposures may produce severe ulceration.

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.

TRIETHYLENETETRAMINE, TETRAETHYLENEPENTAMINE

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. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.

Handling ethyleneamine products is complicated by their tendency to react with other chemicals, such as carbon dioxide in the air, which results in the formation of solid carbamates. Because of their ability to produce chemical burns, skin rashes, and asthma-like symptoms, ethyleneamines also require substantial care in handling. Higher molecular weight ethyleneamines are often handled at elevated temperatures further increasing the possibility of vapor exposure to these compounds.

Acute Toxicity:	Acute Toxicity (Dermal) Category 3 Acute Toxicity (Oral) Category 4	Carcinogenicity:	Not Applicable
Skin Irritation/Corrosion:	Skin Corrosion/Irritation Category 1A	Reproductivity:	Reproductive Toxicity Category 2
Serious Eye Damage/Irritation:	Serious Eye Damage Category 1	STOT - Single Exposure:	Not Applicable
Respiratory or Skin sensitisation:	Skin Sensitizer Category 1	STOT - Repeated Exposure:	STOT - RE Category 1
Mutagenicity:	Germ Cell Mutagen Category 2	Aspiration Hazard:	Not Applicable

CMR STATUS

SKIN

phenol	New Zealand Workplace Exposure Standards (WES) - Skin	Skin absorption
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SECTION 12 Ecological information

Toxicity

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

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Altex AYB 421 Epoxy Resin Part B

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

Toxic to fauna.

For isophorone diamine:

Persistence/Biodegradability: 42% (DOC, OECD 303A) *8.0% (DOC, Die away test -9/69/EEC) *

* [Morton]

Environmental fate:

Isophorone diamine has a melting point of 10 C, is miscible with water and has a vapour pressure of 0.02 hPa at 20 C. The measured log Kow is 0.99 (23 C).

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
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Bioaccumulative potential

Ingredient	Bioaccumulation
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Mobility in soil

Ingredient	Mobility
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SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal:

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Otherwise:

- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- Where possible retain label warnings and MSDS and observe all notices pertaining to the product.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction

Insure that the disposal of material is carried out in accordance with Hazardous Substances (Disposal) Regulations 2001.

SECTION 14 Transport information

Labels Required:



Marine Pollutant: NO

HAZCHEM: 2X

Land transport (UN)

UN number	3066	Packing group	II
UN proper shipping name	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)	Environmental hazard	No relevant data
Transport hazard class(es)	Class: 8 Subrisk:	Special precautions for user	Special provisions 163 limited quantity 1 L

Air transport (ICAO-IATA / DGR)

UN number	3066	Packing group	II
UN proper shipping name	Paint related material corrosive (including paint thinning or reducing compounds); Paint corrosive (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base)	Environmental hazard	No relevant data
Transport hazard class(es)	ICAO/IATA Class: 8 ICAO / IATA Subrisk: ERG Code: 8L	Special precautions for user	Special provisions: A3A72A803 Cargo Only Packing Instructions: 855 Cargo Only Maximum Qty / Pack: 30 L Passenger and Cargo Packing Instructions: 851 Passenger and Cargo Maximum Qty / Pack: 1 L Passenger and Cargo Limited Quantity Packing Instructions: Y840 Passenger and Cargo Maximum Qty / Pack: 0.5 L

Sea transport (IMDG-Code / GGVSee)

Altex AYB 421 Epoxy Resin Part B

UN number	3066	Packing group	II
UN proper shipping name	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)	Environmental hazard	No relevant data
Transport hazard class(es)	IMDG Class: 8 IMDG Subrisk:	Special precautions for user	EMS Number: F-A,S-B Special provisions: 163 Limited Quantities: 1 L

SECTION 15 Regulatory information

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

This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard
HSR100425	Pharmaceutical Active Ingredients Group Standard 2010

isophorone diamine(2855-13-2) is found on the following regulatory lists

"OECD List of High Production Volume (HPV) Chemicals", "International Council of Chemical Associations (ICCA) - High Production Volume List", "New Zealand Inventory of Chemicals (NZIoC)", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Chemicals (single components)", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "FisherTransport Information", "Sigma-AldrichTransport Information", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (English)", "International Maritime Dangerous Goods Requirements (IMDG Code)", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "International Air Transport Association (IATA) Dangerous Goods Regulations"

formaldehyde/ phenol/ triethylenetetramine copolymer(32610-77-8) is found on the following regulatory lists

"New Zealand Inventory of Chemicals (NZIoC)", "Sigma-AldrichTransport Information"

phenol(108-95-2) is found on the following regulatory lists

"OECD List of High Production Volume (HPV) Chemicals", "International Fragrance Association (IFRA) Survey: Transparency List", "IOFI Global Reference List of Chemically Defined Substances", "New Zealand Cosmetic Products Group Standard - Schedule 4: Components Cosmetic Products Must Not Contain - Table 1", "New Zealand Inventory of Chemicals (NZIoC)", "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs", "New Zealand Workplace Exposure Standards (WES)", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Chemicals (single components)", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Scheduled Toxic Substances", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "FisherTransport Information", "Sigma-AldrichTransport Information", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (English)", "International Maritime Dangerous Goods Requirements (IMDG Code)", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "International Air Transport Association (IATA) Dangerous Goods Regulations"

triethylenetetramine(112-24-3) is found on the following regulatory lists

"OECD List of High Production Volume (HPV) Chemicals", "New Zealand Inventory of Chemicals (NZIoC)", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Chemicals (single components)", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "FisherTransport Information", "Sigma-AldrichTransport Information", "IMO Provisional Categorization of Liquid Substances - List 3: (Trade-named) mixtures containing at least 99% by weight of components already assessed by IMO, presenting safety hazards", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (English)", "International Maritime Dangerous Goods Requirements (IMDG Code)", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "International Air Transport Association (IATA) Dangerous Goods Regulations", "OSPAR National List of Candidates for Substitution - Norway", "New Zealand Cosmetic Products Group Standard - Schedule 5 - Table 1: Components Cosmetic Products Must Not Contain Except Subject to the Restrictions and Conditions Laid Down", "OSPAR National List of Candidates for Substitution - United Kingdom"

tetraethylenepentamine(112-57-2) is found on the following regulatory lists

"OECD List of High Production Volume (HPV) Chemicals", "International Council of Chemical Associations (ICCA) - High Production Volume List", "New Zealand Inventory of Chemicals (NZIoC)", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Chemicals (single components)", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "FisherTransport Information", "Sigma-AldrichTransport Information", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (English)", "International Maritime Dangerous Goods Requirements (IMDG Code)", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "International Air Transport Association (IATA) Dangerous Goods Regulations", "OSPAR National List of Candidates for Substitution - Norway", "New Zealand Cosmetic Products Group Standard - Schedule 5 - Table 1: Components Cosmetic Products Must Not Contain Except Subject to the Restrictions and Conditions Laid Down", "OSPAR National List of Candidates for Substitution - United Kingdom"

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/references

The (M)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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