SAFETY DATA SHEET

EPIREZ EPOXY CASTING COMPOUND [8837] HARDENER

Infosafe No.: HXDO3
ISSUED Date : 27/06/2017
ISSUED by: ITW POLYMERS AND FLUIDS

1. IDENTIFICATION

GHS Product Identifier
EPIREZ EPOXY CASTING COMPOUND [8837] HARDENER

Company Name
ITW POLYMERS AND FLUIDS (ABN 63 004 235 063)

Address
100 Hassall Street Wetherill Park
NSW 2164 Australia

Telephone/Fax Number
Tel: +61 2 9757 8800
Fax: +61 2 9757 3855

Emergency phone number
1800 385 556 / 0438 465 960

Emergency Contact Name
(02) 9652-1713 A/HRS

Recommended use of the chemical and restrictions on use
Hardener or Part B of a 2 pack
Requires that the two parts be mixed by hand or mixer before use, in accordance with manufacturers directions. Mix only as much as is required. Do not return the mixed material to the original containers
Use according to manufacturer's directions.
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.

Additional Information
Website: www.itwpf.com.au

2. HAZARD IDENTIFICATION

GHS classification of the substance/mixture
Eye Damage/Irritation: Category 2A
Sensitization - Skin: Category 1
Skin Corrosion/Irritation: Category 2
STOT Single Exposure: Category 3 (respiratory tract irritation)

Signal Word (s)
WARNING

Hazard Statement (s)
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary Statement (s)
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.

P103 Read label before use.

Pictogram (s)
Exclamation mark

Precautionary statement – Prevention
P271 Use only outdoors or in a well-ventilated area.

Precautionary statement – Response
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P362 Take off contaminated clothing and wash before reuse.

Precautionary statement – Storage
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Precautionary statement – Disposal
P501 Dispose of contents/container in accordance with local regulations.

Other Information
Classification of the substance or mixture:
HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

GHS Classification [1]: Skin Corrosion/Irritation Category 2, Eye Irritation Category 2A, Skin Sensitizer Category 1, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation)

Legend: 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Name	CAS	Proportion
Triethylenetetramine	112-24-3	<15 %
Tall oil/ triethylenetetramine polyamides	68082-29-1	>85 %

Other Information
Synonyms: Not Available

Substances:
See section below for composition of Mixtures

4. FIRST-AID MEASURES

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.

Ingestion
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.
Seek medical advice.

Skin
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.

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

Indication of immediate medical attention and special treatment needed if necessary
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Foam.
Dry chemical powder.
BCF (where regulations permit).
Carbon dioxide.

Specific Methods
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.
Use water delivered as a fine spray to control fire and cool adjacent area.

Specific Hazards Arising From The Chemical
Fire Incompatibility: Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

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).
Combustion products include:
Carbon monoxide (CO)
Carbon dioxide (CO_2)
Nitrogen oxides (NOx)
Other pyrolysis products typical of burning organic material.
Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions.
May emit poisonous fumes.
May emit corrosive fumes.

Decomposition Temperature
Not Available

6. ACCIDENTAL RELEASE MEASURES

Clean-up Methods - Small Spillages
Remove all ignition sources.
Clean up all spills immediately.
Avoid breathing vapours and contact with skin and eyes.
Control personal contact with the substance, by using protective equipment.

Clean-up Methods - Large Spillages
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.

Other Information
Personal Protective Equipment advice is contained in Section 8 - Exposure controls/personal protection of the SDS.

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 allow clothing wet with material to stay in contact with skin
DO NOT use aluminium, galvanised or tin-plated containers
DO NOT USE brass or copper containers / stirrers
Avoid all personal contact, including inhalation.
Wear protective clothing when risk of exposure occurs.
Use in a well-ventilated area.
Prevent concentration in hollows and sumps.

Other information:
Store in original containers.
Keep containers securely sealed.
No smoking, naked lights or ignition sources.
Store in a cool, dry, well-ventilated area.

Conditions for safe storage, including any incompatibilities
Suitable container:
DO NOT use aluminium or galvanised containers
Metal can or drum
Packaging as recommended by manufacturer.
Check all containers are clearly labelled and free from leaks.

Storage incompatibility:
Avoid cross contamination between the two liquid parts of product (kit).
If two part products are mixed or allowed to mix in proportions other than manufacturer's recommendation, polymerisation with gelation and evolution of heat (exotherm) may occur.
This excess heat may generate toxic vapour
Avoid reaction with oxidising agents, bases and strong reducing agents.
Avoid contact with copper, aluminium and their alloys.
Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limit values

INGREDIENT DATA:
Not Available

EMERGENCY LIMITS
Ingredient: triethylenetetramine
Material name: Triethylenetetramine
TEEL-1: 3 ppm
TEEL-2: 14 ppm
TEEL-3: 83 ppm

Ingredient: tall oil/triethylenetetramine polyamides
Original IDLH: Not Available
Revised IDLH: Not Available

Ingredient: triethylenetetramine
Original IDLH: Not Available
Revised IDLH: Not Available

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.

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

Eye 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 lenses or restrictions on use, should be created for each workplace or task.

Hand Protection
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.
Personal hygiene is a key element of effective hand care.
When handling liquid-grade epoxy resins wear chemically protective gloves (e.g nitrile or nitrile-butatoluene rubber), boots and aprons.
DO NOT use cotton or leather (which absorb and concentrate the resin), polyvinyl chloride, rubber or polyethylene gloves (which absorb the resin).
DO NOT use barrier creams containing emulsified fats and oils as these may absorb the resin; silicone-based barrier creams should be reviewed prior to use.
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.

Personal Protective Equipment
Other protection:
Overalls.
P.V.C. apron.
Barrier cream.

Thermal Hazards
Not Available

Body Protection

See Hand protection below

See Other protection below

9. PHYSICAL AND CHEMICAL PROPERTIES

Form
Liquid

Appearance
Amber liquid with an amine odour; partially miscible with water.

Odour
Not Available

Decomposition Temperature
Not Available

Solubility in Water
Partly Miscible

pH
Not Applicable (as supplied)
Not Applicable as a solution(1%)

Vapour Pressure
<1.38 kPa @ 20°C

Vapour Density (Air=1)
Not Available

Evaporation Rate
Not Available

Odour Threshold
Not Available

Viscosity
Not Available

Volatile Component
Not Available

Partition Coefficient: n-octanol/water
Not Available

Surface tension
Not Available

Flash Point
195 °C

Flammability
Not Applicable

Auto-Ignition Temperature
Not Available

Explosion Limit - Upper
Not Available

Explosion Limit - Lower
Not Available

Explosion Properties
Not Available

Molecular Weight
Not Applicable

Oxidising Properties
Not Available

Initial boiling point and boiling range
>204 °C

Relative density
0.95 (Water = 1)

Melting/Freezing Point
Not Available

Other Information
Taste: Not Available
Gas group: Not Available
VOC g/L: Not Available

10. STABILITY AND REACTIVITY

Reactivity
See section 7 - Handling and storage

Chemical Stability
Unstable in the presence of incompatible materials.
Product is considered stable.
Hazardous polymerisation will not occur.

Conditions to Avoid
See section 7 - Handling and storage

Incompatible materials
See section 7 - Handling and storage

Hazardous Decomposition Products
See section 5 - Fire-fighting measures

Possibility of hazardous reactions
See section 7 - Handling and storage

11. TOXICOLOGICAL INFORMATION

Toxicology Information
Epirez Epoxy Casting Compound [8837] Hardener
TOXICITY: Not Available
IRRITATION: Not Available

Tall oil/triethylenetetramine polyamides
TOXICITY:
Oral (rat) LD50: >5000 mg/kg[2]
IRRITATION:
Not Available

Triethylenetetramine
TOXICITY:
Dermal (rabbit) LD50: 805 mg/kgE[2]
Oral (rat) LD50: 2500 mg/kgE[2]
IRRITATION:
Eye (rabbit):20 mg/24 h - moderate
Eye (rabbit); 49 mg - SEVERE
Skin (rabbit): 490 mg open SEVERE
Skin (rabbit): 5 mg/24 SEVERE

Legend: 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

TRIETHYLENETETRAMINE

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.
Ethyleneamines are very reactive and can cause chemical burns, skin rashes and asthma-like symptoms. It is readily absorbed through the skin and may cause eye blindness and irreparable damage. As such, they require careful handling. In general, the low-molecular weight polyamines have been positive in the Ames assay (for genetic damage); however, this is probably due to their ability to chelate copper.
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 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.
For alkyl polyamines:
The alkyl polyamines cluster consists of two terminal primary and at least one secondary amine groups and are derivatives of low molecular weight ethylenediamine, propylenediamine or hexanediamine. Toxicity depends on route of exposure. Cluster members have been shown to cause skin irritation or sensitisation, eye irritation and genetic defects, but have not been shown to cause cancer.
Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.
Triethylenetetramine is a severe irritant to skin and eyes and may induce skin sensitisation. Acute exposure to saturated vapour via inhalation was tolerated without impairment but exposure to aerosol may lead to reversible irritations of the mucous membranes in the airways. Studies done on experimental animals showed that it does not cause cancer or foetal developmental defects.
Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).

Acute Toxicity:Data Not Available to make classification

Ingestion
Accidental ingestion of the material may be damaging to the health of the individual.
Ingestion of amine epoxy-curing agents (hardeners) may cause severe abdominal pain, nausea, vomiting or diarrhoea. The vomitus may contain blood and mucous.
Amines without benzene rings when swallowed are absorbed throughout the gut. Corrosive action may cause damage throughout the gastrointestinal tract.

Inhalation
Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.
The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.

Inhalation hazard is increased at higher temperatures.
Inhalation of amine vapours may cause irritation of the mucous membrane of the nose and throat, and lung irritation with respiratory distress and cough. Swelling and inflammation of the respiratory tract is seen in serious cases; with headache, nausea, faintness and anxiety.
Inhalation of epoxy resin amine hardeners (including polyamines and amine adducts) may produce bronchospasm and coughing episodes lasting several days after cessation of the exposure. Even faint traces of these vapours may trigger an intense reaction in individuals showing "amine asthma".

Skin
Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.
This material can cause inflammation of the skin on contact in some persons.
The material may accentuate any pre-existing dermatitis condition
Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
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.
Volatile amine vapours produce irritation and inflammation of the skin. Direct contact can cause burns.

Eye
If applied to the eyes, this material causes severe eye damage.

The liquid produces a high level of eye discomfort and is capable of causing pain and severe conjunctivitis. Corneal injury may develop, with possible permanent impairment of vision, if not promptly and adequately treated.
Vapours of volatile amines irritate the eyes, causing excessive secretion of tears, inflammation of the conjunctiva and slight swelling of the cornea, resulting in "halos" around lights. This effect is temporary, lasting only for a few hours. However this condition can reduce the efficiency of undertaking skilled tasks, such as driving a car. Direct eye contact with liquid volatile amines may produce eye damage, permanent for the lighter species.

Skin corrosion/irritation
Data required to make classification available

Serious eye damage/irritation
Data required to make classification available

Mutagenicity
Data Not Available to make classification

Respiratory sensitisation
Data required to make classification available

Carcinogenicity
Data Not Available to make classification

Reproductive Toxicity
Data Not Available to make classification

STOT-single exposure
Data required to make classification available

STOT-repeated exposure
Data Not Available to make classification

Aspiration Hazard
Data Not Available to make classification

Chronic Effects
Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.
There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.
There is some evidence that inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.
Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.
There is some evidence from animal testing that exposure to this material may result in toxic effects to the unborn baby.
Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).
Sensitisation may give severe responses to very low levels of exposure, i.e. hypersensitivity.
Inhalation of epoxy resin amine hardeners (including polyamines and amine adducts) may produce bronchospasm and coughing episodes lasting several days after cessation of the exposure. Even faint traces of these vapours may trigger an intense reaction in individuals showing "amine asthma".

12. ECOLOGICAL INFORMATION

Ecotoxicity
NOT AVAILABLE

Ingredient / Endpoint / Test Duration (hr) / Effect / Value / Species / BCF
Epirez Epoxy Casting Compound [8837] Hardener Not Available Not Available Not Available Not Available Not Available Not Available
tall oil/triethylenetetramine polyamides Not Available Not Available Not Available Not Available Not Available Not Available
triethylenetetramine Not Available Not Available Not Available Not Available Not Available Not Available

DO NOT discharge into sewer or waterways.

Persistence and degradability
Ingredient: triethylenetetramine
Persistence: Water/Soil: LOW
Persistence: Air: LOW

Mobility
Mobility in soil:
Ingredient: triethylenetetramine
LOW (KOC = 309.9)

Bioaccumulative Potential
Ingredient: triethylenetetramine
Bioaccumulation: LOW (LogKOW = -2.6464)

13. DISPOSAL CONSIDERATIONS

Waste Disposal
Recycle wherever possible or consult manufacturer for recycling options.
Consult State Land Waste Authority for disposal.
Bury or incinerate residue at an approved site.
Recycle containers if possible, or dispose of in an authorised landfill.
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 SDS and observe all notices pertaining to the product.

14. TRANSPORT INFORMATION

Transport Information
Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code:
Epirez Epoxy Casting Compound [8837] Hardener

U.N. Number
None Allocated

UN proper shipping name
None Allocated

Transport hazard class(es)
None Allocated

Marine Pollutant
NO

15. REGULATORY INFORMATION

Regulatory information
TALL OIL/ TRIETHYLENETETRAMINE POLYAMIDES(68082-29-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS:
Australia Inventory of Chemical Substances (AICS)

TRIETHYLENETETRAMINE(112-24-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS:
Australia Hazardous Substances Information System - Consolidated Lists
Australia Inventory of Chemical Substances (AICS)

Canada - NDSL: Not determined or one or more ingredients are not on the inventory and are not exempt from listing (tall oil/ triethylenetetramine polyamides; triethylenetetramine)
China - IECSC: All ingredients are on the inventory
Japan - ENCS: Not determined or one or more ingredients are not on the inventory and are not exempt from listing (tall oil/ triethylenetetramine polyamides)
Korea - KECI: All ingredients are on the inventory
New Zealand - NZIoC: All ingredients are on the inventory

Poisons Schedule
S5

EINECS/ELINCS (EC)
All ingredients are on the inventory

Australia (AICS)
All ingredients are on the inventory

Philippines (PICCS)
All ingredients are on the inventory

USA (TSCA)
All ingredients are on the inventory

16. OTHER INFORMATION

User Codes

User Title Label	User Codes
Task #	1146DS
Task #	22871
Task #	24052
Task #	24328
Task #	262DSG
Task #	2873DSG
Task #	4801DSG
Task #	6142T
Transcription Sign Off	22871 WH 24042017
Transcription Sign Off	24328 WH 09102017

Other Information
Version No: 4.1.1.1
Safety Data Sheet according to WHS and ADG requirements

S.GHS.AUS.EN

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.

This SDS has been transcribed into Infosafe GHS format from an original, issued by the manufacturer on the date shown.
Any disclaimer by the manufacturer may not be included in the transcription.

END OF SDS