

ATL COMPOSITES PTY. LTD. *ATTN: Deborah*
 ABN 002 517 777
 27 GIBBS STREET, LABRADOR, QUEENSLAND, AUSTRALIA. (07) 5537 7636
 POISONS INFORMATION CENTRE PHONE: 131 126 *FROM: P. B. C. M.*

MATERIAL SAFETY DATA SHEET

Issued: January 2003

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Product Name:	TECHNIGLUE Slow Hardener.
Other Names:	Not applicable.
Manufacturers Product Code:	H60S

Chemical Family: Polyamide
Chemical Name: Modified Polyamide.

Hazardous according to criteria of Worksafe Australia

UN No. : Not Applicable	D.G. Class : Not Applicable
Hazchem : 3W	SUSPD : 5
Pack. GRP : Not Applicable	Shipping Name : Polyamide Resin
EPG : 8A1	

1. PRODUCT IDENTIFICATION:

Hazardous Ingredients

Ingredient Name	CAS Number	Concentration (%)
Polyamide resin	68082-29-1	> 50
Tetraethylpentamine (TEPA)	112-57-2	< 5
Diethylenetriamine	111-40-0	< 5
Polyoxypropylenediamine	9046-10-0	< 10
Benzyl alcohol	100-51-6	< 20

Physical Description / Properties

Appearance :	Amber gel with an amine odour.
Boiling Point :	Not determined
Melting Point/Freeze Point :	No data.
Vapour Pressure :	No data.
Specific Gravity :	1.0
Flashpoint :	> 105 °C (PMCC)
Flammability Limits :	Not determined.
Solubility in Water :	Miscible
Viscosity :	200,000 mPa @ 25 °C
Vapour Density :	Heavier than air.
Use :	Epoxy resin curing agent.

2. HEALTH HAZARD INFORMATION:

Emergency Overview

HMIS Hazard Rating: Health - 3 Flammability - 1 Reactivity - 0

DANGER ! Strong skin sensitizer. Corrosive. May cause severe chemical burns to eyes and skin. Harmful if swallowed. Can cause respiratory tract irritation. Amber gel with an amine odour.

Primary Route(s) of Entry : Skin and eye contact, inhalation.

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Potential Health Effects

- Ingestion / Swallowed :** Moderately toxic. May cause gastrointestinal irritation or ulceration. May cause burns of the mouth and throat.
- Eye Contact :** May cause blurred vision. May cause irritation with corneal injury resulting in permanent vision impairment or even blindness.
- Acute Skin Contact :** Corrosive. May cause severe skin damage with burns and blistering. May cause allergic reaction in certain individuals. A single prolonged exposure may result in the material being absorbed in harmful amounts.
- Chronic Skin Contact :** Possible skin sensitiser. May cause persistent irritation and dermatitis. Prolonged skin contact may result in material being absorbed in harmful amounts.
- Acute Inhalation :** Excessive exposure to vapour or mist are irritating to the upper respiratory tract, causing nasal discharge, and discomfort in eyes, nose, throat and chest. Severe cases may cause difficult breathing and lung damage.
- Chronic Inhalation :** May cause lung damage. May cause respiratory sensitisation in susceptible individuals.
- Symptoms of Overexposure :** Skin irritation, burns and blistering. Irritation of the nose and throat, headache, nausea and vomiting. Eye irritation and blurred vision.
- Carcinogenicity :**
- | | |
|------|-----|
| NTP | No. |
| IARC | No. |
| OSHA | No. |

Medical Conditions Aggravated by Exposure :

Existing respiratory conditions, such as asthma and bronchitis. Existing skin conditions.

First Aid Measures

- First Aid for Ingestion :** Give conscious person at least two (2) glasses of water. Do not induce vomiting. If vomiting should occur spontaneously, keep airway clear. Never give fluids or induce vomiting if patient is unconscious or is having convulsions. If poisoning occurs, consult a doctor or contact a Poisons Information Centre. Seek immediate medical attention.
- First Aid for Eyes :** Immediately flush with water for at least fifteen (15) minutes. Get prompt medical attention.
- First Aid for Skin :** Remove contaminated clothing. Wipe excess from skin. Immediately wash with soap and water. Consult a doctor if effects occur. DO NOT apply grease or ointments. Destroy contaminated shoes.
- First Aid for Inhalation :** Move to fresh air if effects occur. Consult a doctor.
- First Aid Facilities :** An eye wash fountain, safety shower and a general washing facility should be available in immediate work area.

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Advice to Doctor: May cause tissue destruction leading to stricture. If lavage is performed, suggest endotracheal and / or esophagoscopy control. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Supportive care. Treatment based on judgment of the doctor in response to reactions of the patient. Excessive exposure may aggravate pre-existing asthma.

Toxicity Data

Oral : Slightly toxic.
Inhalation : No remarkable effects.
Dermal : Slightly toxic; corrosive.

3. PRECAUTIONS FOR USE:

Exposure Standards: Not established for products as whole. Refer to *Product Identification*.
Engineering Controls: Good room ventilation is usually adequate for most operations. Local exhaust ventilation may be necessary for some operations.

Personal Protection

Practice good caution and personal cleanliness to avoid skin and eye contact. Avoid skin contact when removing gloves and other protective equipment. Wash thoroughly after handling. Avoid breathing vapours of heated material. Use only approved protective clothing and equipment when handling this material (refer Australian Standards below).

Respiratory Protection : Wear a NIOSH/MSHA approved respirator with an organic vapour cartridge whenever exposure to vapour in concentrations above applicable limits is likely (approval #TC-23C).

Skin Protection : Use protective clothing impervious to this material. Selection of specific items such as face shield, gloves (rubber or latex), boots apron or full-body suit will depend on operation. Although a full body suit is recommended. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse. Contaminated leather items, such as shoes, belts and watchbands, should be removed and destroyed.

Eye / Face Protection : Chemical splash goggles, full-face shield or full-face respirator. Eye wash fountain should be located in immediate work area.

Selection and use of personal protective equipment should be in accordance with the recommendations in one or more of the relevant Australian Standards, including;

AS 1336 :	Recommended practices for eye protection in the industrial environment.
AS / NZS 1337 :	Eye protectors for industrial applications.
AS / NZS 1715 :	Selection, use and maintenance of respiratory protective devices.
AS 2161 :	Industrial safety gloves and mittens (excluding electrical and medical gloves).
AS / NZS 2210 :	Occupational protective footwear.
AS 2919 :	Industrial clothing.

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Exposure Standards: Will Burn under the right conditions of heat and oxygen supply.
 Classed as combustible liquid.

Environment: No data.

Movement & Partitioning : No data.

Degradation and Transformation : No data.

Ecotoxicology : No data.

4. SAFE HANDLING INFORMATION:

This product is classified as a dangerous good, Class 8 - Corrosive, for transport and storage.

Store in accordance with regulations for storage of dangerous goods; some State Authorities may also regulate combustible liquid status of this product.

Class 8 - Corrosive Substances, shall not be loaded in the same vehicle or packed in the same freight container with:

Class 1	Explosives
Class 4.3	Dangerous When Wet Substances
Class 5.1	Organic Peroxides
Class 6	Poisonous (toxic) Substances (where the poisonous substances are cyanides and the corrosives are acids)
Class 7	Radioactive Substances

Foodstuff and foodstuff empties.

Storage Temperature (min/max) : 4 °C / 32 °C

Shelf Life : Two years or more in original sealed container.

Storage : Store in cool, dry place with adequate ventilation. Keep containers tightly closed when not in use. Protect from atmospheric moisture.

Handling Precautions : Avoid prolonged or repeated skin contact. Wash thoroughly after handling. Launder contaminated clothing before reuse. Avoid inhalation of vapours from heated product. Precautionary steps should be taken when curing product in large quantities. Masses of curing product can generate dangerous exothermic heat and vapour that vary in composition and toxicity.

Spills and Disposal

Spill or Leak Procedures : Stop leak without additional risk. Wear proper personal protective equipment. Dike and contain spill. Ventilate area. Large spill - dike and pump into appropriate container for recovery. Small spill - dilute with water and recover or use inert, non-combustible absorbent material (e.g., sand) and shovel into suitable container. Do not use sawdust, wood chips or other cellulosic materials to absorb the spill, as the possibility for spontaneous combustion exists. Wash spill residue with warm, soapy water if necessary.

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Waste Disposal Method : Evaluation of this product using RCPA criteria shows that it is not a hazardous waste, either by listing or characteristics, in its purchased form. It is the responsibility of the user to determine proper disposal methods.

Incinerate or landfill may be preferred methods when conducted in accordance with federal, state and local regulations.

Fire / Explosion Hazard

Keep unnecessary people away, isolate hazard area and deny unnecessary entry. Highly toxic fumes are released in fire situations. Fire water run-off may be toxic. When using water spray, boil over may occur when the product temperature reaches the boiling point of water (tank-type scenarios, not spills).

Hazardous Combustion Products : Burning or excessive heat may produce toxic levels of ammonia, oxides of nitrogen and irritating aldehydes. Unidentified organic compounds may be formed during combustion.

Fire Fighting Equipment : Wear a self-contained positive pressure breathing apparatus and complete full-body personal protective equipment (including fire fighting helmet, coat, trousers, boots and gloves). Closed containers may rupture (due to buildup of pressure) when exposed to extreme heat.

Extinguishing Media : Water spray, dry chemical, alcohol foam, carbon dioxide (CO₂).

Reactivity Data

Chemical Stability : Stable under normal storage conditions.

Conditions to Avoid : Excessive heating over long periods of time degrades to product.

Incompatibilities : May react violently when in contact with oxidising materials, acids or halogenated compounds such as methylene chloride. Reactions may be slow initially, then may rapidly generate heat and vapour pressure.

Hazardous Polymerisation : Will not occur.

Other Safe Handling Information: Ground all electrical equipment. Do not eat, drink or smoke in working area. No smoking, open flames, or sources of ignition in handling or storage area.

5. OTHER INFORMATION:

Contact Point: Product Information Manager : (07) 5537 7636 Labrador, Queensland, 4215.

Note: The Hazardous Material Indexing System (HMIS), cited in the Emergency Overview of Section 2, uses the following index to assess hazard rating: 0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; and 4 = Severe.

Disclaimer

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Product Name:	TECHNIGLUE Epoxy Resin.
Other Names:	Not applicable.
Manufacturers Product Code:	R60

Chemical Family:	Epoxy resin.
Chemical Name:	Bisphenol A based Epoxy Resin.

Hazardous according to criteria of Worksafe Australia

UN No. :	Not applicable	D.G. Class :	Not applicable
Hazchem :	Not applicable	SUSPD :	Not applicable
Pack. GRP :	Not applicable	Shipping Name :	Not applicable

1. PRODUCT IDENTIFICATION:

Hazardous Ingredients

Ingredient Name	CAS Number	Concentration (%)
Bisphenol-A based epoxy resin	25085-99-8	> 50
Bisphenol-F based epoxy resin	28064-14-4	< 60
Benzyl alcohol	100-51-6	< 20
Inert Mineral Solids	-	< 20

Physical Description / Properties

Appearance :	White gel with little odour.
Boiling Point :	> 206 °C
Melting Point/Freeze Point :	No data.
Vapour Pressure :	< 1 mmHg @ 20 °C
Specific Gravity :	1.06 @ 25 °C
Flashpoint :	> 100 °C (PMCC)
Flammability Limits :	Not determined.
Solubility in Water :	Negligible.
Viscosity :	300,000 mPa @ 25 °C
Vapour Density :	Heavier than air.
Use :	In conjunction with epoxy hardeners as an adhesive.

2. HEALTH HAZARD INFORMATION:

Emergency Overview

HMIS Hazard Rating:	Health - 2	Flammability - 1	Reactivity - 0
WARNING ! May cause allergic skin response in certain individuals. May cause moderate irritation to the skin.			
White gel with little odour.			

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Product Name:	TECHNIGLUE Epoxy Resin (R60)
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Primary Route(s) of Entry : Skin Contact

Potential Health Effects

Ingestion / Swallowed : Low acute oral toxicity. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing larger amounts than that may cause injury.

Eye Contact : May cause irritation.

Acute Skin Contact : May cause allergic skin response in certain individuals. May cause moderate irritation to the skin. A single prolonged exposure is not likely to result in the material being absorbed through the skin in harmful amounts.

Chronic Skin Contact : May cause sensitisation in susceptible individuals. May cause moderate irritation to the skin.

Acute Inhalation : Not considered a problem unless heated to high temperatures. If inhalation does occur, vapours may cause mild respiratory irritation.

Chronic Inhalation : Not considered a problem unless heated to high temperatures. If inhalation does occur, vapours may cause mild respiratory irritation.

Symptoms of Overexposure : Moderate skin irritation seen as redness; possible rash.

Carcinogenicity :

NTP	Product not listed as a whole.
IARC	Product not listed as a whole.
OSHA	Product not listed as a whole.

Epiclorohydrin, present in this product at less than 0.0004%, has been reported to produce cancer in laboratory animals and epidemiological studies present "weak" evidence of cancer risk to humans. It is listed in the IARC monographs and by the NTP. Research data available by the IARC has concluded that diglycidyl ether of bisphenol A is not classifiable as to its carcinogenicity.

Medical Conditions Aggravated by Exposure :

Pre-existing skin and eye disorders may be aggravated by exposure to this product. Pre-existing lung and skin allergies increase the chance of developing allergic symptoms to this product.

First Aid Measures

First Aid for Ingestion : Induce vomiting if large amounts are ingested. Never give fluids or induce vomiting if patient is unconscious or is having convulsions. If poisoning occurs, consult a doctor or contact a Poisons Information Centre.

First Aid for Eyes : Flush immediately with water for at least fifteen (15) minutes. Consult a doctor.

First Aid for Skin : Remove contaminated clothing. Wipe excess from skin. Remove with waterless skin cleaner and then wash with soap and water. Consult a doctor if effects occur. DO NOT use solvents to remove product or reacted material from skin.

First Aid for Inhalation : Remove to fresh air if effects occur. Consult a doctor.

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Product Name: TECHNIGLUE Epoxy Resin (R60)

Advice to Doctor

No specific antidote. Supportive care. Treatment based on judgment of the doctor in response to reactions of the patient.

Toxicity Data

Ethylene glycol monobutyl ether causes harm to the fetus in laboratory animal studies. Harm to the fetus occurs at exposure levels that harm the pregnant animal. The relevance of these findings to humans is uncertain. Neopentyl glycol diglycidyl ether has been reported to be mutagenic in some laboratory tests.

Oral :	LD50 > 5000 mg / kg (rats)
Inhalation :	No data.
Dermal :	LD50 20,000 mg / kg (skin absorption in rabbits)

3. PRECAUTIONS FOR USE:

Exposure Standards

Not established for products as whole. Refer to *Product Identification*.

Engineering Controls

Good room ventilation is usually adequate for most operations. Local exhaust ventilation may be necessary for some operations.

Personal Protection

Practice good caution and personal cleanliness to avoid skin and eye contact. Avoid skin contact when removing gloves and other protective equipment. Wash thoroughly after handling. Avoid breathing vapours of heated material.

Use only approved protective clothing and equipment when handling this material (refer Australian Standards below).

Respiratory Protection : Wear a NIOSH/MSHA approved respirator with an organic vapour cartridge whenever exposure to vapour in concentrations above applicable limits is likely (approval #TC-23C).

Skin Protection : Rubber gloves and body-covering clothing. Remove contaminated clothing no later than the end of the work period and launder before reuse.

Eye / Face Protection : Safety glasses with side shields or chemical splash goggles.

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Selection and use of personal protective equipment should be in accordance with the recommendations in one or more of the relevant Australian Standards, including:

AS 1336 :	Recommended practices for eye protection in the industrial environment.
AS/NZS 1337 :	Eye protectors for industrial applications.
AS/NZS 1715 :	Selection, use and maintenance of respiratory protective devices.
AS 2161 :	Industrial safety gloves and mittens (excluding electrical and medical gloves).
AS/NZS 2210 :	Occupational protective footwear.
AS 2919 :	Industrial clothing.

Exposure Standards

Will support combustion.

Environment

Prevent entry into sewers and natural waters. May cause localised fish kill.

Movement & Partitioning : Bioconcentration potential is low (BCF less than 100 or Kog Kow less than 3).

Degradation and Transformation : Biodegradation under aerobic static laboratory conditions is below detectable limits (i.e. BOD less than 2.5 % of theoretical) in 20 days.

Ecotoxicology : Material is highly toxic to aquatic organisms on an acute basis. LC50 between 0.1 and 1.0 mg / L in most sensitive species.

4. SAFE HANDLING INFORMATION:

This product is not classified as a dangerous good in the Australian Dangerous Goods Code by reference to a specific substance name or a generic substance name or group.

Storage Temperature (min/max) : 4 °C / 49 °C

Shelf Life : Three years or more in original container.

Storage : Store in cool, dry place. Store in tightly sealed containers to prevent moisture absorption and loss of volatiles. Excessive heat over long periods of time will degrade the resin.

Handling Precautions : Avoid prolonged or repeated skin contact. Wash thoroughly after handling. Launder contaminated clothing before reuse. Avoid inhalation of vapours from heated product. Precautionary steps should be taken when curing product in large quantities. Masses of curing product can generate dangerous exothermic heat and vapour that vary in composition and toxicity.

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Product Name:	TECHNIGLUE Epoxy Resin (R60)
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Spills and Disposal

- Spill or Leak Procedures :** Soak up in absorbent material or scrape-up. Residual can be removed with non-flammable solvent, but solvent should be used sparingly and with appropriate precautions.
- Waste Disposal Method :** Any disposal practice must be in compliance with all State, Territory, and/or Local Government regulations.
 Waste characterisation and disposal compliance are the responsibility solely of the party generating the waste or deciding to discard or dispose of the material.
 Do not allow into any sewers, on the ground or into any body of water. The preferred waste management option for unused, uncontaminated, unformulated, or not otherwise altered material is to be sent to an approved recycler, reclaimer, or incinerator. The same waste management options are recommended for used or contaminated material, although additional evaluation is required.

Fire / Explosion Hazard

- Hazardous Combustion Products :** Carbon monoxide and carbon dioxide fumes may be produced when heated to decomposition.
- Fire Fighting Equipment :** Wear a self-contained breathing apparatus and complete full-body personal protective equipment. Closed containers may rupture (due to buildup of pressure) when exposed to extreme heat.
- Extinguishing Media :** Foam, carbon dioxide (CO₂), dry chemical.

Reactivity Data

- Chemical Stability :** Stable under normal storage conditions.
- Conditions to Avoid :** Excessive heating over long periods of time degrades to product.
- Incompatibilities :** Strong acids, bases, amines and mercaptans can cause polymerisation.
- Hazardous Polymerisation :** Will not occur by itself, but a mass of more than half a kilogram (one pound) of product plus an aliphatic amine will cause irreversible polymerisation with significant heat buildup.

5. OTHER INFORMATION:

Contact Point: Product Information Manager : (07) 5537 7636 Labrador, Queensland, 4215.

Note: The Hazardous Material Indexing System (HMIS), cited in the Emergency Overview of Section 2, uses the following index to assess hazard rating: 0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; and 4 = Severe.

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