SAFETY DATA SHEETS (SDS)
Enviro Epoxy B / B-LV Part A

Version: 7

Issued by: Envirosystems

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Hazard Identifiers

SECTION 1 – IDENTIFICATION OF MATERIAL & SUPPLIER

1.1	**Product Name:**	Enviro Epoxy B-LV Part A, Enviro Epoxy B Part A, Enviro Epoxy B / B-LV Part A
	Manufacturer's Product Code:	N/A
1.2	**Recommended Use:**	Part A of a two component, solvent free epoxy resin binder
1.3	**Company:**	Envirosystems
	Address:	295 Princes Highway St Peters, NSW 2044.
	Website:	www.envirosystems.com.au
	Telephone:	+61 2 85958699 (business hours)
	Fax:	+61 2 85958660
1.4	**Emergency Telephone:**	Poisons Centre – 131126

Other Information: All information in this SDS is to the best of our knowledge at time of publication. Users of this product should fully review this SDS prior to use to ensure best safety practices. Further information and or clarification can be obtained by contacting our technical department on the above telephone number.

SECTION 2 – HAZARDS IDENTIFICATION

2.1 Hazard Classification:

Classified as **Hazardous** according to WHS Regulations, Australian GHS criteria and a **Non-Dangerous Goods** according to the Australian Dangerous Goods Code.

Class	Category
Skin Corrosion/Irritation	2
Serious eye damage/eye irritation	2A
Skin Sensitization	1B
STOT – Single, Respiratory Tract	3
Hazardous to the aquatic environment- acute	2
Hazardous to the aquatic environment- chronic	3

2.2 Label Elements

Signal word **Warning**

H-code	Hazard Statements
H315	Causes skin irritation
H319	Causes serious eye irritation
H317	May cause allergic skin reaction
H335	May cause respiratory irritation
H401	Toxic to aquatic life
H412	Harmful to aquatic life with long lasting effects
P-Code	**Precautionary Statement - Prevention**

P280	Wear protective gloves / protective clothing / eye protection / face protection
P260	Do not breath dust , mist or vapors
P273	Avoid release to the environment
P272	Contaminated work clothing should not be allowed out of the workplace.
P270	Do not eat drink or smoke when using this product
P264	Wash with plenty of water and soap thoroughly after handling
P-Code	**Precautionary Statement - Response**
P305, P351, P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
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.
P301, P330, P331	If swallowed: Rinse mouth. Do not induce vomiting.
P361, P364	Take off immediately all contaminated clothing and wash before reuse.
P-Code	**Precautionary Statement - Storage**
P405	Store locked up in a well-ventilated area
P-Code	**Precautionary Statement - Disposal**
P501	Dispose of contents / containers to hazardous or special waste collection point. In accordance with local regulation

2.3 Other Hazards None known

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances See section below for Mixtures

3.2 Mixtures

CAS No.	Material	Content %
25085-38-5	Bisphenol A Epoxy Resin	>60%
9003-36-5	Bisphenol F Epoxy Resin	10-30%
68609-97-2	Alkyl Glycidyl Ether	10-30%

SECTION 4 – FIRST AID MEASURES

4.1 Description of first aid measures

General Advice:
Immediately remove contaminated clothing. If in danger of loss of consciousness, place patient in recovery position and transport accordingly. Apply artificial reparation if necessary. First aid personal should pay attention to the own safety.

Ingestion:
Do not induce vomiting. Wash mouth with water and seek medical attention.

Inhalation:
Keep patient calm and remove to fresh air. If affects occur seek medical attention.

Eye Contact:
While holding eyes open, gently flood with plenty of fresh water for 15 minutes. If affects occur seek medical attention. Skilled personnel should only

undertake removal of contact lenses after an eye injury.
Skin Contact:
Flush contacted area thoroughly with soap and plenty of water, shower if availed. Seek medical attention if irritation persists. Remove contaminated clothing including footwear.

4.2	**Most important symptoms and effects, both acute and delayed**	Any relevant information can be found in other parts of this section and in sections 2 and 11.
4.3	**Advice for doctor**	Treat symptomatically (decontamination, vital functions), if burn is present treat as any thermal burn after decontamination. No specific antidote.

SECTION 5 – FIRE FIGHTING MEASURES

5.1	**Extinguishing media**	Suitable extinguishing media: Water fog or fine spray, dry chemical powder, foam, BCF (where regulations permit). Alcohols resistant foams are preferred. Protein foams may functions but will be less effective. Unsuitable extinguishing media that may not be used for safety reasons: Do not use direct water stream as it might spread the fire.
5.2	**Special hazards arising from the substance or mixture**	Oxides of carbon and other possibly toxic fumes from fire.
5.3	**Advice for firefighters**	Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course. 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 dioxide (CO_2), phenolics products typical of burning organic material. Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions. May emit corrosive fumes.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

6.1	**Personal precautions, protective equipment and emergency procedures**	Secure the area. Wear personal protection equipment (see section 8). Keep unprotected persons away. Avoid contact with eyes and skin. Do not inhale gases/vapours/aerosols. If material is released indicate risk of slipping. Do not walk through spilled material.
6.2	**Environmental precautions**	Do not discharge into sewers or waterways and soil.
6.3	**Methods and material for containment and cleaning up**	Small or major spills should be absorbed with dry, inert filler (soil or sand) which then can be shoveled into appropriately labeled drums for disposal. Disposal of this material should be undertaken by a registered chemical disposal company.
6.4	**Reference to other sections**	Relevant information in other sections has to be considered. This applies in particular for information given on personal protective equipment (section 8) and on disposal (section 13).

SECTION 7 – HANDLING & STORAGE

7.1	**Precautions for safe handling**	Ensure thorough ventilation of stores and work areas. Handle in accordance with

		good industrial hygiene and safety practice. When using do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. Protection against fire and explosion: The product is combustible. Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.
7.2	**Conditions for safe storage**	**Storage Requirements:** Store in a cool, dry area **Temperature Conditions:** Up to 40º C **Protection from weather:** Store undercover and away from frost and moisture
7.3	**Specific end use(s)**	Once mixed with part A and applied, produces a hard wearing, durable surface suitable for commercial and industrial applications.
7.4	**Regulations and standards (Australia):**	Classified as Hazardous Liquid which should be stored and handled in accordance with regulations

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1	**Control parameters**	No known exposure limits
8.2	**Exposure controls**	**General protection and hygiene measures:** General ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations. Do not eat, drink or smoke when handling. Wash hands at the end of work and before eating. Keep working clothes separately. Remove contaminated, soaked clothing immediately. Clean work areas regularly. **Please read Part B SDS** **Personal protection equipment:** *Respiratory protection* Respiratory protection should be worn when exposure limits are exceeded. *Eye protection* Safety glasses with side shield, chemical goggles. Full face respiratory may be required if exposure causes discomfort. *Hand protection* Protective gloves made of PVC, butyl rubber, neoprene or nitrile. Remember to also take into account of other chemical or processes when selecting glove type as well. *Skin protection* Long sleeve shirts and full length pants or overalls clothing. *Other Information* Barrier creams can be used to protect skin from contact with the material. Always wash hands before smoking, eating, drinking or using the toilet and after finishing work. Observe the usual precautions when handling chemicals.
8.3	**Further information for system design and engineering measures**	Ensure adequate ventilation. Keep containers closed when not in use.

SECTION 9 – PHYSICAL & CHEMICAL PROPERTIES

9.1	**Odour:**	Mild
	Odour Threshold	No test data avaliaible
	Colour:	Yellow
	Physical State:	Low Viscosity Liquid

	Flash Point:	Closed cup 177°C Pensky-Martens closed cup ASTM D 93
	Boiling Point:	>100 ºC
	Melting Point:	Not Available
	Specific Gravity:	0.98
	pH (5% solution):	>12
	Solubility in Water (g/L):	Insoluble (Hydrophobic)
	Flammability:	Yes
	Lower Limit:	Not determined
	Higher Limit:	Not determined
	Vapour Pressure:	<2
	Vapour Density (Air = 1)	Not determeined
9.2	**Other information**	None available

SECTION 10 – STABILITY AND REACTIVITY

10.1 -3	**Reactivity; Chemical stability; Possibility of hazardous reactions**	If stored and handled in accordance with standard industrial practices not hazardous reactions are known. Unstable in the present of incompatible material.
10.4	**Conditions to avoid**	Avoid short term temperatures above 300°C as potentially violent decomposition can happen at 350°C. Avoid prolonged exposure to temperatures over 250°C. Avoid all sources of ignition: heat, sparks, open flame. See SDS section 7 - Handling and storage.
10.5	**Incompatible materials**	Keep away from oxidizing agents, acids and alkalis and amines.
10.6	**Hazardous decomposition products**	Oxides of carbon and other possibly toxic fumes from fire.

SECTION 11 – TOXICOLOGICAL INFORMATION

Acute Toxicity/Effects

Enviro Epoxy B / B-LV part A:

Acute Oral toxicity

Low toxicity if swallowed. Small amount swallowed incidentally as a result of handling operations are not likely to cause injury, however swallowing large amount may cause injury.

As a product single dose LD50 has not been determined. Based on information for components:

Oral (rat) LD50: >2000 mg/kg Estimated

Acute Dermal toxicity

Prolonged skin contact is unlikely to result in absorbtion of harmful amounts.

As a product single dose LD50 has not been determined. Based on information for components:

Oral (rabbit) LD50: >2000 mg/kg Estimated

Acute Inhalation toxicity

Excess exposure may cause irritation to upper respiratory tract (nose and throat)

The LC50 has not been determined

Skin corrosion/irritation:

Brief contact may cause moderate irritation with local redness

Serious eye damage/eye irritation:

May cause moderate eye irritation. Corneal injury is unlikely. Vapor may cause eye irritation experienced as mild discomfort and redness.

Sensitization:
A component of this mixture has caused allergic reactions in humans. Contains components which have caused allergic skin sensitization in guinea pigs and also Contains components which have caused allergic skin sensitization in mive.

Bisphenol F Epoxy Resin:
Acute Inhalation toxicity
At room temperature, exposure to vapor is minimal due to low volatility, vapor from heated material may cause respiratory irritation) The LC50 has not been determined

Bisphenol A Epoxy Resin:
Acute Inhalation toxicity
The LC50 has not been determined

Alkyl Glycidyl Ether:
Acute Inhalation toxicity
LCO, Rat, 4 hour, vapor 0,206mg/l. No deaths occurred following exposure to saturated atmosphere.

Chronic Toxicity/Effects

Enviro Epoxy B / B-LV part A:
Specific target organ systematic toxicity (single exposure)
Evaluation of available data suggest that this material is not a STOT-SE toxicant.

Specific target organ systematic toxicity (repeated exposure)
For the major component(s), except for skin sensitization, repeated exposure to low molecular weight epoxy resins of this type are not anticipated to cause significant adverse effects.

Genetic toxicity
Contains component(s) which were negative in some in vitro genetic toxicity studies and positive in others. Contains component(s) which were negative in animal genetic toxicity studies.

Carcinogenicity
Many studies have been conducted on diglycidyl ether of bisphenol A, there is some data to suggest a carcinogenicity in animals however the majority of available data and the international agency for research on cancer (IARC) has not classified it as carcinogenic.

Reproductive toxicity
In animal studies of resins based on diglycidyl ether of bisphenol A have shown not to interfere with reproduction.

Teratogenicity
Resins based on diglycidyl ether of bisphenol A did not cause birth defect or other adverse effects on fetus when pregnant rabbits were exposed on their skin, or when pregnant rats or rabbits were exposed orally.

Long Term Effects:

Susceptible individuals may develop allergic reactions such as dermatitis or asthma like symptoms on a single significant skin exposure or may become sensitized to the material on repeated contact.

SECTION 12 – ECOLOGICAL INFORMATION

Toxicity

Bisphenol F Epoxy Resin:
Acute toxicity in fish
Material is moderately toxic to aquatic organisms on an acute bases, with LC50/EC50 between 1 and 10mg/L in the moist sensitive species tested.

Bisphenol A Epoxy Resin:
Acute toxicity in fish
Material is moderately toxic to aquatic organisms on an acute bases, with LC50/EC50 between 1 and 10mg/L in the moist sensitive species tested.
LC50 (96h) Omcorhynchus mykiss (rainbow trout), semi-static, 1.8mg/L

Acute toxicity in aquatic invertebrates
EC50 (48h), Daphnia magna (water flea), static test, 1.8mg/L

Acute toxicity in aquatic algae/plants
ErC50 (72h), Scenedesmus capiccomutum (fresh water algae), static test, growth rate inhibition, 11mg/L

Chronic toxicity in aquatic invertebrates
NOEC (21 d), Daphnia magna (water flea), semi static test, number of offspring, 0.3mg/L
MATC (maximum acceptable toxicant level) (21 d), Daphnia magna (water flea), semi static test, number of offspring, 0.55mg/L

Alkyl Glycidyl Ether:
Acute toxicity in fish
Material is not expected to be toxic to aquatic organisms on an acute bases
LC50 (96h) Omcorhynchus mykiss (rainbow trout), static, >5000mg/L
LC50 (96h) Lepomis macrochirus (bluegill sunfish), static, 1,800mg/L

Acute toxicity in aquatic algae/plants
EbC50 (72h), pseudokirchneriella subcapitata (green algae) , growth rate inhibition (cell density reduction), 843mg/L
NOEC(72h), pseudokirchneriella subcapitata (green algae) , growth rate inhibition (cell density reduction), 500mg/L

Microorganisms/Effect on sludge

Bisphenol A Epoxy Resin:
Toxicity to Bacteria
IC50 (18h), Respartion rates, >42mg/L

Persistence and degradability

Bisphenol F Epoxy Resin:
Biodegradability
For similar material based on stringent OECD test guidelines this material cannot be considered as readily biodegradable, however these results do not necessarily mean that the material is not biodegradable under environmental conditions.

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Biodegradability
For similar material based on stringent OECD test guidelines this material cannot be considered as readily biodegradable, however these results do not necessarily mean that the material is not biodegradable under environmental conditions.
10 day window: Not applicable
Biodegradation: 12%
Exposure time: 28 d
Method: OECD Test Guideline 302B or equivalent

Theoretical oxygen demand: 2.35 mg/mg estimated

Photodegradtion

Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmosphere half-life: 1.92 hours
Method: estimated

Alkyl Glycidyl Ether:
Biodegradability
For similar material based on stringent OECD test guidelines this material cannot be considered as readily biodegradable, however these results do not necessarily mean that the material is not biodegradable under environmental conditions.
Biodegradation: 87%
Exposure time: 28 d
Method: OECD Test Guideline 301F or equivalent

Chemical oxygen demand: 2.09 mg/mg

Bioaccumulative potential

Bisphenol F Epoxy Resin:
Bioaccumulation
Bio-concentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5)

Partition coefficient
n-octol/water(Log Pow): 3.6 at 20^{o}C estimated

Bisphenol A Epoxy Resin:
Bioaccumulation
Bio-concentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5)

Partition coefficient
n-octol/water(Log Pow): 3.242 at 25oC estimated

Alkyl Glycidyl Ether:
Bioaccumulation
Bio-concentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). No relevant data found.

Partition coefficient
n-octol/water(Log Pow): 3.77 at 25oC estimated OECD test guideline 107 or equivalent.

Bio-concentration factor BCF
160 fish estimated

Mobility in soil

Bisphenol F Epoxy Resin:
Potential for mobility in soil is low (Koc between 500 and 2000). Given its very low henrys constant, volatization from natural bodies of water or moist soil is not expected to be an important fate process.

Bisphenol A Epoxy Resin:
Biodegradability
For similar material

Alkyl Glycidyl Ether:
Expected to be relative immobile in soil (Koc > 5000). Partition coefficient (Koc): > 5000 OECD 121: HPLC method.

Additional Information None

SECTION 13 – DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Material Recommendation:
Material that cannot be used, reprocessed or recycled should be disposed of in accordance with Federal, State, and local regulations at an approved facility. Depending on the regulations, waste treatment methods may include, e.g., landfill or incineration.

Uncleaned packaging Recommendation:
Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local/state/federal regulations. Uncleaned packaging should be treated with the same precautions as the material.

SECTION 14 – TRANSPORT INFORMATION

Transport Information

Not classified as a Dangerous Good according to the Australian Code 7th edition for the Transportation of Dangerous Goods by Road and Rail.

Australian Special Provisions; AU01: Environmentally Hazardous Substances meeting the description of UN 3077 or UN 3082 are not subject to this Code (ADG 07) when transported by road or rail in;
(c) packaging's that do not incorporate a receptacle exceeding 500 Kg (L); or
(d) IBCs.

U.N. Number:	N/A
DG Class:	N/A
EPG card:	N/A
Hazchem Code:	N/A
Proper Shipping Name:	Environmentally hazardous substance liquid N.O.S (epoxy resin)
Packing Group:	N/A

Classification for SEA transport (IMO-IMDG)

U.N. Number:	UN 3082
DG Class:	9
Proper Shipping Name:	Environmentally hazardous substance liquid N.O.S (epoxy resin)
Packing Group:	III
Marine Pollutant:	Epoxy Resin

Classification for AIR transport (IATA/ICAO)

U.N. Number:	UN 3082
DG Class:	9
Proper Shipping Name:	Environmentally hazardous substance liquid N.O.S (epoxy resin)
Packing Group:	III

Label

SECTION 15 – REGULATORY INFORMATION

15.1	**Safety, health and environmental regulations/legislation specific for the substance or mixture**	National and local regulations must be observed. For information on labeling please refer to section 2 of this document. **Poisons Schedule Number: 5**
	Australian Inventory:	Listed
	Controlled Schedule	Not listed substances
	Carcinogenic Substances:	

SECTION 16 – OTHER INFORMATION

Safety Data Sheets are updated regularly. Please ensure you have a current copy. SDS can be obtained from our website: www.envirosystems.com.au
The SDS should be used to assist in the Risk Management. Many other factors determine whether the reported Hazards are risks in any given workplace.
Specific Risks may be determined by reference to various Exposure Scenarios, Scale of use, Frequency of use and current or available engineering controls must be considered.

Emergency Telephone: Poisons Centre – 131126