Safety Data Sheet

Date of Issue: September 21
(Supersedes November 17)

Liquid Crystal Part A

Section 1: Identification of the substance/mixture and of the supplier

Product Name:	Liquid Crystal Part A.
Product Use:	Decorative, clear epoxy coating when mixed with Liquid Crystal Part B.
Pack Size:	7.26 litres.
Company:	Real World Epoxies Research Labs
Address:	C/- 19/10 Miltiadis Street Acacia Ridge QLD 4110
Emergency Phone:	0408 877 256

Section 2: Hazards Identification

GHS Classification:

Skin Irritation:	Category 2.
Skin Sensitisation:	Category 1.
Eye Damage/Irritation:	Category 2A.
Chronic Aquatic Toxicity:	Category 2.

GHS Label:

Signal Word: Warning

Precautionary Statements:
Hazards:
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H411 - Toxic to aquatic life with long lasting effects.

Prevention:
P261 - Avoid breathing dust/fumes/gas/mist/vapours/spray.
P264 - Wash skin thoroughly after handling.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P273 - Avoid release into the environment.
P280 - Wear protective gloves/eye protection/face protection.

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.
P310 - Immediately call a POISON CENTER or doctor/physician.
P321 - Specific treatment (see supplement first aid instructions on this label).
P332 + P313 - If skin irritation occurs: Get medical advice/attention.
P362 - Take off contaminated clothing and wash before reuse.

Disposal:
P501 - Dispose of contents/container in accordance with local and federal regulations.

General:
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.

Section 3: Composition/information on ingredients

INGREDIENT	CAS NUMBER	PROPORTION %
Reaction product: bisphenol-A-(epichlorohydrin); epoxy resin (number average molecular <= 700)	25068-38-6	>60
The remaining products are trade secrets		to 100

Section 4: First-aid measures

General Advice:	Seek medical advice. If breathing has stopped or is laboured give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped begin cardiopulmonary resuscitation immediately.
Ingestion:	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. In general no treatment is necessary unless large quantities are ingested, however, seek medical attention.
Inhalation:	Remove the source of contamination or move the victim to fresh air. Lay patient down. Keep warm and rested. Ensure airways are clear and have qualified person give oxygen through a face mask if breathing is difficult. If symptoms develop and persist seek medical attention.
Skin Contact:	Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.
Eye Contact:	If contact with the eye(s) occurs, wash with copious amounts of water holding eyelid(s) open remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. Take care not to rinse contaminated water into the non-affected eye. If symptoms persist seek medical attention, preferably an ophthalmologist. Suitable emergency eye wash facilities should be available in the work area.
Advice to Doctor:	Treat symptomatically.
Other:	For advice, contact a Poisons Information Center, e.g. Australia 131 126.

Section 5: Fire-fighting measures

Suitable Extinguishing Equipment:	Use water spray, foam or dry chemical to fight fire. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
Hazards Arising from Chemical:	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Phenolics, Carbon Monoxide, Carbon Dioxide. Not susceptible to explosion.
Protective Equipment for Firefighters:	Full protective clothing and self-contained breathing apparatus required.

Section 6: Accidental release measures

Personal Precautions:	Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation.
Environmental Precautions:	Do not allow to enter sewers or drainage. Construct a dike with absorbent, liquid-binding material to prevent spreading. For major spills, alert Fire Brigade and tell them location and nature of hazard.
Methods for Clean Up:	Scrape up and place in suitable container for disposal. Wash area with solvent. Dispose of material as contaminated waste in accordance with local and federal regulations.

Section 7: Handling and storage

Handling:	General good practice required. Ensure adequate ventilation. Avoid prolonged or repeated contact with the skin. Avoid contact with the eyes. Wash hands thoroughly after handling.
Storage:	Store in a cool, dry location away from direct heat. Keep lids sealed tightly. Store away from oxidising agents.

Section 8: Exposure controls and personal protection

Exposure Standards:	No exposure standards have been established by the Australian National Occupational Health and Safety Commission (NOHSC) or the Occupational Safety and Health Service (OHS) of the New Zealand Department of Labour.
Engineering Controls:	Mechanical local exhaust at point of contaminant release if conditions warrant.
Personal Protection:	Where ventilation is inadequate the use of an Air Purifying Respirator with a replaceable organic vapour filter complying with AS/NZS 1715 and AS/NZS 1716 is recommended. Safety glasses with side shields, goggles or full-face shield as appropriate recommended. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337. Wear gloves of impervious material such as impervious PVC or rubber gloves. Reference should be made to AS/NZS 2161.1. Suitable work wear should be worn to protect personal clothing. Industrial clothing should conform to the specifications detailed in AS/NZS 2919.

Section 9: Physical and chemical properties

Appearance:	Clear, low-viscosity liquid.		
Packaging:	15-litre plastic container with press fit lid.		
Odour:	Subtle, sweet odour.	Odour Threshold:	Not determined.
pH:	Not determined.	Melting/Freezing Point:	Not determined.
Initial Boiling Point:	Not determined.	Boiling Point Range:	Not determined.
Flashpoint:	>150°C.	Evaporation Rate:	Not determined.
Flammability:	Not applicable.	Flammability Limits:	Not applicable.
Vapour Pressure:	Not determined.	Vapour Density:	Not determined.
Relative Density:	1.1kg/L	Solubility in Water:	Negligible.
Partition Co-efficient:	Not determined.	Auto ignition Temp:	400°C ca.
Decomposition Temp.:	Not determined.	Viscosity:	Not determined.

Section 10: Stability and reactivity

Reactivity:	Can react vigorously with strong oxidizing agents, strong lewis or mineral acids and organic bases.
Chemical Stability:	The product is stable under normal conditions.
Conditions to Avoid:	Mixing large volumes of Part A and Part B - expect a significant exotherm within 20-25 minutes at 25°C.
Incompatible Materials:	Avoid contact with strong acids and bases, oxidising agents.
Hazardous Decomposition Products:	Carbon Monoxide.

Section 11: Toxicological information

Likely Routes of Exposure:	Effects on Eye - There is evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Severe inflammation may be expected with pain. Effects on Skin - The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering. Open cuts, abraded or irritated skin should not be exposed to this material 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. Inhalation Effects - The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Not normally a hazard due to non-volatile nature of product. Ingestion Effects - High molecular weight material; on single acute exposure would be expected to pass through gastrointestinal tract with little change / absorption. Occasionally accumulation of the solid material within the alimentary tract may result in formation of a bezoar (concretion), producing discomfort. Ingestion may result in nausea, abdominal irritation, pain and vomiting.
Acute Toxicity:	Oral - LD50 Low Toxicity Rat LD50 >15,000mg/kg. Dermal - LD50 Low Toxicity Rabbit LD50 >23,000mg/kg. Inhalation - No applicable toxicity data. Other Routes - No applicable toxicity data. (For epoxy polymer. No data available on mixture)
Skin Corrosion/Irritation:	Irritating to skin. (For epoxy polymer. No data available on mixture)
Eye Damage/Irritation:	Irritating effect. (For epoxy polymer. No data available on mixture)
Respiratory or Skin Sensitisation:	Possible sensitisation through skin contact. (For epoxy polymer. No data available on mixture)
Germ Cell Mutagenicity:	No specific data available.
Carcinogenicity:	Many studies have been conducted to assess the potential carcinogenicity of diglycidyl ether of bisphenol A (DGEBPA). Indeed, the most recent review of the available data by the International Agency for Research on Cancer (IARC) has concluded that DGEBPA is not classified as a carcinogen. Although some weak evidence of carcinogenicity has been reported in animals, when all the data is considered, the weight of evidence does not show that DGEBPA is carcinogenic. (For epoxy polymer. No data available on mixture)
Reproductive Toxicity:	Resins based on diglycidyl ether of bisphenol A (DGEBPA) did not cause birth defects or other adverse effects on the fetus when pregnant rabbits were exposed by skin contacts, the most likely route of exposure, or when pregnant rats or rabbits were exposed orally. (For epoxy polymer. No data available on mixture)
STOT-single Exposure:	No applicable toxicity data. No known significant effects or critical hazards. (For epoxy polymer. No data available on mixture)
STOT-repeated Exposure:	Except for skin sensitisation, repeated exposures to low molecular weight epoxy resins of this type are not anticipated to cause any significant adverse effects. (For epoxy polymer. No data available on mixture)
Aspiration Hazard:	No applicable toxicity data. No known significant effects or critical hazards. (For epoxy polymer. No data available on mixture)

Section 12: Ecological information

Toxicity:	Material is moderately toxic to aquatic organisms on an acute basis (LC50 or EC50 between 1 and 10mg/L in the most sensitive species tested). Acute LC50 in water flea Daphnia magna is 1.3mg/L. Acute LC50 in fathead minnow (Pimephales promelas) is 3.1mg/L. Toxicity to aquatic species occurs at concentrations greater than water solubility. Maximum acceptable toxicant concentration (MATC) in water flea.Daphnia magna is 0.55mg/L. Growth inhibition threshold in bacteria is >42.6mg C/L. Inhibitory concentration (IC50) in OECD Activated Sludge Respiration Inhibition Test (OECD Test No. 209) is >100mg/L. (For epoxy polymer. No data available on mixture)
Persistence and Degradability:	Theoretical oxygen demand (ThOD) is calculated to be 2.35 p/p. In the atmospheric environment, material is estimated to have a tropospheric half-life of 1.92 hr. Biodegradation reached in Modified Zahn-Wellens/EMPA Test. (OECD Test No. 302B) after 28 days: 12%. The 20-Day Biochemical Oxygen Demand (BOD20) is <2.5%. (For epoxy polymer. No data available on mixture)
Bioaccumulative Potential:	Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). Measured log octanol/water partition coefficient (log Pow) is 3.7-3.9. (For epoxy polymer. No data available on mixture)
Mobility in Soil:	Potential for mobility in soil is low (Koc between 500 and 2000). Soil organic carbon/water partition coefficient (Koc) is estimated to be 1800-4400. Henry's Law Constant (H) is estimated to be <6.94E-09 atm-m^3/mole. Log octanol/water partition coefficient (log Pow) is estimated, using a structural fragment method, to be 3.84. (For epoxy polymer. No data available on mixture)
Other Adverse Effects:	None known.

Section 13: Disposal considerations

Disposal Methods:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Residual Part A can be mixed with Part B to harden before disposal. Use industrial disposal. Comply with local, state and federal laws and regulations.

Section 14: Transport information

Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class:	9
UN/ID No:	UN 3082
Packing Group:	III
Hazchem:	3Z
Marine Pollutant:	Yes.

ADG
Not subject to the ADG code when transported by Road or Rail (ADG Special Provision AU01).

IATA
Not restricted when transported by air (IATA DGR 4.4 Special Provision A197).

IMDG
Non-regulated goods when transported by sea (IMDG Code 2.10.2.7).

Section 15: Regulatory information

Australia: Classified as hazardous according to criteria of National Occupational Health and Safety Commission (NOHSC).
Poisons Schedule Number: S5

Section 16: Other relevant information

Technical Services Information Officer: 0408 877 256