

## SECTION 1 – IDENTIFICATION OF MATERIAL AND SUPPLIER

<b>SUPPLIER:</b>	<b>SOLID SOLUTIONS.</b>
<b>ABN:</b>	46 977 073 014.
<b>ADDRESS:</b>	19 Ardena Court, East Bentleigh, VIC 3165.
<b>TELEPHONE:</b>	(03) 9579 2044.
<b>AH EMERGENCY TELEPHONE:</b>	13 1126 (Poisons Information Centre).
<b>FAX:</b>	(03) 9579 0573.
<b>WEB PAGE:</b>	www.solidolutions.com.au
<b>Product Name:</b>	4 Seasons 151 Epoxy Adhesive Part A.
<b>Product Use:</b>	Ambient temperature epoxy resin based formulation for mixing with 4 Seasons 151 Epoxy Adhesive Part B. 4 Seasons 151 Epoxy Adhesive Kit is used in areas such as adhesives for a variety of substrates.
<b>Manufacturer's Product Code:</b>	Not applicable.
<b>Creation Date:</b>	01/15/2012.
<b>Revision Date:</b>	

## SECTION 2 – HAZARDS IDENTIFICATION

This product is classified as a **HAZARDOUS SUBSTANCE** according to criteria of the ASCC, and as **NON-DANGEROUS GOODS** according to the ADG Code.

<b>Hazard Category:</b>	Xn: Harmful; Xi: Irritant; N: Dangerous for the environment; Possible Mutagen, Cat 3.
<b>Emergency Overview:</b>	Irritating to eyes and skin contact, may cause sensitization, possibly Mutagenic Cat 3.
<b>Acute Skin Contact:</b>	A single prolonged exposure is not likely to result in the material being absorbed through the skin in harmful amounts.
<b>Chronic Skin Contact:</b>	Prolonged or repeated exposure may cause skin irritation and/or sensitisation
<b>Acute Eye Contact:</b>	May cause slight eye irritation. Corneal injury is unlikely.
<b>Chronic Eye Contact:</b>	Corneal injury.
<b>Acute Inhalation:</b>	Risk of inhalation is low due to low vapour pressure at ambient temperatures.
<b>Chronic Inhalation:</b>	Prolonged exposure to high concentrations of vapour may affect the central nervous system.
<b>Ingestion (Swallowed):</b>	Acute oral toxicity has not been determined. Acute oral toxicity (rat) for components of this product are each in excess of 2000 mg/kg.
<b>Primary Routes of Exposure:</b>	Skin.
<b>Risk Statements:</b>	R36/38 Irritating to eyes and skin. R43 May cause sensitisation by skin contact. R51 Toxic to aquatic organisms. R53 May cause long-term adverse effects in the aquatic environment. R68: Possible risk of irreversible effects.
<b>Safety Statements:</b>	S2 Keep out of the reach of children. S24 Avoid contact with skin. S28 After contact with skin, wash immediately with plenty of soap-suds. S36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S61 Avoid release to the environment. Refer to special instructions/Material Safety Data Sheets.

## SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients:	CAS Number:	Proportion:
Polymer of bisphenol A and epichlorhydrin	25085-99-8	65 - 80% w/w
Cresyl glycidyl ether	26447-14-3	15 - 25% w/w
Non-hazardous ingredients		To 100% w/w
<b>Total</b>		<b>100% w/w</b>

## SECTION 4 – FIRST AID MEASURES

<b>Scheduled Poisons:</b>	Poisons Information Centre in each Australian State capital city can provide additional assistance for scheduled poisons. (Phone Australia 13 1126) or a doctor (at once).
<b>First Aid Facilities Required:</b>	Eye wash fountains and a general washing facility should be easily accessible in the immediate work area.
<b>Inhalation:</b>	Remove victim from exposure to fresh air – avoid becoming a casualty. If not breathing, apply mouth-to-mouth resuscitation. If breathing is difficult, qualified personnel should administer oxygen. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Call a doctor and/or transport to an emergency hospital.
<b>Skin contact:</b>	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Immediately remove contaminated clothing and wash before reuse. If irritation develops seek medical attention.
<b>Eye contact:</b>	If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. If irritation develops seek medical attention.
<b>Ingestion (Swallowed):</b>	Immediately rinse mouth with water. If swallowed DO NOT induce vomiting. Give a glass of water to drink. Never give anything by mouth to an unconscious patient. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration into the lungs. Get to a doctor or hospital quickly.
<b>Advice to Doctor:</b>	No specific antidote is known. Supportive care. Treatment based on judgement by the doctor in response to reactions of the patient. Skin contact may cause dermatitis; treat as any contact dermatitis. Poisons Information Centre in each Australian State capital city can provide additional assistance for scheduled poisons.

## SECTION 5 – FIRE FIGHTING MEASURES

<b>Hazards from Combustion Products:</b>	Upon combustion, this product may emit carbon monoxide, carbon dioxide, phenolics, and other possibly toxic gases and vapours on burning.
<b>Hazardous Decomposition Products:</b>	Upon decomposition, this product may emit this product may emit carbon monoxide, carbon dioxide, phenolics, and other possibly toxic gases and vapours on burning.
<b>Suitable Extinguishing Media:</b>	Carbon dioxide, dry chemical foam, dry powder. For large-scale fires, alcohol resistant foams are preferred if available. General-purpose synthetic foams or protein foams may function, but much less effectively. Water may be used as a blanket for fire extinguishment. If water is used, it should be used in very large quantities. If possible, contain fire run off water.

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<b>Precautions for Fire Fighting:</b>	In case of fire use large quantities of water, foam, carbon dioxide or a dry chemical. Immediately evacuate the area (including down-wind) of unnecessary personnel. People who are fighting fires must be protected against hazardous combustion products by wearing positive pressure self-contained breathing apparatus and full protective clothing. Do not reseal contaminated containers. If safe to do so, remove container(s) from the path of the fire if it can be done without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.
<b>Hazchem Code:</b>	Not applicable.
<b>Flash Point:</b>	Ca. 154°C (PMCC).
<b>Solubility in Water:</b>	Insoluble.
<b>Fire Hazards:</b>	Hazardous combustion products: Upon decomposition, this product may emit carbon monoxide, carbon dioxide, phenolics, and other possibly toxic gases and vapours on burning.
<b>Flammability:</b>	Non-flammable paste. Product may burn in a fire situation generating toxic vapours or fumes.

## SECTION 6 – ACCIDENTAL RELEASE MEASURES

### Spills:

<b>Personal Precautions:</b>	Evacuate and ventilate spill area. In case of spill, wear full protective equipment including respiratory equipment during clean up as indicated in section 8 below. Isolate hazard area and deny entry.
<b>Environmental Precautions:</b>	Contain spill, e.g. by diking, to prevent entry into sewers, drainage system, surface or ground water systems. In the event of product entering waters or drainage system, or polluting soil or plants contact the Environmental Protection Authority or your local Waste Management Authority.
<b>Major Spill:</b>	If transportation spill, dial “000” for Police or Fire Brigade. Large quantities may be pumped into closed containers for disposal.
<b>Minor Spill:</b>	Spilt material may result in a slip hazard and should be absorbed into dry, inert material (e.g. sand, sawdust, vermiculite or other absorbent), which then can be put into appropriately labelled open top drums.
<b>Clean Up:</b>	Residual material may be removed using steam or hot soapy water. Use of solvents in cleanup poses a distinct hazard and therefore should be avoided.

## SECTION 7 – HANDLING AND STORAGE

<b>Handling:</b>	Avoid all personal contact, including skin and eye contact and inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers closed at all times. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Launder contaminated clothing before re-use.
<b>Storage:</b>	Store indoors in cool place in original, unopened containers. Store away from strong oxidising agents, bases, acids. Store away from heat and ignition sources. Masses of more than 0.5 kg of product plus an aliphatic amine will cause irreversible polymerization with considerable heat build-up.

## SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

<b>Exposure Limits:</b>	National Occupational Exposure Limits, as published by National Occupational Health & Safety Commission: <b>Time-weighted Average (TWA):</b> None established for this product or its ingredients. <b>Short Term Exposure Limit (STEL):</b> None established for this product or its ingredients.
<b>Engineering Controls:</b>	Ensure for good ventilation/ suction. Use only in a well-ventilated area. Ensure airflow, where this product is used, is directed away from the operators.
<b>Personal Protection:</b>	<u>Respiratory protective equipment:</u> Avoid breathing dust (or) vapour (or) spray mist. Suitable breathing mask where ventilation is inadequate. <u>Eye protection:</u> Avoid contact with eyes. Wear eye protection when mixing or using. The use of face shields, chemical goggles, or safety glasses with side shield protection is recommended. <u>Hand protection:</u> Avoid contact with skin. Wear protective gloves when mixing or using. Chemical resistant gloves (e.g. Polyethylene/Ethylene Vinyl Alcohol/ Polyethylene or PE/EVAL/PE or Dupont Barricade gloves complying with AS 2161) are recommended. <u>Clothing:</u> Suitable protective clothing complying with AS 2919 (Industrial Clothing), suitable footwear complying with AS/NZS 2210 (Occupational protective footwear - Guide to selection, care and use).

## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical Description/ Properties:</b>	
<b>Appearance:</b>	Colourless to slight yellow thixotropic paste
<b>Colour:</b>	Colourless to slight yellow.
<b>Odour:</b>	Faint phenolic odour.
<b>pH:</b>	Not available.
<b>Vapour Pressure:</b>	Not available.
<b>Vapour Density:</b>	Not available.
<b>Boiling Point/ Range:</b>	Not available.
<b>Freezing/ Melting Point:</b>	Not available.
<b>Solubility in Water:</b>	Insoluble.
<b>Specific Gravity:</b>	Ca. 1.15.
<b>Flashpoint:</b>	Ca. 154°C (PMCC).
<b>Flammability Limits:</b>	Not applicable.
<b>Ignition Temperature:</b>	Not available.
<b>Other Properties:</b>	
<b>Volatile Organic Compounds (VOC) Content:</b>	< 1 % v/v.
<b>Per Cent Volatile:</b>	< 1 % v/v.
<b>Solubility in Solvents:</b>	Miscible with organic solvents including esters, ketones, and aromatic hydrocarbons.
<b>Stability:</b>	Stable under normal conditions.

## SECTION 10 – STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable at normal temperatures and pressure.
<b>Conditions to Avoid:</b>	Prolonged heating over 60°C. Stable when stored under normal conditions. Thermal decomposition begins at temperatures above 180°C.
<b>Materials to Avoid:</b>	Strong oxidising agents, bases, acids. Masses of more than 0.5 kg of product plus an aliphatic amine will cause irreversible polymerization with considerable heat build-up.
<b>Hazardous Decomposition:</b>	Upon decomposition, this product may emit carbon monoxide, carbon dioxide, phenolics, and other possibly toxic gases and vapours on burning.
<b>Hazardous Polymerisation:</b>	Will not occur by itself, but masses of more than 0.5 kg of product plus an aliphatic amine will cause irreversible polymerization with considerable heat build-up.

## SECTION 11 – TOXICOLOGICAL INFORMATION

<b>Health Effects:</b>	No data for product, following data is compiled on basis of ingredients.
<b>Acute:</b>	
<b>Swallowed:</b>	On basis of ingredients: Polymer of bisphenol A and epichlorhydrin, single dose oral toxicity is considered to be extremely low. No hazards anticipated from swallowing small amounts incidental to normal handling operations. Cresyl Glycidyl Ether, low toxicity if swallowed.
<b>Eye:</b>	On basis of ingredients: Polymer of bisphenol A and epichlorhydrin, may cause slight transient (temporary) eye irritation. Corneal injury is unlikely.
<b>Skin:</b>	On basis of ingredients: Polymer of bisphenol A and epichlorhydrin, prolonged exposure not likely to cause significant skin irritation. Repeated exposure may cause skin irritation. Has caused allergic skin reaction in humans. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.
<b>Inhaled:</b>	On basis of ingredients: Polymer of bisphenol A and epichlorhydrin, vapours are unlikely due to physical properties. Cresyl Glycidyl Ether, vapours are unlikely due to physical properties.
<b>Carcinogenicity:</b>	On basis of ingredients: Polymer of bisphenol A and epichlorhydrin, many studies have been conducted to assess the potential carcinogenicity. Although some weak evidence of carcinogenicity has been reported in animals, when all of the data are considered, the weight of evidence does not show carcinogenicity. The most recent review of the available data by the International Agency for Research on Cancer (IARC) has concluded that it is not classified as a carcinogen.
<b>Reproductive and Developmental Toxicity:</b>	On basis of ingredients: Polymer of bisphenol A and epichlorhydrin, animal mutagenicity studies were negative. In-vitro mutagenicity studies were negative in some cases and positive in others. Did not cause birth defects or other adverse effects on the foetus when pregnant rabbits were exposed by skin contact, the most likely route of exposure, or when pregnant rabbits were exposed orally. In animal studies, has not been shown to interfere with reproduction. Cresyl Glycidyl Ether is a direct acting mutagen in in-vitro test systems, classified as possible mutagenic activity, Category 3. Studies in-vivo, including micronucleus tests and assays in transgenic animals, showed no mutagenic activity.
<b>Acute Toxicity Data (Oral):</b>	On basis of ingredients: Acute Toxicity for Polymer of bisphenol A and epichlorhydrin, Low toxicity, (Oral) LD <sub>50</sub> (rat) > 5000 mg/kg. Acute Toxicity for Cresyl Glycidyl Ether, (Oral) LD <sub>50</sub> (rat) > 2000 mg/kg.

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<b>Acute Toxicity Data (Dermal):</b>	On basis of ingredients: Acute Toxicity for Polymer of bisphenol A and epichlorhydrin, Low toxicity, (Dermal) LD <sub>50</sub> (rabbit) 20,000 mg/kg. Acute Toxicity for Cresyl Glycidyl Ether, (Dermal) LD <sub>50</sub> (rabbit) > 2,000 mg/kg.
<b>Acute Toxicity Data (Inhalation):</b>	On basis of ingredients: Acute Toxicity for Cresyl Glycidyl Ether, (Inhalation) LC <sub>50</sub> (rat) 6,100 mg/L.
<b>Chronic Toxicity Data:</b>	On basis of ingredients: Chronic Toxicity for Polymer of bisphenol A and epichlorhydrin, prolonged exposure not likely to cause significant skin irritation. Repeated exposure may cause skin irritation. Has caused allergenic skin reaction in humans. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.

## SECTION 12 – ECOLOGICAL INFORMATION

<b>Movement &amp; Partitioning</b>	No data for product, following data is compiled on basis of ingredients. On basis of ingredients: Polymer of bisphenol A and epichlorhydrin, bioconcentration potential is moderate, (BCF between 100 and 3000 or Log Pow between 3 and 5). Potential for mobility in soil is low (Koc between 500 and 2000). Measured log octanol/water partition coefficient (log Pow) is 3.7-3.9. 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 <sup>3</sup> /mole. Log octanol/water partition coefficient (log Pow) is estimated, using a structural fragment method, to be 3.84. Cresyl Glycidyl Ether, bioconcentration potential is low, (BCF less than 100 or Log Pow less than 3).
<b>Degradation &amp; Persistence:</b>	On basis of ingredients: Polymer of bisphenol A and epichlorhydrin, 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%. 20-Day biochemical oxygen demand (BOD <sub>20</sub> ) is <2.5%. Cresyl Glycidyl Ether, Not readily biodegradable and has the potential to bioaccumulate
<b>Ecotoxicity:</b>	On basis of ingredients: Polymer of bisphenol A and epichlorhydrin, material is moderately toxic to aquatic organisms on an acute basis (LC <sub>50</sub> /EC <sub>50</sub> between 1 and 10 mg/l in most sensitive species). Toxicity to aquatic species occurs at concentrations greater than water solubility.
<b>Fish Toxicity:</b>	On basis of ingredients: Toxicity for Polymer of bisphenol A and epichlorhydrin,, Acute LC <sub>50</sub> for fathead minnow ( <i>Pimephales promelas</i> ) is 3.1 mg/l. Toxicity for Cresyl Glycidyl Ether, Acute LC <sub>50</sub> for rainbow trout ( <i>Onchorhynchus mykiss</i> ) is 7.5 mg/l.
<b>Algae Toxicity:</b>	No data for product or ingredients.
<b>Invertebrates Toxicity:</b>	On basis of ingredients: Toxicity for Polymer of bisphenol A and epichlorhydrin, Acute LC <sub>50</sub> for water flea ( <i>Daphnia magna</i> ) is 1.3 mg/l. Maximum acceptable toxicant concentration (MATC) in water flea ( <i>Daphnia magna</i> ) is 0.55 mg/l. Toxicity for Cresyl Glycidyl Ether, Acute LC <sub>50</sub> for water flea ( <i>Daphnia magna</i> ) is 3.3 mg/l.

<b>Toxicity to Microorganisms:</b>	On basis of ingredients: Toxicity for Polymer of bisphenol A and epichlorhydrin, Growth inhibition threshold in bacteria is > 42.6 mg C/L. Inhibitory concentration (IC <sub>50</sub> ) in OECD Activated Sludge Respiration Inhibition Test (OECD Test No. 209) is >100 mg/l. Toxicity for Cresyl Glycidyl Ether to sewage, Practically non-toxic LC/EC/IC <sub>50</sub> >100 mg/l.
<b>Additional Ecological Information:</b>	
<b>General:</b>	DO NOT DISCHARGE INTO DRAINS, WATERWAYS, SEWER OR ENVIRONMENT. Product slightly soluble in water. Keep from entering waste-water, soil or surface waters. Inform local authorities if this occurs.

## SECTION 13 – DISPOSAL CONSIDERATIONS

Any disposal of product, drain and rinse liquid, or containers, must be in accordance with all State, Territory and/or Local government regulations. Liquids are usually incinerated in an approved facility. Waste characterisation and disposal compliance are the responsibility solely of the party generating the waste or deciding to discard or dispose of the material. None of these waste management options should be considered “arranging for disposal”.

## SECTION 14 – TRANSPORT INFORMATION

<b>Road &amp; Rail Transport:</b>	This material is not a Dangerous Good according to the ADG.
<b>UN Number:</b>	Not applicable.
<b>UN Proper Shipping Name:</b>	Not applicable.
<b>ADG Class:</b>	Not applicable.
<b>Packing Group:</b>	Not applicable.
<b>HAZCHEM Code:</b>	Not applicable.
<b>Flammability:</b>	Non-flammable paste. Product may burn in a fire situation generating toxic vapours or fumes.

## SECTION 15 – REGULATORY INFORMATION

<b>SUSDP:</b>	Poisons Schedule Number S5 allocated.
<b>AICS:</b>	All ingredients present on AICS.
<b>Labelling Details:</b>	
<b>Hazard Category:</b>	Xn: Harmful; Xi: Irritant; N: Dangerous for the environment; Possible Mutagen, Cat 3.
<b>Risk Statements:</b>	R36/38 Irritating to eyes and skin. R43 May cause sensitisation by skin contact. R51 Toxic to aquatic organisms. R53 May cause long-term adverse effects in the aquatic environment. R68: Possible risk of irreversible effects.
<b>Safety Statements:</b>	S2 Keep out of the reach of children. S24 Avoid contact with skin. S28 After contact with skin, wash immediately with plenty of soap-suds. S36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S61 Avoid release to the environment. Refer to special instructions/Material Safety Data Sheets.
<b>ADG Code:</b>	Not applicable.

