

Joluka All Purpose Epoxy

Material Safety Data Sheet

1. IDENTIFICATION OF SUBSTANCE / PREPARATION AND THE COMPANY / UNDERTAKING

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Product Name : **Joluka All Purpose Epoxy Part A
A High Strength Epoxy Adhesive**

2. HAZARDS IDENTIFICATION

Classification of Substance or Mixture

Type of product : Mixture

Classification

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1
Chronic aquatic toxicity	Category 2

Hazard Pictograms:



Signal Word: WARNING

Hazard Statements

H315: Causes skin irritation
H317: May cause allergic skin reaction
H319: Causes serious eye irritation
H411: Toxic to aquatic life with long lasting effects

Precautionary Statements

Prevention:

- P261: Avoid breathing dust/fume/gas/mist/vapours/spray
P264: Wash face, hands and any exposed skin thoroughly after handling.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response:

- P333+P313: If skin irritation or a rash occurs: Get medical advice/attention.
P337+P313: If eye irritation persists. Get medical advice/attention.
P362+P364: Take off contaminated clothing and wash it before reuse.
P391: Collect spillage.

Storage:

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

Disposal:

- P501 Dispose of contents/container to appropriate hazardous waste collection point.

Other Hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Nature : Modified resin mixture

Component	CAS #	Concentration W/W %
Bisphenol-A epoxy resin (number average molecular weight <700)	25068-38-6	> 30 < 50
Calcium Carbonate (CaCO ₃)	471-34-1	> 40 < 75
Titanium Dioxide (TiO ₂)	13463-67-7	> 0 < 2
Pyrogenic micro-dispersed silica, synthetic X-ray amorphous silicon dioxide (SiO ₂)	112945-52-5	> 0 < 1

4. FIRST AID MEASURES

General advice:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation:

Move person to fresh air; if effects occur, consult a physician

- 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:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. Suitable emergency eye wash facility should be available in work area.
- Ingestion:** Keep respiratory tract clear. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

Most important effects, both acute and delayed:

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Notes to physician:

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

- Suitable Extinguishing Media: Foam
Water spray
Carbon dioxide (CO₂)
- Unsuitable Extinguishing Media: Water jet
Do not allow run-off from firefighting to enter drains or water courses.

Specific hazards during firefighting

Hazardous combustion products:

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.

Unusual Fire and Explosion Hazards:

Container may rupture from gas generation in a fire situation.
Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Dense smoke is emitted when burned without sufficient oxygen.
Do not allow run-off from firefighting to enter drains or water courses.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this SDS

Special Protective Equipment and Fire Fighting Instructions

Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Isolate area. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to section 7, Handling, for additional precautionary measures.

Environmental Precautions:

Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and Materials for Containment and Cleaning Up:

Contain spilled material if possible.
Absorb with materials such as: Sand. Polypropylene fiber products.
Polyethylene fiber products.
Remove residual with soap and hot water. Collect in suitable and properly labeled containers.
Residual can be removed with solvent. Solvents are not recommended for clean-up unless the recommended exposure

guidelines and safe handling practices for the specific solvent are followed.

Consult appropriate solvent Safety Data Sheet for handling information and exposure guidelines. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling:

Avoid prolonged or repeated contact with skin. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Avoid use of electric band heaters. Failures of electric band heaters have been reported to cause drums of liquid epoxy resin to explode and catch fire. Application of a direct flame to a container of liquid epoxy resin can also cause explosion and/or fire. See Section 8, Exposure Controls and Personal Protection.

Conditions for safe storage:

Store in a cool, dry place away from moisture or temperature extremes.

Further information on storage stability:

No decomposition if stored and applied as directed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Exposure limits are listed below, if they exist.

None established

Engineering measures

Provide readily accessible eye wash stations and safety showers.

Provide ventilation adequate to maintain PELs.

Personal protective equipment

Eye/face protection:

Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent.

Skin protection

Hand protection: Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Ethyl vinyl alcohol laminate ("EVAL"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Neoprene. Polyvinyl chloride ("PVC" or "vinyl"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 6 (breakthrough time greater than 480 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection:

Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection:

Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, use an approved air-purifying respirator. Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.

Protective Measures: Avoid contact with the skin, eyes and clothing. In order to prevent contamination while handling, closed working clothes and working gloves should be used. Handle in accordance with good building materials hygiene and safety practice.

Hygiene Measures: When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Paste
Colour:	White
Odour:	N/A
Relative Density:	1.66
Soluble in water:	5.4 - 8.4 mg/l at 20 °C EU Method A.6 (Water Solubility)

Partition coefficient: n-octanol/water log Pow: 3.242 Estimated.

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity:

No hazardous reactions if stored and handled as prescribed/indicated.

Stability:

Stable under normal conditions.

Possibility of hazardous reactions:

Will not occur by itself. Masses of more than 0.5 kg of product plus an aliphatic amine will cause irreversible polymerization with considerable heat buildup.

Chemical Stability: Product is chemically stable

Conditions to Avoid: See SDS section 7 - Handling and storage.

Incompatible Materials:

Avoid contact with oxidizing materials.

Avoid contact with: Acids. Bases.

Avoid unintended contact with amines.

Hazardous decomposition products:

Decomposition products depend upon temperature, air supply and the presence of other materials. Gases are released during decomposition. Uncontrolled exothermic reaction of epoxy resins release phenolics, carbon monoxide, and water.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Acute toxicity

Acute oral toxicity

Very low toxicity if swallowed.

LD50, Rat, > 15,000 mg/kg

Harmful effects not anticipated from swallowing small amounts.

Acute dermal toxicity

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

LD50, Rabbit, 23,000 mg/kg

Acute inhalation toxicity

At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated material, mist or aerosols may cause respiratory irritation.

The LC50 has not been determined.

Skin corrosion/irritation

Prolonged contact may cause skin irritation with local redness.
Repeated contact may cause skin irritation with local redness.

Serious eye damage/eye irritation

May cause eye irritation.
Corneal injury is unlikely.

Sensitization

For similar material(s):
Has caused allergic skin reactions in humans.
Has demonstrated the potential for contact allergy in mice.

Respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure):

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure):

Except for skin sensitization, repeated exposures to low molecular weight epoxy resins of this type are not anticipated to cause any significant adverse effects.

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 of the data are considered, the weight of evidence does not show that DGEbPA is carcinogenic.

Teratogenicity

Resins based on the 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 contact, the most likely route of exposure, or when pregnant rats or rabbits were exposed orally.

Reproductive toxicity

In animal studies, did not interfere with reproduction.

Mutagenicity

In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

Further information

Health injuries are not known or expected under normal use. The statements on toxicology have been derived from the properties of the individual components.

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

Ecotoxicity**Acute toxicity to fish**

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

LC50, *Oncorhynchus mykiss* (rainbow trout), semi-static test, 96 Hour, 2 mg/l

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), static test, 48 Hour, 1.8 mg/l

Acute toxicity to algae/aquatic plants

EC50, *Scenedesmus capricornutum* (fresh water algae), static test, 72 Hour, Growth rate inhibition, 11 mg/l

Toxicity to bacteria

LC50, Bacteria, 18 Hour, Respiration rates., > 42.6 mg/l

Chronic aquatic toxicity

Chronic toxicity to aquatic invertebrates

MATC (Maximum Acceptable Toxicant Level), *Daphnia magna* (Water flea), semi-static test, 21 d, number of offspring, 0.55 mg/l

Persistence and degradability**Biodegradability:**

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: 12 %

Exposure time: 28 d

Method: OECD Test Guideline 302B or Equivalent

Bio accumulative potential

Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Partition coefficient: n-octanol/water (log Pow): 3.242 at 25 °C Estimated.

Mobility in soil

Potential for mobility in soil is low (Koc between 500 and 2000).

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Partition coefficient (Koc): 1800 - 4400 Estimated.

Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

Other adverse effects

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

13. DISPOSAL CONSIDERATIONS

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER.

All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

Composition Information.

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

This product when disposed of in its unused and uncontaminated state should be treated as a hazardous waste.

14. TRANSPORT INFORMATION

Classification for ROAD and Rail transport:

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Epoxy resin)
UN number	UN 3082
Class	9
Packing group	III
Environmental hazards	Epoxy resin

Classification for SEA transport (IMO-IMDG):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Epoxy resin)
UN number	UN 3082
Class	9
Packing group	III
Marine pollutant	Epoxy resin

Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code. Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Epoxy resin)
UN number	UN 3082
Class	9
Packing group	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Workplace Safety and Health Act & Workplace Safety and Health (General Provisions)

Regulations

This product is subject to the SDS, labeling, PEL and other requirements in the Act/Regulations.

Workplace Classification

This product is classified as hazardous according to Singapore Standards, Act and Regulations.

The following statutes, regulations and standards have the related prescribes on chemicals in terms of safe use, storage, transportation, loading and unloading, classification and symbol etc.

Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations

Environmental Protection and Management Act and Environmental Protection and Management (Hazardous Substances) Regulations

Chemical Weapons Prohibition Act

Fire Safety Act and Fire Safety (Petroleum and Flammable Materials) Regulations

16. OTHER INFORMATION

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control. All risks of use of the product are therefore assumed by the user and we expressly disclaim all warranties of every kind and nature, including warranties of merchantability and fitness for purpose in respect to the use or suitability of the product. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by: **Joluka (Pty) Ltd**

Health, Safety, Environment and Quality Department

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