Joluka All Purpose Epoxy

Material Safety Data Sheet

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

Company Details	:	Joluka (Pty) Ltd 349 Roan Crescent, Corporate Park North Midrand Gauteng South Africa
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Product Name : **Joluka All Purpose Epoxy Part B**
A High Strength Epoxy Adhesive

2. HAZARDS IDENTIFICATION

Classification:

Acute Toxicity (Oral):	Category 4
Acute Toxicity (Dermal):	Category 1
Dermal Corrosion /Irritation:	Category 1B
Serious Eye Damage/Eye Irritation:	Category 1
Skin Irritation:	Category 1
Specific Organ Toxicity – Single Exposure:	Category 1
Aquatic Toxicity (Chronic):	Category 3

Hazard Statements:

H302	May be harmful if swallowed.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause allergic skin reaction.
H319	Causes eye irritation.
H401	Toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Hazard Symbol(s):

Signal Word: DANGER

Precaution Phrases:

Prevention

P260	Do not breathe dust/ fume/ gas/ mist/vapors/ spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing.

Precaution Phrases:

Response

P301+ P312	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P302 + P303 + P352 + 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.
P305 +P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
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.
P370 +P378	In case of fire: Use dry powder or dry sand to extinguish.

Call a Poison center /doctor/physician if you feel unwell Wear protective gloves/clothing. Wear protective gloves. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Wash with plenty of soap and water. If skin irritation or rash occurs, seek medical advice/attention

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS #	Concentration W/W %
Benzyl alcohol	100-51-6	> 5
Triethylenetetramine	112-24-3	> 1
2,4,6 Tris(dimethylaminomethyl)phenol	90-72-2	> 1
Formaldehyde, polymer with benzenamine, hydrogenated	135108-88-2	< 5
Crystalline Silica (quartz)	14808-60-7	> 35 < 55
Calcium Carbonate (CaCO3)	471-34-1	> 30 < 50

Pyrogenic micro-dispersed silica, synthetic X-ray amorphous silicon dioxide (SiO2)	112945-52-5	< 2

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, trained personnel should begin cardiopulmonary resuscitation immediately.

Eye contact: Rinse immediately with plenty of water also under the eyelids for at least 20 minutes. Remove contact lenses.

Skin contact: Wash off immediately with plenty of water for at least 20 minutes. Wash off with soap and water. Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay.

Ingestion: Never give anything by mouth to an unconscious person. Prevent aspiration of vomit. Turn victim's head to the side.

Inhalation: Move to fresh air.

5. FIRE-FIGHTING MEASURES

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

FIRE FIGHTING PROCEDURES:	Use dry chemical, Carbon Dioxide. Dry sand or other suitable absorbent. Use an extinguishing agent suitable for the surrounding fire.
EXTINGUISHING MEDIA:	Do not use water jet as it may scatter and spread fire. Use dry chemical, Carbon Dioxide.
CONDITIONS TO AVOID:	Avoid impact, friction, heat, sparks, or flame.
HAZARDOUS COMBUSTION PRODUCTS:	If heated to combustion, the following substances may be formed: carbon monoxide, carbon dioxide, nitrogen, water, hydrogen, nitrogen oxides, ammonia, methane, aldehydes, carboxylic acids, and hydrogen cyanide.

SPECIAL HAZARDS ARISING FROM SUBSTANCE OR MIXTURE:

May generate ammonia gas at high temperatures.
May generate toxic nitrogen oxide gases.

	Use of water may result in the formation of very toxic aqueous solutions. Do not allow run-off from firefighting to enter drains or water courses. Incomplete combustion may form carbon monoxide. In case of incomplete combustion an increased formation of oxides of nitrogen (NOx) is to be expected. Burning produces noxious and toxic fumes.
ADVICE FOR FIREFIGHTERS	Use personal protective equipment. Wear self-contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Use personal protective equipment (Chemical glasses, PVC/rubber gloves, respirator with an organic cartridge filter, overalls and boots). Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. For personal protection see section 8. Contain spillage, and then collect with non-combustible absorbent material, (e.g., sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

General Handling Measures:
Use personal protective equipment. Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Avoid contact with eyes. Provide readily accessible eye wash stations and safety showers. Discard contaminated leather articles. Wash hands at the end of each work shift and before eating, smoking or using the toilet. Remove contaminated clothing. Drench affected area with water for at least 15 minutes.

Storage Conditions:
Keep containers tightly closed in a cool, well-ventilated place. Do not store near acids. Keep away from alkalis. Store in steel containers preferably located outdoors, above ground, and surrounded by dikes to contain spills or leaks. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store in reactive metal containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

COPOLYMER OF FORMALDEHYDE AND BENZENAMINE, HYDROGENATED

DNEL
Workers – Dermal; Long term systemic effects: 2 mg/kg
Workers – Inhalation; Short term systemic effects: 2 mg/m³
Workers – Inhalation; Long term systemic effects: 0.2 mg/m³
Workers – Dermal; Short term systemic effects: 6 mg/kg/day

PNEC
Fresh water; 0.015 mg/l
Sediment (Marinewater); 1.5 mg/kg
Sediment (Freshwater); 15 mg/kg
marine water; 0.002 mg/l
STP; 1.9 mg/l
Soil; 1.8 mg/kg

BENZYL ALCOHOL

DNEL
Industry – Inhalation; Short term systemic effects: 110 mg/m³
Industry – Inhalation; Long term systemic effects: 22 mg/m³
Industry – Dermal; Short term systemic effects: 40 mg/kg/day
Industry – Dermal; Long term systemic effects: 8 mg/kg/day
Consumer – Inhalation; Long term systemic effects: 5.4 mg/m³
Consumer – Inhalation; Short term systemic effects: 27 mg/m³
Consumer – Dermal; Long term systemic effects: 4 mg/kg/day
Consumer – Dermal; Short term systemic effects: 20 mg/kg/day
Consumer – Oral; Long term systemic effects: 4 mg/kg/day
Consumer – Oral; Short term systemic effects: 20 mg/kg/day

PNEC
Fresh water; 1 mg/l
marine water; 0.1 mg/l
Intermittent release; 2.3 mg/l
Soil; 0.456 mg/kg/day
Sediment (Freshwater); 5.27 mg/kg/day
Sediment (Marinewater); 0.527 mg/kg/day
STP; 39 mg/l

2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL

DNEL
Workers – Inhalation; Long term systemic effects: 0.53 mg/m³
Workers – Dermal; Short term systemic effects: 0.6 mg/kg
Workers – Inhalation; Short term systemic effects: 2.1 mg/m³

Workers – Dermal; Long term systemic effects: 0.15 mg/kg
General population – Dermal; Short term systemic effects: 0.075 mg/kg
General population – Inhalation; Short term systemic effects: 0.13 mg/m³
General population – Dermal; Long term systemic effects: 0.075 mg/kg
General population – Inhalation; Long term systemic effects: 0.13 mg/m³
General population – Oral; Long term systemic effects: 0.075 mg/kg

PNEC STP; 0.2 mg/l
Fresh water; 0.046 mg/l
Soil; 0.025 mg/kg
Sediment (Marinewater); 0.026 mg/kg
Sediment (Freshwater); 0.262 mg/kg
marine water; 0.005 mg/l

TRIETHYLENETETRAMINE

DNEL General population - Inhalation; Long term systemic effects: 0.096 mg/m³
General population - Oral; Long term systemic effects: 0.14 mg/kg
Workers - Inhalation; Long term systemic effects: 0.54 mg/m³

PNEC Fresh water; 0.027 mg/l
marine water; 0.003 mg/l
Soil; 1.25 mg/kg
Sediment (Freshwater); 8.572 mg/kg
Sediment (Marinewater); 0.857 mg/kg
STP; 0.13 mg/l

Engineering measures
Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimize worker exposure. Avoid inhalation of vapours and contact with skin and eyes. Eye wash facilities and emergency shower must be available when handling this product.

Personal protective equipment

Eye/Face Protection:

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Chemical splash goggles or face shield.

Hand protection:

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. It is recommended that gloves are made of the following material: Neoprene. Polyvinyl chloride (PVC). Butyl rubber. Nitrile rubber. Frequent changes are recommended. The breakthrough time of the selected glove(s) must be greater than the intended use period.

Skin and body protection:
Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene Measures:
Wash at the end of each work shift and before eating, smoking and using the toilet. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Care should be taken to avoid contact with contaminants when removing contaminated clothing. Wash contaminated clothing before reuse.

Respiratory Protection:
Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. If ventilation is inadequate, suitable respiratory protection must be worn.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Paste
Colour:	Black
Odour:	Ammoniacal
Relative density:	1.66
Solubility in Water:	Not miscible
pH:	Alkaline
Flash point:	>100°C (Closed cup)

10. STABILITY AND REACTIVITY

Stability:
Stable under normal conditions.

Incompatible Materials:

- CAUTION! N-Nitrosamines, many of which are known to be potent carcinogens, may be formed when the product comes in contact with nitrous acid, nitrites or atmospheres with high nitrous oxide concentrations.
- Nitrous acid and other nitrosating agents
- Reactive metals (e.g., sodium, calcium, zinc etc.).
- Materials reactive with hydroxyl compounds.
- Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion.
- sodium hypochlorite
- Organic acids (i.e., acetic acid, citric acid etc.).
- Mineral acids.
- Product slowly corrodes copper, aluminum, zinc and galvanized surfaces.
- Oxidizing agents

Hazardous decomposition products:

- Nitric acid
- Ammonia
- Nitrogen oxides (NOx)
- Nitrogen oxide can react with water vapours to form corrosive nitric acid
- Carbon monoxide
- Carbon dioxide (CO2)
- Aldehydes
- Flammable hydrocarbon fragments.
- Nitrosamine

11. TOXICOLOGICAL INFORMATION

Acute Health Hazard

Oral:	LD_{50}: 2.020 mg/kg Species: Rat.
Inhalation:	No data is available on the product itself.
Dermal:	Acute toxicity estimate Dose: 2.100 mg/kg Method: Calculation method
Irritation/corrosion of the skin:	Moderate skin irritation Non-corrosive in an in vitro test.
Serious eye damage/ eye irritation:	Moderate eye irritation

	Non-corrosive in an in vitro test. Corneal edema may give rise to a perception of "blue haze" or "fog" around lights. This effect is temporary and has no known residual effect.
Respiratory/skin sensitization:	Dermal sensitization to this product or component has been seen in some humans. The results of a test on guinea pigs showed this substance to be a weak skin sensitizer. Sensitization has occurred in laboratory animals after repeated exposures.
Repeated dose toxicity:	Mixed polycycloaliphatic amines was tested in rats for systemic effects in a subchronic (28-day) oral study at doses ranging from 15 to 300 mg/kg/day. Effects seen at 300 mg/kg/day included decreased survival, decreased body weight gain, increased liver, kidney,and adrenal weights and histological changes in the liver, kidney, adrenals and spleen. The No-Observed-Adverse-Effect-Level (NOAEL) was 15 mg/kg/day. Rats exposed orally to 800 mg/kg benzyl alcohol for thirteen weeks exhibited CNS depression and histopathological changes in the brain, thymus and skeletal muscles. The No Observed Adverse Effect Level (NOAEL) was 400 mg/kg. No evidence of carcinogenicity was seen in a two-year study with rats and mice.

CMR assessment

Carcinogenicity:	no data available
Mutagenicity:	Results from a battery of short-term genotoxicity tests on this material or its components indicate mutagenic activity. In vitro tests showed mutagenic effects
Teratogenicity:	A component has been shown to cause reproductive/teratogenic effects in laboratory animals.
Toxicity to reproduction:	No data is available on the product itself.

Specific Target Organ Toxicity - Single exposure: no data available
Specific Target Organ Toxicity - Repeated exposure: no data available
Aspiration hazard: no data available

12. ECOLOGICAL INFORMATION

Ecotoxicity
Toxic to aquatic life with long lasting effects.

COPOLYMER OF FORMALDEHYDE AND BENZENAMINE, HYDROGENATED

Ecotoxicity	Harmful to aquatic life with long lasting effects.

BENZYL ALCOHOL

Ecotoxicity	The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.

2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL

Ecotoxicity	Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

TRIETHYLENETETRAMINE

Ecotoxicity	Harmful to aquatic life with long lasting effects

Toxicity

Toxic to aquatic life with long lasting effects.

Ecological information on ingredients.

COPOLYMER OF FORMALDEHYDE AND BENZENAMINE, HYDROGENATED

Toxicity Harmful to aquatic life with long lasting effects.

Acute aquatic toxicity

Acute toxicity - fish LC_{50}, 96 hour: 63 mg/l, Poecilia reticulata (Guppy)

Acute toxicity – aquatic invertebrates

EC_{50}, 48 hour: 15.4 mg/l, Daphnia magna

Acute toxicity – aquatic plants

EC_{50}, 72 hour: 43.9 mg/l, Desmodesmus subspicatus

Acute toxicity - microorganisms

EC_{50}, 3 hour: 187 mg/l, Activated sludge

BENZYL ALCOHOL

Toxicity Not considered toxic to fish.

Acute aquatic toxicity

Acute toxicity - fish LC_{50}, 96 hours: 460 mg/l, Pimephales promelas (Fat-head Minnow) OECD 203

LC_{50}, 96 hour: 10 mg/l, Lepomis macrochirus (Bluegill)

Acute toxicity – aquatic invertebrates

EC_{50}, 48 hours: 230 mg/l, Daphnia magna OECD 202

Acute toxicity – aquatic plants

LC_{50}, 72 hours: 770 mg/l, Algae NOEC, 72 hours: 310 mg/l, Pseudokirchneriella subcapitata OECD 201

Acute toxicity - microorganisms

LC_{50}, 49 hours: 2100 mg/l, Activated sludge

Chronic aquatic toxicity
Chronic toxicity – aquatic invertebrates
NOEC, 21 days: 51 mg/l, Daphnia magna

2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL
Acute aquatic toxicity
Acute toxicity - fish LC_{50}, 96 hours: 175 mg/l, Fish
Acute toxicity – aquatic invertebrates
LC_{50}, 96 hour: 718 mg/l, Daphnia magna

Acute toxicity – aquatic plants
EC_{50}, 72 hours: 84 mg/l, Desmodesmus subspicatus OECD 201
Acute toxicity - microorganisms
NOEC, 28 day: 2 mg/l, Activated sludge

TRIETHYLENETETRAMINE
Toxicity — Harmful to aquatic life with long lasting effects.

Persistence and degradability
There are no data on the degradability of this product.

COPOLYMER OF FORMALDEHYDE AND BENZENAMINE, HYDROGENATED
Persistence and degradability: There are no data on the degradability of this product.

BENZYL ALCOHOL
Persistence and degradability: The product is readily biodegradable.
Biodegradation - Degradation 92 - 96%: 14 days OECD 301C
Degradation 95 - 97%: 21 days OECD 301A

2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL
Persistence and degradability: Not readily biodegradable.
Biodegradation - Degradation 4%: 28 day OECD 301D

TRIETHYLENETETRAMINE
Persistence and degradability: There are no data on the degradability of this product.

Bio accumulative potential
Bio accumulative potential: No data available on bioaccumulation.
Partition coefficient: No information available.
Mobility in soil

Mobility: No information available

COPOLYMER OF FORMALDEHYDE AND BENZENAMINE, HYDROGENATED
Mobility: No information available.

BENZYL ALCOHOL
Mobility: The product is soluble in water.
Surface tension 39 mN/m @ 20°C OECD 115

2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL
Mobility: No information available.

TRIETHYLENETETRAMINE
Mobility: No information available.

Results of PBT and vPvB assessment
Results of PBT and vPvB assessment: No information available.

COPOLYMER OF FORMALDEHYDE AND BENZENAMINE, HYDROGENATED
Results of PBT and vPvB assessment: This substance is not classified as PBT or vPvB according to current EU criteria.

BENZYL ALCOHOL
Results of PBT and vPvB assessment: This substance is not classified as PBT or vPvB according to current EU criteria.

2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL
Results of PBT and vPvB assessment: No information available.

TRIETHYLENETETRAMINE
Results of PBT and vPvB assessment: This substance is not classified as PBT or vPvB according to current EU criteria.

13. DISPOSAL CONSIDERATIONS

General information
Waste is classified as hazardous waste. Toxic to aquatic life with long lasting effects. Do not discharge into drains or watercourses or onto the ground. Do not puncture or incinerate, even when empty. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities

Disposal methods
Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

14. TRANSPORT INFORMATION

UN number	UN3082
IATA-DGR	
UN/ID No.	UN 3082
Proper Shipping Name	Environmentally hazardous substance, (Polyamide)
Class	9
Packing Group	III
Labels	9MI
Packing Instruction	964

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
National legislation
Water contaminating class (Germany): water endangering

Notification status

Europe (EINECS/ELINCS):	listed/registered or exempted
USA (TSCA):	listed/registered or exempted
Canada (DSL):	listed/registered or exempted
Australia (AICS):	listed/registered or exempted
Japan (ENCS):	listed/registered or exempted
Korea (TCCL):	listed/registered or exempted
Philippines (PICCS):	listed/registered or exempted
China (IECSC):	listed/registered or exempted
New Zealand:	listed/registered or exempted

Chemical safety assessment
Chemical safety assessment: If this product does not contain exposure scenarios, the components in this product are either exempt from REACH, do not meet the minimum volume threshold for a CSA, or the CSA has not yet been completed.

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.

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