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OLYMPUS
Marketing, Inc.

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Poly Klear
FIBERGLASS + RESIN

MATERIAL SAFETY DATA SHEET

POLYKLEAR EPOXY RESIN HAND LAY-UP SW2503-A

1. CHEMICAL AND SUPPLIER INFORMATION

Product Name: POLYKLEAR EPOXY RESIN HAND LAY-UP SW2503-A
Distributor:
SEA Olympus Marketing Inc.
SEA Olympus Bldg., A.C. Cortes Ave.,
Mandaue City, Cebu
Philippines 6014
Telephone No: (032) 346-7137

2. HAZARDS IDENTIFICATION

Hazardous chemicals classification	Skin corrosion/irritation – Category 2 Hazardous to the aquatic environment - Category 2
Label contents	Hazard symbol  Warnings: Warning Hazard Statements: May cause irritation. Cause harmful effects to aquatic organisms. Precautionary statements Hazard warnings: May be harmful if swallowed (oral) May cause mild skin irritation May cause allergic skin reaction Hazard precautions: Wear protective gloves/clothing and eye/face protection. Safe storage: Keep away from ignition sources, flames. Store container tightly closed in well-ventilated place. Disposal considerations: The product and container should be disposed in accordance with local, regional, national and international rules and regulations. Avoid release to the environment.
Physical and chemical	NA
Health hazards	NA
Environmental hazards	NA
Emergency overview	Wear protective gloves/clothing and eye/face protection. If skin/eye irritation occurs, wash with plenty of soap and water and get medical advice/attention. Store container tightly closed in a well-ventilated place. Avoid release to the environment.
Other hazards	NA

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REGIONAL OFFICE
TAGUIG
1st Avenue, Sta. Maria Industrial Subd,
Bagumbayan, Taguig City
Tel.#: (02) 506-8519 ; 837-0710
837-0708
Fax #: (02) 519-1552 ; 553-2551

VISAYAS:

HEADQUARTERS
CEBU
2F SEA Olympus Building, AC Cortes Ave.
Trunkline #: (032) 421-7777
Tel.#: (032) 346-7137 ; 421-7800 to 06
421-7817 to 18 ; 421-7823
Fax #: (032) 421-7789 ; 346-1817

MINDANAO:

REGIONAL OFFICE
DAVAO
Unit A16 J.King Warehouse Complex
Km.3 Maa Road, Davao City 8000
Telefax #: (082) 244-1206 ; 302-2711

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Hazardous Ingredients	%	CAS No.	Chemical properties
Bisphenol-A epoxy resin	80-85	25068-38-6	Stable chemical material
Epoxy diluents	15-20	2425-79-8	Stable inorganic material

4. FIRST-AID MEASURES

First aid treatments with different kinds of exposure ways	Inhalation: Move to fresh air. Oxygen or artificial respiration if needed. Call a physician immediately.
	Skin contact: Wash off with soap and plenty of water. If skin irritation persists, call a physician.
	Eye contact: Rinse immediately with plenty of water for at least 15 minutes. Call a physician immediately.
	Ingestion: Immediately give plenty of water (if possible charcoal slurry). If a person vomits while lying on his back, place in the recovery position. Oxygen or artificial respiration if needed. Do not induce vomiting.
Major symptom and harm effect	NA
Protection for first aider	Wear protective gloves/clothing and eye/face protection.
Prompt for doctor	Immediately give plenty of water (if possible charcoal slurry).

5. FIREFIGHTING MEASURES

Suitable extinguishing media	Water spray. Carbon dioxide (CO ₂). Foam. Dry powder.
The hazards might encounter while extinguishing	Contact with sources of ignition or oxidizing agents, may cause combustion.
Particular extinguishing procedure	Must wear breathing apparatus and protective suit. Eliminate ignition sources. Stay upwind. Use water spray to cool containers. Move the containers from fire area if this is possible without hazard.
Special equipment for the firefighter	Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Keep away from sources of ignition. –No smoking. Avoid contact with skin, eyes and clothing. Do not breath vapors/dust.
Environmental precautions	Prevent product from entering drains. Do not contaminate surface water.

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	Avoid subsoil penetration.
Methods for cleaning up	Soak up with inert absorbent material and dispose of as Hazardous Waste. Contain spillage and place in container for disposal according to local regulations.

7. HANDLING AND STORAGE

Handling	Ensure adequate ventilation. Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition. –No smoking. Take measures to prevent the buildup of electrostatic charge. Handle and open container with care.
Storage	Store in cool place. Keep container tightly closed in a dry, well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Further information on storage conditions.

8. EXPOSURE CONTROLS

Control parameters	Hazardous ingredient	Testing basis	Type	Standard value	Remarks
	NA	NA	Time-weighted average	NA	NA
			Short-term exposure limit	NA	
			Ceiling	NA	
Biological exposure indices	Hazardous ingredient	Testing basis	Biological monitoring index	Biological limit values	Sampling time
	NA	NA	NA	NA	NA
Engineering controls	NA				
Personal protective equipment	Respiratory protection: Where risk-assessment shows air-purifying respirators are appropriate, use a full respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards. Hand protection: Face shield and safety glasses. Use equipment for the eye protection tested and approved under appropriate government standards. Material of gloves for long-term applications Butyl rubber. Ethyl Vinyl Alcohol Laminate (EVAL) Material of gloves for short-term/splash application (10 min<BTT<480 min) Nitrile rubber Neoprene rubber Use gloves approved by relevant standards e.g. EN 374 (Europe), F739 (US). Suitability and durability of gloves are dependent on usage e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek				

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	advice from glove suppliers. Eye protection: Tightly-fitting safety goggles. Face shield. Skin and body protection: Protective suit. Safety shoes.
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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid	Partition coefficient: n-octanol/water	NA
pH	NA	Critical temperature	NA
Boiling point	NA	Critical pressure	NA
Melting point	NA	Auto-ignition temp.	NA
Flash point	>150	Decomposition temp.	NA
Explosion limit	NA	Combustion heat	NA
Odor	NA	Volatile rate	NA
Vapor pressure	NA	Inflammability	NA
Density	1.15g/cm ³ (25 °C)	Viscosity	NA
Vapor density	NA	Odor threshold value	NA
Solubility	NA		

10. STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions.
The hazards might encounter in particular situations	NA
Conditions to avoid	Heat, flames, sparks and oxidizing agents
Incompatible materials	NA
Hazardous decomposition products	NA

11. TOXICOLOGICAL INFORMATION

Acute toxicity	LD ₅₀ : NA LC ₅₀ : NA	
Exposure route	NA	
	Skin Irritation or corrosion	May cause skin irritation
	Eye irritation or corrosion	May cause eye irritation
	Breath or skin allergies	Sensitization possible by skin contact
	Germ cell mutagenicity	NA
	Carcinogenicity	NA
	Specific target organ toxicity after single exposure	NA
	Specific target organ toxicity after multiple exposure	NA
	Inhalation danger	NA
Long-term toxicity	NA	

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12. ECOLOGICAL INFORMATION

Eco-toxicity	NA
Persistence and degradability	NA
Bioconcentration	NA
Mobility in the soil	NA
Other harmful influence	Prevent product from entering drains. Do not contaminate surface water.

13. DISPOSAL CONSIDERATIONS

Disposal considerations	Follow the local rules and regulations.
Chemical waste	Follow the local rules and regulations.
Contaminated packaging	Follow the local rules and regulations.
Disposal precautions	Follow the local rules and regulations.

14. TRANSPORT INFORMATION

UN No.	3082
UN proper shipping name	Environmentally hazardous substance, liquid, N.O.S.
Transport hazard class	9
Packaging group	III
Packaging mark	
Packaging method	NA
Marine pollutants (Y/N)	Y
Particular transportation and precautions	NA

15. REGULATORY INFORMATION

Suitable regulatory information	Labeling according to EEC Directive: Labeling required Symbol(s): Warning R-phrases: R36/38: Irritating to eyes and skin R43: May cause sensitization by skin contact S-phrases: S26: Contact with eyes, rinse immediately with water and seek medical advice. S28: After contact with skin, wash immediately with plenty of soap and water. S37/39: Wear suitable gloves and eye/face protection. S61: Avoid release to the environment. Refer to special instructions/safety data sheets. Exceptional labeling of special preparations: Contains epoxy constituents. See information supplied by the manufacturer.
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Hazardous components which must be listed on the label:

Reaction product: Bisphenol-A epoxy resin, Epoxy diluents

National legislation

Water contaminating class:

2 water endangering

Classified according to annex 4 of the German VwVwS for preparations

Notification status:

EINECS: Yes

TSCA: Yes

AICS: Yes

DSL: Yes

INV (CN): Yes

JEX (JP): Yes

KECI (KR): Yes

PICCS (PH): Yes

16. OTHER INFORMATION

Disclaimer: SEA Olympus Marketing, Inc. reserves the right to change the information given herein without prior notice. We believe this information to be reliable, but do not guarantee its applicability to the user's process or assume liability for occurrence arising out of its use. The user, by accepting products described herein agrees to be responsible for thoroughly testing any application before committing to production. ©20

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TECHNICAL DATA SHEET

POLYKLEAR EPOXY RESIN HAND LAY-UP SW2503 A/B

I. DESCRIPTION

Polyklear Epoxy Resin Hand Lay-Up SW2503 A/B is designed for the process of hand lay-up, and is composed of a particular epoxy resin and hardener. It is especially suitable for wind blade, yacht and large-scale structural products manufacturing. The major features include low viscosity, long pot life, high HDT and wetting properties with glass fiber and carbon fiber.

II. PHYSICAL PROPERTIES OF LIQUID RESIN AND HARDENER

Item	POLYKLEAR SW2503-A	POLYKLEAR SW2503-B
Appearance	Transparent Liquid	Clear Blue Liquid
Viscosity(cps,25)	1100~1500 (LVT#3-60rpm)	10~40 (LVT#1-60rpm)
Flash Point(25)	>150	>90
Density(g/cm ³ ,25)	1.10~1.20	0.90~1.00
Shelf Life (months)	24(kept in the original sealed barrel and none direct sunlight)	
Mixing Ratio (by weight)	100:25	
Initial Mixed Viscosity(cps,25)	350~550 (LVT#2-60rpm)	
Exothermic Peak Time (mins,25 ,60%RH /100g)	140~200	

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III. MECHANICAL PROPERTIES OF CURED RESIN

Item	POLYKLEAR SW2503-A/B	Method
Tensile Strength (MPa)	75~85	ASTM D638 / ISO527
Tensile Modulus (MPa)	3000~3900	ASTM D638 / ISO527
Elongation at Break(%)	>4.0	ASTM D638 / ISO527
Flexural Strength(MPa)	130~160	ASTM D790 / ISO 178
Flexural Modulus(MPa)	3200~4000	ASTM D790 / ISO 178
Tg()	105-115 (25 /16hrs+80 /1 2hrs)	DSC test ,10 / min
HDT()	95~110	ASTM D648 / ISO 75-2

Curing condition: 24hours at room temperature then 8 hours at 80 /176°F .

IV. PACKING , STORAGE AND HANDLING PRECAUTION

1.1 POLYKLEAR EPOXY RESIN HAND LAY-UP SW2503 A is packed in tin cans weighing 15kg, 3.65kg and 950g.

1.2 The epoxy resin and hardener have to be well mixed before use.

1.3 After epoxy resin and hardener are mixed, it shall be used in valid period (>35). Mixed epoxy resin and hardener can't be used in case.

1.4 All implement for tooling and container shall be cleaned after using.

1.5 During using resin, suggested PPE are as followed.

	eyes	hands	face	body
PPE	Goggles	Latex gloves	R95 mask	Acid resistant, alkali resistant andsolvent resistant coat

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