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OLYMPUS
Marketing, Inc.

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Poly Klear
FIBERGLASS + RESIN

MATERIAL SAFETY DATE SHEET

POLYKLEAR EPOXY RESIN INFUSION SW-2711 A&B

1. Chemical and Manufacturer information

Chemical name: POLYKLEAR EPOXY RESIN INFUSION SW-2711 A&B	Other name : N/A
DISTRIBUTOR: SEA Olympus Marketing Inc. SEA Olympus Bldg., A.C. Cortes Ave., Mandaue City, Cebu Philippines 6014	
Telephone No.: (032) 346 -7137	
Suggested using and restriction: Infusion and RTM process for FRP material	

2. Hazards Identification

Hazardous chemicals classification	Acute toxicity (oral) to fourth class, corrode/skin contact to second class, eye contact to second class, skin sensitizer to first class, chronic hazards to the aquatic environment to second class
Hazard symbol :	
Label contents	<p>Warnings : Warning</p> <p>Hazard Statements :</p> <p>Precautionary statements</p> <p>Hazard warnings :</p> <p>May be harmful if swallowed (oral)</p> <p>May cause mild skin irritating</p> <p>May cause allergic skin reaction</p> <p>Hazard Precautions :</p> <p>Wear protective gloves/clothing and eye/face protection.</p> <p>Safe storage :</p> <p>Store container tightly closed in well-ventilated place</p> <p>Disposal Considerations :</p> <p>Avoid release to the environment</p>
Physical and Chemical	N/A
Health hazards	N/A
Environmental hazards	TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS
Emergency Overview	<p>Wear protective gloves/clothing and eye/face protection.</p> <p>If skin/eyes irritation occurs, wash with plenty of soap and water and get medical</p> <p>Advice /attention</p> <p>Store container tightly closed in well-ventilated place.</p> <p>Avoid release to the environment</p>
Other hazards	N/A

3. Composition on ingredients

Hazardous ingredients Chinese and English name	Its percentage	CAS No	Chemical properties
Bisphenol -A Epoxy Resin	75 (%)	25068 -38-6	-
Epoxy diluents	25 (%)	2425 -79-8	-

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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 when lying on his back, place him in the recovery position. Oxygen or artificial respiration if needed. Do not induce vomiting.
Major symptom and Harm effect	N/A
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. Fire-fighting measures

Suitable extinguishing media	Water spray. Carbon dioxide (CO ₂). Foam. Dry powder.
The hazards might encounter while extinguishing	High volume water jet.
Particular extinguishment procedure	Burning produces obnoxious and toxic fumes. Carbon oxides.
Special equipment for fire fighter	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 breathe vapors/dust.
Environmental precautions	Prevent product from entering drains. Do not contaminate surface water. Avoid subsoil penetration.
Methods for cleaning up	Soak up with inert absorbent material and dispose of as Hazardous waste.

7. Handling and Storage

Handling	Irritating Sensitizing Avoid formation of aerosol. Ensure adequate ventilation. When using, do not eat, drink or smoke. Handle and open container with care.
Storage	Further information on storage conditions: Keep away from food, drink and animal feeding stuffs. Keep container tightly closed. Store at room temperature in the original container. Storage hazard class: Storage class 12, Liquids, not dangerous

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	Hazardous ingredient	Testing basis	Type	Standard Value	Remarks
Control Parameters	N/A	N/A	Time Weighted Average	N/A	N/A
			Short-Term Exposure Limit	N/A	
			Ceiling	N/A	
Biological Exposure Indices	Hazardous ingredient	Testing basis	Biological monitoring index	Biological values	limit
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
Engineering Controls	N/A				
Personal protective equipments	Respiratory protection :				
	Hand protection: Material of gloves for long term application Butyl rubber Ethyl Vinyl Alcohol Laminate (EVAL)				
Health measures	Material of gloves for short term/splash application (10min<BTT<480 min) Nitrile rubber Neoprene rubber Use gloves approved to relevant standards e.g. EN 374 (Europe), F739 (US) Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek advice from glove suppliers.				
	Eye protection : Tightly fitting safety goggles. Face -shield. Skin and Body protection : Protective suit. Safety shoes.				
Health measures	N/A				

9. Physical and Chemical Properties

Appearance	Clear Transparent liquid	Partition coefficient: n-octanol/water	NA
pH	NA	Critical temperature	NA
Boiling Point	NA	Critical pressure	NA
Melting point	NA	Auto-ignition temperature	NA
Flash point	>150°C	Decomposition temperature	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	Keep away from heat and sources of ignition. Do not smoke.
The hazards might encounter in particular situations	NA
Conditions to avoid	Strong acids, strong oxidizing agents
Incompatible materials	NA
Hazardous decomposition products	Ammonia

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Acute toxicity	LD ₅₀ : 1050mg/kg	
	LC ₅₀ : N/A	
Exposure route	N/A	
Symptoms	Skin irritation or corrosion	Irritating Rabbit Dermal
	Eye irritation or corrosion	Irritating Rabbit
	Breath or skin allergies	N/A
	Germ cell mutagenicity	N/A
	Carcinogenicity	N/A
	Genotoxicity	N/A
	Specific target organ toxicity after single exposure	N/A
	Specific target organ toxicity after multiple exposure	N/A
Long-term toxicity	Inhalation danger	N/A
	N/A	

12. Ecological information

Eco-toxicity	N/A
Persistence and degradability	On the skin : Irritating to skin. On the eye : Irritating to eyes. Sensitization : sensitization possible by skin contact
Bioconcentration	Prevent product from entering drains.
Mobility in the soil	Do not contaminate surface water.
Other harmful influence	N/A

13. Disposal Considerations

Disposal considerations	N/A
Chemical Waste	In compliance with actual waste regulations, the product must be brought to a suitable disposal plant. No waste key number as per the European Waste Types List can be assigned to this product, since such classification is based on the (as yet undetermined) use to which the product is put by the consumer. The waste key number must be determined as per the European Waste Types List (decision on EU Waste Types List 2000/532/EC) in cooperation with the disposal firm / producing firm / official authority.
Contaminated packaging	N/A
Disposal precautions	N/A

14. Transport information

UN. No.	3082
UN proper shipping name	N/A
Transport hazard class	9
Packaging group	III
Packaging mark	N/A
Packaging method	N/A
Marine pollutants (Y/N)	N
Particular transportation and precautions	N/A

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Suitable regulatory	Labeling according to EEC Directive Labeling required Symbol(s): C: Corrosive R-phrase(s) : R21/22: Harmful in contact with skin and if swallowed. R34: Causes burns. R43: May cause sensitization by skin contact. R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. S-phrase(s) : S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28: After contact with skin, wash immediately with plenty of soap and water. S36/37/39: Wear suitable protective clothing, gloves and eye/face protection. S45: In case of accident or if you feel unwell, seek medical advice immediately (show label where possible). S61: Avoid release to the environment. Refer to special instructions/safety data sheets. Hazardous components which must be listed on the label: isophorone diamine EC -No.: 220-666-8 National legislation Water contaminating class: 3 highly water endangering(self-assessment) 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

Write and Edit information	RD
Correlative Interpretation	N/A
References	1.CHEMINFO database, CCINFO disc, 2005-3 2.HSDB database, TOMES PLUS disc, Vol65,2005 3.RTECS database, TOMES PLUS disc, Vol65,2005 4.Hazardous chemicals database, EPA 5.ChemWATCH database, 2005 -1
Disclaimer	This SDS information is only available for appropriate products, unless otherwise indicated, this product with other substances mixture cannot applicable. This SDS is provided safety information for the staff who has had professional training. The users of SDS must make an independent judgment on the suitability under special conditions. If the SDS application results in injuries under a special occasion, the SDS compilers do not bear any responsibility.

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TECHNICAL DATA SHEET

POLYKLEAR EPOXY RESIN INFUSION SW-2711 A&B

Product Description

POLYKLEAR EPOXY RESIN INFUSION SW2711 A&B is designed for the process of vacuum infusion (SCRIMP or RTM) which is composed of particular epoxy resin and hardener. Main characters are low viscosity, long pot life, high HDT, superior immersed effect at glass fiber and carbon fiber.

Properties

Item	2711-A	2711-BT	2711-BM	2711-BF	2711-BS	2711-BL
Appearance	Clear Transparent Liquid	Clear Blue Liquid	Clear Blue Liquid	Clear Blue Liquid	Clear Blue Liquid	Clear Blue Liquid
Viscosity (25°C/77°F, cps)	900~1,400 (LVT#3-60rpm)	10~25 (LVT#1-60rpm)	5~20 (LVT#1-60rpm)	5~20 (LVT#1-60rpm)	5~20 (LVT#1-60rpm)	5~20 (LVT#1-60rpm)
Density (25°C/77°F, g/cm ³)	1.1~1.2	0.9~1.0	0.9~1.0	0.9~1.0	0.9~1.0	0.9~1.0
Flash point	>150°C/302°F					
Shelf life (months)	24					
A/B ratio (weight)	100:30					
Initial Mix viscosity (25°C/77°F, cps)		250~350 (LVT#2-60rpm)	200~300 (LVT#2-60rpm)	200~280 (LVT#2-60rpm)	190~280 (LVT#2-60rpm)	180~250 (LVT#2-60rpm)
Exothermic peak time (28°C/82°F, 100g, mins)		85~125	170~250	220~300	280~360	330~430

Mechanical properties (sample thickness of neat resin: 3.2mm or 4.0mm)

Item	2711-A/BT	2711-A/BM	2711-A/BF	2711-A/BS	2711-A/BL	Method
Tensile strength(Mpa)	75~87	73~84	70~80	67~80	67~80	GB/T 2568-05 or ASTM D638 or ISO 527
Tensile modulus(Mpa)	2,800~3,500	2,900~3,600	2,900~3,600	2,700~3,500	2,700~3,500	GB/T 2568-05 or ASTM D638 or ISO 527
Elongation at tensile strength (%)	5~8	5~8	5~8	4.5~8.5	4.5~8.5	GB/T 2568-05 or ASTM D638 or ISO 527
Flexural strength(Mpa)	125~155	110~130	110~140	110~140	110~140	GB/T 2570-05 or ASTM D790 or ISO 178
Flexural modulus(Mpa)	2,800~3,600	2,900~3,400	3,000~3,500	2,800~3,600	2,800~3,600	GB/T 2570-05 or ASTM D790 or ISO 178
Glass transition temperature (°C/°F)	85~95/185~203	85~95/185~203	85~95/185~203	80~90/176~194	80~90/176~194	DSC test, 10 °C(50 °F)/min
Heat Distortion Temperature (°C/°F)	90~99/194~210	76~88/169~190	76~88/169~190	72~82/162~180	72~82/162~180	GB/T 1634.2-04 /ASTM D648 / ISO 75-2

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

Packing, storage and handling precaution

1. POLYKLEAR EPOXY RESIN INFUSION SW2711 is available convenient packaging (Tins, gal, etc.)
2. The epoxy and hardener have to well mix by regular proportion for use.
3. After epoxy and hardener are mixed, it should be used in valid period, in case it gels and can't be use.
5. All implement for daubing and stowing should be cleansed right after used.
6. Under construction duration, should avoid skin contact, wear protective cloth and glove if necessary.
7. Crystallization will not occur above 15 °C(59 °F), if encounter, it can be undone by careful heating.

The data presented herein are believed to be accurate and reliable. We require customers to inspect and test our product before use and to satisfy themselves as to contents and suitability for their specific applications. Information herein is to assist customers in determining whether our products are suitable for their applications but not to be taken as a guarantee, express warranty or implied warranty of merchantability or fitness for particular purpose, nor is any protection from any law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is limited to replacement of our material and in no event shall we be liable for special, incidental or consequential damages. ©21

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