

SWANCOR 984

EPOXY VINYL ESTER RESIN



SWANCOR 984 is an elastomer modified epoxy vinyl ester resin, which is particularly designed for use as primer for lining concrete, carbon steel, stainless steel and FRP substrate. The inherent resilient property provides exceptional higher elongation, i.e. increased flexibility, excellent adhesion and resistance to severe mechanical stress. The use of **SWANCOR 984** as primer can ensure the superior bonding strength between substrate and subsequent laminate structure. Can be easily applied by rolling or brushing.

Typical properties of liquid resin

Property* ¹	
Appearance	Opaque two-phase liquid
Solid Content (%)	55 +/- 1
Viscosity (cps)* ²	400 +/- 100
Specific Gravity	1.02 +/- 0.02
Gel Time (min)* ³	15~25
Shelf Life (months)	4

*¹ Measurement were obtained under 25°C.

*² LVT-#3-60rpm@25°C.

*³ 6% Cobalt: 0.4phr, 100% DMA: 0.05phr, 55%MEKP: 1.2phr.

Mixtures of SWANCOR 984

For concrete and FRP (cured by MEKP/CoOct/DMA)
984 = 100%

For carbon steel (cured by MEKP/CoOct/DMA)
SW984 : Z-6030 (Dow CORNING Co.) = 100 : 1

For stainless steel (cured by BPO/DMA)
SW984 : SWANCOR MM001 : Mica powder = 100 : 1 : 20

Curing formulation of SWANCOR 984 as a carbon steel, concrete and FRP liner (cured by MEKP/CoOct/DMA)

Temperature/Time (Gel-Time)		10~20mins	20~40mins	40~60mins
15°C/59°F	40%MEKP	2.00%	1.50%	1.00%
	6%CoOct	0.60%	0.40%	0.30%
	100%DMA	0.15%	0.08%	0.05%
25°C/77°F	40%MEKP	1.50%	1.20%	1.00%
	6%CoOct	0.40%	0.30%	0.30%
	100%DMA	0.08%	0.05%	0.02%
35°C/95°F	40%MEKP	1.20%	1.20%	1.20%
	6%CoOct	0.40%	0.40%	0.30%
	100%DMA	0.05%	0.02%	-----

Curing formulation of Swancor 984 as a stainless steel primer (cured by BPO/DMA)

Temperature/Time(Gel-Time)		10~20mins	20~40mins
	DMA	0.33%	0.25%
	98% BPO	2.00%	2.00%
	DMA	0.20%	0.12%
	98% BPO	2.00%	2.00%
	DMA	0.09%	0.055%
	98% BPO	2.00%	2.00%

Typical clear casting properties of 3.2mm cured resin

Property	Measurement	Test Method
Tensile Strength (psi)	9,000~11,000	ASTM D638
Tensile Modulus (X10 ⁵ psi)	4.5~5.0	ASTM D638
Tensile Elongation (%)	6~9	ASTM D638
Flexural Strength (psi)	15,000~17,000	ASTM D790
Flexural Modulus (X10 ⁵ psi)	4.3~4.8	ASTM D790
Volume Shrinkage (%)	7.5~8.5	ASTM D2566
Heat Distortion Temperature (°C/°F)* ⁴	>85/185	ASTM D648
Barcol Hardness	32 +/- 4	ASTM D2583

*⁴ Cure condition for HDT: 24 hours at room temperature then 2 hours at 105°C.

Adhesion strength*^{5,6} (ASTM D-1002, test speed rate: 5mm/min.)

Carbon Steel: 130 Kg/cm²

*⁵:The metal surface should achieve Sa 2 ½ (white metal).

*⁶:Cure condition for test: 24 hours at room temperature then 2 hours at 105°C.

NOTICE IN USE

If **SWANCOR 984** is blended with cobalt salt promoters, the shelf life will be shortened. Promoted **SWANCOR 984** must be used within 2 weeks.

- Before applying **SWANCOR 984**, it is advised to remove the loose material, rust and dirt by sand-blast in order to achieve maximum adhesion. The metal surface should achieve Sa 2 ½ (white metal).
- In case of high humidity (85%), it is recommended to increase the MEKP usage (by 0.1phr or higher depending on operations) for better cure. Fine-tuning MEKP usage rate is able to give best performance of **SWANCOR 984** even the humidity is high.
- SWANCOR 984** should be applied within 8 hours after sand-blast. Careful check is required to make sure the substrate surface is free of dust, dirt and grease which will reduce adhesion.
- After **SWANCOR 984** is applied onto the substrate, laminate should be constructed between 4 hours and 7

Quality Products with In-Time Service and Innovation

SWANCOR IND. CO., LTD.

NO.9 INDUSTRY SOUTH 6 ROAD, 54066 NANTOU CITY, TAIWAN
TEL: 886-49-2255420 FAX: 886-49-2251534
swancor@swancor.com
www.swancor.com

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days. If it becomes tacky-free, the surface should be roughed before laminating resin is to be applied.

5. **SWANCOR 984** will appear as **two-phase liquid** in storage. **Thorough mixing again** is required to have maximum performance.
6. The gel time of **SWANCOR 984** is affected primarily by catalyst concentration and temperature. The variations of cure characteristics may be caused by the variations of catalyst, humidity, pigment, fillers and other additives. It is recommended that the fabricators check the cure characteristics with a small quantity resin before proceeding for bulk production.
7. **SWANCOR 984** contains organic solvent (styrene). Keep away from heat, sparks and flames.
8. **SWANCOR 984** is a potentially reactive chemical. Please store it in dark and keep away from heat and direct sunshine.
9. Containers, not completely emptied must be closed immediately after use.

MATERIAL SAFETY AND HANDLING INFORMATION

SKIN CONTACT:

Thoroughly wash exposed area with soap and water immediately. Remove contaminated clothing. Launder contaminated clothing before re-use.

EYE CONTACT:

Flush with large amount of water immediately and continuously for 20 minutes, lifting upper and lower lids occasionally. Get medical attention.

INGESTION:

Do not induce vomiting. Keep person warm, quiet and get medical attention. Aspiration of material into the lungs can cause chemical pneumonitis which can be fatal.

INHALATION:

If affected, remove individual to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Keep person warm, quiet, and get medical attention.

PERSONAL PROTECTION:

Do not breathe vapors. High concentration of vapor can be hazardous. Keep out of sewers. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. For large spills, warn public of downwind explosion hazard. Check area with explosion meter before re-entering area. Ground and bond all containers and handling equipment.

RESIN STORAGE

Keep away from ignition sources; flames, pilot lights, electrical sparks, and sparking tools. **NO SMOKING**. Do not store in direct sunlight. Store separate from oxidizing materials, peroxides, and metal salts. Keep container closed when not in use. To ensure maximum stability and maintain optimum resin properties, resins should be stored in closed containers at temperatures below

25°C (77°F). Copper or copper containing alloys should be avoided as containers.

SPILLS

Eliminate all ignition sources (flares, flames, including pilot lights electrical sparks). Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source, dike area of spill to prevent spreading, pump liquid to salvage tank. Remaining liquid may be taken up on sand, clay, earth, floor absorbent or other absorbent material and shoveled into containers.

WASTE DISPOSAL

Destroy by liquid incineration in accordance with applicable regulation. Contaminated absorbent should be disposed in accordance to government regulations.

PACKAGE

Standard packing is 200 kg steel drum.