

## EPOXY VINYL ESTER RESIN

### Product Description

**SWANCOR 901-TP-AU02** is a Bisphenol-A type pre-thixotroped pre-promoted epoxy vinyl ester resin. The product is good for non-drip or non-sag applications. It provides excellent corrosion resistance to a broad range of organic and inorganic acids, alkalis, oxidizing chemicals and salt solutions etc. It also provides very good mechanical strength such as tensile and flexural while incorporated with reinforcement such as glass fiber, carbon fiber or kevlar fibre etc. Generally, **SWANCOR 901-TP-AU02** can provide superior toughness with excellent fatigue resistance. It has good heat distortion temperature, commonly up to 100°C.

### Applications

- Chemical storage tanks, pipes, fume gas desulfurizing systems (FGD), scrubbers, ducts.
- Corrosion resistant flooring while incorporated with aggregates.
- Waste water treatment systems.
- Toolings and molds.
- Food storage tanks and pure water system.
- Marine use for yachts and boats.
- Swimming pools and spas.

### Fabrication Methods

- Can be easily applied by hand lay-up laminating, spray-up, and filament winding.
- Can be used in polymer concrete casting.
- Can comply with US FDA regulation 21 CFR 177.2440 if the resin is properly formulated and cured.

### Typical properties of liquid resin

Property* <sup>1</sup>	
Appearance	Pinkish translucent
Viscosity (cps)* <sup>2</sup>	550~750
Thixotropic Index	1.6~1.8
Gel Time (min)* <sup>3</sup>	35~45min
Shelf Life (months)	5* <sup>4</sup>

\*<sup>1</sup> Measurement were obtained under room temperature.

\*<sup>2</sup> LVT-#3-60rpm/25°C.

\*<sup>3</sup> 55% MEKP 1.0phr @20~30°C.

\*<sup>4</sup> Under 25°C.

### Typical clear casting properties of cured resin

Property	Measurement	Test Method
Tensile Strength (psi)	11,000~14,000	ASTM D638
Tensile Modulus (X10 <sup>5</sup> psi)	4.8~5.2	ASTM D638
Tensile Elongation (%)	5.0~6.0	ASTM D638
Flexural Strength (psi)	17,000~20,000	ASTM D790
Flexural Modulus (X10 <sup>5</sup> psi)	4.5~5.0	ASTM D790
Volume Shrinkage (%)	8.0	ASTM D2566
Heat Distortion Temperature (°C)	100~102	ASTM D648
Barcol Hardness	35 +/- 3	ASTM D2583
Impact Strength (kg-cm/cm <sup>2</sup> )* <sup>4</sup>	5~8	ASTM D256

\*<sup>4</sup> Charpy test.

### Heat resistance of SWANCOR 901 laminates\*<sup>5,6</sup>

Property	NBS 15-69 Spec.	Testing Temperature (°C)	SW 901 Laminate Measurement
Tensile Strength (psi)	12,000	25°C	22,000
		65°C	19,500
		95°C	18,500
		120°C	12,000
		150°C	7,500
Tensile Modulus (X10 <sup>5</sup> psi)	-	25°C	17.4
		65°C	17.8
		95°C	14.9
		120°C	11.2
		150°C	7.7
Flexural Strength (psi)	19,000	25°C	29,000
		65°C	28,000
		95°C	27,000
		120°C	5,000
		150°C	3,200
Flexural Modulus (X10 <sup>5</sup> psi)	8.0	25°C	10.5
		65°C	10.1
		95°C	8.5
		120°C	2.3
		150°C	2.2

\*<sup>5</sup> Construction according to NBS PS 15-69.

\*<sup>6</sup> Laminate construction is as follows: V/M/M/Wr/M/Wr/M, fiber content: 39~40%, thickness: 6mm.

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### NOTES FOR USE

1. **SWANCOR 901-TP-AU02** is a pre-thixotroped pre-promoted resin with limited shelf life and must be used within five months (Under 25°C).
2. The gel time of **SWANCOR 901-TP-AU02** 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 for a small quantity resin under operating conditions.
3. **SWANCOR 901-TP-AU02** contains organic solvent (styrene). Keep away from heat, sparks and flames.
4. **SWANCOR 901-TP-AU02** is a potentially reactive chemical. Please store it in dark and keep away from heat and direct sunshine.
5. 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. Vapor explosion hazard, 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 reentering 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. 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. Other packing such as ISO tank, 1000kg IBC and 20kg pails can be discussed upon request.