

# SWANCOR 901-V

## Epoxy Vinyl Ester Resins



### Product Description

**SWANCOR 901-V** is a low viscosity Bisphenol A type epoxy vinyl ester resin. 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 glass fiber, carbon fiber or kevlar fiber etc. The ease of use of **SWANCOR 901-V** makes it suitable for various fabrication process, such as vacuum infusion, RTM, filament winding and pultrusion etc. It has good heat resistance distortion temperature as good as **SWANCOR 901**.

### Applications

- Chemical storage tanks, pipes, flue gas desulfurization systems (FGD), scrubbers, ducts.
- Corrosion resistant flooring while incorporated with aggregates.
- Waste water treatment systems.
- Food storage tanks and pure water system.
- Marine use for yachts and boats, approved by DNV.

### Fabrication Methods

- Can be easily applied by spray-up, pultrusion, resin transfer molding (RTM), filament winding and vacuum infusion.
- Can comply with US FDA regulation 21 CFR 177.2420 if the resin is properly formulated and cured.

### Typical properties of liquid resin

Property* <sup>1</sup>	Value	
Appearance	Clear amber liquid	
Solid Content (%)	51.5 ± 2	
Viscosity * <sup>2</sup>	250 ± 100 cps	250 ± 100 mPa.s
Specific Gravity	1.04 ± 0.02	
Gel Time (min)* <sup>3</sup>	15~25* <sup>4</sup>	
Shelf Life (months)	9 (25°C)	

\*<sup>1</sup> Measurement was obtained under 25°C.

\*<sup>2</sup> LVT-#3-60rpm @25°C.

\*<sup>3</sup> 6% Cobalt: 0.4phr, 100% DMA: 0.05phr, MEKP: 1.2phr @25°C.

### Typical clear casting properties of cured resin

Property	SI* <sup>5</sup>	US Standard	Test Method
Tensile Strength	80~93MPa	11,000~13,500psi	ASTM D638
Tensile Modulus	3.1~3.7GPa	4.5~5.5 X 10 <sup>5</sup> psi	ASTM D638
Tensile Elongation	4.5~5.5%	4.5~5.5%	ASTM D638
Flexural Strength	114~138MPa	16,500~20,000psi	ASTM D790
Flexural Modulus	3.1~3.5GPa	4.5~5.0 X 10 <sup>5</sup> psi	ASTM D790
Volume Shrinkage	8.0%	8.0%	ASTM D2566
Heat Distortion Temperature* <sup>6</sup>	100 °C	212°F	ASTM D648
Barcol Hardness	34 +/- 4	34 +/- 4	ASTM D2583

\*<sup>5</sup> SI values based on conversion.

\*<sup>6</sup> Cure condition for HDT: 24 hours at room temperature then 2 hours at 105 °C.

### Typical gel time of SWANCOR 901-V\*<sup>7</sup>

Gel Time Temperature	Materials	Gel Time		
		10-20min	20-40min	40-60min
20°C/ 68°F	MEKP	1.80%	1.50%	1.020%
	CoOct	0.40%	0.40%	0.40%
	DMA	0.10%	0.50%	0.05%
25°C/ 77°F	MEKP	1.50%	1.20%	1.20%
	CoOct	0.40%	0.40%	0.30%
	DMA	0.08%	0.03%	0.02%
30°C/ 86°F	MEKP	1.20%	1.00%	1.00%
	CoOct	0.40%	0.30%	0.30%
	DMA	0.05%	0.03%	---

\*<sup>7</sup> Concentration: CoOct: 6%, DMA: 100%

### Cured by CHP/CoOct/SW1511\*<sup>8,9</sup>

Gel Time Temperature	Materials	Gel Time		
		55~65 min	85~95 min	115~125 min
20°C/ 68°F	CHP	---	---	2.00%
	CoOct	---	---	0.60%
	SW1511	---	---	---
25°C/ 77°F	CHP	1.50%	1.50%	1.50%
	CoOct	0.40%	0.40%	0.20%
	SW1511	0.06%	---	0.03%
30°C/ 86°F	CHP	1.50%	1.50%	1.50%
	CoOct	0.30%	0.30%	0.30%
	SW1511	0~0.05%	0.50%	0.70%

\*<sup>8</sup> Concentration: CHP: 80%, CoOct: 6%,

\*<sup>9</sup> CHP cure system is appropriate for vacuum Infusion process application.

*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.*

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### NOTICE IN USE

- 1.If **SWANCOR 901-V** is blended with cobalt-salt promoters, shelf life will be shortened. Promoted **SWANCOR 901-V** must be used within three months.
- 2.The gel time of **SWANCOR 901-V** 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.
- 3.**SWANCOR 901-V** contains organic solvent (styrene). Keep away from heat, sparks and flames.
- 4.**SWANCOR 901-V** 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. 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 exclude 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.

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