

PRODUCT DESCRIPTION

Bisphenol-A Epoxy Based Vinyl Ester Resin (VER™900) are thermostatic polymer resins. These type of resins require starting chemicals or catalysts to improve and speed up the curing process. In general, a12 product is composed of a set of properties and characteristics of epoxies and esters. And for this reason, it has finally become a unique product. VER™900 resin has high mechanical and chemical properties. These resins are highly resistant to excellent acids, alkalis, oxidizing chemicals and salt solutions, etc. Due to its low viscosity, it saturates surfaces quickly. These resins are also used in the production of GFRP fibers. This type of resin adheres the glass fibers well.

PRODUCT FEATURES

- Maintain physical properties as well as high heat resistance
- Excellent resistance to corrosive substances such as excellent acids, salts, alkalis, oxidizing chemicals, etc.
- The low viscosity of the product, which results in the surface of the members being impregnated with the material more quickly
- High mechanical and chemical properties
- Easy mixing
- High penetration and reduced empty space
- Excellent impact strength
- Excellent tensile elongation
- High toughness resistance

PRODUCT USES

The VER™900 resins are widely used in the following industries:

- Chemical storage tanks
- Production of GFRP fibers
- Foam gas desulfurization systems
- Corrosion resistant floors
- Wastewater treatment systems
- Food storage tanks and pure water system
- Scrubber
- Pipes
- Marine use for yachts and boats.

TECHNICAL DATA

Physical state*	solid
Viscosity	275 mPas
Specific Gravity	1.03 gm/cc
Shelf Life	3 month
Monomer Content	48 %

Temperature at 25°C

HOW TO USE

SURFACE PREPARATION

The surface must be cleaned of any contaminants. The surface must also have at least 90% of the manufacturer's desired hardness. Barcol can be used to measure the surface hardness to identify the surface repair area. The degree of curvature of the



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part or the number of layers of synthetic coating, materials added to the resin, UV inhibitors, etc. also affect the hardness of the members. Acetone susceptibility testing is also commonly used with barcol. In fact, pour the acetone on a clean cloth and rub it gently on the surface. If the surface becomes soft or sticky, the resin will not cure in that area.

TYPICAL CURING CHARACTERISTICS

MEKP™ catalyst(phr)*	GelTime,minutes	Temperature°C
65-75	15-21	1.00
50-60	15-21	1.25
40-50	15-21	1.50
25-35	21-27	1.00
20-30	21-27	1.25
15-25	21-27	1.50
20-30	27-32	1.00
15-25	27-32	1.25
10-20	27-32	1.50

PROPERTY OF CURED AT 25°C

Barcol Hardness	35
Tensile Strength	82 Mpa
Tensile Modulus	3720 Mpa
Tensile Elongation at yield	4.6 %
Tensile Elongation at Break	7.9 %
Flexural Strength	131 Mpa
Flexural Modulus	3450 Mpa
Heat Distortion Temperature	98 °C

MIXING

VER™900 resins are thermostatic. In fact, these types of resins contain polymers that, if used alone, can take months or years to cure completely. For this reason, chemicals called catalysts are used to speed up the curing process. In general, the ratio of catalyst to resin should be less than 5%. Air temperature as well as resin gelling time affect the consumption of catalysts. Catalysts increase the curing speed of the resin so that the resin hardens in a short time. Therefore, the ratio of catalysts to resin can be changed to control the curing time. Usually this mixture should be mixed with a mixer for 2 to 3 minutes to distribute the catalysts evenly in the resin.

VER™900

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APPLICATION

Can be easily applied by hand lay-up laminating, spray up, pultrusion, resin transfer molding (RTM) and filament winding. Also, can be used in polymer concrete casting.

LIMITATIONS

- The mixing ratio of catalyst and resin depends on the temperature conditions and the gelling time of the compound. The mixing ratio should be determined according to the tables provided by the product manufacturer.
- The surface to be coated with resin must have at least 90% hardness specified by the product manufacturer.

CAUTION

Users should observe good industrial and personal hygiene. The use of hardhats, proper footwear, and ear protection should be evaluated on a site-by-site basis. In situations where installation is occurring in water, flotation devices should be utilized. In general, installers of products should wear long-sleeve shirts and pants and use safety glasses/goggles and gloves to minimize skin contact. Measures such as washing after handling the material and before eating, drinking, and/or smoking, as well as routinely washing work clothing and protective equipment to remove contaminants, should be employed.

STORAGE

Bisphenol-epoxy vinyl ester resins contain organic styrene solvent, so it is highly reactive. VER™900 resins should be kept away from heat, sparks, flames, direct sunlight. It is better to keep in a dark place. They should be consumed within 4 months. Containers that are not completely emptied should be closed immediately after use..

CLEANUP

Dispose of material in accordance with local disposal regulations. Uncured material can be removed with approved solvents. Cured materials can only be removed mechanically. In fact, the thinner cannot completely clean the equipment; therefore, acetone or ketone solution can be used to clean equipment.

FIRST AID

- In case of contact with skin, wash thoroughly with soap and water
- In case of contact with eyes, rinse immediately with plenty of water.
- Get out of space or use oxygen capsules if you have trouble breathing.
- Wash clothing before reuse.

DISCLAIMER OF LIABILITY

AFZIR, LLC warrants its products to be free from manufacturing defects. Buyer determines suitability of product for use and assumes all risks. Buyer's sole remedy shall be limited to replacement of product. Any claim for breach of this warranty must be brought within six months of the date of purchase.

AFZIR shall not be liable for any consequential or special damages of any kind, resulting from any claim or breach of warranty, breach of contract, negligence or any legal theory.

The Buyer, by accepting the products described herein, agrees to be responsible for thoroughly testing any application to determine its suitability before committing to production.