Derakane® 441-400

Vinyl Ester

Ashland Performance Materials

Message:

DERAKANE® 441-400 epoxy vinyl ester resin is a lower styrene-content resin that has an optimized epoxy backbone and resulting superior thermal properties and corrosion resistance performance which place it as a resin type between DERAKANE 411-350 and DERAKANE 470-300 resins. DERAKANE 441-400 resin offers superior stability compared to conventional vinyl ester resins which provide additional flexibility to fabricators in storage and handling.
The raw materials used in the manufacture of this resin are listed as acceptable in FDA regulation Title 21 CFR 177.2420 for repeated use in contact with food, subjerct to user's compliance with the prescribed limitations of that regulation.
APPLICATIONS AND USE
DERAKANE® 441-400 resin is designed for ease of fabrication using hand lay-up, spray-up, filament winding, compression molding and resin transfer molding techniques, pultrusion and molded grating applications. This resin is recommended for fabricationg FRP storage tanks, vessels, ducts, and on-site maintenance projects, particularly in chemical processing, pulp and paper operations, including chlorine dioxide bleaching towers.

General Information	
Features	Solvent resistance Good corrosion resistance Good stability alkali resistance acid resistance Good toughness Compliance of Food Exposure
Uses	Container Water tank
Agency Ratings	FDA 21 CFR 177.2420
Forms	Liquid
Processing Method	Filament power winding pultrusion Hand coating Resin transfer molding Compression molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.16	g/cm³	ASTM D792, ISO 1183
Solution Viscosity	430	mPa·s	
Styrene Content	33	%	
Volume Shrinkage	7.5	%	
Hardness	**Nominal Value**	**Unit**	**Test Method**
Barcol Hardness	35		ASTM D2583
Mechanical	**Nominal Value**	**Unit**	**Test Method**

Tensile Modulus			
--	3380	MPa	ASTM D638
--	3400	MPa	ISO 527-2
Tensile Strength			
--	89.6	MPa	ASTM D638
--	90.0	MPa	ISO 527-2
Tensile Elongation (Yield)	5.0 - 6.0	%	ASTM D638, ISO 527-2
Flexural Modulus			
--	3790	MPa	ASTM D790
--	3800	MPa	ISO 178
Flexural Strength			
--	145	MPa	ASTM D790
--	160	MPa	ISO 178
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (1.8 MPa, Unannealed)	120	°C	ASTM D648, ISO 75-2/A
Glass Transition Temperature	125	°C	ASTM D3418, ISO 11357-2
Additional Information	**Nominal Value**	**Unit**	
Properties of clear casting at 25°C.			

Recommended distributors for this material

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