

# Derakane® 451-400

Vinyl Ester

Ashland Performance Materials

## Message:

DERAKANE 451-400 resin is a low viscosity, unpromoted novolac epoxy vinyl ester. This product allows the use of standard MEKP, exhibits excellent exotherm control and industry-leading storage stability.

Exceptional hot water resistance

Excellent solvent and acid resistance

Good caustic resistance

Excellent impact strength

High heat resistance

High tensile elongation

## APPLICATIONS AND USE

DERAKANE 451-400 resin is recommended for hand lay-up and spray-up, filament winding, flake glass and filled linings and coating compounds.

| General Information             |                         |         |             |
|---------------------------------|-------------------------|---------|-------------|
| Features                        | Low viscosity           |         |             |
|                                 | Solvent resistance      |         |             |
|                                 | Impact resistance, high |         |             |
|                                 | Heat resistance, high   |         |             |
|                                 | acid resistance         |         |             |
|                                 | Extended tensile rate   |         |             |
| Uses                            | Lining                  |         |             |
|                                 | Coating application     |         |             |
| Forms                           | Liquid                  |         |             |
| Processing Method               | Filament power winding  |         |             |
|                                 | Hand coating            |         |             |
| Physical                        | Nominal Value           | Unit    | Test Method |
| Solution Viscosity <sup>1</sup> | 425                     | mPa · s |             |
| Solids Content                  | 58                      | %       |             |
| Hardness                        | Nominal Value           | Unit    | Test Method |
| Barcol Hardness                 | 35                      |         | ASTM D2583  |
| Mechanical                      | Nominal Value           | Unit    | Test Method |
| Tensile Modulus                 | 3310                    | MPa     | ASTM D638   |
| Tensile Strength                | 89.6                    | MPa     | ASTM D638   |
| Tensile Elongation (Break)      | 5.6                     | %       | ASTM D638   |
| Flexural Modulus                | 3450                    | MPa     | ASTM D790   |
| Flexural Strength               | 138                     | MPa     | ASTM D790   |
| Thermal                         | Nominal Value           | Unit    | Test Method |

|   |                                |    |           |
|---|--------------------------------|----|-----------|
| Deflection Temperature Under Load (1.8 MPa, Unannealed) | 120                            | °C | ASTM D648 |
| Additional Information                                  |                                |    |           |
| Properties of cured casting at 25°C.                    |                                |    |           |
| NOTE  |                                |    |           |
| 1.  | Brookfield #2 spindle @ 30 rpm |    |           |

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