

PHENOLIC RESIN

Phenolic resins are renowned for their excellent high temperature resistance, flame resistance, low smoke generation and low toxicity in fire situations. Phenolics are used in vehicle armor applications that utilize these properties in combination with E-glass and other high performance glass fibers. Phenolics are very rigid, although toughened versions are available with reduced temperature resistance.

FEATURES AND BENEFITS

- High temperature resistance.
- Excellent flame, smoke and toxicity performance.
- Modified/toughened versions are available.

PRODUCT FORMS

Barrday's phenolic systems are available on a wide variety of fabrics such as E-glass, R-glass, S-glass, aramid and carbon fibers. Our S-glass with Phenolic has been tested to meet MIL-DTL-64154B.

COMMON PHENOLIC CONFIGURATIONS

	Style 1159 PSR133	Style 1136 PSR133	Style 1174 PSR133
Applications	Vehicles	Vehicles	Vehicles
Finished (Coated / Impregnated) Fabric Weight	31.9 oz/yd ² 1084 g/m ²	29.9 oz/yd ² 1014 g/m ²	30.7 oz/yd ² 1040 g/m ²
Pick Count	5 x 5.2	5 x 5.2	5.6 x 5.2
Weave Type	Basket	Basket	Basket
Fiber Type	225 Yield E-Glass Roving	250 Yield S-2 Glass Roving	1370 Yield ShieldStrand Roving
Typical Resin Content	20 ± 2%	20 ± 2%	20 ± 2%
Meets MIL-DTL-64154B	N/A	Class A, HJI system	Class C

PROCESS INFORMATION

The following are general recommendations for successful processing. Adjustments may be required to achieve optimum results in your specific manufacturing environment.

	Mil Spec Phenolic Resin (Meets MIL-R-9299C, Grade B)
Resin	PSR133
Shelf Life	3 Weeks < RT (77°F, 25°C) 6 Months < 40°F (5°C) 12 Months < 0°F (-18°C)



We recommend that our PSR133 be pressed in the following steps for fixed platen pressing using stops:

1. Set initial platen temperature to 270-280°F.
2. Lay up the material with adequate release film and an edge constraint/containment system (aluminum or steel shims).
The shims are necessary to avoid resin overflow or "foaming" around the perimeter.
Panel should be pressed to thickness required by MIL-DTL-62474F.
3. Place prepreg into press and close to establish contact pressure (10-40 psi).
4. Hold temperature until panel core reaches 260-270°F.
5. Increase pressure on prepreg to consolidate to required thickness and hold this pressure.
6. Increase platen temperature at a rate of 4-7°F/min until platens reach 340-350°F set point.
7. Hold at temperature and pressure for 30 minutes until core of panel reaches 335-345°F.
8. Reduce platen temperature until core of panel is below 180°F while maintaining pressure.
9. Open press and remove completed panel.

For additional processing information, please consult HJ1 Armor Compression-Molding documentation.

Disclaimer: The data presented herein has been developed under controlled manufacturing conditions and is considered accurate. No warranty is expressed or implied regarding the accuracy or use of this data. It is the responsibility of the end user to determine suitability for use.

Note: The rolls are sealed in polyethylene film bags to protect prepreg from moisture and other contaminants. The bags should remain sealed while the prepreg is under refrigeration and only removed when the prepreg has had sufficient time to warm to room temperature. When not in use, the prepreg should be returned to refrigerated storage. Care should be exercised to limit out-time of the prepreg in order to insure maximum shelf life. Torn bags should be replaced.

