

UV-preg[®] M160

Sun or UV Light Curing Vinyl Ester Prepreg

Description

UV-preg[®] M160 is an advanced vinyl ester prepreg with low styrene emission designed to provide a high performance-to-cost ratio. It has a medium to high tack. It can be used for sandwich construction, providing good adhesion to core materials, like foams and balsa, after surface preparation.

M160 curing starts immediately upon exposure to sun or UV light, having a spectrum peak around 400 nm. UV-preg[®] M160 is available only with glass reinforcements and represents a great choice for many industrial applications.

Features

• Prepreg

- ❖ Fast curing cycle: 5-10 min for 3 mm thick laminate.
- ❖ Suitable for vacuum / sun light curing.
- ❖ Excellent flexibility and handling.
- ❖ Environmentally friendly and retains its tack for many days.
- ❖ Controlled flow and ease vacuum processing.
- ❖ Weight loss < 1%, as determined in a vacuum curing process.

• Laminate

- ❖ Superior toughness and excellent fatigue resistance.
- ❖ Good resistance to a broad range of organic and inorganic acids, alkalis, oxidizing chemical and salt solutions, commonly up to 203°F (95°C).

Physical Properties on 7781 E-Glass Fabric

- Standard weight: 0.092 lbs/sq. ft. (484 g/m²).
- Standard resin content: 38% by weight.
- Standard tack: good tack on both sides.
- Cured ply thickness: 0.010" (0.254 mm).

Typical Applications

- FRP parts for chemical resistance purposes.
- General-purpose composites.
- Marine.

Shelf Life

- 12 months @ 73°F (23°C).

Curing Conditions

UV-preg® M160 has to be laminated layer after layer with proper know how, to minimize air entrapment between the prepreg layers. The total laminate thickness should not exceed 3 mm. A transparent perforated release film and peel ply are recommended to be used with a vacuum bag to ensure good debulking and layers consolidation.

The curing starts only after exposing the laminate to sun or UV light, having a spectrum peak around 400 nm. Curing time ranges from 5-10 min depending on the laminate thickness and the UV light exposure.

Laminate Properties (3 mm thick vacuum cured under sun light for 10 min)

✓ Glass Transition Temperature (DSC): 125°C

Mechanical Properties	ASTM	E-Glass 7781	E-Glass WR
Flexural Strength, MPa Modulus, GPa	D-790	500-600 23-25	TBD TBD
Tensile Strength, MPa Modulus, GPa	D-3039	TBD TBD	TBD TBD
Compression Strength, MPa Modulus, GPa	D-695	TBD TBD	TBD TBD
Inter-laminar Shear Strength, MPa	D-2344	45-50	TBD

Storage and Handling

All UV-preg® prepregs are wrapped in a shrink film immediately after impregnation then packed into a barrier film. UV-preg® prepregs should be stored in their original packaging barrier film, or an equivalent film, and maintained airtightness, away from any UV light at less than 73°F (23°C), and dry place.

If the prepreg roll has to be maintained out of its packaging barrier film, for few hours during lamination and processing time, it should be wrapped up again in a shrink film. This will protect the prepreg and extend its out of the bag life time.

The small prepreg pieces that were cut from the roll in order to be laminated should be handled and protected properly. The release film must not be removed from the prepreg piece only when ready to be placed and laminated in the mold. The top release film must not be removed only when the following prepreg layer is ready to be placed. Such lamination care will ensure minimum styrene emission and working area highly environmentally friendly. The prepreg tack time out of the barrier packaging bag will be for several days, depending on the previous handling and protective caring.

Safety Precautions

Usual precautions should be observed. The prepreg contains mainly uncured synthetic resins. The operator has to use appropriate mask – respirator and work in a clean, dry (R.H. = 50% or less), and ventilated area. The use of clean disposable inert gloves provides protection for the operator and avoids contamination of material and components.

Important Notice

The data reported in this sheet are based on representative samples. Since the method and circumstances of handling and processing are keys to the material performance, Gulf Composite Materials L.L.C., does not guaranty these data. Users should make their own assessment of the suitability of any product for the performance required.