

Description

UV-preg® **M160** is an advanced vinyl ester prepreg with low styrene emission. **M160** curing starts immediately upon its exposure to sun or UV light, having a spectrum peak around 400 nm.

UV-preg® **M160** is available only in fiber glass reinforcements, and cannot be cured in more than 3 mm at one time. It can be cured easily in vacuum bagging using translucent release film and peel ply.

M160 is a great choice for many applications.

Physical Properties on E-Glass 7781

- Standard resin content: 32±3% by weight.
- Standard weight: 441±20 g/m².
- Standard tack: medium.
- Cured ply thickness at 48% FVF: 0.25 mm.

Typical Applications

- ✓ FRP parts for chemical resistance purposes.
- ✓ General-purpose composites.
- ✓ High performance marine sporting goods.

Key Features and Benefits

• **Prepreg**

- ✓ Fast UV curing: **5-10 min** for max 3 mm thickness.
- ✓ Shelf life: **12 months @ 73°F (23°C)**, and 24 months @ 41°F (5°C).
- ✓ Controlled flow and easy vacuum processing.
- ✓ Self-adhesive for secondary bonding.
- ✓ Excellent flexibility and handling.
- ✓ Easy curing with standard gel-coats.

• **Laminate**

- ✓ Superior toughness.
- ✓ Excellent fatigue and impact resistance.
- ✓ Tg (DSC) up to 252°F (**122°C**).

Cured Laminate Chemical Resistance

- ✓ Outstanding resistance to wide range of chemical such as:

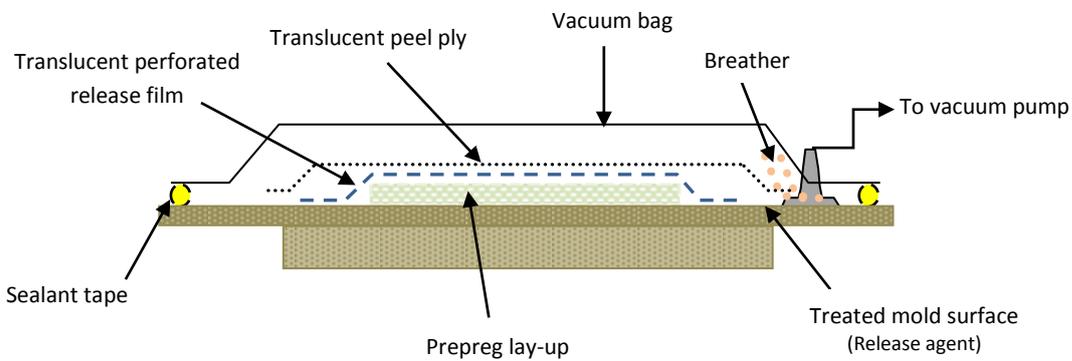
Chemicals	Conc. (%)	T (°F/°C)
Hydrochloric Acid	≤ 20	180/82
Hydrochloric Acid	21-30	150/65
Hydrobromic Acid	≤ 25	180/82
Nitric Acid Fumes		180/82
Olive Oil	100	210/99
Perchloric Acid	10	150/65
Phthalic Acid	All	210/99
Barium Hydroxide	All	150/65
Calcium Hydroxide	100	210/99
Potassium Nitrate	> 5	150/65
Sodium Hydroxide	All	180/82
Jet Fuel	100	140/60
Kerosene	100	180/82
Gas, Natural		210/99
Gasoline, Leaded	100	176/80



UV Vacuum Curing Cycle

- Apply 24" Hg vacuum for 3-5 minutes before exposing the part to UV rays or sun light.
- Hold the part under vacuum and well exposed to UV rays, having a spectrum peak in the range of **400 nm**, for **5-10 min**.
- Make sure that the whole part area has been exposed to the UV rays, prior to release vacuum pressure.

Recommended Bagging Arrangement



Cured Laminates Mechanical Performance

✓ 2.8-3 mm thick laminates cured @ sun light for 10 min.

Mechanical Properties @ 25 °C		ASTM Standard	E-Glass	
			8H Satin	Triax 0/±45
Fiber Areal Weight	(gsm)		300	900
Resin Content	(%)		30	30
Fiber Volume Fraction	(%)		52.5	52.5
0 ° Tensile,				
Strength,	Mpa	D-3039	475	495
Modulus,	Gpa		22	25
0 ° Flexural,				
Strength,	Mpa	D-790	570	685
Modulus,	Gpa		22	24
0 ° Compressive,				
Strength,	Mpa	D-695	440	460
Modulus,	Gpa		-	-
0 ° Interlaminar Shear,				
Strength,	Mpa	D2344	48	50



Storage and Handling

All UV-preg[®] prepregs are wrapped in a shrink film immediately after impregnation and then packed into a barrier film.

UV-preg[®] prepregs should be stored in their original packaging barrier film, or an equivalent film, and maintained air-tightness, away from any UV light, at 73°F (23°C) and dry place.

During storing and handling, the following notes must be considered:

- 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 prepreg tack time out of the barrier packaging bag will be for several days, depending on the previous handling and protective caring.
- 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.
- It is highly recommended to handle the prepreg at a clean area where relative humidity is $\leq 50\%$ and ambient temperature is 20-23°C.

Safety Precautions

Usual precautions, as following, must be considered:

- During lamination, it is recommended to wear appropriate disposable protective gloves.
- Protective glasses must be worn to avoid eyes contamination. In case of contamination, eyes must be flushed for 15 min and then medical treatment must be applied.
- After working, hands and contaminated skin, if any, have to be washed with soap and warm water. This has to be implemented as a routine practice.

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 does not guaranty these data. Users should make their own assessment of the suitability of any product for the performance required.

