

## Product Data Sheet

### Simprex<sup>®</sup> 1355

250°F (121°C) Curing Vinyl Ester Prepreg

#### Description

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Simprex<sup>®</sup> 1355 is an advanced vinyl ester Prepreg, with low styrene emission, designed to provide high strength retention at elevated temperature. It has a medium to high tack and is a great choice for many medium to high service temperature applications.

#### Features

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##### • Prepreg

- ❖ Fast curing cycle: **20 min @ 250°F (121°C)**.
- ❖ Suitable for low pressure: 1-3 bar.
- ❖ Excellent flexibility and handling.
- ❖ Controlled flow for ease processing (autoclave, press-mold & vacuum bagging).
- ❖ Weight loss < **1%**, as determined in a vacuum curing process.

##### • Laminate

- ❖ High strength and toughness retention at elevated temperature.
- ❖ Superior oxidation resistance and excellent resistance to acidic oxidizing environment, commonly up to 302°F (150°C).

#### Physical Properties on 7781 E-Glass Fabric

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- Standard weight: 0.092 lbs/sq. ft. (484 g/m<sup>2</sup>).
- Standard resin content: 38% by weight.
- Standard tack: good tack on both sides.
- Cured ply thickness: 0.010" (0.254 mm).

#### Typical Applications

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- FRP parts for chemical resistance purposes.
- Secondary aircraft structures.
- Electric.
- Electronic.

#### Shelf Life

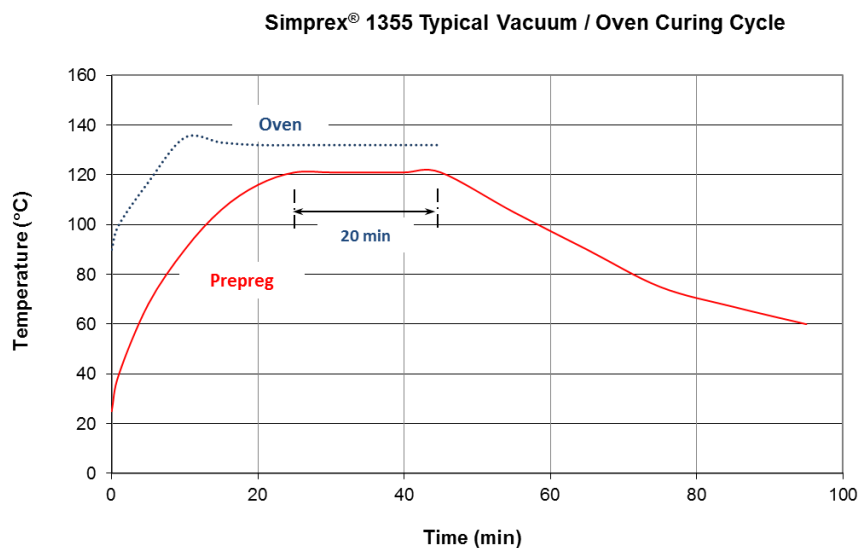
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- Minimum 6 months @ 68°F (20°C).

## Curing Conditions

Normal curing cycle is **20-25 min @ 250-257°F (121-125°C), under 1-3 bars pressure**. In press-mold, pressure should increase gradually to reach its maximum within 60-90 sec. In some applications, **a post-cure @ 302-329°F (150-165°C)**, is required for optimum performance.

- It must be understood that the curing time starts only after the prepreg temperature achieves the recommended temperature. This involves a dwell time which depends on the heating rate.



## Laminate Properties

✓ Glass Transition Temperature (DSC): 170-180°C

Mechanical Properties	ASTM	E-Glass 7781 ■	E-Glass 7781 *	Carbon 12K Stitched UD – (T700.) *
<b>Flexural</b> Strength, MPa Modulus, GPa	D-790	<b>550-650</b> <b>26-30</b>	TBD	TBD
<b>Tensile</b> Strength, MPa Modulus, GPa	D-3039	TBD TBD	TBD	TBD
<b>Compression</b> Strength, MPa Modulus, GPa	D-695	TBD TBD	TBD	TBD
<b>Inter-laminar Shear</b> Strength, MPa	D-2344	<b>55-64</b>	TBD	<b>46</b>

■ Laminate cured in press @ 121°C / 20 min / 3 bars, and then post-cured @ 165°C / 20 min.

♣ Laminate cured under vacuum @ 121°C / 20 min, and then post-cured @ 165°C / 20 min.

## Storage and Handling

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All Simprex® Prepregs are wrapped in a shrink film immediately after impregnation, then packed into a barrier film.

Simprex® Prepregs should be stored in their original packaging barrier film, or an equivalent film, and maintained air-tightness, at 68°F (20°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 tack time.

The small Prepreg pieces, splitted from the roll in order to be laminated, should be handled and protected properly (i.e. in a plastic bag or box), if not used with in a short time (i.e. around 1 hour). The tack time will ranges from 5-24 hours, depending on the handling and protective caring.

The styrene content in the Prepreg is ranging from 15 to 20%. When the Prepreg is left out with out any protection, its weight will drop up to 3% (representing the maximum volatiles content). This will cause significant tack reduction.

## Safety Precautions

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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

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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.