



Prepreg fabric data sheet

Code # C242T2pp

Prepreg Properties

| General Characteristics | | | |
|-------------------------|---------------------|-----------|-----------|
| | | Nominal | Tolerance |
| Mass unit per area | (g/m ²) | 387 | |
| Dry fabric areal weight | (g/m ²) | 240 | ±5% |
| Weave | | 2X2 Twill | |
| Thickness | (mm) | 0.25* | ±2.5% |

| Warp - Weft ratio | | | |
|--------------------------------|---------------------|--------------------------|--------------------------|
| | | Warp | Weft |
| Fiber description | | HS carbon fiber TR30S 3K | HS carbon fiber TR30S 3K |
| Thread count | (ends/cm) | 6 | 6 |
| Dry fabric weight distribution | (g/m ²) | 120 | 120 |
| Dry fabric weight distribution | (%) | 50 | 50 |
| Epoxy content by weight | (%) | | 38% |

(*) Theoretical thickness of compressed epoxy laminate with 40% of reinforcement in volume.

Note: Technical information furnished is based on laboratory findings and believed to be correct. No warranties of any kind are made except that the materials supplied are of standard quality. All risk and liabilities arising from handling, storage and use of products, as well as compliance with applicable legal restrictions, rests with the user.

Resin properties

Description

R627 is a modified epoxy resin suitable for impregnation of fibres as Carbon, Glass and Aramid. Its formulation makes it suitable for high cosmetic moulding parts with improved light strength. It is developed to obtain very low surface porosity parts with vacuum bagging or autoclave process technologies.

The formulation allows to obtain a partially impregnated prepreg with a special texture on the external resin surface, suitable for direct contact with the mould. The placement of first layer can be done by a slight pressure.

If the main requested characteristics of the final parts are cosmetic, it is possible to cure the parts with only vacuum in order to obtain a surface porosity reduction of more than 95% compared to standard prepreps. R627 is suitable also for autoclave processes, where complex mould geometries reduce the porosity; moreover, very good parts may be obtained when, due to technology or other processes, it is not allowed to work at maximum pressure.

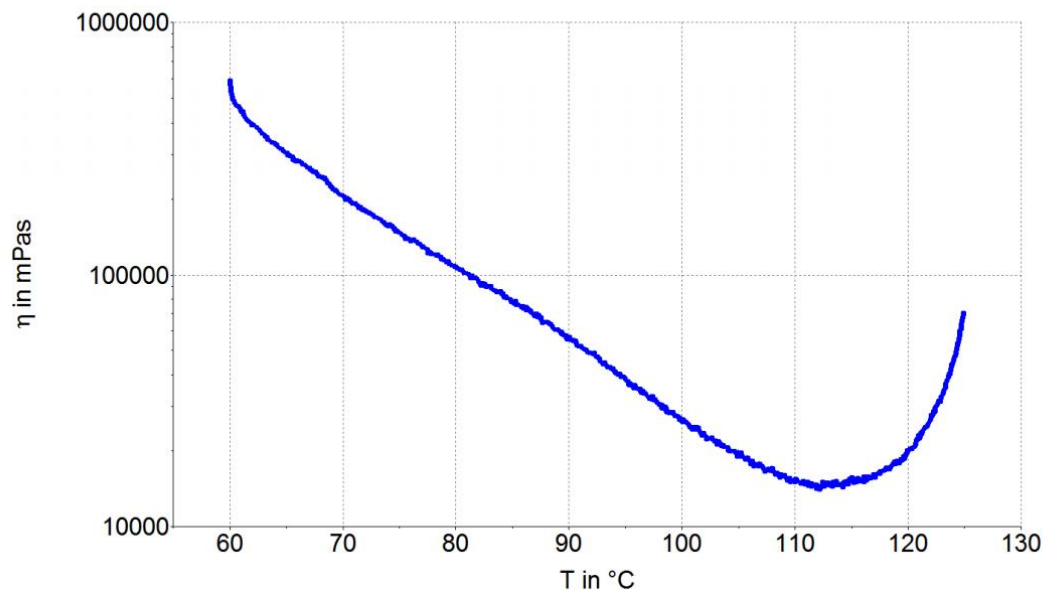
Features & Benefits

- ◆ Very low porosity surface
- ◆ High cosmetic results
- ◆ UV resistance improved
- ◆ Vacuum bag process only

| General Characteristics | | |
|-------------------------|----------------------|------------------|
| | | Toughened |
| Cured resin's density | (g/cm ³) | 1.18 to 1.29 |
| Gel Time at 125 °C | (min) | 7 to 8 |
| Tack | | Medium to low |
| Out-life (23 °C) | (weeks) | 5 |
| Shelf Life (-18 °C) | (months) | 12 |

Viscosity Profile

The plot under depicted below is performed with cone-plate rehometer starting from 60°C until viscosity kicks off. Parameters: frequency 0.03 Hz and heating rate 3 °C /min.



Curing cycles

| Curing Temperature (°C) | Time (h) | Tg (TanDelta DMA, °C) |
|-------------------------|----------|-----------------------|
| 80 | 12 | 110-115 |
| 135 | 1 | 120-125 |

Process description

1. Place the prepreg as first layer.
2. Continue the lamination using other prepregs. The dimensions of the others layers must be equal or larger than the first, not smaller.
3. After closing the vacuum bag, heat at room temperature for 60 minutes or more for complex and large parts.
4. Heat from room temperature to 70-75 °C at heating rate between 1 and 3°C/minutes, with applied vacuum value higher than 900 mbar.
5. Keep the temperature (70-75 °C) for 60 minutes or more for complex and large parts.
6. Heat from 70-75 °C to 130-135°C at heating rate between 1 and 3°C/minutes; keep applied vacuum value higher than 900 mbar.
7. Keep the temperature (130-135 °C) for 60 minutes or more for complex and large parts. Keep applied vacuum value higher than 900 mbar.
8. Cool and extract the part.

TO OBTAIN GOOD RESULTS VIA VACUUM BAGGING TECHNOLOGY IT IS NECESSARY TO APPLY VACUUM HIGHER THAN 900 mbar; LOWER VALUES OR LEACKAGES WILL RESULT IN HIGHER POROSITY.

Storage

This prepreg should be stored as received in a cool dry place or in a refrigerator. Storage life at different temperatures:

12 Months at -18 °C

5 weeks at +23 °C

After removal from refrigerator storage, prepreg should be allowed to reach room temperature before opening the polythene bag to prevent water condensation.

Material handling - safety

Operators should wear protective gloves to avoid direct contact with the skin and to prevent product contamination. Please consult MSDS.

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