# Glastic® TSF 1312

### Thermoset Polyester

#### Glastic Corporation

#### Message:

Glastic TSF 1312 general-purpose laminate is the most cost-effective fiberglass-reinforced laminate sheet available from Glastic. This resin exhibits outstanding punchability in thin thicknesses. It is widely used in motors and dry-type transformers, as well as a variety of other applications.

| General Information                 |                                 |          |             |
|-------------------------------------|---------------------------------|----------|-------------|
| Filler / Reinforcement              | Glass fiber reinforced material |          |             |
| Features                            | General                         |          |             |
| Uses                                | Laminate                        |          |             |
|                                     | Sheet                           |          |             |
|                                     | General                         |          |             |
|                                     |                                 |          |             |
| UL File Number                      | E23525                          |          |             |
| Appearance                          | Brown                           |          |             |
| Forms                               | Particle                        |          |             |
| Physical                            | Nominal Value                   | Unit     | Test Method |
| Specific Gravity                    | 1.78                            | g/cm³    | ASTM D792   |
| Water Absorption (24 hr)            | 0.30                            | %        | ASTM D570   |
| Mechanical                          | Nominal Value                   | Unit     | Test Method |
| Tensile Strength (yield, 1.60mm)    | 64.8                            | МРа      | ASTM D638   |
| Flexural Strength (yield, 1.60mm)   | 154                             | MPa      | ASTM D790   |
| Compressive Strength (1.60 mm)      | 268                             | МРа      | ASTM D695   |
| Shear Strength                      | 92.4                            | МРа      | ASTM D732   |
| Impact                              | Nominal Value                   | Unit     | Test Method |
| Notched Izod Impact (1.60 mm)       | 430                             | J/m      | ASTM D256   |
| Thermal                             | Nominal Value                   | Unit     | Test Method |
| CLTE - Flow (1.60 mm)               | 2.2E-5                          | cm/cm/°C | ASTM D696   |
| Thermal Conductivity                | 0.26                            | W/m/K    | ASTM C177   |
| RTI Elec (1.60 mm)                  | 130                             | °C       | UL 746      |
| RTI (1.60 mm)                       | 130                             | °C       | UL 746      |
| Electrical                          | Nominal Value                   | Unit     | Test Method |
| Dielectric Strength <sup>1</sup>    |                                 |          | ASTM D149   |
| 1.60 mm, in Air                     | 16                              | kV/mm    | ASTM D149   |
| 1.60 mm, in Oil                     | 19                              | kV/mm    | ASTM D149   |
| Dissipation Factor (1.60 mm, 60 Hz) | 9.5E-3                          |          | ASTM D150   |
| Arc Resistance (1.60 mm)            | 127                             | sec      | ASTM D495   |
| Flammability                        | Nominal Value                   | Unit     | Test Method |
| Flame Rating (1.60 mm)              | НВ                              |          | UL 94       |

 Oxygen Index (1.60 mm)
 22
 %
 ASTM D2863

#### Additional Information

NEMA Grade: GPO-1/GPO-1PInsulation Resistance, ASTM D257: 2.4e12 ohms

NOTE

1. Method A (short time)

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