



**Product Data Sheet &
General Processing Conditions**

**VLF 82311 A
Rigid Thermoplastic Polyurethane
(RTPU)
Long Glass Fiber**

PROPERTIES & AVERAGE VALUES OF INJECTION MOLDED SPECIMENS

| PERMANENCE | English | SI Metric | ASTM TEST |
|--|-----------------------|------------------|------------------|
| Primary Additive | 60 % | 60 % | |
| Specific Gravity | 1.71 | 1.71 | D 792 |
| Molding Shrinkage 1/8 in (3.2 mm) section | 0.0005 - 0.0020 in/in | 0.05 - 0.20 % | D 955 |

MECHANICAL

| | | | |
|--|----------------------------|-------------|--------|
| Impact Strength, Izod notched 1/8 in (3.2 mm) section | 9.0 ft-lbs/in | 481 J/m | D 256 |
| unnotched 1/8 in (3.2 mm) section | 30.0 ft-lbs/in | 1602 J/m | D 4812 |
| Tensile Strength | 32000 psi | 221 MPa | D 638 |
| Tensile Elongation | 2.0 - 3.0 % | 2.0 - 3.0 % | D 638 |
| Tensile Modulus | 2.50 x 10 ⁶ psi | 17238 MPa | D 638 |
| Flexural Strength | 48000 psi | 331 MPa | D 790 |
| Flexural Modulus | 2.50 x 10 ⁶ psi | 17238 MPa | D 790 |

THERMAL

| | | | |
|--|--------------|-------------|-------|
| Deflection Temperature @ 264 psi (1820 kPa) | 200 °F | 93 °C | D 648 |
| Ignition Resistance* Flammability** | HB @ 1/16 in | HB @ 1.5 mm | D 635 |

PROPERTY NOTES

Data herein is typical and not to be construed as specifications.

Unless otherwise specified, all data listed is for natural or black colored materials. Pigments can affect properties.

* This rating is not intended to reflect hazards of this or any other material under actual fire conditions.

** Values per RTP Company testing.

GENERAL PROCESSING FOR INJECTION MOLDING

| | English | SI Metric |
|--------------------|-------------------|------------------|
| Injection Pressure | 10000 - 15000 psi | 69 - 103 MPa |
| Melt Temperature | 430 - 470 °F | 221 - 243 °C |
| Mold Temperature | 125 - 200 °F | 52 - 93 °C |
| Drying | 6 hrs @ 225 °F | 6 hrs @ 107 °C |
| Moisture Content | 0.01 % | 0.01 % |
| Dew Point | -40 °F | -40 °C |

PROCESSING NOTES

Use a reverse barrel profile. To maximize fiber length, the following injection barrel, screw, and tip designs should be followed. L/D ratio 16/1 - 22/1, Compression ratio 2:1, Flight depth 0.200 in (5 mm) minimum, in feed section, Screw diameter 0.65 - 0.80 in (16.5 - 20 mm) minimum, Compression section length 12 - 13 diameters, Check ring valve assembly - free flow type no restrictions, Nozzle orifice 0.250 in (6 mm) diameter. Feed throat from hopper to machine must have sufficient opening to prevent bridging of long pellet composition.

Desiccant Type Dryer Required.