



**Product Data Sheet &  
General Processing Conditions**

**VLF 82309 A  
Rigid Thermoplastic Polyurethane  
(RTPU)  
Long Glass Fiber**

**PROPERTIES & AVERAGE VALUES OF INJECTION MOLDED SPECIMENS**

| <b>PERMANENCE</b>                            | <b>English</b>        | <b>SI Metric</b> | <b>ASTM TEST</b> |
|--|-----------------------|------------------|------------------|
| Primary Additive                             | 50 %                  | 50 %             |                  |
| Specific Gravity                             | 1.60                  | 1.60             | D 792            |
| Molding Shrinkage<br>1/8 in (3.2 mm) section | 0.0010 - 0.0020 in/in | 0.10 - 0.20 %    | D 955            |

**MECHANICAL**

|  |                            |             |        |
|--|----------------------------|-------------|--------|
| Impact Strength, Izod<br>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   | 34000 psi                  | 234 MPa     | D 638  |
| Tensile Elongation                                       | 2.0 - 3.0 %                | 2.0 - 3.0 % | D 638  |
| Tensile Modulus  | 1.80 x 10 <sup>6</sup> psi | 12411 MPa   | D 638  |
| Flexural Strength  | 50000 psi                  | 345 MPa     | D 790  |
| Flexural Modulus   | 1.80 x 10 <sup>6</sup> psi | 12411 MPa   | D 790  |

**THERMAL**

|  |              |             |       |
|--|--------------|-------------|-------|
| Deflection Temperature<br>@ 264 psi (1820 kPa) | 235 °F       | 113 °C      | D 648 |
| Ignition Resistance*<br>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**

|                    | <b>English</b>    | <b>SI Metric</b> |
|--------------------|-------------------|------------------|
| 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.

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complex, a set solution will not solve all problems. Observation on a "trial and error" basis may be required to achieve desired results.

Data are obtained from specimens molded under carefully controlled conditions from representative samples of the compound described herein. Properties may be materially affected by molding techniques applied and by the size and shape of the item molded. No assurance can be implied that all molded articles will have the same properties as those listed.

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