MATERIAL DATA SHEET

Rigid

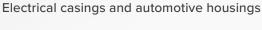
Rigid Resin for Stiffness and Precision

Rigid Resin is reinforced with glass to offer very high stiffness and a polished finish. This material is highly resistant to deformation over time and is great for printing thin walls and features. Requires Resin Tank LT.

Turbines and fan blades

Jigs, fixtures, and tooling

Manifolds



FLRGWH01

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To the best of our knowledge the information contained herein is accurate. However, Formlabs, Inc. makes no warranty, expressed or implied, regarding the accuracy of these results to be obtained from the use thereof.

Material Properties Data

| | METRIC ¹ | | IMPERIAL ¹ | | METHOD |
|----------------------------------|---------------------|-------------------------|-----------------------|-------------------------|---------------|
| | Green ² | Post-Cured ³ | Green ² | Post-Cured ³ | |
| Tensile Properties | | | | | |
| Ultimate Tensile Strength | 40 MPa | 75 MPa | 5801 psi | 10907 psi | ASTM D 638-14 |
| Tensile Modulus | 2.2 GPa | 4.1 GPa | 319 ksi | 594 ksi | ASTM D 638-14 |
| Elongation | 13.3 % | 5.6 % | 13.3 % | 5.6 % | ASTM D 638-14 |
| Flexural Properties | | | | | |
| Flexural Stress at 5% Strain | 49 MPa | 121 MPa | 7135 psi | 17593 psi | ASTM D 790-15 |
| Flexural Modulus | 1.37 GPa | 3.7 GPa | 198 ksi | 537 ksi | ASTM D 790-15 |
| Impact Properties | | | | | |
| Notched IZOD | not tested | 18.8 J/m | not tested | 0.37 ft-lbf/in | ASTM D256-10 |
| Temperature Properties | | | | | |
| Heat Deflection Temp. @ 1.8 MPa | not tested | 74 °C | not tested | 165.2 °F | ASTM D 648-16 |
| Heat Deflection Temp. @ 0.45 MPa | not tested | 88 °C | not tested | 190.4 °F | ASTM D 648-16 |
| Thermal Expansion (-30 to 30° C) | not tested | 53 µm/m/°C | not tested | 29.5 µin/in/°F | ASTM E 831-13 |

¹Material properties can vary with part geometry, print orientation, print settings, and temperature. 2 Data was obtained from green parts, printed using Form 2, 100 $\mu m,$ Rigid settings, without additional treatments.

 3 Data was obtained from parts printed using Form 2, 100 $\mu m,$ Rigid settings and post-cured with a Formcure for 120 minutes at 80 C.

Solvent Compatibility

Percent weight gain over 24 hours for a printed and post-cured 1 x 1 x 1 cm cube immersed in respective solvent:

| Solvent | 24 hr weight gain (%) | Solvent | 24 hr weight gain (%) |
|---------------------------------|-----------------------|-------------------------------------|-----------------------|
| Acetic Acid, 5 % | 0.8 | Hydrogen Peroxide (3 %) | 0.87 |
| Acetone | 3.27 | Isooctane | 0.05 |
| Isopropyl Alcohol | 0.38 | Mineral Oil, light | 0.22 |
| Bleach, ~5 % NaOCl | 0.69 | Mineral Oil, heavy | 0.15 |
| Butyl Acetate | 0.09 | Salt Water (3.5 % NaCl) | 0.71 |
| Diesel | 0.06 | Sodium hydroxide (0.025 %, pH = 10) | 0.68 |
| Diethyl glycol monomethyl ether | 1.37 | Water | 0.7 |
| Hydrolic Oil | 0.17 | Xylene | 0.09 |
| Skydrol 5 | 1.11 | Strong Acid (HCI Conc) | 5.34 |