RenShape® SL 7820

Accurate and durable black colored SL resin

Key features
- Black parts with high strength and good dimensional stability, even in humid conditions
- ABS like, fine surface
- Low viscosity supports easy recoating during the build as well as good drainage for fast cleaning
- Good green strength requires minimal finishing

Key benefits
- Users can build accurate, robust parts in black color without painting
- Throughput is increased with minimal part finishing

Key applications
Designed for use on solid state SLA® platforms to build automotive parts, consumer packaging, electronics housing, toys, etc…
RenShape® SL 7820 stereolithography material is a white, low viscosity and stable liquid that produces strong black models and prototypes with good surface finish and detail, and ABS-like appearance. It offers a large working envelope of physical properties, high elongation and impact strength suitable for building concept models, and functional prototype parts.

### Liquid material
- **Appearance**: White liquid
- **Density**
  - at 25°C (77°F): 1.13 g/cm³
- **Viscosity**
  - at 28°C (82°F): 240 cps
  - at 30°C (86°F): 210 cps
- **Penetration depth (Dp)**: 4.5 mils
- **Critical exposure (Ec)**: 10 mJ/cm²
- **Part building layer thickness**:
  - 0.10 mm (0.004 in.)
  - Dependent upon part geometry and build parameters

### Post-cured material
- **Hardness**
  - ASTM D-2240: 86 Shore D
  - ASTM D-2240: 87 Shore D
- **Flexural modulus**
  - ASTM D-790: 2,000-2,400 MPa (290-348 ksi)
  - ASTM D-790: 2,100-2,500 MPa (304-362 ksi)
- **Flexural strength**
  - ASTM D-790: 59-80 MPa (8.500-11.100 psi)
  - ASTM D-790: 62-80 MPa (9.000-11.100 psi)
- **Tensile modulus**
  - ASTM D-638: 1,900-2,400 MPa (274-348 ksi)
  - ASTM D-638: 2,000-2,500 MPa (290-362 ksi)
- **Tensile strength**
  - ASTM D-638: 36-51 MPa (5200-7400 psi)
  - ASTM D-638: 39-51 MPa (5700-7400 psi)
- **Elongation at break**
  - ASTM D-638: 8-18%
  - ASTM D-638: 9-14%
- **Impact strength, notched Izod**
  - ASTM D-256: 42-49 J/m (5.79-6.91 ft.-lb./in.)
  - ASTM D-256: 30-49 J/m (4.08-6.03 ft.-lb./in.)
- **Heat deflection temperature**
  - ASTM D-648 @ 66 psi: 51°C (124°F)
  - ASTM D-648 @ 66 psi: 50°C (122°F)
- **Glass transition, Tg**
  - DMA, E' peak: 62°C (144°F)
  - DMA, E' peak: 62°C (144°F)
- **Coefficient of thermal expansion**
  - TMA (T<Tg): 93x10⁻⁶ / °C
  - TMA (T<Tg): 93x10⁻⁶ / °C
- **Color**: Dark brown to black

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