HUNTSMAN

Enriching lives through innovation

Renshapesl

Accurate and durable black coloured 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
- Throughput is increased with reduced cure time and minimal part finishing
- Black color produces aesthetically pleasing parts with an ABS-like appearance

Key applications

RenShape SL 7820 is a black, low viscosity stereolithography resin with excellent accuracy, designed for use on solid state SLA® platforms. It offers a large working envelope of physical properties, high elongation and impact strength suitable for building concept models, functional prototype parts



RenShape[®] SL

RenShape® SL 7820 stereolithography material is a white, low viscosity stable liquid that produces strong black models and prototypes with good surface finish and detail, an ABS-like appearance. The product is also well suited for building RTV patterns. Parts built with SL7820 exhibit durability over time beyond 6 months.

Liquid material

Appearance	White liquid	
Density at 25°C (77°F)	1.13 g/cm ³	
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/cm ²	
Part building layer thickness*	0.10 mm (0.004 in.)	

* Dependent upon part geometry and build parameters

Comparison tables



Post-cured material

	90-minute UV post-cure	90-minute UV + 2 hours @ 80°C (176°F) thermal post-cure
Hardness ASTM D-2240	86 Shore D	87 Shore D
Flexural modulus	2 000-2 400 MPa	2 100-2 500 MPa
ASTM D-790	(290-348 ksi)	(304-362 ksi)
Flexural strength	59-80 MPa	62-80 MPa
ASTM D-790	(8 500-11 100 psi)	(9 000-11 100 psi)
Tensile modulus	1 900-2 400 MPa	2 000-2 500 MPa
ASTM D-638	(274-348 ksi)	(290-362 ksi)
Tensile strength	36-51 MPa	39-51 MPa
ASTM D-638	(5 200-7 400 psi)	(5 700-7 400 psi)
Elongation at break ASTM D-638	8-18%	9-14%
Impact strength, notched Izod	42-48 J/m	30-49 J/m
ASTM D-256	(0.79-0.91 ftlb./in.)	(0.88-0.93 ftlb./in.)
Heat deflection temperature	51°C	50°C
ASTM D-648 @ 66 psi	(124°F)	(122°F)
ASTM D-648 @ 264 psi	-°C (-°F)	-°C (-°F)
Glass transition, Tg	62°C	62°C
DMA, E [°] peak	(144°F)	(144°F)
Coefficient of thermal expansion TMA (T <tg)< th=""><th>93x10⁻⁶ / °C</th><th>93x10⁻⁶ / °C</th></tg)<>	93x10 ⁻⁶ / °C	93x10 ⁻⁶ / °C
Cured density	1.16 g/cm ³	-





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