

## Advanced Materials

# RenShape<sup>®</sup> SL 7820

STEREOLITHOGRAPHY MATERIALS  
For use on Solid State Laser SLA<sup>®</sup> Systems

White to black resin  
ABS Like Performance  
Good Durability

### DESCRIPTION

RenShape<sup>®</sup> 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.

MEASUREMENT	CONDITION	VALUE
Appearance		White liquid
Density	@ 25°C (77°F)	1.13 g/cm <sup>3</sup>
Viscosity	@ 28°C (82°F)	240 cps
Viscosity	@ 30°C (86°F)	210 cps
Penetration depth (Dp)		4.5 Mills
Critical exposure (Ec)		10 mJ/cm <sup>2</sup>
Part building layer thickness*		0.10mm (0.004 in.)

\* Dependent upon part geometry and build parameters.

### POST-CURED MATERIAL

MEASUREMENT	TEST METHOD	VALUE 90-minute UV post-cure	VALUE 90-minute UV + 2 hours @ 80°C (176°F) thermal postcure
Hardness, Shore D	ASTM D-2240	86	87
Flexural modulus	ASTM D-790	2000-2,400 MPa (290-348 ksi)	2100-2,500 Mpa (304-362 ksi)
Flexural strength	ASTM D-790	59-80 Mpa (8,500-11,100 psi)	62-80 Mpa (9,000-11,100 psi)
Tensile modulus	ASTM D-638	1,900-2,400 MPa (274-348 ksi)	2,000-2,500 Mpa (290-362 ksi)
Tensile strength	ASTM D-638	36-51 Mpa (5,200-7,400 psi)	39-51 Mpa (5,700-7,400 psi)
Elongation at break	ASTM D-638	6-16%	7-13%
Impact strength, notched Izod	ASTM D-256	42-48 J/m (0.79-0.91 ft.-lb./in.)	30-49 J/m (0.88-0.93 ft.-lb./in.)
Heat deflection temperature	ASTM D-648 @ 66 psi @ 264 psi	51°C (124°F) --°C (--°F)	50°C (122°F) --°C (---°F)
Glass transition, Tg	DMA, E" peak	62°C (144°F)	62°C (144°F)
Coefficient of thermal expansion	TMA (T<Tg)	93 x 10 <sup>-6</sup> /°C	93 x 10 <sup>-6</sup> /°C
Cured Density		1.16g/cm <sup>3</sup>	

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**FIRST AID !**

Eyes and skin : Flush eyes with water for 15 minutes. Contact a physician if irritation persists. Wash skin thoroughly with soap and water. Remove and wash contaminated clothing before reuse.

Inhalation : Remove subject to fresh air.

Swallowing : Dilute by giving water to drink and contact a physician promptly. Never give anything to drink to an unconscious person.

**KEEP OUT OF REACH OF CHILDREN****FOR PROFESSIONAL AND INDUSTRIAL USE ONLY**

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Main Office :  
**Huntsman Advanced Materials (Switzerland) GmbH**  
Klybeckstrasse 200  
4057 BASEL  
Switzerland  
+41 61 966 3333