

# Stereolithography Materials

**SL**  
DIRECT

## RenShape® SL 7545

for use on  
**Solid State Laser**  
SLA® systems

### Durable Stereolithography Material for Polypropylene-like Parts

- High green strength
- Accurate material with wide process latitude
- Excellent side walls and fine features
- High durability
- High elongation at break
- Suitable for snap-fit parts

#### Liquid Material

MEASUREMENT	CONDITION	VALUE
Appearance		Clear Amber
Density	@ 25°C (77°F)	1.15 g/cm <sup>3</sup>
Viscosity	@ 28°C (82°F)	430 cps
Viscosity	@ 30°C (86°F)	350 cps
Penetration depth (Dp)		6.6 mils
Critical exposure (Ec)		9.6 mJ/cm <sup>2</sup>
Part building layer thickness*		0.10mm (0.004in)    0.15mm (0.006in)

#### Post-Cured Material

\*Dependent upon part geometry and build parameters.

MEASUREMENT	TEST METHOD	**VALUE	**VALUE
		90-minute UV post-cure	90-minute UV + 2 hours @ 80°C thermal post-cure
Hardness, Shore D	ASTM D 2240	79	81
Flexural modulus	ASTM D 790	1,390 - 1,560 MPa (200 - 225 KSI)	1,460- 1,600 MPa (210 - 230 KSI)
Flexural strength	ASTM D 790	50 - 55 MPa (7,300 - 8,000 PSI)	52 - 56 MPa (7,500 - 8,100 PSI)
Tensile modulus	ASTM D 638	1,400 - 1,900 MPa (200 - 275 KSI)	1,500 - 1,900 MPa (220 - 280 KSI)
Tensile strength	ASTM D 638	35 - 40 MPa (5,000 - 5,700 PSI)	35 - 40 MPa (5,000 - 5,700 PSI)
Elongation at break	ASTM D 638	12 - 21%	10 - 16%
Impact strength, notched Izod	ASTM D 256	28 - 39 J/m (0.5 - 0.7 ft - lbs/in)	22 - 33 J/m (0.4 - 0.6 ft - lbs/in)
Heat deflection temperature	ASTM D 648	@ 66 PSI: 48 - 50°C (118 - 122°F) @ 264 PSI: 43 - 48°C (109 - 118°F)	58 - 60°C (136 - 140°F) 48 - 50°C (118 - 122°F)
Glass transition, Tg	DMA, E" peak	55°C (131°F)	58°C (136°F)
Density		1.19 g/cm <sup>3</sup>	

\*\*Values dependent upon SLA system and build parameters.

**Caution:** Our products are generally quite harmless to handle provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should be taken to prevent the uncured materials from coming in contact with the skin, since people with particularly sensitive skin may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary; likewise the use of eye protection. The skin should be thoroughly cleansed at the end of each working period by washing with soap and warm water. The use of solvents is to be avoided. Disposable paper - not cloth towels - should be used to dry the skin. Adequate ventilation of the working area is recommended. These precautions are described in greater detail in the Material Safety Data sheets for the individual products and should be referred to for fuller information.

All recommendations for the use of our products, whether given by us in writing, verbally, or to be implied from the results of tests carried out by us, are based on the current state of our knowledge. Notwithstanding any such recommendations the Buyer shall remain responsible for satisfying himself that the products as supplied by us are suitable for his intended process or purpose. Since we cannot control the application, use or processing of the products, we cannot accept responsibility therefore. The Buyer shall ensure that the intended use of the products will not infringe any third party's intellectual property rights. We warrant that our products are free from defects in accordance with and subject to our general conditions of supply.

Protected by one or more of the following patents: US 5,476,748; US 6,100,007; US 6,136,497; US 5,972,563

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