

Stereolithography Materials

SL
DIRECT

RenShape® SL 5170

for use on
SLA® 190/250
system

Highly Accurate Stereolithography Material for Master Patterns

- Low viscosity
- Wide process latitude and high yield
- Highly accurate with superior surface finish
- Suitable for QuickCast™ applications
- Suitable as master patterns for tooling inserts
- Suitable for form, fit and function testing

Liquid Material

MEASUREMENT	CONDITION	VALUE
Appearance		Clear Amber
Density	@ 25°C (77°F)	1.14 g/cm ³
Viscosity	@ 28°C (82°F)	220 cps
Viscosity	@ 30°C (86°F)	165 - 195 cps
Penetration depth (Dp)		4.8 mils
Critical exposure (Ec)		13.5 mJ/cm ²
Part building layer thickness*		0.10 mm (0.004 in) 0.15 mm (0.006 in)

Post-Cured Material

*Dependent upon part geometry and build parameters.

MEASUREMENT	TEST METHOD	VALUE
		90-minute UV post-cure
Hardness, Shore D	ASTM D 2240	85
Flexural modulus	ASTM D 790	2,920 - 3,006 MPa (423 - 436 KSI)
Flexural strength	ASTM D 790	107 - 108 MPa (15,500 - 15,700 PSI)
Tensile modulus	ASTM D 638	3,737 - 4,158 MPa (542 - 603 KSI)
Tensile strength	ASTM D 638	59 - 60 MPa (8,600 - 8,800 PSI)
Elongation at break	ASTM D 638	7 - 19%
Impact strength, notched Izod	ASTM D 256 DIN 53455/ISO R 527	27 - 37 J/m (0.5 - 0.7 ft - lbs/in)
Heat deflection temperature	ASTM D 648 @ 66 PSI @ 264 PSI	55°C (131°F) 49°C (120°F)
Glass transition, Tg	DMA, E" peak	65 - 90°C (149 - 184°F)
Coefficient of thermal expansion	TMA (T<Tg)	90 x 10 ⁻⁶ /°C
Thermal conductivity		0.200 W/m °K (4.78 x 10 ⁻⁴ cal/sec.cm.°C)
Density		1.22 g/cm ³

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 therefor. 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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