

RigidBlack (TOP31B)

Production Description

TOP31B is an gray/black ABS like SL resin which is accurate and durable. It is designed for solid state SLA platforms. TOP31B can be applied for master molds, concept models, general parts and functional prototypes in the field of automotive and consumer electronics. The durability of the material might deteriorate over time, depending on application (exposure to UV).

Typical features

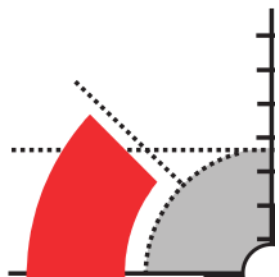
- Liquid resin medium viscosity, easy to clean parts and machines
- Strength and dimensions retention of parts remain in humid conditions.
- Parts need minimal finishing after printing
- Long shelf life in machine

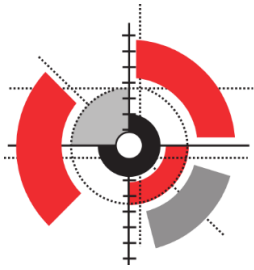
Typical Benefits

- Easy to post cure
- Building accurate and tough parts with an improved dimensional stability
- High quality and dimension control for vacuum casting parts
- Low shrink and good resistance to yellowing (UV)
- Outstanding machinability on SLA machines

Physical Properties – liquid material

Appearance	Grey
Density	1.11 – 1.15 g cm ³ @ 25C
Viscosity	510 – 590 cps @ 25C
Dp	0.135 – 0.158 mm
Ec	8.3-9.2 mJ/cm ²
Layer thickness	0.05-0.1mm





Mechanical properties of post-cured material

Measurement	Test Method	Value
		90min UV post cure
Hardness Shore D	ASTM D 2240	78-88
Flexural Modulus, Mpa	ASTM D 790	2,722-2.792
Flexural strength, Mpa	ASTM D 790	69-76
Tensile modulus, Mpa	ASTM D 638	2.649-2.731
Tensile strength, Mpa	ASTM D 638	41-58
Elongation at break	ASTM D 638	7-11%
Poisson's Ratio	ASTM D 638	0,4-0,44
Impact strength notched Izod J/m	ASTM D 256	29-34
Heat deflection temperature C	ASTM D 648 @66PSI	58~69
Glass transition Tg, C	DMA, E'' peak	62~75
Coefficient of thermal expansion, C	TMA(T,Tg)	90~103*E-6
Density, g/cm3		1.12~1.18
Dielectric Constrant 60Hz	ASTM D 150-98	4.2~5.0
Dielectric Constant 1kHz	ASTM D 150-98	3.3~4.2
Dielectric Constant 1MHz	ASTM D 150-98	3.2~4.0
Dielectric Strength, kV/mm	ASTM D 1549-97a	12.8~16.1

