Version 2021/04/14

LOCTITE 3D 3860™

HDT180 High Temperature Photoplastic Black

LOCTITE®
Henkel Corporation
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LOCTITE®

3860™

HDT180 HIGH TEMPERATURE
PHOTOPLASTIC
BLACK

LOCTITE 3D IND3860™

LOCTITE 3D 3860 is a rigid resin that withstands high temperature stress and it is ideal for applications where high resolution and high HDT is required

Printed articles made from LOCTITE 3D 3860 exhibit high heat deflection temperature (HDT) and good print resolution.

LOCTITE 3D 3860 is a low viscosity liquid, printable at room temperature across various DLP Platforms.

Benefits:

- No deformation, more durable
- Survives longer to temperature stress
- Easy to print with high print resolution

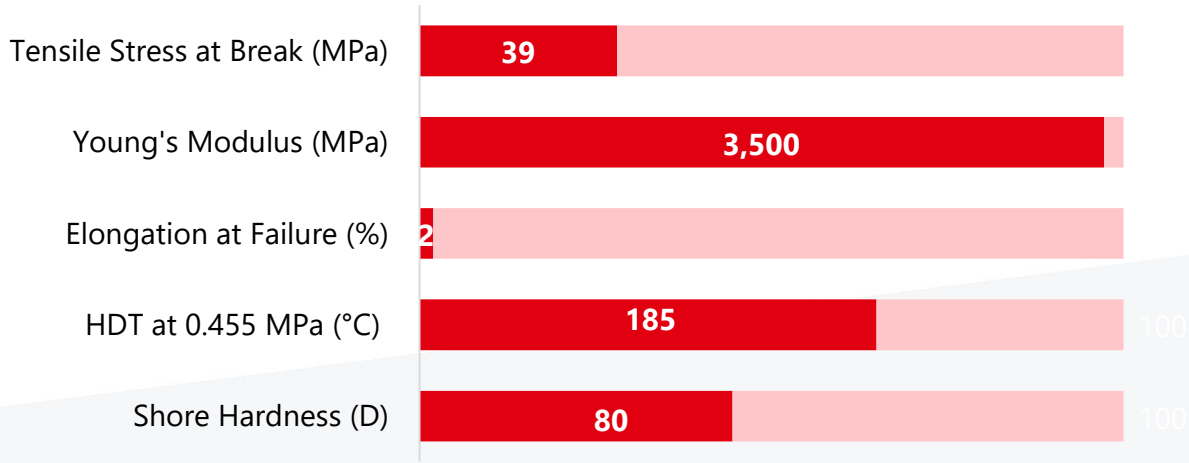
Ideal for:

- Functional prototyping
- Encapsulation
- Mounts and housings

Markets:

Industry

Automotive



**Values shown are linked to LOCTITE 3860 Black as reference, please refer to the specific mechanical properties for each of the colors shown in this document*

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MECHANICAL PROPERTIES

Mechanical Properties	Measure	Method	Green	Post Processed (Loctite CL36)
Tensile Stress at Break	MPa	ASTM D638	35	39
Young's Modulus	MPa	ASTM D638	1,800	3,500
Elongation at Break	%	ASTM D638	4	2
Other Properties				
HDT at 0.455 MPa	°C	ASTM D648	57	185
Thermal conductivity	mW/m*K	ASTM D5930	-	193
Specific heat capacity	J/g*K	ASTM D5930	-	1.21
Shore Hardness	D	ASTM D2240	-	80

Liquid Properties	Measure	Method	Value
Viscosity at 25°C (77°F)	MPa	ASTM D7867	400
Liquid Density	g/cm³	ASTM D1475	1,1

"All specimen are printed unless otherwise noted. All specimen were conditioned in ambient lab conditions at 19-23°C / 40-60% RH for at least 24 hours." ASTM Methods: D638 Type IV, 5 mm/min, D790-B, 2 mm/min, D648, D256 Notched IZOD (Machine Notched), 6 mm x 12 mm, D570 0.125" x 2" Disc 24hr@ 25°C, D2240, Type "D" (0, 3 seconds), D7867, D1475

Internal Data Sources:
n/a

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MACHINE SETTINGS

LOCTITE 3D 3860 is formulated to print optimally on any DLP machine. It is recommended to print with 385 nm wavelength projectors with irradiance between 3-7 mW/cm^2. Layer time is given below at 5 mW/cm^2:

Layer Thickness (µm):	25	50	100
First layer time (s)	Available upon request		
Burn in region (s):			

Ec (mJ/cm^2)	9.08
Dp (mm):	0.162

POST PROCESSING

LOCTITE 3D 3860 requires post processing to achieve specified properties. Prior to post curing, support structures should be removed from the printed part, and the part should be washed in a compatible cleaner. LOCTITE recommends either IPA or Cleaner C in 2-minute interval wash cycles. Use compressed air to remove residual solvent from the surface of the material between intervals. Exact times and methods can be found by contacting us at www.loctiteAM.com.

ADDITIONAL DEVELOPMENT OPTIONS

Colors: LOCTITE 3D 3860 formula is made with additional pigment colors.

Formula Modification LOCTITE 3D 3860 are possible.

LCD printers: LOCTITE 3D 3860 more development needed but could be possible with clear resin formulation.

POST CURING

LOCTITE 3D 3860 can be cured by exposure to ultraviolet and/or visible light of sufficient intensity and wavelength. Cure rate and ultimate depth of cure depend on light intensity, spectral distribution of the light source, exposure time and light transmittance of the printer window through which the light must pass. LOCTITE 3D 3860 will cure with DLP and Lasers ranging from 300 to 450 nm.

LIMITATIONS

Vat Printer: LOCTITE 3D 3860 has not been tested.

https://www.loctiteam.com/printer-validation-settings/

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NOTE

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