

LOCTITE®

3843™

**PhotoPlastic HDT60 HT
High Toughness**

Matte Black

LOCTITE®
5110 Port Chicago Hwy
Concord CA 94520

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Preliminary v3.0



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Description

LOCTITE® Engineering Grade products are high performance fluids developed to be highly consistent with extraordinary attributes. LOCTITE® 3843™ is a high performance, high modulus product which boasts excellent flexural and tensile physical properties with a relatively high degree of elongation. LOCTITE® 3843™ displays high green strength and HDT enabling it to print accurately and function at body temperature. LOCTITE® 3843™ should only be printed on a DLP machine.

LOCTITE® 3843™ has been tested in QUV exterior weathering conditions (ASTM G-154) for 800 hours with less than a 15% change in Tensile and IZOD Impact properties. ^[1]

Available Colors: Matte Black, Gray, Clear

Mechanical Properties	Method	Green	Complete
Tensile Stress at Yield	ASTM D638	43.8 ± 0.7 MPa ^[6]	52.9 ± 1.5 MPa ^[1]
Tensile Stress at Break	ASTM D638	37.8 ± 1 MPa ^[6]	50.9 ± 2.4 MPa ^[1]
Young's Modulus	ASTM D638	1572 ± 31 MPa ^[6]	1806 ± 47 MPa ^[1]
Elongation at Failure	ASTM D638	51.5 ± 10.3% ^[6]	43.4 ± 9.7% ^[1]
Flexural Stress at Yield	ASTM D790	49.4 ± 0.8 MPa ^[7]	73.8 ± 1 MPa ^[2]
Flexural Modulus	ASTM D790	1113 ± 23 MPa ^[7]	1783 ± 45 MPa ^[2]
Flexural Strain at Break	ASTM D790	>10 % ^[7]	>10% ^[2]
Other Properties			
HDT @ 0.455 MPa	ASTM D648	[8]	[3]
HDT@ 0.455 MPa	Internal	52.4 ± 0.3 ^[9]	65 ± 2 ^[4]
IZOD Impact Strength	ASTM D256		52.6 ± 3.8 ^[5]
Water Absorption	ASTM D570		[10]
Shore Hardness (0s, 3s)	ASTM D2240	68D, 63D ^[15]	74D, 67D ^[12]
Solid Density (Green)	ASTM D1475	[13]	
Solid Density	ASTM D1475		[13]

Liquid Properties

Viscosity @ 25°C (77°F)	ASTM D7867	760 cP ^[11]
Liquid Density	ASTM D1475	[15]

"All specimen are printed unless otherwise noted. All specimen were conditioned in ambient lab conditions at 19-23C / 40-60% RH for at least 24 hours." ASTM Methods: D638 Type IV, 5mm/min, D790-B, 2mm/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

1. TaskID Reference: FOR16424

2. TaskID Reference: FOR16426, FOR17678

3. TaskID Reference: FOR

4. TaskID Reference: FOR16437

5. TaskID Reference: FOR16427

6. TaskID Reference: FOR16425

7. TaskID Reference: FOR19115

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10. TaskID Reference: FOR19118

11. TaskID Reference: FOR16420

12. TaskID Reference: FOR19117

13. TaskID Reference: FOR19114

14. TaskID Reference: FOR19116

15. TaskID Reference: FOR19119



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Machine Settings

LOCTITE® 3843™ is formulated to print optimally on any DLP machine. It is recommended to print with 405 nm wavelength projectors with irradiance between 3-7 mW/cm². Layer time is given below at 5 mW/cm²:

Layer Thickness:	25um	50um	100um		
Base Cure Time:	45s	45s	45s	Ec (mJ/cm ²)	11.16
Model Layer Cure Time:	2s	3.5s	6s	D _p (mm):	0.21

Recommended printing Temperature range: 20°C to 45°C

Post Processing

LOCTITE® 3843™ 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. Henkel recommends LOCTITE® Cleaner C™. A 5 minute wash in an ultrasonic bath using the recommended cleaners and using compressed air to remove residual solvent from the surface of the material is recommended. Exact times and methods can be found by contacting us at www.loctiteAM.com

Post Curing

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Additional Development Options

Colors: LOCTITE® 3843™ formula is made with additional pigment colors

Limitations

Vat Printer: LOCTITE® 3843™ formula is likely possible with recirculation VAT that can handle higher viscosity resins

LCD printers: LOCTITE® 3843™ formula shows limited path forward for LCD projector printers at this time.

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Note

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product. Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

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