Technisches Datenblatt

Produkt:	IND403
Hersteller:	HENKEL KGAA
Warengruppe:	3DP
Artikelgruppe:	3DP RESINS
Download:	29.03.2024

LOCTITE IND403 HDT80 HM BLACK

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IND403™

PhotoPlastic

HDT80

High Modulus

LOCTITE®
5110 Port Chicago Hwy
Concord CA 94520

07/20/2020 **Preliminary v3.3**

IND403™ HDT80 High Modulus

Description

LOCTITE® 3D IND403™ is a high temperature resistance material that showcases high surface quality and outstanding dimensional accuracy, making it ideal for tooling production for low temperature processes (below 80°C). The material is able to withstand mechanical stresses while maintaining dimensional stability, which makes it a good candidate for interior applications.

Available Colors: Black (Other color upon request)

Mechanical Properties	Method	Green	Post Processed
Tensile Stress at Break (MPa)	ASTM D638	46.5 ± 2.5 [6]	87 ± 3 [5]
Tensile Stress at Yield (MPa)	ASTM D638	56.1 ± 8 [6]	91 ± 2 [5]
Young's Modulus (MPa)	ASTM D638	2176 ± 72 [6]	2750 ± 65 [5]
Elongation at Failure (%)	ASTM D638	15 ± 10 [6]	8.5 ± 2 [5]
Maximum Flexural Stress (MPa)	ASTM D790	81 ± 2 [2]	136 ± 1.5 [1]
Flexural Modulus (MPa)	ASTM D790	1879 ± 34 [2]	2880 ± 50 [1]
Flexural Strain at Break (%)	ASTM D790	>10 [2]	>10 [1]
Impact Strength—IZOD Notched	ASTM D256		27.2 ± 4.7 [8]
Impact Strength—IZOD Unnotched	ASTM D256		>250 [9]
Other Properties			
Hardness—Shore D (0, 3 Seconds)	ASTM D2240	81D, 76D [3]	80D, 78D [4]
Solid Density	ASTM D1475	1.17 g/cm^3 [10]	1.20 g/cm^3 [11]
Volumetric Shrinkage	Internal	8.67% [10]	10.99% [11]
Thermal Conductivity	ASTM D5930		0.22 W/m*K [12]
Heat Capacity	ASTM D5930		1.35 J/g*K [12]
Heat Deflection Temperature @ 0.455 MPa	ASTM D648	64 ± 1.6°C [15]	81.7 ± 1°C [16]
Heat Deflection Temperature @ 1.82 MPa	ASTM D648		64.7°C [17]
Liquid Properties			
Viscosity @ 25°C (77°F)	ASTM D7867	100—200 cP [7]	
Liquid Density	ASTM D1475	1.08 g/mL [18]	

"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, D256 Notched IZOD (Machine Notched), 6 mm x 12 mm, D2240, Type "D" (0, 3 seconds), D7867, D1475

1. TaskID Reference: FOR16922
2. TaskID Reference: FOR16923
3. TaskID Reference: FOR16912
4. TaskID Reference: FOR16911
5. TaskID Reference: FOR16917
6. TaskID Reference: FOR16916
7. TaskID Reference: FOR16921
8. TaskID Reference: FOR16913
9. TaskID Reference: FOR16914
10. TaskID Reference: FOR16928
11. TaskID Reference: FOR16928
12. TaskID Reference: FOR19229
13. TaskID Reference: Removed
14. TaskID Reference: FOR16924
15. TaskID Reference: FOR16918
16. TaskID Reference: FOR19730
17. TaskID Reference: FOR16920
18. TaskID Reference: FOR16910
19. TaskID Reference: FOR16928
20. TaskID Reference: Removed
21. TaskID Reference: FOR16915
22. TaskID Reference: FOR12108

IND403™ HDT80 High Modulus

Machine Settings

LOCTITE® IND403™ is formulated to print optimally on industrial DLP technology. It is recommended to print with a 385nm [or 405nm if preferred] wavelength projector with an irradiance between 3-7 mW/cm². Layer time is given below at 6 mW/cm2:

Layer Thickness:	25um	50um	100um
Base Cure Time:	45s	45s	45s
Model Layer Cure Time:	2s	3.5s	6s

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

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

Post Processing

LOCTITE® IND403™ 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.

Post Curing

LOCTITE® IND403™ requires post curing to achieve specified properties. A wide array of post cure equipment can be used to cure appropriately. Exact devices with detail information can be found by contacting us at www.loctiteAM.com.

Additional Development Options

Colors: LOCTITE® IND403™ formula can be made in additional pigment colors.

Formula Modification LOCTITE® IND403™ are possible.

LCD printers: LOCTITE® IND403™ more development needed but could be possible with clear resin formulation.

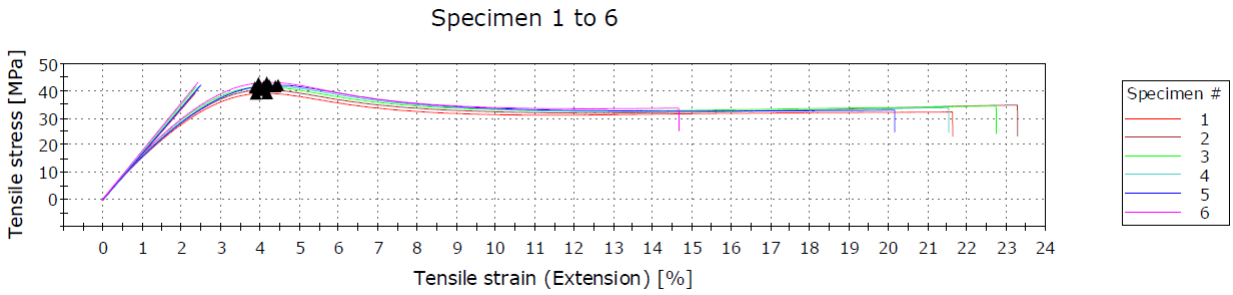
Limitations

Vat Printer: LOCTITE® IND403™ has not been tested.

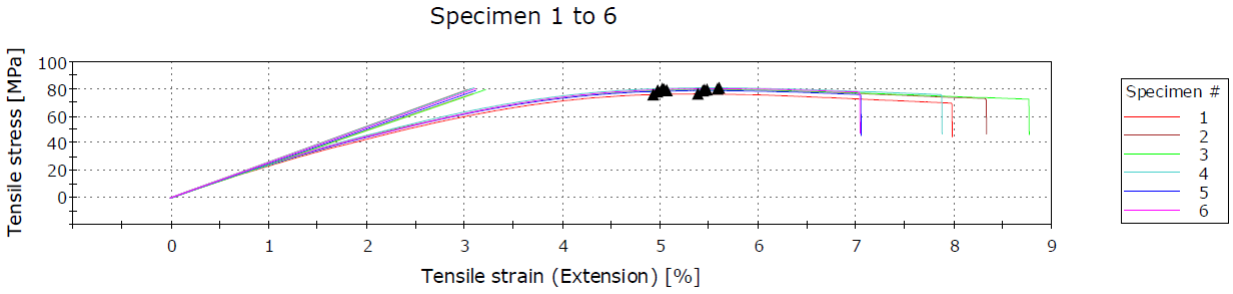
IND403™ HDT80 High Modulus

Supplemental Data

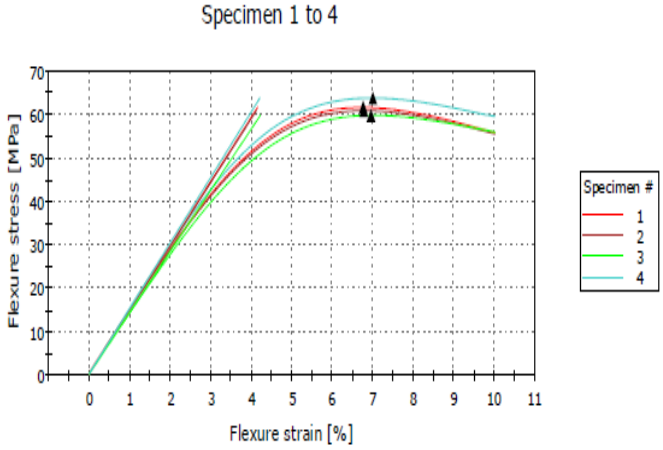
Green—Tensile



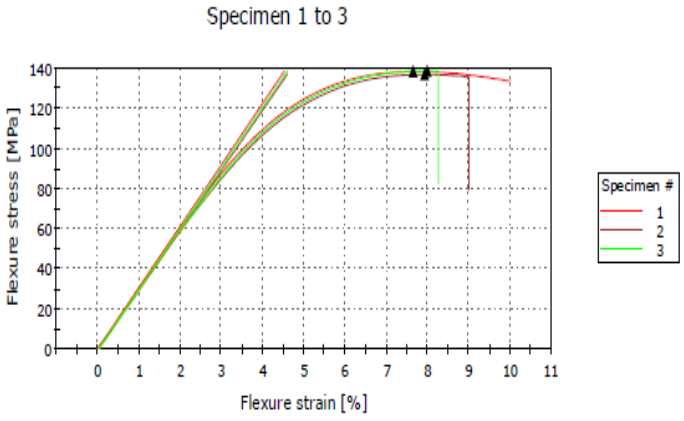
Post Cured—Tensile



Green—Flexural



Post Cured—Flexural



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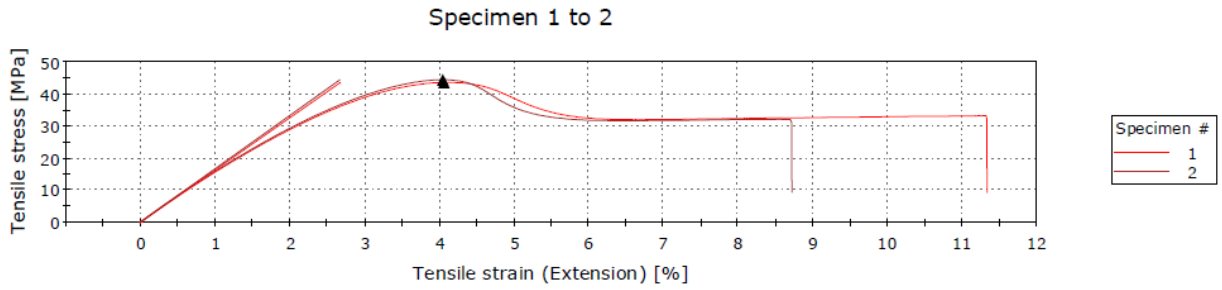
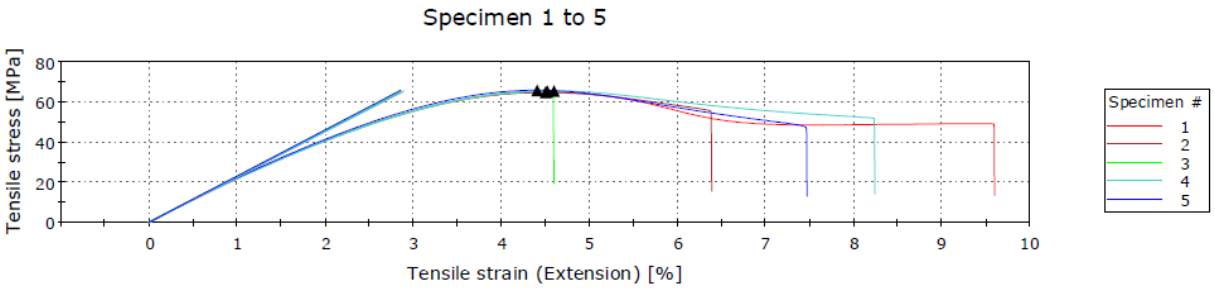


Post Cured—Tensile



IND403™ HDT80 High Modulus (High Modulus)

Note

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