Technisches Datenblatt

Produkt:	IND405
Hersteller:	HENKEL KGAA
Warengruppe:	3DP
Artikelgruppe:	3DP RESINS
Download:	28.03.2024

LOCTITE 3D IND405 HDT50 HE BLACK

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LOCTITE®

IND405™

PhotoPlastic

HDT50

High Elongation

Black

5110 Port Chicago Hwy
Concord CA 94520

7/17/2020 **Preliminary v3.2**

Henkel

IND405™ HDT50 High Elongation Black

Description

LOCTITE® 3D IND405™ is a high elongation and high toughness material with outstanding impact resistance and excellent surface finish. This stiff and durable high performance material is ideal for a wide variety of tools in the production floor, including manufacturing aids and final parts such as housings and consumer goods applications. The unique set of performance attributes makes it comparable to an unfilled thermoplastic like polypropylene. Parts can be printed with various DLP printers and machined, tapped, or polished for final finish.

Available Colors: Black, Clear

Mechanical Properties	Method	Green	Post Processed
Tensile Stress at Break	ASTM D638	24 ± 1 MPa [21]	45 ± 2 MPa [17]
Tensile Stress at Yield	ASTM D638	25 ± 1 MPa [21]	44 ± 1 MPa [17]
Young's Modulus	ASTM D638	897 ± 20 MPa [21]	1434 ± 80 MPa [17]
Elongation at Failure	ASTM D638	89 ± 8 % [21]	101 ± 10.5 % [17]
Maximum Flexural Stress	ASTM D790		50 ± 1 MPa [20]
Flexural Modulus	ASTM D790		1181 ± 65 MPa [20]
Flexural Strain at Break	ASTM D790		Does not Break [20]
Impact Strength—IZOD Notched	ASTM D256		69 ± 2 J/m [18]
Impact Strength—IZOD Unnotched	ASTM D256		>1500 J/m [18]
Other Properties			
HDT @ 0.455 MPa	ASTM D648		52.8°C [22]
Shore Hardness "D" (0s,3s)	ASTM D2240		80,76 [14]
Water Absorption	Internal		1% [15]
Liquid Density	ASTM D1475		1.046 [19]
Solid Density (Green)	ASTM D1475		1.116 [19]
Solid Density (Post Processed)	ASTM D1475		1.121 [19]
Liquid Properties			
Viscosity @ 25°C (77°F)	ASTM D7867		2410 cP [13]

"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, 50mm/min, D790-B, 2mm/min, D256 Notched IZOD (Machine Notched), 6 mm x 12 mm, D648, D2240, Type "D" (0, 3 seconds), D1475, D7867

1) TaskID Reference: FOR16318
2) TaskID Reference: FOR16273
3) TaskID Reference: FOR5556
4) TaskID Reference: FOR9594
5) TaskID Reference: FOR16316
6) TaskID Reference: FOR16321
7) TaskID Reference: FOR10162
8) TaskID Reference: FOR16266
9) TaskID Reference: FOR16274
10) TaskID Reference: FOR18476
11) TaskID Reference: FOR16322
12) TaskID Reference: FOR17633
13) TaskID Reference: FOR18202
14) TaskID Reference: FOR18207
15) TaskID Reference: FOR18206
16) TaskID Reference: FOR16757
17) TaskID Reference: FOR18201
18) TaskID Reference: FOR18611
19) TaskID Reference: FOR18208
20) TaskID Reference: FOR18531
21) TaskID Reference: FOR19614
22) TaskID Reference: FOR18828

IND405™ HDT50 High Elongation Black

Machine Settings

LOCTITE® IND405™ is formulated to print optimally on any DLP machine. It is recommended to print with 385-405 nm wavelength projectors with irradiance between 3-7 mW/cm². Layer time is given below at 5 mW/cm^2:

Ec (mJ/cm^2)	6.1
Dp (mm):	0.14

Layer Thickness	**25 µm**	**50 µm**	**100 µm**
First Layer Exposure Duration	15 s	25 s	45 s
Burn In Region Exposure Duration	8 s	15 s	30 s
Model Exposure Duration	3 s	4 s	8 s

Post Processing

LOCTITE® IND405™ 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® IND405™ requires post curing to achieve specified properties. A wide array of post cure equipment can be used to cure LOCTITE® IND405™ appropriately. A list of validated devices with detailed information can be found by contacting us at www.loctiteAM.com.

Additional Development Options

Colors: LOCTITE® IND405™ formula can be made in additional pigment colors.

LCD printers: LOCTITE® IND405™ currently testing, there's potential.

Limitations

Vat Printer: LOCTITE® IND405™ formula is not possible.

Post Cure: LOCTITE® IND405™ requires UV/Visible light post curing.

IND405™ HDT50 High Elongation Black

Note

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