

LOCTITE®

IND402™

**PhotoElastic
A70 High Rebound
Black**

LOCTITE®
5110 Port Chicago Hwy
Concord CA 94520

07/10/2020

Preliminary v3.1

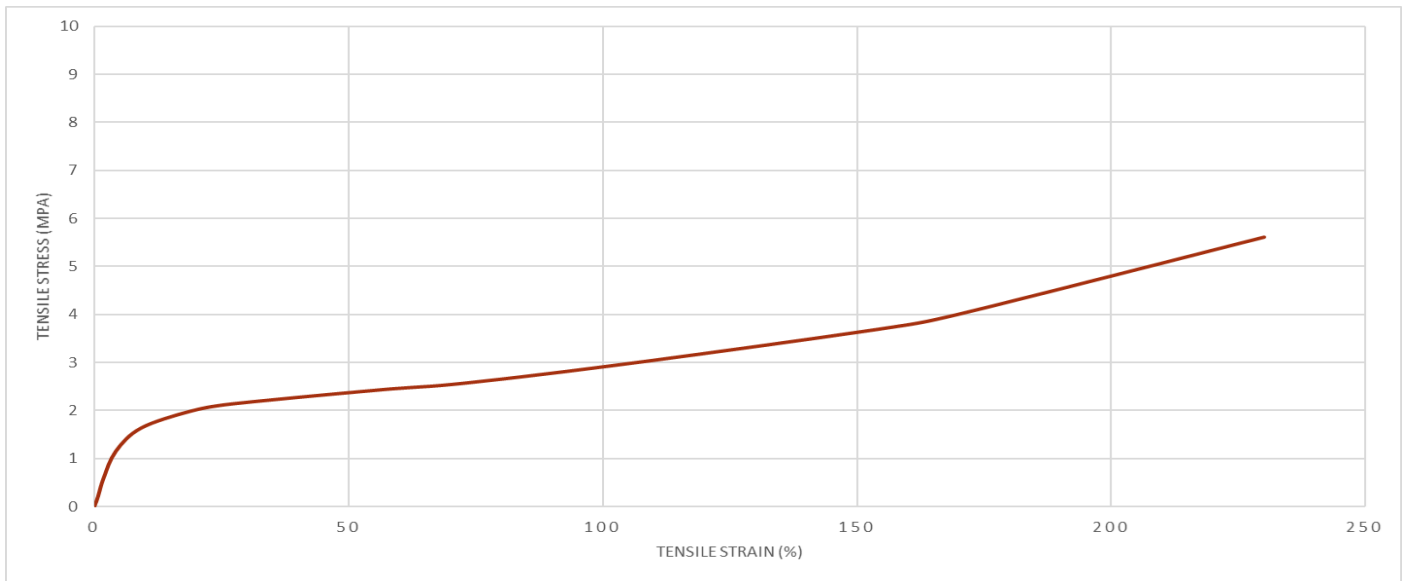


IND402™ A70 High Rebound Black

Description

LOCTITE® 3D IND402™ is a high elongation elastomeric photopolymer that exhibits excellent resilience to compression forces and maintains its tensile strength and interlayer adhesion. It demonstrates good rebound performance resulting in high energy return. These performance attributes make this product ideal for midsole and soft insert applications with lattice structure as well as other consumer and industrial applications requiring an elastomeric solution. Parts can be printed with various DLP and SLA printer platforms and would not require thermal post processing.

Available colors: Black. Custom colors can be offered upon request.



Mechanical Properties	Method	Green state (no post processing)	Post Processed
Tensile Strength	ASTM D638	2.3 ± 0.31 MPa [10]	5.5 ± 0.2 MPa ^[1]
Young's Modulus	ASTM D638	15 ± 2.15 MPa [10]	42 ± 5 MPa ^[1]
Elongation at Break	ASTM D638	176 ± 43.5 % [10]	230 ± 10 % ^[1]
Energy Return	Internal method		30-35 % ^[2]
Tear Strength	ASTM D624		28 ± 1 kN/m ^[5]
Shore Hardness (0s, 3s) A Scale	ASTM D2240		75, 73 ^[8]
Other Properties			
Water Absorption	ASTM D570-98		3.15% ^[4]
Solid Density	ASTM D1475		1.068 [9]
Liquid Density	ASTM D1475		1.044 [9]

Liquid Properties

Viscosity @ 25°C (77°F)	14500 cP ^[3]	
Viscosity @ 35°C (95°F)	8430 cP ^[7]	
Viscosity @ 40°C (104°F)	6028 cP ^[7]	
Flow Characteristic	Self-leveling,	
Appearance Color	Black	

"All samples are printed unless otherwise specified." ASTM Methods: D638 Type IV, 5mm/min, D790-B , 2mm/min, D624, D570-98 24 hour water immersion, specimen 50.8mm diameter, 3.2mm thick.



IND402™ A70 High Rebound Black

1) TaskID: FOR18387
2) TaskID: FOR18388
3) TaskID: FOR18389
4) TaskID: FOR18665

5) TaskID: FOR18664
6) TaskID: FOR19225
7) TaskID: FOR19857
8) TaskID: FOR20027

9) TaskID: FOR20028
10) TaskID: FOR18709

Machine Settings

LOCTITE® IND402™ is formulated to print with 385-405 nm wavelength projectors with irradiance between 3-7 mW/cm². Layer time is given below at 6 mW/cm².

Layer Thickness:	50um	100um		
Base Cure Time:	25s	25s	Ec (mJ/cm ²):	6.06
Model Layer Cure Time:	2-4s	4-6s	Dp (mm):	0.09

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

Post Processing

LOCTITE® IND402™ requires post processing to achieve specified properties. Support structures should be removed from the printed part then the part may be lightly rinsed in IPA for 2 minutes and sprayed with pressurized air to remove residual resin. Part should be allowed to dry at room temperature or 35°C for 5-15 minutes to remove any residual solvent. Exact times and methods can be found by contacting us at www.loctiteAM.com

Post Curing

LOCTITE® IND402™ It is recommend to use wide spectrum UV light (5-10 J/cm² per side). See Validation chart for examples of type and time. Exact devices with detail information can be found by contacting us at www.loctiteAM.com

Additional Development Options for IND402™ High Rebound

Colors: LOCTITE® IND402™ formula can be made in additional pigment colors

Vat Printer: LOCTITE® IND402™ formula is likely possible with recirculation VAT that can handle higher viscosity resins

LCD printers: LOCTITE® IND402™ formula shows limited path forward for LCD projector printers at this time.

Limitations for IND402™ High Rebound

Post Cure: LOCTITE® IND402™ requires broadband spectrum for post cure.

Formula Modification: LOCTITE® IND402™ has limited potential for any tensile property adjustments.



IND402™ A70 High Rebound Black

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.

In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:

In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:

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. Henkel is 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.

In case products are delivered by Henkel Corporation, Resin Technology Group, Inc., or Henkel Canada, Inc. the following disclaimer is applicable:

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

Trademark usage

Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

