

Technisches Datenblatt

Produkt: 3840

Hersteller: HENKEL KGAA

Warengruppe: 3DP

Artikelgruppe: 3DP RESINS

Download: 31.03.2020

LOCTITE® 3D 3840

Dieses Datenblatt wurde Ihnen von der Firma tewipack Uhl GmbH zur Verfügung gestellt. Die Firma tewipack Uhl GmbH übernimmt keinerlei Verantwortung für die Aktualität und die Richtigkeit der enthaltenen Informationen. Die Eigenschaften der Produkte können sich aufgrund verschiedener Einflüsse wie beispielsweise Zusammensetzung und Zustand des Substrats, Unreinheiten in oder auf dem Substrat, Temperatur und Luftfeuchtigkeit bei der Lagerung und Umgebungsbedingungen während der Anwendung ändern. Bei Verwendung dieses Produkts in Kombination mit anderem Material ist der Kunde dafür verantwortlich, durch eigene Tests zu prüfen, ob das Produkt für die geplante Kombination geeignet ist und ob diese Kombination die erwarteten Ergebnisse liefert

PRODUCT DESCRIPTION

Loctite® 3D 3840™ is a light curing acrylic compound used for prototyping via stereolithography. Loctite® 3D 3840™ requires a very short exposure time and provides a very fine print resolution ideal for parts that require fine features. Loctite® 3D 3840™ has low shrinkage upon curing, maintaining part dimensions from conception to production. Excellent compatibility with PDMS coatings.

Loctite® 3D 3840™ provides the following product characteristics:

Technology	Stereolithography Resin
Appearance	Clear, White, Grey, Black ^{LMS}
Chemical Type	Acrylic
Odor	Mild
Cure	Ultraviolet (UV)/ Visible light
Viscosity	Low
Application	Prototyping
Specific Benefits	<ul style="list-style-type: none"> • Semi-Flexible general purpose • Low shrinkage • Fine print resolution • Short exposure time

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity g/cm³@ 25°C 1.1^{LMS}

Flash Point - See MSDS

Viscosity, Cone & Plate, mPa*s (cP):
 Temperature: 25C, Shear Rate: 200 s⁻¹ 120-300^{LMS}

TYPICAL CURING PERFORMANCE

Loctite® 3D 3840™ can be cured by exposure to UV and 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 3840™ will cure with DLP and Lasers ranging from 300-450nm.

The following working curve values were determined using a Loctite PR10 DLP printer at 405nm wavelength;

Measurement	Unit	Value
Critical Exposure (E _c)	mJ/cm ²	10.6
Penetration Depth (D _p)	mm	0.165

TYPICAL PROPERTIES OF CURED MATERIAL

Samples prepared at 0.050 mm layer thickness on LOCTITE PR10 DLP printer using recommended exposure settings. Samples post cured for 10s per side at 20mW/cm² @ 405nm wavelength using using Loctite 405nm Flood System.

All data is recorded on specimens printed in the XY plane. Some variation is expected when printing in Z plane. Contact your local Loctite Technical Service team for further information.

Physical Properties:

Shore Hardness, ISO 868, Durometer D	70
Volume Shrinkage, %	7.5
Linear Shrinkage, %	2.7

Physical Property	Unit	As Printed	Post Cure
Elongation, at break, ASTM D638	%	15-25	15 - 20
Tensile Strength, ASTM D638	MPa	20 - 35	20-30
	ksi	2.9-5.1	2.9-4.4
Tensile Modulus, (Secant 0.002), ASTM D638	MPa	800-1200	900-1300
	ksi	116-174	131-189
Flexural Strength, ASTM D790	MPa	20-30	25-35
	ksi	2.9-4.4	3.6-5.1
Flexural Modulus, (Secant 0.002), ASTM D790	MPa	700-900	800-1000
	ksi	102-131	116-145
Heat Deflection Temperature, ASTM D648 @ 0.45MPa	°C	45-50	45-55
Notched IZOD Impact ASTM D256	J/m	30-40	25-35
Notched IZOD Impact ISO 180 Type 1A	kJ/m ²	2.4-2.6	2.0-2.5

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Safety Data Sheet (SDS).

Directions for use:

- This product is light sensitive; exposure to daylight, UV light and artificial lighting should be kept to a minimum during storage and handling.
- **Shake or stir Loctite 3D 3840™ well before use.**
 - Agitate resin before each print
 - Do not leave resin in printer tray when not in use

- Recommended Post Curing Process:
 - Rinse the printed part using an approved cleaner to remove uncured resin
 - 10s/side at 20mW/cm² at 405nm

Loctite Material Specification^{LMS}

LMS dated MONTH-DAY, YEAR. Test reports for each batch are available for the indicated properties. LMS test reports include selected QC test parameters considered appropriate to specifications for customer use. Additionally, comprehensive controls are in place to assure product quality and consistency. Special customer specification requirements may be coordinated through Henkel Quality.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labelling.

Optimal Storage: 8 °C to 21 °C. Storage below 8 °C or greater than 28 °C can adversely affect product properties.

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\mu\text{m} / 25.4 = \text{mil}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

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."

