

# LOCTITE ABLESTIK 223F01

June 2016

## PRODUCT DESCRIPTION

LOCTITE ABLESTIK 223F01 provides the following product characteristics:

<b>Technology</b>	Epoxy
<b>Appearance</b>	Black
<b>Components</b>	Two components - requires mixing
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>• High thermal conductivity</li> <li>• Long work life</li> <li>• Low shrinkage</li> <li>• Excellent chemical resistance</li> <li>• Low exotherm</li> <li>• Low CTE</li> <li>• Mechanical toughness</li> <li>• Electrically insulative</li> </ul>
<b>Mix Ratio, (by weight)</b>	100 : 10
<b>Resin : Hardener</b>	
<b>Cure</b>	Room Temperature or Heat Cure
<b>Operating Temperature</b>	-20 to 230 °C
<b>Application</b>	Thermally conductive adhesive
<b>Surfaces</b>	Many metals, Glass and Plastics

LOCTITE ABLESTIK 223F01 epoxy adhesive is formulated for use in applications requiring excellent thermal conductivity. LOCTITE ABLESTIK 223F01 bonds offer resistance to water and weathering, salts, mild acids and other organic and inorganic compounds.

LOCTITE ABLESTIK 223F01 passes NASA outgassing standards.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

### Mixed Properties:

Viscosity @ 25 °C, mPa·s (cP):	
rv#7, 10 rpm	128,000
Thixotropic Index (1/10 rpm)	2.2
Specific Gravity,	2.23
Work Life, hours:	
@ 100 grams	24
Flash Point - See SDS	

## TYPICAL CURING PERFORMANCE Cure Schedule

3 hours @ 125°C plus  
3 hours @ 175°C

### For large or extremely critical castings

16 hours @ 65°C plus  
6 hours @ 125°C plus  
6 hours @ 150°C

The above cure profile is a guideline recommendation. Cure conditions

(time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

## TYPICAL PROPERTIES OF CURED MATERIAL

### Physical Properties :

Hardness, Shore D	92
Thermal Conductivity , W/(m-K)	1.34
Glass Transition Temperature (Tg), °C	133
Coefficient of Thermal Expansion, ppm/°C	38
Water Absorption %	0.2

### Electrical Properties:

Volume Resistivity, ohms-cm:	
@ 25 °C	1.00×10 <sup>17</sup>
Dielectric Strength, volts/mil	460
Dielectric Constant / Dissipation Factor:	
@ 1MHz	5.8/0.01

### Outgassing Properties:

Outgassing CVCM, %	0.01
Outgassing TWL, %	0.22

## TYPICAL PERFORMANCE OF CURED MATERIAL

### Lap Shear Strength :

Alum to Alum	N/mm <sup>2</sup>	9.65
	(psi)	(1,400)

## GENERAL INFORMATION

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

## DIRECTIONS FOR USE

1. Carefully clean and dry all surfaces to be bonded.
2. Remove clamp and thoroughly mix the LOCTITE ABLESTIK 223F01 epoxy adhesive system components in the handy BIPAX mixing-dispenser package until color is uniform throughout.
3. Apply this completely mixed adhesive to the prepared surfaces, and gently press these surfaces together. Contact pressure is adequate for strong, reliable bonds; however, maintain contact until adhesive is completely cured.
4. Some separation of components is common during shipping and storage. For this reason, it is recommended that the contents of the shipping container be thoroughly mixed prior to use.
5. Some ingredients in this formulation provided in BIPAX,

TRA-PAX and bulk packaging may crystallize when subjected to low temperature storage. A gentle warming cycle of 52°C for 30 minutes prior to mixing components may be necessary. Crystallized epoxy components do not react as well as liquid components and should be redissolved prior to use for best results.

### Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

### STORAGE:

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

### Optimal Storage : 27 °C

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation 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

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

### Disclaimer

#### 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, 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 Corporation, Resin Technology Group, Inc., or Henkel Canada Corporation, 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 and/or registered trademarks of Henkel and its affiliates in the U.S. and elsewhere.

Reference **N/A**