

LOCTITE ABLESTIK 45 CLEAR

September 2014

PRODUCT DESCRIPTION

LOCTITE ABLESTIK 45 CLEAR provides the following product characteristics:

Technology	Epoxy
Technology (Catalyst)	Amine
Appearance (Resin)	Clear yellow
Appearance (Catalyst)	Clear yellow
Mix Ratio - Resin : Hardener	100 : 100
Rigid Formula	
Mix Ratio - Resin : Hardener	100 : 200
Semi-Rigid Formula	
Mix Ratio - Resin : Hardener	100 : 300
Flexible Formula	
Product Benefits	<ul style="list-style-type: none"> • Unfilled • Ease of use • Non-conductive • General purpose • Controllable flexibility • Bond dissimilar substrates
Cure	Heat cure
Application	Assembly

LOCTITE ABLESTIK 45 CLEAR is a clear, unfilled epoxy adhesive which, by varying the amount of catalyst used, can adjust the hardness from flexible to rigid. It has an easy mix ratio and bonds well to a wide variety of substrates. LOCTITE ABLESTIK 45 CLEAR is an unfilled, clear version of ABLESTIK 45.

LOCTITE ABLESTIK 45 CLEAR can be used with a variety of catalysts. For more information on mixed properties when used with other available catalysts, please contact your local technical service representative for assistance and recommendations.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A Properties ABLESTIK 45 Clear

Viscosity, Brookfield , mPa·s (cP)	13,500
Density, g/cm ³	1.17
Flash Point - See SDS	

Part B Properties LOCTITE CAT 15

Viscosity, Brookfield , mPa·s (cP)	25,000
Density, g/cm ³	0.97
Flash Point - See SDS	

Mixed Properties

Rigid Formulation	
Viscosity, Brookfield , mPa·s (cP)	20,000
Density, g/cm ³	1.06
Work Life, 100 grams @ 25°C, minutes	120
Flash Point - See SDS	

Semi-Rigid Formulation

Viscosity, Brookfield , mPa·s (cP)	20,000
Density, g/cm ³	1.03
Work Life, 100 grams@ 25°C, minutes	140
Flash Point - See SDS	

Flexible Formulation

Viscosity, Brookfield , mPa·s (cP)	21,000
Density, g/cm ³	1.01
Work Life, 100 grams@ 25°C, minutes	160
Shelf Life @ 25 °C, days	365
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

15 to 30 minutes @ 105°C
2 to 4 hours @ 65°C
4 to 6 hours @ 45°C
16 to 24 hours @ 25°C

The above cure profiles are guideline recommendations. 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

Rigid Formulation

Physical Properties

Hardness, Shore D	75
Flexural strength	N/mm ² 57 (psi) (8,300)
Temperature Range of Use, °C	-40 to 90

Electrical Properties

Volume Resistivity@ 25°C, ohm-cm	>1×10 ¹³
Dielectric Strength , kV/mm	16
Dielectric Constant @ 1MHz	3
Dissipation Factor @ 1MHz	0.03

Semi-rigid Formulation

Physical Properties

Hardness, Shore D	52
Temperature Range of Use, °C	-55 to 80

Electrical Properties

Volume Resistivity@ 25°C, ohm-cm	>1×10 ¹³
Dielectric Strength , kV/mm	16
Dielectric Constant @ 1MHz	3.0
Dissipation Factor @ 1MHz	0.03

Flexible Formulation

Physical Properties

Hardness, Shore A	45
Temperature Range of Use, °C	-55 to 65

Electrical Properties

Volume Resistivity@ 25°C, ohm-cm	$>1 \times 10^{10}$
Dielectric Strength, kV/mm	16
Dielectric Constant @ 1MHz	3.0
Dissipation Factor @ 1MHz	0.03

TYPICAL PERFORMANCE OF CURED MATERIAL

Rigid Formulation

Shear Strength :

Tensile Lap Shear Strength :		
Aluminum to aluminum @ 25 °C	N/mm ² (psi)	16.5 (2,400)

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. Complete cleaning of the substrates should be performed to remove contamination such as oxide layers, dust, moisture, salt and oils which can cause poor adhesion or corrosion in a bonded part.
2. 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.
3. Power mixing is preferred to ensure a homogeneous product.
4. Accurately weigh resin and hardener into a clean container in the recommended ratio. Weighing apparatus having an accuracy in proportion to the amounts being weighed should be used.
5. Blend components by hand, using a kneading motion, for 2 to 3 minutes and scrape the bottom and sides of the mixing container frequently to produce a uniform mixture.
6. If possible, power mix for an additional 2 to 3 minutes. Avoid high mixing speeds. This can entrap excessive amounts of air. It can also cause overheating of the mixture, resulting in reduced working life.
7. Apply adhesive to all surfaces to be bonded and join together.
8. In most applications only contact pressure is required.

Storage

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

Optimal Storage : 25 °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.

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.

Conversions

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

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 of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 0.3