

LOCTITE ABLESTIK ICP 4000

April 2014

PRODUCT DESCRIPTION

LOCTITE ABLESTIK ICP 4000 provides the following product characteristics:

Technology	Silicone
Appearance	Silver
Cure	Heat cure
Product Benefits	<ul style="list-style-type: none"> • One component • High flexibility • Excellent electrical conductivity • High temperature performance • Pb-free alternative to solder • High electrical current carrying capability
Operating Temperature	-40 to 200°C
Application	Flexible, Electrically Conductive Adhesive
Filler Type	Silver

LOCTITE ABLESTIK ICP 4000 is a silicone based, electrically conductive adhesive. It is specially designed for applications where both high flexibility and excellent conductivity are required. This material is also recommended for use in mounting small components to a variety of interconnect substrates.

LOCTITE ABLESTIK ICP 4000 is engineered to maintain its flexibility and conductivity at elevated temperatures, up to 200°C. LOCTITE ABLESTIK ICP 4000 can be dispensed with commonly used time-pressure and auger valve technology and can be applied by pin-transfer.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity @ 25°C:	
Plate 2 cm @ Shear rate 15 s ⁻¹ , mPa·s (cP)	30,000
Increase after 48 hours @ RT, %	50
Density, g/cm ³	4.0
Shelf Life:	
@ -40°C, months	4
@ 25°C, days	2

TYPICAL CURING PERFORMANCE

Cure Schedule

- 1 hour @ 130°C or
- 35 minutes @ 140°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

Physical Properties

Elongation , 200µm film, 2 mm/minute,%	450
Young's Modulus @ 0 °C	N/mm ² 75 (psi) (10,877)
Coefficient of Thermal Expansion , µm/m.°C	330
Glass Transition Temperature, Tan δ, °C	-45
Weight Loss during cure, %	0.87

Electrical Properties

Volume Resistivity, ohms-cm	6×10 ⁻⁵
Electrical Current Carrying Capability, A/mm ²	70

TYPICAL PERFORMANCE OF CURED MATERIAL

Miscellaneous

Die Shear Strength :	
2 X 2 mm (80 x 80 mil) Si to Ag Plated Cu L/F, grams	450

GENERAL INFORMATION

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

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.

Thawing:

1. After removing from the freezer, set the syringes to stand vertically while thawing.
2. DO NOT open the package before contents reach ambient temperature.
3. Any moisture that collects on the thawed package should be removed prior to opening the package.
4. Material is ready to use after 1 hour @ 25°C.
5. DO NOT re-freeze. Once thawed, the adhesive should not be re-frozen.

DIRECTIONS FOR USE

1. Packages removed from storage should be allowed to return to ambient temperature before use.
2. This material can be applied by hand, automatic dispense equipment or by stencil printing.
3. Clean or degrease all application surfaces with a suitable solvent.

Storage

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

Optimal Storage : -40 °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

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$

$\text{kV/mm} \times 25.4 = \text{V/mil}$

$\text{mm} / 25.4 = \text{inches}$

$\text{N} \times 0.225 = \text{lb}$

$\text{N/mm} \times 5.71 = \text{lb/in}$

$\text{psi} \times 145 = \text{N/mm}^2$

$\text{MPa} = \text{N/mm}^2$

$\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$

$\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$

$\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$

$\text{mPa}\cdot\text{s} = \text{cP}$

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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.

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