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LOCTITE

Technical Data Sheet

LOCTITE ABLESTIK E 3503-1

August 2014

PRODUCT DESCRIPTION

LOCTITE ABLESTIK E 3503-1 provides the following product characteristics:

Technology	Epoxy
Appearance	Off-white
Cure	Heat cure
Product Benefits	• Thermally conductive • One component • Low temperature cure • Long pot life • High performance thermal management adhesive • Excellent dispensing characteristics • Fine filler • Thin bondline • Low thermal resistance
Application	Assembly
Filler Weight, %	15 to 20
Operating Temperature	-45 to 125 °C
Typical Package Application	LED displays and Heat sensitive devices

LOCTITE ABLESTIK E 3503-1 is optimised for SMT dispense and the manufacturing of high volume assemblies. It has high adhesion to the substrate finishes commonly used in microelectronics and will not adversely affect solder processes.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity @ 25 °C, mPa·s (cP)	60,000
Specific Gravity	1.2
Work Life @ 25°C, days	7
Shelf Life:	
@ -25 to -18ºC, days	183
@ 25ºC, days	7
Hegman Fineness, micron	20
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

Convection Oven:
30 minutes @ 100°C or
10 minutes @ 120°C or
5 minutes @ 150°C

IR Oven:
20 minutes @ 100°C or
3 minutes @ 120°C or
1 to 2 minutes @ 150°C

Stroke Cure:
6 to 12 seconds @ 160°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 :

Coefficient of Thermal Expansion , K^{-1}	70×10^{-6}
Glass Transition Temperature (Tg), °C	90 to 100
Thermal Conductivity , W/(m-K)	0.8
Extractable Ionic Content, ppm:	
Chloride (Cl-)	≤100
Sodium (Na+)	≤10
Potassium (K+)	≤10
Ammonia (NH4+)	≤75
Hardness, Shore A	≥75

TYPICAL PERFORMANCE OF CURED MATERIAL

Die Shear Strength:	
1.27 x 1.27 mm Die, Kg	≥2.0
Tensile Lap Shear Strength, MPa	≥8

GENERAL INFORMATION

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

THAWING:

1. Allow container to reach room temperature before use.
2. After removing from the freezer, set the syringes to stand vertically while thawing.

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 : -25 to -18 °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.

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Reference 0.3

Conversions
(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa = N/mm²
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = 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.
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