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LOCTITE

Technical Data Sheet

LOCTITE ABLESTIK 281 BK

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PRODUCT DESCRIPTION

LOCTITE ABLESTIK 281 BK provides the following product characteristics:

Technology	Epoxy
Appearance	Black thixotropic paste
Cure	Heat cure
Product Benefits	• One component • High thermal conductivity • Non-sag paste • Thixotropic • Good chemical resistance • High electrical insulation • Low coefficient of thermal expansion
Application	Assembly
Operating Temperature	-55 to +180 °C
Key Substrates	Metals , Glass and Plastics

LOCTITE ABLESTIK 281 BK epoxy adhesive is formulated for use in applications requiring excellent thermal conductivity.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Density, g/cm³	2.3
Shelf Life @ 25°C (from date of manufacture), months	3
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

4 hours @ 80°C or
1 hour @ 120°C or
30 minutes @ 150°C or
15 minutes @ 180°C

For optimum performance, follow the initial cure with a post cure of 2 to 4 hours at the highest expected use temperature.

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

Hardness, Shore D	88
Coefficient of Thermal Expansion, TMA, ppm/°C	32.4
Thermal Conductivity, ASTM D-2214, W/(m-K)	1.4
Water Absorption, 24-hr boil, %	0.06

Electrical Properties

Volume Resistivity @ 25ºC, ohm-cm	$>1\times10^{15}$

Outgassing Properties

Outgassing , per NASA Reference Publication 1124:
Sample cured 5 hours @ 80ºC

TML, %	0.35
CVCM, %	0.06

TYPICAL PERFORMANCE OF CURED MATERIAL

Miscellaneous

Flexural Strength, ASTM D790	N/mm²	62
	(psi)	(9,000)
Compressive Strength	N/mm²	83
	(psi)	(12,000)

Shear Strength

Tensile Lap Shear Strength:
Aluminum to Aluminum:

@ 25°C	N/mm²	13.8
	(psi)	(2,000)
@ 120°C	N/mm²	9
	(psi)	(1,300)

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. Certain resins and hardeners are prone to crystallization. If crystallization does occur, warm the contents of the shipping container to 50 to 60ºC until all crystals have dissolved. Shipping container must be loosely covered during the warming stage to prevent any pressure build-up.
2. 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.
3. Some filler settling 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. Power mixing is preferred to ensure a homogeneous product.
4. Apply adhesive to surface to be bonded.
5. In most applications only contact pressure is required.

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.

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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

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
psi x 145 = N/mm²
MPa = N/mm²
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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