Technical Data Sheet

LOCTITE ABLESTIK CDF 5000

March 2016

PRODUCT DESCRIPTION

LOCTITE ABLESTIK CDF 5000 provides the following product characteristics:

Technology	Hybrid chemistry
Appearance	Silver film
Cure	Heat cure
Product Benefits	• High MSL reliability • Controlled fillet size • No resin bleed-out • Consistent bondline thickness • Pre-cut wafer lamination equipment compatible • Recommended for thin wafer handling applications • Good wetting and low warpage for large die
Film Thickness	15µm and 30µm
Application	Die attach
Typical Package Application	QFN, TQFP, eTQFP

LOCTITE ABLESTIK CDF 5000 highly filled, conductive die attach adhesive is designed to provide high thermal and electrical conductivity in the attachment of integrated circuits and components onto metallic leadframes. This adhesive exhibits strong adhesion to various wafer metallizations and Ag, Cu and PPF leadframe finishes. It can be used in a variety of die sizes ranging from 2mm x 2mm to 8 mm x 8mm .

TYPICAL PROPERTIES OF UNCURED MATERIAL

Filler Content, %	84.5
Work Life @ 25°C, days	90
Shelf Life @ 0 to 5ºC days	365

TYPICAL CURING PERFORMANCE

Cure Schedule

30 minute ramp from 25°C to 200°C, hold 60 minutes at 200°C

Alternate Cure Schedule

30 minute ramp from 25°C to 175°C, hold 60 minutes at 175°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 , TMA expansion:	
Below Tg, ppm/°C	55
Above Tg, ppm/°C	191
Glass Transition Temperature, °C	9
Moisture Absorption, 85°C/85 RH, wt.%	0.35

Tensile Modulus:

@ 25°C	N/mm²	2,947
	(psi)	(427,426)
@ 150°C	N/mm²	130
	(psi)	(18,854)
@ 250°C	N/mm²	68
	(psi)	(9,862)

Thermal Properties

Thermal Conductivity (Bulk), W/(m-K)	1.0
Thermal Resistance (Rth):	
Thermal Die (Ti/Ni/Ag) on QFN, K/W	1.03

Electrical Properties

Bond Joint Resistance (Bulk), ohm/0.5 in²	0.0009
Electrical Resistance , RDSon Testing, ohms:	
MOSFET Die on TO-220	0.055

TYPICAL PERFORMANCE OF CURED MATERIAL

Shear Strength

Hot Die Shear Strength @ 260°C:	
2 X 2 mm (80 x 80 mil) die on PPF LF, kg/mm²	1.0

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. Refrigerator storage is recommended.
2. Care must be exercised to avoid entrapment of contaminants.
3. Avoid overheating.
4. Alternate thicknesses may be used depending on the application requirements.
5. Recommended silicon wafer backside lamination temperature is 65ºC or higher.
6. Please contact your Henkel Technical Service representative for details regarding ideal lamination temperatures for your specific wafer and dicing tape recommendation.

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 : 0 to 5 °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.
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, Inc.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 1