

# LOCTITE ABLESTIK ECF 563

November 2019

## PRODUCT DESCRIPTION

LOCTITE ABLESTIK ECF 563 provides the following product characteristics:

<b>Technology</b>	Epoxy Film
<b>Appearance</b>	Gray
<b>Cure</b>	Heat cure
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>Electrically conductive</li> <li>Thermally conductive</li> <li>Thin, uniform bondline control</li> <li>Low squeeze-out during bonding</li> <li>Electrically conductive in the x, y, and Z axis</li> <li>Passes NASA outgassing</li> </ul>
<b>Application</b>	Assembly
<b>Filler Type</b>	Silver
<b>Film Thickness</b>	2 to 6mils
<b>Typical Assembly Applications</b>	Microwave and Heat sink applications

LOCTITE ABLESTIK ECF 563 unsupported epoxy adhesive film is ideal for bonding "hot" devices onto heat sinks in applications where electrical insulation is not required. This adhesive provides RF/EMI shielding in bonding microwave substrates into packages.

LOCTITE ABLESTIK ECF 563 passes NASA outgassing standards.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Work Life @ 25°C, days	91
Shelf Life @ 5°C days	183

## TYPICAL CURING PERFORMANCE

### Cure Schedule

30 minutes @ 150°C

### Alternative Cure Schedule

2 hours @ 125°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

Glass Transition Temperature (Tg) by TMA, °C	88
Coefficient of Thermal Expansion, TMA:	
Below Tg, ppm/°C	60
Above Tg, ppm/°C	250
Thermal Conductivity @ 121°C, BTU/ft hr °F	1.0
Weight Loss @ 300°C, %	0.03

### Electrical Properties

Volume Resistivity, ohm-cm	0.004
Electrical Resistance Measured through gold joints, ohm/ 0.001 0.5 sq. in.	

## TYPICAL PERFORMANCE OF CURED MATERIAL

### Lap Shear Strength :

Al to Al @ 25°C	N/mm <sup>2</sup>	17
	(psi)	(2,500)
Au to Au @ 25°C	N/mm <sup>2</sup>	20
	(psi)	(3,000)

## TYPICAL ENVIRONMENTAL RESISTANCE

### Outgassing Properties

Outgassing , NASA Outgassing:

TML, %	0.21
CVCM, %	0.02
WVR, %	0.09

## GENERAL INFORMATION

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

## THAWING:

1. Allow container to reach room temperature before use.
2. DO NOT open the container before contents reach 25°C temperature. Any moisture that collects on the thawed container should be removed prior to opening the container.
3. DO NOT re-freeze. Once thawed, the adhesive should not be re-frozen.



**DIRECTIONS FOR USE**

1. LOCTITE ABLESTIK ECF 563 adhesive film is unsupported.
2. Handle carefully to avoid any stretching or flexing when frozen.
3. It may be helpful during handling to keep at least one sheet of release paper attached.
4. Preheat surface to be bonded to approximately °C.
5. Remove release paper from one side of the adhesive film.
6. Apply film to one of the bonding surfaces.
7. Remove any trapped air by pressing on the surface.
8. Allow device to cool to room temperature.
9. Remove the release paper from the other side of the adhesive film. Attach the remaining adherend.
10. Apply spring loaded clamp or dead weight to provide continuous pressure of at least 2 to 10 psi during cure cycle.
11. Place assembly in a preheated oven and cure at the recommended cure schedule.
12. This adhesive is not recommended for use on bare aluminum surfaces. Poor ohmic contact will result.

**AVAILABILITY**

1. LOCTITE ABLESTIK ECF 563 adhesive is available in sheet stock, slit rolls or die cut preforms.
2. LOCTITE ABLESTIK ECF 563 adhesive can be die cut to customer specifications.

**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 : 5 °C . Avoid flexing film if stored at colder temperature.**

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**

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

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