PRODUCT DESCRIPTION
CF3350 provides the following product characteristics:

<table>
<thead>
<tr>
<th>Technology</th>
<th>Epoxy Film</th>
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<tbody>
<tr>
<td>Appearance</td>
<td>Gray Tan</td>
</tr>
<tr>
<td>Cure</td>
<td>Heat cure</td>
</tr>
<tr>
<td>Product Benefits</td>
<td>• High electrical conductivity</td>
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<tr>
<td></td>
<td>• High thermal conductivity</td>
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<tr>
<td></td>
<td>• Uniform bondline adhesion</td>
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<td></td>
<td>• Custom preforms available</td>
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<td></td>
<td>• Adhesion with flexibility</td>
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<td></td>
<td>• Void-free bondline</td>
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<td></td>
<td>• Clean, easy application with no waste</td>
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<tr>
<td></td>
<td>• Even heat dissipation</td>
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<td></td>
<td>• Provides electrical continuity</td>
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<td>• Minimum thermal resistance to heat sink</td>
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</tbody>
</table>

Application: Assembly
Filler Type: Silver
Operating Temperature: 40 to 160 °C
Thickness: 2 or 4 mils (±0.5 mils)
Carrier Type: Polyester
Typical Assembly Applications: Circuit board materials, Metal backplanes and Heatsinks
Substrates: Fluoropolymer circuits, Ceramic circuits, Copper, Brass, Kovar and Aluminum
pH: 8.0

CF3350 film adhesive is formulated for electrical, thermal and mechanical assembly applications. The combination of adhesive properties ensures reliable RF ground plane performance.

TYPICAL PROPERTIES OF UNCURED MATERIAL
Work Life @ 25°C, months 3
Shelf Life @ 5°C (from date of manufacture), months 9
Peak Exotherm Temperature, DSC, 177.5°C ± 5°C
Flash Point - See MSDS

TYPICAL CURING PERFORMANCE
Cure Schedule
30 minutes @ 150°C

Alternative Cure Schedule
10 minutes @ 175°C or
50 minutes @ 137°C or
120 minutes @ 125°C

Cure Pressure
5 to 60 psi

TYPICAL PROPERTIES OF CURED MATERIAL
Physical Properties:
- Coefficient of Thermal Expansion TMA:
  - Below Tg, 10⁶/°C: 65
  - Above Tg, 10⁶/°C: 150
- Glass Transition Temperature, DMA, °C: 90
- Thermal Conductivity, W/mK: 7
- Thermal Resistance for 1 sq cm area @ 10psi assembly pressure:
  - 50μm bondline, °C/W: 0.15
  - 100μm bondline, °C/W: 0.23
- Storage Modulus, DMA:
  - @ -40 °C: N/mm² (psi) 4,000 (580,151)
  - @ 0 °C: N/mm² (psi) 3,000 (435,113)
  - @ 25 °C: N/mm² (psi) 2,400 (348,090)
  - @ 100 °C: N/mm² (psi) 680 (98,625)
  - @ 150 °C: N/mm² (psi) 60 (8,702)
- Extractable Ionic Content, ppm:
  - Chloride (Cl⁻): 50
  - Sodium (Na⁺): 30
  - Potassium (K⁺): 5

Electrical Properties:
- Volume Resistivity, ohm/cm @ 25°C: 0.0002

TYPICAL PERFORMANCE OF CURED MATERIAL
Tensile Lap Shear Strength (psi):
- 4 mil thickness, @ 25°C:
  - Substrate: Aluminum to aluminum: 3,400
  - Gold to Gold: 3,500

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. DO NOT open the container before contents reach 22°C temperature. Any moisture that collects on the thawed container should be removed prior to opening the container.
DIRECTIONS FOR USE

1. While substrate cleaning is not mandatory, wiping with an organic solvent (e.g., isopropanol) is recommended to remove any oils that might interfere with the bonding process.

2. Pressure needs to be applied during cure to promote proper wetting of substrate surfaces.

3. Common industry practices to apply pressure include the use of spring clamps, lamination presses, dead weights and vacuum bagging.

4. The technique to apply pressure will vary by application and customer preference.

5. For large surface area applications, a load distribution material is recommended between one of the pressure plates and the bonding part in order to equalize the applied pressure over the entire area.

6. After fixturing, the parts are then cured at an elevated temperature.

7. The specified temperatures and times refer to the bondline values. It should be noted that large mass assemblies will take longer time to achieve bondline temperatures.

8. This material becomes brittle at temperatures below -5°C. If material goes below this temperature, it should be handled gently and the entire package should be warmed to room temperature before opening. This will minimize the possibility of fracturing in the brittle state or allowing condensation to collect on the product.

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 in original, tightly covered containers in clean, dry areas. Storage information may be indicated on the product container labeling. Usable shelf life may vary depending on method of application and storage conditions.

Optimal Storage: 5°C. Storage below 5°C or greater than minus 5°C can adversely affect product properties.

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
N/mm² x 145 = psi
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

Note
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 and its affiliates ("Henkel") specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel products. Henkel 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 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.

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