



# UF3800™

January 2009

## PRODUCT DESCRIPTION

UF3800™ provides the following product characteristics:

<b>Technology</b>	Epoxy
<b>Appearance</b>	Black liquid
<b>Cure</b>	Heat cure
<b>Application</b>	Underfill
<b>Typical Package Application</b>	Chip scale packages and BGA
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>• One component</li> <li>• Reworkable</li> <li>• Fast cure at moderate temperatures</li> <li>• Minimal stress on other components</li> <li>• High Tg</li> <li>• Compatible with most Pb-free and halogen-free solders</li> <li>• Stable electrical performance in Temperature Humidity Bias</li> </ul>

UF3800™ reworkable epoxy underfill is designed for CSP and BGA applications. It cures quickly at moderate temperatures to minimize stress to other components, and when cured provides excellent mechanical stress protection for solder joints.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity @ 25°C, MPa Physica MCR100, Spindle CP50-1, 1000S-1	375
Specific Gravity	1.13
Pot Life @ 25°C, days	3
Shelf Life @ -20°C, months	6
Flash Point - See MSDS	

## TYPICAL CURING PERFORMANCE

### Cure Schedule

≥8 minutes @ 130°C

**Note:** This is a bondline / material temperature.

The above cure profile is a guideline recommendation. 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 ppm/°C:	
Below Tg, ppm/°C	52
Above Tg, ppm/°C	188
Glass Transition Temperature (Tg) by TMA, °C	69

Storage Modulus, 25°C, GPa

3.08

## GENERAL INFORMATION

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

### Rework Procedure

1. Heat part to 240°C or greater using a hot air nozzle on standard BGA rework equipment.
2. The component can then be twisted and removed.
3. Residue can be removed by using a tacky or liquid flux with a soldering iron.

### 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 -15°C. Storage below -25°C or greater than -15°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

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



**Note**

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Reference 0.0