Technical Data Sheet

# LOCTITE ECCOBOND UF 8806H

September 2012

## PRODUCT DESCRIPTION

LOCTITE ECCOBOND UF 8806H provides the following product characteristics:

| | |
|---|---|
| **Technology** | Cyanate Ester |
| **Appearance** | Translucent |
| **Cure** | Heat cure |
| Product Benefits | • Moisture resistant<br>• Electrically Insulating<br>• High glass transition<br>• Low thermal expansion<br>• Ultra-fine filler system<br>• Superior adhesion after moisture testing<br>• Excellent flow characteristics for high density arrays |
| **Application** | Encapsulant |
| Filler Type | Silica |

LOCTITE ECCOBOND UF 8806H is designed to improve the thermal cycling and reliability performance of flip chip devices. It is formulated using a proprietary Moisture Resistant Cyanate Estser (MRCE) resin. This material is designed to achieve JEDEC Level 1 reliability standards with ceramic substrates. This material will form a hard polymer when sufficiently cured.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

| | |
|---|---|
| Thixotropic Index (0.5/5 rpm) | ≤1.6 |
| Viscosity, Brookfield CP51, 25 °C, mPa·s (cP) | 3,300 |
| Work Life @ 25°C, hours | 24 |
| Shelf Life @ -40°C, days | 365 |
| Flash Point - See SDS | |

## TYPICAL CURING PERFORMANCE

**Cure Schedule**

45 minutes @ 195°C plus 45 minutes @ 195°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 ppm/°C: | | |
| Below Tg, ppm/°C | | 36 |
| Above Tg, ppm/°C | | 110 |
| Glass Transition Temperature (Tg) by TMA, °C | | ≥110 |
| Tensile Modulus: | | |
| @ -65 °C | N/mm² | 8,100 |
| | (psi) | (1,174,806) |
| @ 25 °C | N/mm² | 6,800 |
| | (psi) | (986,256) |
| @ 150 °C | N/mm² | 350 |
| | (psi) | (50,763) |
| @ 250 °C | N/mm² | 188 |
| | (psi) | (27,267) |
| Extractable Ionic Content, @ 100°C ppm: | | |
| Chloride (Cl-) | | ≤25 |
| Sodium (Na+) | | ≤25 |
| Potassium (K+) | | ≤25 |
| Fluoride (F-) | | ≥25 |

## 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. After removing from the freezer, set the syringes to stand vertically while thawing.
3. 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.
4. DO NOT re-freeze. Once thawed to 25°C, the adhesive should not be re-frozen.

## DIRECTIONS FOR USE

1. Thawed adhesive should immediately be placed on dispense equipment for use.
2. If the adhesive is transferred to a final dispensing reservoir, care must be exercised to avoid entrapment of contaminants and/or air into the adhesive.
3. Adhesive must be completely used within the products recommended work life.

**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: -40 °C. Storage below minus (-)40 °C or greater than minus (-)40 °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
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

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