

Product Description

DM-UFL-16001 is a two part epoxy thermoset underfill that is syringe printed. It is designed for use as a capillary underfill for chip size packages and other electronic components. The paste is cured at low temperature and is stretchable and therefore minimises joint stress during assembly, thermoforming and molding processes whilst increasing component bond strength. Applications include In-Mold Electronics (IME) and hybrid printed electronics use. It is transparent and therefore ideal for LED packages.

Product Benefits

- Stretchable and compatible with thermoforming and injection molding
- Low temperature cured
- Compatible with Dycotec stretchable conductive adhesive range
- Transparent (>99%) and compatible with LED applications
- Stretchable enabling low stress on assembly joint formation during curing, thermoforming and injection molding

Paste Preparation

DM-UFL-16001 is a two part adhesive system. The component parts should be mixed in a ratio by weight of 1.0:1.0 of part A (resin) to part B (hardener). The contents of one container of the Part A, DM-UFL-16001A system can be added completely to a pot of DM-UFL-16001B. The combined pastes should then be mixed slowly. Avoid rapid stirring to prevent air entrapment during the stirring process. As soon as the product is activated, the material should be used immediately.

Properties of the Uncured Paste

Test	Properties
Viscosity after mixing (Pa.s) (Lamy, cone and plate 10s ⁻¹ , 20°C)	0.1 - 1.0 (Part A) 0.5 - 2.5 (Part B)
Colour	Transparent >99% (550 nm)
Solids Content	100%

Paste Processing Conditions

Parameter	Typical Properties
Deposition Method	Syringe
Minimum Gap Sizes	30 µm
Pot-life	>1 hour

Curing of the underfill is at 60°C for 60 mins to cure to the beta stage which makes it safe for handling. The final cure will occur at room temperature overnight. The slower cure leads to better crosslinking and higher strength.

Properties of Cured Underfill

Test	Properties
Transparency	>99% (550 nm)
Shore A hardness	5B
Elongation (ASTM D638)	30%

Clean-Up

Equipment can be cleaned using isopropanol alcohol or acetone.

Storage and Shelf-life

Containers should be stored at room temperature (<25°C). The shelf-life for part A and part B components is 6 months from date of shipment. Dycotec Materials cannot assume responsibility for component parts that has not been stored in inappropriate conditions or where the component parts that have been contaminated following use.

Safety and Handling

For safe use of this product, please review relevant material safety and datasheet (MSDS).

For more information, please contact:

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All information reported in the datasheet is for experimental work undertaken in our laboratories and illustrates typical values only. Processing conditions may vary depending on customers' experience and their application requirements and manufacturing process equipment set-up.

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