



NAMICS CORPORATION

# U8410-99-1F

CAPILLARY UNDERFILL MATERIAL

## 1 DESCRIPTION

U8410-99-1F is an epoxy based insulating material for FLIP-CHIP manufacturing. It's excellent flowability allows narrow gap penetration between substrate, integrated circuit chip, and interconnect bumps providing excellent reliability during thermal cycles.

## 3 KEY FEATURES

- Fine pitch and narrow gap compatibility
- Excellent reliability performance for both Lead (Pb) free and Copper (Cu) Pillar Bumps
- Excellent reduced stress and Low K layer
- Excellent coplanarity / low warpage
- Excellent jet-ability

## 2 APPLICATIONS

- Flip-Chip BGA/LGA/PGA
- Flip-Chip CSP

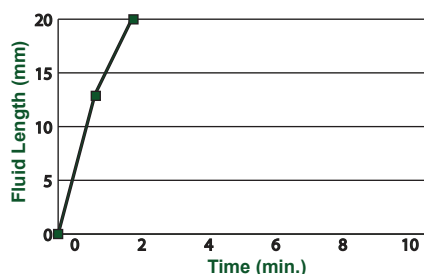
## 4 TYPICAL PROPERTIES \*

**Parameter** **Unit** **Note / Condition**

U8410-99-1F				
Filler Content	60	wt%		
Filler Size	Mean Max	1.6 10.0	µm	Measured by laser diffraction
Color		Black		
Viscosity		55	Pa·s	@25°C
Thermal Conductivity		0.45	W/mK	
Tg	DMA TMA	119 100	°C	Dual Cantilever Beam Compression
Coefficient of Thermal Expansion (CTE)	<Tg >Tg	28 100	ppm/°C	TMA
Bending Modulus		10.5	GPa	
Bending Strength		150	MPa	
Storage Modulus (DMA)	<Tg >Tg	10.0 0.1	GPa	Dual Cantilever Beam
Volume Resistivity	Initial After PCT	>1.0x10 <sup>14</sup> >1.0x10 <sup>12</sup>	Ω·cm	DC 500V PCT: 121°C, 2atm, 20 hours
Impurities Concentration	Cl <sup>-</sup> Na K	< 20 < 5 < 5	ppm	PCT: 121°C, 2atm, 20 hours

\* This data is for reference and is not guaranteed.

## 5 FLUIDITY



### Test Conditions

Substrate : FR-4  
 Chip : Glass  
 Gap : 50μm  
 Temperature : 110°C

## 6 STORAGE AND HANDLING

- Store -40°C or below for up to 12 months.
- Thaw before use. Warm at room temperature until no longer cool to touch (normally 60-90 minutes). Do not thaw in oven.
- Wear gloves when handling product.
- Clean contaminated skin with soap and water.

## 7 PROCESSING GUIDELINES

- Standard dispensing conditions:  
 Needle: 18-23G  
 Temperature: Substrate 90-120°C
- Curing condition: 150°C/2 hours

## 8 POT LIFE INFORMATION

- Pot life at 25°C is up to 24 hours.

## 9 ORDERING INFORMATION

### U8410-99-1F

- Available in syringes only.
- Standard syringe sizes and fill amounts are 10cc filled with 10 grams and 30cc filled with 30-50 grams.
- Contact your local NAMICS office.

## 10 MORE INFORMATION

For more information on U8410-99-1F and other NAMICS products contact your local NAMICS sales office:

**NAMICS Corporation Japan**

**NAMICS Technologies, Inc. USA**

**NAMICS Europe GmbH Germany**

**Singapore NAMICS Company Pte. Ltd Singapore**

**Taiwan NAMICS Electronics Co., Ltd. Taiwan (R.O.C.)**

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