

## Technical Data Sheet

### FeedBond® FP-5023-E2

#### *Electrically Conductive Die Attach Adhesive*

#### **Description:**

**FeedBond®FP-5023-E2** electrically conductive adhesive is designed for die attach of IC package with small to medium size dies on silver and gold-plated leadframes, as well as on copper leadframes.

#### **Characteristics:**

- Minimal tailing and stringing
- Minimal bleeding
- Good bonding on variable substrates.
- Low stress

UNCURED PROPERTIES		TEST DESCRIPTION	TEST METHOD
Appearance	Silver		
Viscosity @ 25°C	9500cps	Brookfield DV-III/CP-51 @ 5rpm	FT-P006
Thixotropic Index @ 25°C	3.5	Brookfield DV-III/CP-51 Visc. @ 0.5rpm/Visc. @ 5rpm	FT-P008
Grind	< 20µm	Grind meter	FT-P026
Moisture Content	< 0.5 %	25°C/24hours	FT-P002
Work Life @ 25°C	48 hrs	25% increase in visc. @ 5rpm	FT-P024
Shelf Life@ -40°C	12months		FT-P018
CURE CONDITION		TEST DESCRIPTION	TEST METHOD
Standard Cure Condition		20~30 minutes ramp to 150°C+60 minutes @ 150°C	
Alternate Cure Condition		20~30 minutes ramp to 175°C+ 30 minutes @ 175°C	

## FeedBond<sup>®</sup> FP-5023-E2

PHYSIOCHEMICAL PROPERTIES		TEST DESCRIPTION	TEST METHOD
Glass Transition Temperature (Tg)	63°C	TMA Expansion Mode	FT-M016A
Glass Transition Temperature (Tg)	88°C	DMA Mode	FT-M019A
Coefficient of Thermal Expansion			
Below Tg( $\alpha$ 1)	52ppm/°C	TMA Expansion Mode	FT-M016
Above Tg( $\alpha$ 2)	212 ppm/°C		
Flexural Modulus			
@25°C	5003MPa	Dynamic Mechanical Thermal Analysis(TA) using <1.6mm thick specimen	FT-M019A
@150°C	93MPa		
@250°C	89MPa		
Weight loss	<1 % @300°C	Thermogravimetric Analysis	FT-P010
Ionic Content		Teflon flask, 20~40 mesh, 5g sample in 50g DI water, 24hr@100°C	FTC-021
Cl-	<20 ppm		
Na+	<10 ppm		
K+	<10ppm		
MECHANICAL PROPERTIES- POST CURE		TEST DESCRIPTION	TEST METHOD
Die Shear Strength @ 25°C	10Kg/die	2mmx2mm Si die on Ag/Cu LF (80milx80 mil)	FT-M012
@260°C	2Kg/die		
THERMAL ELECTRICAL PROPERTIES- POST CURE		TEST DESCRIPTION	TEST METHOD
Thermal Conductivity @ 25°C	2 W/m · K	HOT DISK Tester	FT-P022
Volume resistivity	0.0002 ohm-cm	4-Point Probe	FT-P017

### Instruction

#### Thawing

Place the container to stand vertically for 30min ~90min. **DO NOT** open the container before adhesive reaches ambient temperature to prevent the moisture condensation. Any moisture that collects on the thawed container should be removed prior to use. Adhesives that appear to have separated should not be used.

#### Storage

Adhesive should be stored @ -40°C. The shelf life of the material is only valid when the material has been stored at the correct storage condition.

#### Availability

FeedBond<sup>®</sup> adhesives are packaged in syringes or pots per customer specification. For the details, please contact our Customer Service or sales department.