

# Technical Data Sheet

## FeedBond® AP-1200-A2

### Non-Conductive Adhesive

#### Introduction:

**AP-1200-A2** is a one component, non-voiding, low bleeding, low internal stress, non-conductive epoxy hybrid adhesive designed for Pb-free PBGA and Array BGA semiconductor die attach. This high strength adhesive can be used on wide range of die sizes. It is suitable for dispensing application.

#### Characteristics:

- Excellent dispensability with minimal tailing and stringing
- Low modulus
- Box oven cure or in-line snap cure
- High reliability packaging application

UNCURED PROPERTIES		TEST DESCRIPTION	TEST METHOD
Appearance	Red		
Viscosity @ 25°C	12000 cps	Brookfield DV-III/CP-51 @ 5rpm	FT-P006
Thixotropic Index @ 25°C	4.5	Brookfield DV-III/CP-51 Visc. @ 0.5rpm/Visc @ 5rpm	FT-P008
Work Life @ 25°C	48 hours	25% increase in visc. @ 5rpm	FT-P024
Shelf Life@ -40°C	12month		FT-P018
CURE PROCESS DATA		TEST DESCRIPTION	TEST METHOD
Weight loss on cure	3.0%	TGA	FT-P010
Standard Cure Condition		15 minutes @175°C	
Alternate Cure Condition		5°C/min ramp to 175°C + 15minutes @ 175°C	

The tables shown above are typical values only. If you need to write a specification , please request our current Standard Release Specification.

## ***FeedBond® AP-1200-A2***

### **Non-Conductive Adhesive**

PHYSIOCHEMICAL PROPERTIES- POST CURE		TEST DESCRIPTION	TEST METHOD
Glass Transition Temperature 15 °C		DMA Tension Mode	FT-M016
Coefficient of Thermal Expansion		TMA Expansion Mode	FT-M016
Below Tg( $\alpha_1$ )	90ppm/°C		
Above Tg( $\alpha_2$ )	175ppm/°C		
Dynamic Tensile Modulus		Dynamic Mechanical Thermal  Analysis using 0.3 mm thick specimen	FT-M019
@ -40°C	1550MPa		
@25°C	460MPa		
@150°C	49MPa		
@250°C	57MPa		
Weight loss@200°C	<1%	TGA	FT-P010
Decompose temperature	400°C	Thermogravimetric Analysis	FT-P010
Moisture Absorption	1.2%	85 °C /85%RH exposure	FT-P032
Ionics			
Cl-	<10 ppm	Teflon flask, 20~40 mesh, 5g	FTC-021
Na+	<10 ppm	sample in 50g DI water,	
K+	<10 ppm	24hr@100°C	
MECHANICAL PROPERTIES- POST CURE		TEST DESCRIPTION	TEST METHOD
Die Shear Strength @ 25°C	>7kg/die	2mmx2mm Si die on Ag/Cu LF (80milx80 mil)	FT-M012
Die Shear Strength @ 25°C	10kg/die	2mmx2mm Si die on SM/BT (80milx80 mil)	FT-M012
THERMAL ELECTRICAL PROPERTIES- POST CURE		TEST DESCRIPTION	TEST METHOD
Thermal Conductivity	0.2 W/m · K	HOT DISK Tester	FT-P022

## **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 adhesives are packaged in syringes or pots per customer specification. For the details, please contact our Customer Service or sales department.