Product Information Sheet

MATERIAL ID: **EPO-TEK® H74F**
Date: Nov 2010 **Per:**
Rev: IV

Material Description:	A two component, high Tg, thermally conductive, electrically insulating epoxy designed for semiconductor packaging including heat sinking, hermetic sealing, and opto-electronic assemblies. It may be used for flip chip underfill, sealing sensor devices packaged in TO-cans or fiber optic feed-through. It may be considered a finer particle version of EPO-TEK® H74.
Number of Components:	Two
Mix Ratio by weight:	100:4
Cure Schedule (minimum)	150°C/5 Minutes - 120°C/10 Minutes - 100°C/20 Minutes - 80°C/2 Hours
Specific Gravity:	--- Part A: 2.02 Part B: 1.02
Pot Life:	3 Hours
Shelf Life:	One year at room temperature

NOTE: Container(s) should be kept closed when not in use. Filled systems should be stirred thoroughly before mixing and prior to use. Refrigeration of Part A may help prevent settling.

MATERIAL CHARACTERISTICS: *To be used as a guide only, not as a specification. Data below is not guaranteed. Different batches, conditions and applications yield differing results; Cure condition: 150°C/1 hour*
* denotes test on lot acceptance basis

PHYSICAL PROPERTIES:

***Color (before cure):**	Part A: Dark Grey Part B: Amber	**Weight Loss:**	
***Consistency:**	Smooth paste	**@ 200°C:**	0.05 **%**
***Viscosity (23°C):**		**@ 250°C:**	0.05 **%**
@ 5.0 **rpm**	45,000 - 75,000 **cPs**	**@ 300°C:**	0.10 **%**
Thixotropic Index:	1.9	**Operating Temp:**	
***Glass Transition Temp:**	≥ 90 **°C** (Dynamic Cure 20—200°C /ISO 25 Min; Ramp -10—200°C @ 20°C/Min)	**Continuous:**	- 55**°C to** + 250**°C**
		Intermittent:	- 55**°C to** + 350**°C**
Coefficient of Thermal Expansion (CTE):		**Storage Modulus @ 23°C:**	638,392 **psi**
Below Tg:	33 **x 10^{-6} in/in°C**	**Ion Content:**	
Above Tg:	108 **x 10^{-6} in/in°C**	**Cl^-:**	41 **ppm**
Shore D Hardness:	88	**NH_4^+:**	100 **ppm**
Lap Shear @ 23°C:	> 2,000 **psi**	**Na^+:**	20 **ppm**
Die Shear @ 23°C:	≥ 15 **Kg /** 5,100 **psi**	**K^+:**	9 **ppm**
Degradation Temp:	486 **°C**	***Particle Size:**	≤ 20 **microns**

ELECTRICAL AND THERMAL PROPERTIES:

Thermal Conductivity:	0.52 **W/mK**	**Dielectric Constant (1KHz):**	4.90
Volume Resistivity @ 23°C:	≥ 5 x 10^{13} **Ohm-cm**	**Dissipation Factor (1KHz):**	0.012

OPTICAL PROPERTIES @ 23°C:

Spectral Transmission:	N/A	**Index of Refraction:**	N/A

EPOXY TECHNOLOGY, INC.
14 FORTUNE DRIVE, BILLERICA, MA 01821 (978) 667-3805, FAX (978) 663-9782
WEB SITE: www.epotek.com