EPO-TEK® H70E-4

Epoxy; Epoxide

Epoxy Technology Inc.

Message:

EPO-TEK® H70E-4 is a two component, thermally conductive, electrically insulating epoxy adhesive for semiconductor, micro-electronic and opto-electronic packaging. It may be used for heat sinking power devices in the form of hybrid circuits or at the SMD / PCB level.

General Information				
Features	Electrically Insulating			
	Good Adhesion			
	Thermally Conductive			
	Thixotropic			
Uses	Adhesives			
	Bonding			
	Electrical/Electronic Applications			
	Printed Circuit Boards			
Agency Ratings	EC 1907/2006 (REACH)			
	EU 2003/11/EC			
	EU 2006/122/EC			
RoHS Compliance	RoHS Compliant			
Forms	Paste			
Physical	Nominal Value	Unit		
Physical Particle Size	Nominal Value	Unit µm		
Particle Size			TGA	
	< 20.0	μm	TGA	
Particle Size Degradation Temperature	< 20.0 432	μm °C	TGA	
Particle Size Degradation Temperature Die Shear Strength - >5 kg (23°C)	< 20.0 432	μm °C	TGA	
Particle Size Degradation Temperature Die Shear Strength - >5 kg (23°C) Operating Temperature	< 20.0 432 11.7	μm °C MPa	TGA	
Particle Size Degradation Temperature Die Shear Strength - >5 kg (23°C) Operating Temperature Continuous	< 20.0 432 11.7 -55 to 200	μm °C MPa	TGA	
Particle Size Degradation Temperature Die Shear Strength - >5 kg (23°C) Operating Temperature Continuous Intermittent	< 20.0 432 11.7 -55 to 200 -55 to 300	μm °C MPa °C °C	TGA	
Particle Size Degradation Temperature Die Shear Strength - >5 kg (23°C) Operating Temperature Continuous Intermittent Storage Modulus (23°C)	< 20.0 432 11.7 -55 to 200 -55 to 300 2.87	μm °C MPa °C °C	TGA	
Particle Size Degradation Temperature Die Shear Strength - >5 kg (23°C) Operating Temperature Continuous Intermittent Storage Modulus (23°C) Thixotropic Index	< 20.0 432 11.7 -55 to 200 -55 to 300 2.87	μm °C MPa °C °C	TGA	
Particle Size Degradation Temperature Die Shear Strength - >5 kg (23°C) Operating Temperature Continuous Intermittent Storage Modulus (23°C) Thixotropic Index Weight Loss on Heating	< 20.0 432 11.7 -55 to 200 -55 to 300 2.87 3.20	μm °C MPa °C °C GPa	TGA	
Particle Size Degradation Temperature Die Shear Strength - >5 kg (23°C) Operating Temperature Continuous Intermittent Storage Modulus (23°C) Thixotropic Index Weight Loss on Heating 200°C	< 20.0 432 11.7 -55 to 200 -55 to 300 2.87 3.20 0.57	μm °C MPa °C °C °C GPa	TGA	
Particle Size Degradation Temperature Die Shear Strength - >5 kg (23°C) Operating Temperature Continuous Intermittent Storage Modulus (23°C) Thixotropic Index Weight Loss on Heating 200°C 250°C	< 20.0 432 11.7 -55 to 200 -55 to 300 2.87 3.20 0.57 1.5	μm °C MPa °C °C GPa %	TGA	

2	1.7E-5	cm/cm/°C	
3	7.7E-5	cm/cm/°C	
Thermal Conductivity	0.57	W/m/K	
Thermoset	Nominal Value	Unit	Test Method
Thermoset Components			
Part A	Mix Ratio by Weight: 1.0		
Part B	Mix Ratio by Weight: 1.0		
Shelf Life (23°C)	52	wk	
Uncured Properties	Nominal Value	Unit	Test Method
Color			
4	Grey		
5	Grey		
Density			
Part A	1.61	g/cm³	
Part B	2.01	g/cm³	
Viscosity ⁶ (23°C)	20 to 40	Pa·s	
Curing Time (150°C)	1.0	hr	
Pot Life	3600	min	
Cured Properties	Nominal Value	Unit	Test Method
Shore Hardness (Shore D)	67		
Lap Shear Strength (23°C)	7.38	MPa	
Relative Permittivity (1 kHz)	4.81		
Volume Resistivity (23°C)	> 2.5E+13	ohms·cm	
Dissipation Factor (1 kHz)	0.018		
NOTE			
1.	Dynamic Cure 20-200°C/ISO 25 Min; Ramp -40-200°C @ 20°C/Min		
2.	Below Tg		
3.	Above Tg		
4.	Part B		
5.	Part A		
6.	10 rpm		

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