EPO-TEK® H77

Epoxy; Epoxide

Epoxy Technology Inc.

Message:

EPO-TEK® H77 is a two component, thermally conductive, electrically insulating epoxy system designed for lid-sealing of hybrids found in hermetic packaging of micro-electronics. Lids can be ceramic, glass, aluminum or kovar. Package types can be plastic, metal cases or ceramic.

General Information					
Features	Electrically Insulating				
	Good Chemical Resistance				
	Low to No Outgassing				
	Low Viscosity				
	Solvent Resistant				
	Thermally Conductive				
Uses	Aircraft Applications				
	Automotive Under the Hood				
	Electrical/Electronic Applications				
	Medical/Healthcare Applications				
	Seals				
Agency Ratings	ASTM E 595				
	EC 1907/2006 (REACH)				
	EU 2003/11/EC				
	EU 2006/122/EC				
RoHS Compliance	RoHS Compliant				
Forms	Paste				
Processing Method	Casting				
	Potting				
Physical	Nominal Value	Unit			
Particle Size	< 50.0	μm			
Degradation Temperature	405	°C	TGA		
Die Shear Strength - >5 kg (23°C)	11.7	MPa			
Operating Temperature					
Continuous	-55 to 250	°C			
Intermittent	-55 to 350	°C			
Storage Modulus (23°C)	6.55	GPa			
Thixotropic Index	1.40				
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200°C 0.15 % % 1.5 % 1.					
250°C 0.38 % 300°C 1.5 % Thermal Nominal Value Unit Glass Taristion Temperature	Weight Loss on Heating				
1.5 %	200°C	0.15	%		
Thermal Nominal Value Unit Giass Transition Temperature 1	250°C	0.38	%		
Second Common	300°C	1.5	%		
CLE - Flow —² 3.3E-5 cm/cm/°C —³ 1.3E-4 cm/cm/°C Thermal Conductivity 0.66 W/m/K Thermoset Components Part A Mix Ratio by Weight: 100 Part B Mix Ratio by Weight: 15 Shelf Life (23°C) 52 wk Color —² Amber — —³ Grey — Density Part B 1.22 g/cm² Part B 1.26 g/cm² Part B 1.29 g/cm²	Thermal	Nominal Value	Unit		
3 3.8-5 cm/cm/°C 3 1.3E-4 cm/cm/°C Thermoet Nominal Value Unit Test Method Thermoet Omponents Part A Mix Ratio by Weight: 100 Part B Mix Ratio by Weight: 15 Shelf Life (23°C) 52 w/k Uncured Properties Nominal Value Unit Test Method Color 4 Anaber 5 Grey Density Part B 122 gr/cm² Part B 2.69 gr/cm² Part A 2.69 gr/cm² Viscosity ⁶ (23°C) 6.0 to 12 Pars S Curing Time (150°C) 1.0 hr Pot Life 360 minal Value Unit Test Method Cured Properties Unit Test Method Mix Ratio by Weight: 15 MPart B 5.64 Cured Properties Unit Test Method MPa Ratio Signal Sig	Glass Transition Temperature ¹	> 80.0	°C		
1.3E-4 cm/cm/°C Thermal Conductivity 0.66 W/m/K Themoset Nominal Value Unit Test Method Thermoset Components Part A Mix Ratio by Weight: 100 Part B Mix Ratio by Weight: 15 Shelf Life (3°C) 52 wk Uncured Properties Nominal Value Unit Test Method Color — 4 Amber — 5 Grey Density Part B 1.22 g/cm³ Part A 2.69 g/cm³ Part A 2.69 g/cm³ Part A 3.60 to 12 Part A 3.60 min (3°C) Using (150°C) 1.0 hr Curing (150°C) 1.0 hr Curing Airme (150°	CLTE - Flow				
Themal Conductivity 0.66 W/m/K Themoset Nominal Value Unit Test Method Themoset Components Part A Mix Ratio by Weight: 100 Part B Mix Ratio by Weight: 15 Shelf Life (23°C) 52 wk Uncured Properties Nominal Value Unit Test Method Color	2	3.3E-5	cm/cm/°C		
Thermoset Components Part A Mix Ratio by Weight: 100 Part B Mix Ratio by Weight: 15 Shelf Life (23°C) 52 wk Uncured Properties Nominal Value Unit Test Method Color 4 Amber 5 Grey Density Part A 2.69 g/cm³ Viscosity 6(23°C) 1.0 e	3	1.3E-4	cm/cm/°C		
Thermoset Components Part A Mix Ratio by Weight: 100 Part B Mix Ratio by Weight: 15 Shelf Life (23°C) 52 wk Uncured Properties Nominal Value Unit Test Method Color	Thermal Conductivity	0.66	W/m/K		
Part A Mix Ratio by Weight: 15 Shelf Life (23°C) 52 wk Uncured Properties Nominal Value Unit Test Method Color	Thermoset	Nominal Value	Unit	Test Method	
Part B Mix Ratio by Weight 15 Shelf Life (23°C) 52 wk Uncured Properties Nominal Value Unit Test Method Color — 4 Amber — 5 Grey Density — 7 Grey — 7 <th< td=""><td>Thermoset Components</td><td></td><td></td><td></td></th<>	Thermoset Components				
Shelf Life (23°C) 52 wk Uncured Properties Nominal Value Unit Test Method Color	Part A	Mix Ratio by Weight: 100			
Unuared Properties Nominal Value Unit Test Method Color499999	Part B	Mix Ratio by Weight: 15			
Color 4 Amber 5 Grey Density Fort B 1.22 g/cm³ Part A 2.69 g/cm³ Viscosity ⁶ (23°C) 6.0 to 12 Par's Curing Time (150°C) 1.0 hr Pot Life 360 min Cured Properties Nominal Value Unit Test Method Shore Hardness (Shore D) 90 Test Method Lap Shear Strength (23°C) 10.5 MPa Relative Permittivity (1 kHz) 5.64 Wolume Resistivity (23°C) > 1.0E+13 ohms·cm Dissipation Factor (1 kHz) 6.0E-3 NOTE NOTE 1. Below Tg Min; Ramp-10-200°C @ 200°C/Min Serice (2-200°C/Min (200°C/Min) Serice (2-200°C/Min) Serice (2-200°C/Min) Serice (2-200°C/Min) Serice (2-200°C/Min) Serice (2-200°C/Min) Serice (2-200°C/Min) Serice (2-200°C/Min) </td <td>Shelf Life (23°C)</td> <td>52</td> <td>wk</td> <td></td>	Shelf Life (23°C)	52	wk		
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Curing Time (150°C) 1.0 hr Pot Life 360 min Cured Properties Nominal Value Unit Test Method Shore Hardness (Shore D) 90 ————————————————————————————————————	Part A	2.69	g/cm³		
Pot Life 360 min Cured Properties Nominal Value Unit Test Method Shore Hardness (Shore D) 90	Viscosity ⁶ (23°C)	6.0 to 12	Pa·s		
Cured PropertiesNominal ValueUnitTest MethodShore Hardness (Shore D)90Lap Shear Strength (23°C)10.5MPaRelative Permittivity (1 kHz)5.64Volume Resistivity (23°C)> 1.0E+13ohms·cmDissipation Factor (1 kHz)6.0E-3NOTE1.Dynamic Cure 20-200°C/ISO 25 Min; Ramp -10-200°C @ 20°C/Min2.Below Tg3.Above Tg4.Part B5.Part A	Curing Time (150°C)	1.0	hr		
Shore Hardness (Shore D) 90 Lap Shear Strength (23°C) 10.5 MPa Relative Permittivity (1 kHz) 5.64 Volume Resistivity (23°C) > 1.0E+13 ohms·cm Dissipation Factor (1 kHz) 6.0E-3 NOTE 1. Dynamic Cure 20-200°C/ISO 25 Min; Ramp -10-200°C @ 20°C/Min 2. Below Tg 3. Above Tg 4. Part B 5. Part A	Pot Life	360	min		
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Dissipation Factor (1 kHz) 6.0E-3 NOTE 1. Dynamic Cure 20-200°C/ISO 25 Min; Ramp -10-200°C @ 20°C/Min 2. Below Tg 3. Above Tg 4. Part B 5. Part A	Relative Permittivity (1 kHz)	5.64			
Dynamic Cure 20-200°C/ISO 25 1. Min; Ramp -10-200°C @ 20°C/Min 2. Below Tg 3. Above Tg 4. Part B 5. Part A	Volume Resistivity (23°C)	> 1.0E+13	ohms·cm		
Dynamic Cure 20-200°C/ISO 25 Min; Ramp -10-200°C @ 20°C/Min Below Tg Above Tg Part B Part A	Dissipation Factor (1 kHz)	6.0E-3			
1.Min; Ramp -10-200°C @ 20°C/Min2.Below Tg3.Above Tg4.Part B5.Part A	NOTE				
3. Above Tg 4. Part B 5. Part A	1.				
4. Part B 5. Part A	2.	Below Tg			
5. Part A	3.	Above Tg			
	4.	Part B			
6. 20 rpm	5.	Part A			
	6.	20 rpm			

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