

EPO-TEK® EK1000

Epoxy; Epoxide

Epoxy Technology Inc.

Message:

EPO-TEK® EK1000 is a silver-filled adhesive that exhibits exceptional thermal and electrical conductivity along with a shiny silver appearance designed for the demanding requirements of high power LED die attach applications. It is the single component version of EPO-TEK® EK2000.

General Information		
Filler / Reinforcement	Silver	
Features	Electrically Conductive	
	Thermally Conductive	
	Thixotropic	
Uses	Adhesives	
	Electrical/Electronic Applications	
	LEDs	
Agency Ratings	EC 1907/2006 (REACH)	
	EU 2003/11/EC	
	EU 2006/122/EC	
RoHS Compliance	RoHS Compliant	
Forms	Paste	
Physical	Nominal Value	Unit
Ion Type		
Cl-	< 10	ppm
K+	0	ppm
Na+	2	ppm
NH4+	6	ppm
Particle Size	< 45.0	µm
Dry Time	< 1.0	day
Degradation Temperature	357	°C
Die Shear Strength		
> 10 kg : 23°C ¹	23.4	MPa
> 5 kg : 23°C ²	11.7	MPa
Operating Temperature		
Continuous	-55 to 200	°C
Intermittent	-55 to 300	°C
Storage Modulus	1.89	GPa
Thixotropic Index	3.60	

Weight Loss on Heating		
200°C	0.090	%
250°C	0.94	%
300°C	1.7	%
Thermal	Nominal Value	Unit
Glass Transition Temperature ³	> 80.0	°C
CLTE - Flow		
-- ⁴	3.8E-5	cm/cm/°C
-- ⁵	9.4E-5	cm/cm/°C
Thermal Conductivity		
-- ⁶	13	W/m/K
-- ⁷	26	W/m/K
-- ⁸	36	W/m/K
Thermoset	Nominal Value	Unit
Shelf Life (-40°C)	52	wk
Post Cure Time (200°C)	1.0	hr
Uncured Properties	Nominal Value	Unit
Color	Silver	
Density	3.33	g/cm ³
Viscosity ⁹ (23°C)	1.8 to 3.6	Pa · s
Curing Time (150°C)	1.0	hr
Pot Life	20000	min
Cured Properties	Nominal Value	Unit
Shore Hardness (Shore D)	66	
Lap Shear Strength (23°C)	6.96	MPa
Volume Resistivity (23°C)	< 9.0E-5	ohms · cm
NOTE		
1.	Initial	
2.	After 1000 hrs 85°C/85%RH	
3.	Dynamic Cure 20-200°C/ISO 25 Min; Ramp -10-200°C @ 20°C/Min	
4.	Below Tg	
5.	Above Tg	
6.	150°C/1 Hour Cure	
7.	150°C/1 Hour+200°C/1 Hour Cure	
8.	125°C/2.5 Hours+150°C/36 Minutes+200°C/15 Minutes Cure	
9.	100 rpm	

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