

EPO-TEK® OE121 Black

Epoxy; Epoxide
Epoxy Technology Inc.

Message:

A two component, low temperature curing epoxy adhesive designed for semiconductor flip chip underfill. It is color coded black for visual ID during the underfilling process. It may also be used for adhesive, potting, sealing, and encapsulation applications found within the electronics, medical, and optical industries. It is a black version of EPO-TEK® OE121.

General Information		
Uses	Adhesives	
	Electrical/Electronic Applications	
	Medical/Healthcare Applications	
	Optical Applications	
	Seals	
Agency Ratings	EC 1907/2006 (REACH)	
	EU 2003/11/EC	
	EU 2006/122/EC	
RoHS Compliance	RoHS Compliant	
Forms	Liquid	
Processing Method	Encapsulating	
	Potting	
Physical	Nominal Value	Unit
Ion Type		
Cl-	62	ppm
K+	1	ppm
Na+	16	ppm
NH4+	15	ppm
Particle Size	< 20.0	µm
Degradation Temperature	350	°C
Die Shear Strength - > 15 kg (23°C)	35.2	MPa
Operating Temperature		
Continuous	-55 to 200	°C
Intermittent	-55 to 275	°C
Storage Modulus (23°C)	1.71	GPa
Weight Loss on Heating		
200°C	1.2	%
250°C	1.7	%
300°C	3.9	%

Thermal	Nominal Value	Unit
Glass Transition Temperature ¹	> 55.0	°C
CLTE - Flow		
-- ²	4.3E-5	cm/cm/°C
-- ³	1.6E-4	cm/cm/°C
Optical	Nominal Value	Unit
Transmittance (340 to 1260 nm)	< 1.0	%
Thermoset	Nominal Value	Unit
Thermoset Components		
Part A	Mix Ratio by Weight: 100	
Part B	Mix Ratio by Weight: 35	
Shelf Life (23°C)	52	wk
Uncured Properties	Nominal Value	Unit
Color		
-- ⁴	Black	
-- ⁵	Clear/Transparent	
Density		
Part B	0.958	g/cm³
Part A	1.18	g/cm³
Viscosity ⁶ (23°C)	0.30 to 0.50	Pa·s
Curing Time (90°C)	> 1.0	hr
Pot Life	300	min
Cured Properties	Nominal Value	Unit
Shore Hardness (Shore D)	81	
Lap Shear Strength (23°C)	11.8	MPa
Relative Permittivity (1 kHz)	3.67	
Volume Resistivity (23°C)	> 1.0E+13	ohms·cm
Dissipation Factor (1 kHz)	0.012	
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 A	
5.	Part B	
6.	100 rpm	

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