

EPO-TEK® U300-2

Epoxy; Epoxide

Epoxy Technology Inc.

Message:

A two component epoxy designed for capillary underfill of semiconductor chips and SMDs. Long pot-life, high Tg, and optical clarity are a few of its traits. NASA approved low outgassing epoxy (<http://outgassing.nasa.gov>) suitable for electronic applications such as smart cards, RFIDs, medical implants and wafer level camera optics.

General Information		
Features	Low to No Outgassing	
Uses	Electrical/Electronic Applications	
	Medical/Healthcare Applications	
Agency Ratings	EC 1907/2006 (REACH)	
	EU 2003/11/EC	
	EU 2006/122/EC	
RoHS Compliance	RoHS Compliant	
Forms	Liquid	
Physical	Nominal Value	Unit
Ion Type		
Cl-	100	ppm
K+	6	ppm
Na+	14	ppm
NH4+	274	ppm
Degradation Temperature	425	°C
Die Shear Strength - 20 kg (23°C)	46.9	MPa
Operating Temperature		
Continuous	-55 to 225	°C
Intermittent	-55 to 325	°C
Storage Modulus	1.85	GPa
Weight Loss on Heating		
200°C	< 0.050	%
250°C	< 0.050	%
300°C	0.15	%
Thermal	Nominal Value	Unit
Glass Transition Temperature ¹	> 115	°C
CLTE - Flow		
-- ²	5.5E-5	cm/cm/°C
-- ³	1.8E-4	cm/cm/°C
Optical	Nominal Value	Unit

Refractive Index ⁴	1.575	
Transmittance (600 to 2100 nm)	> 97.0	%
Thermoset	Nominal Value	Unit
Thermoset Components		
Part A	Mix Ratio by Weight: 10	
Part B	Mix Ratio by Weight: 1.0	
Shelf Life (23°C)	52	wk
Uncured Properties	Nominal Value	Unit
Color		
-- ⁵	Clear/Transparent	
-- ⁶	Clear/Transparent	
Density		
Part B	1.10	g/cm ³
Part A	1.20	g/cm ³
Viscosity ⁷ (23°C)	3.7 to 6.7	Pa·s
Curing Time (150°C)	1.0	hr
Pot Life	2900	min
Cured Properties	Nominal Value	Unit
Shore Hardness (Shore D)	80	
Lap Shear Strength (23°C)	10.8	MPa
Relative Permittivity (1 kHz)	3.04	
Volume Resistivity (23°C)	> 3.0E+13	ohms·cm
Dissipation Factor (1 kHz)	0.011	
NOTE		
1.	Dynamic Cure 20-200°C/ISO 25 Min; Ramp -10-200°C @ 20°C/Min	
2.	Below Tg	
3.	Above Tg	
4.	589 nm	
5.	Part B	
6.	Part A	
7.	20 rpm	

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