EPO-TEK® OE138

Technical Data Sheet
For Reference Only
High Temperature Thixotropic Epoxy

Date:	October 2022	
Rev:	VII	
No. of Components:	Two	
Mix Ratio by Weight:	10 : 1	
Specific Gravity:	Part A: 1.06	Part B: 1.02
Pot Life:	2 Hours	
Shelf Life- Bulk:	One year at room temperature	
Shelf Life- Syringe:	Six months at -40°C	

Recommended Cure: 150°C / 1 Hour

Minimum Alternative Cure(s):
May not achieve performance properties below
150°C / 2 Minutes
80°C / 30 Minutes

NOTES:
- Container(s) should be kept closed when not in use.
- Filled systems should be stirred thoroughly before mixing and prior to use.
- Performance properties (rheology, conductivity, others) of the product may vary from those stated on the data sheet when bi-pak/syringe packaging or post-processing of any kind is performed. Epoxy's warranties shall not apply to any products that have been reprocessed or repackaged from Epoxy's delivered status/container into any other containers of any kind, including but not limited to syringes, bi-paks, cartridges, pouches, tubes, capsules, films or other packages.
- Syringe packaging will impact initial viscosity and effective pot life, potentially beyond stated parameters.
- *TOTAL MASS SHOULD NOT EXCEED 50 GRAMS*

Product Description: EPO-TEK® OE138 is a two component epoxy with intermediate viscosity range between EPO-TEK®353ND and EPO-TEK® 353ND-T. It is designed for semiconductor glob top applications, as well as use in medical and fiber optic industries.

Typical Properties: Cure condition: 150°C / 1 Hour Different batches, conditions & applications yield differing results.
Data below is not guaranteed. To be used as a guide only, not as a specification. * denotes test on lot acceptance basis

PHYSICAL PROPERTIES:			
* Color (before cure):	Part A: Tan		Part B: Amber
* Consistency:	Smooth, pourable paste		
* Viscosity (23°C) @ 20 rpm:	4,000 - 7,000		cPs
Thixotropic Index:	1.3		
* Glass Transition Temp:	≥ 90		°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)
Coefficient of Thermal Expansion (CTE):			
Below Tg:	21		x 10^{-6} in/in°C
Above Tg:	128		x 10^{-6} in/in°C
Shore D Hardness:	85		
Lap Shear @ 23°C:	> 2,000		psi
Die Shear @ 23°C:	≥ 20		Kg 7,112 psi
Degradation Temp:	406		°C
Weight Loss:			
@ 200°C:	0.18		%
@ 250°C:	0.60		%
@ 300°C:	1.40		%
Suggested Operating Temperature:	< 300		°C (Intermittent)
Storage Modulus:	392,573		psi
Ion Content	Cl^-: 334 ppm		Na^+: 494 ppm
	NH_4^+: 4 ppm		K^+: ND
* Particle Size:	< 20		microns

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	N/A	
Volume Resistivity @ 23°C:	≥ 9 x 10^{12}	Ohm-cm
Dielectric Constant (1KHz):	3.18	
Dissipation Factor (1KHz):	0.003	

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EPO-TEK® OE138 Advantages & Suggested Application Notes:

- Suitable for circuit assembly applications such as stacking SMDs, bonding ferrites cores, bonding inductor coils and power devices
- Used in chip on Board Globtops for encapsulation and environmental protection
- High temperature adhesive for hybrids and down hole sensors which can resist up to 300 C for extended periods of time
- Can be applied by screen printing, spatula, automatic dispenser or by hand
- Recommended for bonding metals, glass, ceramic, and many types of plastic
- OE138 changes to a dark amber color when properly cured for easy visual inspection

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