

Date: May 2021
Rev: XII
No. of Components: Two
Mix Ratio by Weight: 10 : 1
Specific Gravity: Part A: 1.31 Part B: 1.34
Pot Life: 1 Day

Recommended Cure: 150°C / 1 Hour

Minimum Alternative Cure(s):
May not achieve performance properties listed below
150°C / 30 Minutes
125°C / 60 Minutes
60°C / 15 hours

Shelf Life- Bulk: One year at room temperature
Shelf Life Syringe: One year at -40°C

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.

Product Description: EPO-TEK® T7139 is a two component, electrically insulating, encapsulating epoxy designed for semiconductor glob top applications and package assembly.

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: Black	Part B: Tan
* Consistency:	Smooth paste	
* Viscosity (23°C) @ 50 rpm:	5,000 - 7,000	cPs
Thixotropic Index:	2.5	
* 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:	30	x 10 ⁻⁶ in/in°C
Above Tg:	76	x 10 ⁻⁶ in/in°C
Shore D Hardness:	86	
Lap Shear @ 23°C:	2,000	psi
Die Shear @ 23°C:	≥ 10	Kg 3,556 psi
Degradation Temp:	438	°C
Weight Loss:		
@ 200°C:	0.19	%
@ 250°C:	0.34	%
@ 300°C:	0.48	%
Suggested Operating Temperature:	< 350	°C (Intermittent)
Storage Modulus:	598,884	psi
* Particle Size:	≤ 50	microns

ELECTRICAL AND THERMAL PROPERTIES:

Thermal Conductivity:	0.4	W/mK
Volume Resistivity @ 23°C:	≥ 3 x 10 ¹²	Ohm-cm
Dielectric Constant (1KHz):	3.39	
Dissipation Factor (1KHz):	0.006	

OPTICAL PROPERTIES @ 23°C:

Spectral Transmission:	< 0.01% @ 400	nm
	< 1% @ 900	nm
	< 5% @ 2000	nm
Refractive Index:	N/A	

Epoxyes and Adhesives for Demanding Applications™

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www.epotek.com

EPO-TEK® T7139 Advantages & Suggested Application Notes:

- A pot life of at least one day is mass production friendly and convenient for consecutive manufacturing shifts.
- Its thixotropic nature allows for dispensing “domes or hemispheres” directly over the IC without the need for using a dam or cavity to control flow.
- Suggested applications:
 - Semiconductor:
 - Glob top encapsulant for COB die attach.
 - Plastic semiconductor package filling instead of traditional epoxy transfer molding compound.
 - Electronic/PCB: general protection of SMDs.
 - Opto-electronics: black and opaque epoxy for adhesive and sealing applications while blocking IR and VIS light.
- In some cases, it is advantageous to pre-warm the epoxy < 50°C in order to decrease its thixotropic nature, while increasing capillary and flow rate.
- Low CTE makes it ideal for keeping stresses to a minimum.

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