EPO-TEK® 353NDP

High Temperature Humidity Resistant Epoxy

Preliminary Product Information Sheet

Date:	June 2025
Rev:	III
No. of Components:	Two
Mix Ratio by Weight:	10 : 1
Specific Gravity:	Bulk - Part A: 1.20, Part B: 1.02 Syringe: 1.18
Pot Life:	Bulk: ≤3 Hours, Syringe: ≤2 Hours
Shelf Life- Bulk:	One year at room temperature
Shelf Life- Syringe:	Six months at -40°C
Recommended Cure:	120°C / 1 Hour
Alternative Cure(s):	May not achieve performance properties below 150°C / 1 Hour 120°C / 5 Minutes 100°C / 10 Minutes 80°C / 30 Minutes

Product Description:

EPO-TEK® 353NDP is a two component, high temperature and high humidity resistance epoxy designed for optical, telecom, datacom, HI-REL microelectronics, semiconductor and hybrid applications. Also available in single component frozen syringe.

Typical Properties:

Cure condition: 120°C / 1 Hour

Different batches, conditions, and applications yield differing results.

Data contained herein is preliminary and subject to change without notice. To be used as guide only, not as a specification.

*denotes test on lot acceptance basis.

Notes:

- Container(s) should be kept closed when not in 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.
- If product crystalizes in storage, place container in warm oven until crystallization disappears. Please refer to Tech Tip #7 on website.
- TOTAL MASS MIXED SHOULD NOT EXCEED 25 GRAMS

Physical Properties	*Details*
* Color (before cure)	Part A: Clear, Part B: Amber
* Consistency	Pourable liquid
* Viscosity (23°C) @ 50 rpm	3,000 - 5,000 cPs
Thixotropic Index	N/A
* 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)	Pending
Shore D Hardness	85
Lap Shear @ 23°C	> 2000 psi
Die Shear @ 23°C	38 Kg; 32 Kg (after 7d @ 85°C / 85% RH); 15 Kg (after 2000h @ 85°C / 85% RH)
Degradation Temp	410°C
Weight Loss:	@ 200°C: 0.09%, @ 250°C: 0.28%, @ 300°C: 0.72%
Suggested Operating Temperature	< 350°C (Intermittent)
Storage Modulus:	2213 MPa @ 23°C
Ion Content	Pending
*Particle Size	N/A

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Electrical & Thermal Properties	*Details*
Thermal Conductivity	N/A
Volume Resistivity @ 23°C	≥ 1.8 x 10^{13} Ohm-cm
Dielectric Constant (1KHz)	3.17
Dissipation Factor (1KHz)	0.005

Optical Properties @23°C	*Details*
Spectral Transmission:	≥ 50% @ 550 nm
	≥ 95% @ 1100-1600 nm
	≥ 98% @ 800-1000 nm
Refractive Index:	1.569 @589 nm

EPO-TEK® 353NDP Advantages & Suggested Application Notes

- Reasonable pot-life that allows for low temperature curing to be realized. It has an amber color change upon cure.
- Passes NASA low outgassing standard ASTM E595 with proper cure.
- Semiconductor suggested applications: wafer-wafer bonding of CSP; fabrication of MEMs devices; flip chip underfill.
- Hybrid suggested applications: providing near hermetic seals and UHV seals in sensor devices, resisting high temperature packaging.
  - o Down-Hole petrochemical fiber optic sensors, resisting >200°C field conditions.
  - o HI-REL microelectronics assembly for automotive electronics, autonomous, aviation, and defense
- Optical, telecom, and datacom suggested applications:
  - o Sealing fiber into ferrules, transmitting light in the optical pathway from 800- 1550 nm range.
  - o High speed data transceiver device adhesive for active alignment of optics, environmental sealing of opto-package, V-groove arrays.
- Electronics Assembly suggested applications:
  - o Used as dielectric layer in the fabrication of capacitors; laminating PZT ferroelectrics found in ultrasound or ink-jetting devices.
  - o Impregnating and insulating copper coil windings in motors and inductor coils. Bonding ferrite cores and magnets.
  - o Structural bonding of stainless steel, metals, Kapton®, and magnets.

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