EPOXY TECHNOLOGY

# EPO-TEK® EJ2189

**Technical Data Sheet**
**For Reference Only**
*Electrically Conductive Epoxy*

| | | | |
|---|---|---|---|
| **Date:** | September 2017 | | **Recommended Cure: 150°C / 1 Hour** |
| **Rev:** | VI | | |
| **No. of Components:** | Two | | Minimum Alternative Cure(s): |
| **Mix Ratio by Weight:** | 10 : 1 | | *May not achieve performance properties listed below* |
| **Specific Gravity:** | Part A: 3.43 | Part B: 0.94 | 150°C / 15 Minutes |
| **Pot Life:** | 4 Hours | | 100°C / 1 Hour |
| **Shelf Life- Bulk:** | One year at room temperature | | 80°C / 3 Hours |
| **Shelf Life- Syringe:** | One year at -40°C | | 23°C / 3 Days |

**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.

**Product Description:** EPO-TEK® EJ2189 is an electrically conductive, silver-filled epoxy paste. This two component system is designed for low temperature curing from ambient to 80°C, although other heat cures can be used.

**Typical Properties:** Cure condition: Varies as required    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: Silver | | Part B: Amber | |
| * Consistency: | Smooth thixotropic paste | | | |
| * Viscosity (23°C) @ 1 rpm: | | 55,000-90,000 | cPs | |
| Thixotropic Index: | | 5.2 | | |
| * Glass Transition Temp: | | ≥ 30 | °C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min) | |
| Coefficient of Thermal Expansion (CTE): | | | | |
| Below Tg: | | 53 | x $10^{-6}$ in/in°C | |
| Above Tg: | | 107 | x $10^{-6}$ in/in°C | |
| Shore D Hardness: | | 60 | | |
| Lap Shear @ 23°C: | | 1,480 | psi | |
| Die Shear @ 23°C: | | ≥ 9 | Kg | 3,200 psi |
| Degradation Temp: | | 316 | °C | |
| Weight Loss: | | | | |
| @ 200°C: | | 0.31 | % | |
| @ 250°C: | | 0.65 | % | |
| @ 300°C: | | 1.93 | % | |
| Suggested Operating Temperature: | | < 260 | °C (Intermittent) | |
| Storage Modulus: | | 275,557 | psi | |
| Ion Content: | $Cl^-$: | 169 ppm | $Na^+$: | 15 ppm |
| | $NH_4^+$: | 40 ppm | $K^+$: | 1 ppm |
| * Particle Size: | | ≤ 45 | microns | |

| ELECTRICAL AND THERMAL PROPERTIES: | | |
|---|---|---|
| Thermal Conductivity: | 1.4 | W/mK |
| * Volume Resistivity @ 23°C (150°C/1 Hour): | ≤ 0.0005 | Ohm-cm |
| * Volume Resistivity @ 23°C (80°C/3 Hours): | ≤ 0.005 | Ohm-cm |
| * Volume Resistivity @ 23°C (25°C/40-60%RH/3 Day cure): | ≤ 0.009 | Ohm-cm |


**This information is based on data and tests believed to be accurate. Epoxy Technology, Inc. makes no warranties (expressed or implied) as to its accuracy and assumes no liability in connection with any use of this product.**
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## EPO-TEK® EJ2189 Advantages & Suggested Application Notes:

- Ease of use: smooth thioxtropic paste allows for automated dispensing, stamping, brushing, or hand applications.
- Suggested applications include: EMI and Rf shielding; ITO interconnects in LCDs; low temperature cryogenic cooling.
- Exhibits superior adhesion to a wide variety of substrates including most metals, ceramics, glass and plastics.
- Hybrid/micro-electronic adhesive including die-attach and substrate attach for Rf and Microwave devices.
- Provides a metallic-like layer after cure.

Epoxies and Adhesives for Demanding Applications™
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