EPO-TEK® MED-H20S
Technical Data Sheet
For Reference Only
Biocompatible/Electrically Conductive (ECA), Silver Epoxy
ISO 10993-5 Tested/Compliant

Date: January 2019  Biocompatible Certified Cure: 100°C / 1 Hour
Rev: I
No. of Components: Two
Mix Ratio by Weight: 1 : 1
Specific Gravity: Part A: 1.76  Part B: 3.05
Pot Life: 3 Days
Shelf Life- Bulk: One year at room temperature

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 (theology, 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® MED-H20S is a biocompatible, silver-filled epoxy with electrical and high thermal conductivity. It is a smooth low viscosity paste with fine Ag particles. It is a well characterized and highly reliability ECA, used most often for critical circuit connections and EMI coatings and has a curing time and temperature lower than EPO-TEK® MED-H20E.

Typical Properties: Cure condition: 100°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: Silver  Part B: Silver
* Consistency: Smooth thixotropic paste
* Viscosity (23°C) @ 100 rpm: 1,800-2,800 cPs
Thixotropic Index: 5.0
* Glass Transition Temp: ≥ 80 °C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)
Coefficient of Thermal Expansion (CTE):
Below Tg: 58 x 10^-6 in/in°C
Above Tg: 200 x 10^-6 in/in°C
Shore D Hardness: 58
Lap Shear @ 23°C: 1,186 psi
Die Shear @ 23°C: ≥ 10 Kg  3,556 psi
Degradation Temp: 400 °C
Weight Loss:
@ 200°C: 0.36 %
@ 250°C: 0.72 %
@ 300°C: 1.26 %
Suggested Operating Temperature: < 300 °C (Intermittent)
Storage Modulus: 325,428 psi
* Particle Size: > 20 microns

ELECTRICAL AND THERMAL PROPERTIES:
Thermal Conductivity: 1.9 W/mK
* Volume Resistivity @ 23°C: ≤ 0.0009 Ohm-cm
Fiber and Electro-Optical
- Die-attaching LED chips in surgical lighting products, whether light guides or headlights
- An ECA for x-ray detection technologies using scintillator crystal and photo diode arrays, it can be dispensed, stamped or screen printed onto PCB/substrates, whether using direct chip or flip chip attachment processes
- Die attaching LEDs for fingertip worn pulsed oximeters

Device and Diagnostics
- PZT / Ferro-electronics: ECA for PZT/Au connections to matching PCB, for ultrasound imaging arrays
- In a reference electrode for circuitry in gene sequencers and other disease specific diagnostic equipment

Implantable Devices
- A world leader in hybrid circuit assembly of hermetic, microelectronic, active implantable packages for cardiac, cerebral, spinal, ophthalmic, neurostimulator and cochlear healthcare applications
- Electrically contacting chips, SMDs, PCBs, ground and lead-wires, suggested contacts include Au, Ag, AgPd, Pt, PtIr, SST and nitinol

Adhesive Applications for EPO-TEK® MED-H20S
**Biocompatibility Approval**

- EPO-TEK® MED-H20S cured at 100°C for one hour has been tested and is ISO 10993-5 certified (Cytotoxicity testing by MEM Elution methodology)

**Sterilization Information**

- MED-H20S contains silver which should never be exposed to moisture or bio-fluids since an oxide layer will form, compromising performance and reliability. Therefore it should always be protected, via semiconductor packaging methods, isolating it from its hostile sterilization environments such as: ETO, autoclave and Vaporized Hydrogen Peroxide (VHP) plasma.

**Packaging Availability**

- EPO-TEK® MED-H20S is available in specialty packaging such as Pre-Mixed Frozen Syringes (PMF), Bi-Paks, or bulk (A & B containers)....
- A Bi-Pak video tutorial can be found here:
- A video tutorial on handling frozen syringes can be found here: