



APTEK LABORATORIES, INC.

ISO 9001 / AS9100 Certified

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TECHNICAL DATA & INFORMATION

APTEK® 2713-A/B

Electrically conductive, low modulus silicone adhesive

PRODUCT DESCRIPTION

APTEK 2713-A/B is a two component, silver filled, electrically conductive soft paste adhesive. It is designed to bond many dissimilar substrates and dissipate device generated heat. **APTEK 2713-A/B** is a 100% solids, solvent free system that will not form voids during cure or outgas after being fully cured.

- Dual cartridge kits for convenient dispensing to circuit board
- Very low modulus to minimize stress to sensitive components and ceramic substrates
- Very low Tg for excellent low temperature cycling and performance
- Excellent substrate adhesion when used in conjunction with G.E. SS4155 primer.
- Also available with spacer beads to precise bond line control

HANDLING INFORMATION

Work life after dispensing @25°C, minutes >45

Handling notes:

- Silicone resins and primers are moisture sensitive, therefore, blanket containers of any unused portions with Argon or dry nitrogen prior to resealing.
- Prior to application of adhesive, clean part(s) to be bonded with a lint free cloth and MEK or other suitable degreaser. Then wipe with isopropyl alcohol and allow to dry. Be sure to apply only a very thin coat of primer. Allow primer to dry for two hours at 25°C and 45-75% RH prior to application of fresh adhesive mixture. Longer drying times may be required when RH is below 40%. We have found internally that mixing fresh GE SS4155 1/1by weight with anhydrous isopropyl alcohol has promoted adhesion.

COMPATIBILITY:

Certain materials, chemicals, curing agents and plasticizers can inhibit the cure of silicone encapsulants and adhesives. Most notable of these include:

- Organotin and other organometallic compounds
- Silicone rubber containing organotin catalyst
- Sulfur, polysulfides, polysulfones or other sulfur-containing materials
- Amines, urethanes or amine-containing materials
- Unsaturated hydrocarbon plasticizers
- Some solder flux residues
- Latex rubber gloves

- DISCLAIMER NOTICE -

All statements, technical data, and recommendations expressed herein are based on tests believed to be reliable and accurate. However, APTEK LABORATORIES, INC. gives no warranty, expressed or implied, regarding the accuracy of this information. It is intended that the buyer and user of these products shall determine the suitability of the information provided for his specific application, and is responsible for its selection.

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CURE SCHEDULE*

1 hour @ 125°C
or
2 hours @ 100C
or
4 hours @ 65°C

*Alternative cure schedules may be possible depending on application requirements.

TYPICAL PROPERTIES

(Values not to be used for specification purposes)

<u>CHARACTERISTICS</u>	<u>APTEK2713-A</u>	<u>APTEK2713-B</u>	<u>TEST METHOD</u>
Color	Silver	Silver	Visual
Specific gravity	3.7	3.7	ASTM D-1475
Viscosity @25°C, initial cps	paste	paste	ASTM D-1824
Flash point, °C	>150	>150	ASTM D-92
Shelf Life @ 5°C or below in factory sealed containers, months	3	3	

<u>CURED PHYSICAL PROPERTIES</u>	<u>APTEK 2713- A/B</u>	<u>TEST METHOD</u>
Lap shear, Al to Al, 5 mil bondline, 25°C, psi * Cured 1 hr @ 125°C + ≥ 16 hrs @ RT	110*	ASTM D-1002
Glass transition temp., °C	≤-100	ASTM E-831-86
Thermal conductivity, @25°C W/M°K	1.7	COLORA

<u>CURED ELECTRICAL PROPERTIES</u>	<u>APTEK 2713-A/B</u>	<u>TEST METHOD</u>
Volume resistivity @25°C, ohm-cm	0.04	ASTM D-257

SAFETY AND FIRST AID

APTEK 2713-A is a silver-filled silicone resin blend that is safe to handle when used properly. It is judged to be low in toxicity and to be rated as a slight skin irritant. Avoid contact with skin and eyes and use in a well-ventilated area and avoid breathing vapors. In case of eye contact, flush with fresh clean water for at least 15 minutes; for skin contact, wash thoroughly with soap and water. If swallowed, drink at least one pint of water and call a physician. Refer to Material Safety Data Sheet for more details.

APTEK 2713-B is a silver-filled silicone resin blend, which is safe to handle when used properly. Avoid skin and eye contact and use in a well-ventilated, hooded area. In case of eye contact, flush profusely with fresh clean water and contact a physician. For skin contact, wash thoroughly with soap and water. If inhaled, move subject to fresh air and provide water to drink. If swallowed, dilute with at least one pint of water and contact physician immediately. Refer to Material Safety Data Sheet for more details.

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