



# APTEK LABORATORIES, INC.

ISO 9001 / AS9100 Certified

28570 Livingston Avenue, Valencia, CA 91355-4171 • (661) 257-1677 FAX (661) 257-8939

## TECHNICAL DATA & INFORMATION

### APTEK® 2210-A/B

- Electrically Conductive Urethane Adhesive
- Silver-filled
- Flexible Low Modulus
- Low outgassing

### PRODUCT DESCRIPTION

**APTEK 2210-A/B** is a two component, silver-filled, urethane adhesive designed for application where flexibility and electrical conductivity are required.

**APTEK 2210-A/B** is a 100% solids adhesive displaying excellent adhesion to plastic metal substrates.

### KEY FEATURES AND BENEFITS

- Non-TDI based for safety
- Very flexible/low modulus to absorb stress buildup during thermal cycling
- Excellent adhesion to ceramic and various substrates
- Low Tg (<-60°C) for excellent low temperature performance

### HANDLING INFORMATION

Mix ratio, parts by weight: 100 (2210-A)/ 3.5 (2210-B)

Work Life, @ 25°C, 5 gm mass, mins 25

Handling Notes:

- Parts A and B are very sensitive to moisture contamination. Always blanket partially used containers with dry nitrogen or argon before resealing.
- For maximum shelf life and stability refrigerate part A below 5-15°C and part B between 25-30°C.

### MIXING

Weigh 100 parts of 2210 Part A into a clean, dry, glass, metal, or plastic container and then add 3.5 part of 2210 Part B. DO NOT MACHINE MIX - hand stir with glass or metal stirrer until complete and thorough blending is achieved. Care should be taken to avoid any source of moisture contamination or air entrapment during mix. For best results and void-free bond line, vacuum mixture @ less than 10 mm Hg for 5 mins.

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**CURE SCHEDULE**

4 hours @ 100°C  
or  
2 hours @ 125°C

Note: As typical with urethane systems, a relaxation/stabilization period of 2-4 days after cure is required before testing, service, or use.

**TYPICAL PROPERTIES**

(values not to be used for specification purposes)

<b><u>CHARACTERISTICS</u></b>	<b><u>2210-A</u></b>	<b><u>2210-B</u></b>	<b><u>TEST METHOD</u></b>
Color	Silver	Pale Yellow	Visual
Specific Gravity	4.2	1.13	ASTM D-1475
Viscosity @25°C, cps	smooth paste	1800	ASTM D-1824
Flash point, °C	>150°C	>150°C	ASTM D-92
Shelf Life @25°C, months factory sealed container,	6	6	
<b><u>CURED PHYSICAL PROPERTIES</u></b>	<b><u>2210-A/B</u></b>		<b><u>TEST METHOD</u></b>
Volume resistivity, ohm-cm @25°C	0.005		QCP-006
Lap Shear, strength @25°C, 5 mil bondline, Al to Al, psi	175		ASTM D-1002
Thermal conductivity, watts/m <sup>2</sup> /°K	2.5		ASTM E-1461
Specific gravity	3.1		ASTM D-1475
Outgassing @10 <sup>-6</sup> Torr, TML%	0.45		ASTM E-595
CVCM%	0.08		ASTM E-595

**SAFETY AND FIRST AID**

**APTEK 2210-A** is a silver filled polyol resin 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 2210-B** is an organic isocyanate which may cause severe eye and skin irritation with direct contact. Inhalation of vapors may result in breathlessness, severe coughing, chest discomfort, and irritation of mucous membranes. 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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