



# APTEK LABORATORIES, INC.

ISO 9001 / AS9100 Certified

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## TECHNICAL DATA & INFORMATION

### APTEK® 2209-A/B

Clear non-yellowing urethane adhesive

### PRODUCT DESCRIPTION

**APTEK 2209-A/B** is a clear, thixotropic, two component, electrically insulating, urethane adhesive designed for bonding various substrates. **APTEK 2209-A/B** is especially effective for bonding plastics and in particular displays excellent adhesion to GE's LEXAN® (polycarbonate) without cracking or crazing the substrate.

### FEATURES AND BENEFITS

- Excellent U.V. and weathering resistance for outdoor application
- Very good clarity for see-through applications like back-lit signs/displays
- Convenient 1:1 PBW or PBV mix ratio for easy handling
- Available in dual-cartridge dispenser kits
- Fast set version available upon request
- Low viscosity, castable version available upon request – Aptek 2206-A/B

### HANDLING INFORMATION

Mix ratio, parts by weight: 100 (2209-A) / 100 (2209-B)

Work life, @25°C, 20 gm mass, minutes: 60-90

Note: Parts A and B are sensitive to moisture contamination. If material contains gelled portions or is excessively high in viscosity - DO NOT USE. Always blanket partially used containers with dry nitrogen or argon before resealing.

### MIXING

- For bulk packaging, weigh 100 parts of APTEK 2209 Part A into a clean, dry, glass, metal, or plastic container and then add 100 parts of APTEK 2209 Part B. Machine mix on slow speed or 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 optimum results, mix materials in an environment below 50% relative humidity, and vacuum mixture at less than 10 mm Hg for 2-3 minutes after "break".

### **Dual cartridge/dispenser kits**

- Hold cartridge firmly and upright.
- Twist protective cap counterclockwise 90° and pull protective cap off, exposing the adhesive ports.

### **- 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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- Insert flanged base of mixing tube over the exposed adhesive ports perpendicular to the cartridge bracket. Note this is keyed and will only fit in one orientation.
- Rotate turquoise collar clockwise 90°. Ensure that mix tip is securely attached.
- Hold gray handles of ratchet gun, with up arrow facing you.
- While lifting and holding up silver lever with thumb, pull back black plunger fully, until it stops.
- Insert the cartridge into slot in front of gun.
- Continue to apply pressure to trigger to dispense adhesive through the tube.
- Allow one inch of adhesive to extrude before applying to bonding surface.
- Cut back tip of tube to adjust bead size.
- If using a luer lock adaptor, cut off the first two segments from the mix tip. Thread the luer lock adaptor on the third segment. Attach appropriate compatible luer lock tip.
- To remove plunger from spent cartridge hold up silver lever and pull back black plunger fully; then cartridge can be removed from gun.

### **SURFACE PREPARATION**

- Thoroughly clean surface area with detergent and water to remove all dirt, grease, or wax.
- Using a 40-80 grit paper, thoroughly rough sand all surfaces to be bonded.
- Clean all parts with an anhydrous-grade solvent such as methyl ethyl ketone, acetone, or isopropyl alcohol.
- All surfaces must be dry before applying adhesive.

### **CURE SCHEDULE**

RT gel (2-4 hours @25°) then 2 hr @ 100°C  
 or  
 RT gel (2-4 hours @25°) then 4 hrs @ 65°C  
 or  
 7 days at RT

#### Notes:

1. As typical with urethane systems, a relaxation/stabilization period of 2-4 days after heat cure is required before testing, service, or use.
2. For best results and a void free bond line, vacuum mixture at less than 10 mm Hg for 3-5 minutes after "break".

### **TYPICAL PROPERTIES**

(values not to be used for specification purposes)

<b><u>CHARACTERISTICS</u></b>	<b><u>2209-A</u></b>	<b><u>2209-B</u></b>	<b><u>TEST METHOD</u></b>
Color	slight haze	slight haze	Visual
Specific gravity	1.13	1.14	ASTM D-1475
Viscosity @ 25°C	smooth thixotropic	smooth thixotropic	ASTM D-1824

	paste	paste	
Flash point, °C	>150	>150	ASTM D-92
Shelf life, months factory sealed containers @ 25°C	6	6	

<u>CURED PHYSICAL PROPERTIES</u>	<u>2209-A/B</u>	<u>TEST METHOD</u>
Hardness durometer D	55±5	ASTM D-2240
Lap shear, psi		
Al to Al	>1000	ASTM D-1002
PC to PC, 1/8" thick (sanded surfaces)	> 700*	
*Polycarbonate substrate failed		

### SAFETY AND FIRST AID

**APTEK 2209-A** is a 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 2209-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 for eye contact, flush profusely with fresh clean water and contact physician. For skin contact, wash thoroughly with soap and water. If inhaled, move subject to fresh air and provide fresh 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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