



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® 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
- Over 1 hour pot-life for large area applications
- Available in dual-cartridge dispenser kits
- Fast-set, RT-cure version available upon request
- Low viscosity, castable version available upon request

HANDLING INFORMATION

Mix ratio, parts by weight or volume: 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

- Remove cartridge from Mil Spec bag and set aside.
- If not previously assembled, lift up the gray lever on top of gun and insert black plunger into dispenser gun by pushing up the silver lever in the back of the gun and inserting plunger into the slot through the

- 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.

APTEK LABORATORIES, INC. shall not be liable for any injury, loss or damage, direct or consequential, arising out of the use or misuse of these products, or of the information given in these data bulletins. Purchasers assume all risk and liability whatsoever in connection with the use of these products and this information.

front of the gun leading with the rounded handle. Pull the plunger all the way into the gun until the circular ports stop at the front of the gun.

- Lift up the gray lever on the top of the dispensing gun and insert/seat the cartridge into the dispensing gun with notch at the bottom end of cartridge barrel facing down.
- Lower the gray lever on the top of the dispensing gun to secure the cartridge in place. If the lever does not lower properly, the cartridge may be upside down.
- Twist off protective cap counterclockwise 90° until notch is in open position and remove cap exposing the adhesive ports.
- Inspect for material at both ends of the adhesive ports on the cartridge. If material is visible and flush at the ends of the ports, proceed with next step. If material is not flush at the ends of ports, squeeze the gun handle until a tiny bit of material comes out of both ports. Then wipe off the ports with a lint-free cloth so that material is flush at port-ends and no material is outside of the ports.
- Properly insert the notched gray base of mixing tip over the exposed adhesive ports and rotate the base of the mixing tip clockwise until it is secure.
- Pull the trigger of the gun until material is dispensed from the mix tip of the cartridge.
- Allow 3 inches of adhesive to extrude as waste before applying to bonding surface.
- Cut back tip of mixing tube to adjust bead size, as needed.
- Use material as needed.
- If material is remaining, remove used mix tip and discard and replace protective cap onto cartridge.
- To remove cartridge, push up silver lever and pull back black plunger fully; then lift up gray lever on top of the gun and remove cartridge.

SURFACE PREPARATION

- Thoroughly clean surface area to a water-break condition with an oxygen bleach 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 hours @ 100°C
or
RT gel + 4 hours @ 65°C

Notes:

1. To minimize any voiding in bond-line, it is recommended to allow the material to RT gel prior to heat-cure
2. As typical with urethane systems, a relaxation/stabilization period of 2-4 days after heat cure is required before testing, service, or use.
3. 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)

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

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	60	ASTM D-2240
Lap shear, psi		
Al to Al	1600	ASTM D-1002
PC to PC (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.

Revised 1/9/2021 - mjb

APTEK® is a registered trademark of Aptek Laboratories, Inc.