



APTEK LABORATORIES, INC.

ISO 9001 / AS9100 Certified

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TECHNICAL DATA & INFORMATION

APTEK® 2717-A/B

- Low modulus silicone adhesive
- -110°C to 260°C operating range
- Low outgassing/space grade
- Electrostatically Discharging (ESD)

PRODUCT DESCRIPTION

APTEK 2717-A/B is a two component, black, low modulus, thixotropic, silicone adhesive displaying very low temperature flexibility and good physical strength properties.

APTEK 2717-A/B has been designed to fully cure at room temperature and can be accelerated with a brief low temperature cure. This 100% solids system has been manufactured with highly pure resins to minimize the occurrence of ionic contamination without outgassing during cure or service.

KEY FEATURES AND BENEFITS

- Utilizes silicone technology providing very low Tg for excellent low temperature performance
- Convenient 10:1 PBW or PBV mix ratio for easy handling - ideal for cartridge dispensers/repair kits
- Very flexible/low modulus over wide temperature range to absorb stress build-up during thermal cycling
- Very good adhesion to various substrates when used in conjunction with G.E. SS4155 primer.

HANDLING INFORMATION

Mix ratio, parts by weight or parts by volume 100 (2717-A)/10 (2717-B)

Work Life, @ 25°C, 20 gm mass, minutes > 30

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 1/1 by weight with anhydrous isopropyl alcohol has promoted adhesion.

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MIXING

Bulk handling

Weigh 100 parts of 2717 Part A into a clean, dry, glass, or metal, container and then add 10 parts of 2717 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.

Note:

For best results and void-free bond line, vacuum mixture @ less than 10 mm Hg for 5 minutes minimum.

Dual cartridge/dispenser kits

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

CURE SCHEDULE

7 days @ RT
or
2 hours @ 65°C
or
1 hour @ 100°C
or
15 mins. @ 150°C

TYPICAL PROPERTIES

(values not to be used for specification purposes)

<u>CHARACTERISTICS</u>	<u>2717-A</u>	<u>2717-B</u>	<u>TEST METHOD</u>
Color	Black	Hazy	Visual
Specific Gravity	1.05	1.05	ASTM D-1475
Viscosity @ 25°C,	thixotropic paste	thixotropic liquid	Visual
Flash point, °C	>150°C	>150°C	ASTM D-92
Shelf Life @ 25°C in factory sealed containers, months	1		
Shelf life @ 5°C or below in factory Sealed containers, months	6		

<u>CURED PHYSICAL PROPERTIES</u>	<u>2717-A/B</u>	<u>TEST METHOD</u>
* (Cured 2 hr @ 70°C or 7 days @25°C)		
Hardness, Durometer A	35	ASTM-D-2240
Lap Shear Strength, 5 mil bondline thickness on primed aluminum panels, psi	275	ASTM-D-1002
Tensile Strength @ 25°C 0.064" thickness, psi	210	ASTM-D-638
Elongation, %	225	ASTM-D-638
Outgassing @ 10 ⁻⁶ torr		
TML, %	0.55	ASTM E-595
CVCM, %	0.07	ASTM E-595
Glass transition Temp (Tg), °C	-110 °C	TMA
Coefficient of thermal expansion, in/in/°C		
alpha 1	105 x 10 ⁻⁶	ASTM E-831
alpha 2	360 x 10 ⁻⁶	ASTM E-831

<u>CURED ELECTRICAL PROPERTIES</u>	<u>2717-A/B</u>	<u>TEST METHOD</u>
Electrical resistance, 5 mil bondline, @25°C, ohms 1" Al to Al overlap	1.0 x 10 ⁴	QCP-013

SAFETY AND FIRST AID

APTEK 2717-A is a carbon-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 2717-B is a silica-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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