



# APTEK LABORATORIES, INC.

ISO 9001 / AS9100 Certified

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## TECHNICAL DATA & INFORMATION

### APTEK® 2503R-A/B

Premeasured conformal coating repair kit

### PRODUCT DESCRIPTION

**APTEK 2503R-A/B** is an unfilled, two component, electrically insulating, transparent, flexible urethane coating system designed for the encapsulation and protection of electrical/electronic components mounted on printed circuit boards.

### KEY FEATURES AND BENEFITS

- Qualified to **Mil-I-46058C**, **IPC-CC-830C**, and **SCD 6528981**
- Ideal for repair—ready-to-use—no weighing or blending equipment needed
- Fully compatible with APTEK 2503-A/B conformal coating as well as other commercially available urethane coatings
- Excellent reversion resistance for good physical stability under high heat and humidity environments
- Tg BELOW -70°C for excellent low temperature cycling, storage and performance
- Excellent substrate adhesion; superior to silicones
- Exceeds NASA outgassing requirements for high vacuum environments
- Fluoresces under black-light (UV) to facilitate QC inspection of coating coverage of repaired components/substrates
- Non-TDI based for safety

### HANDLING INFORMATION

Work life, after mix @ 25°C, 15 gm mass, hour >3  
**APTEK 2503R-A/B** kits must be used in their entirety. See mixing instructions below.

### MIXING

Pour entire contents of Part B (smaller vial) into larger Part A vial. **DO NOT** shake Part B out of vial; let drain for 10 seconds. Replace cap on Part A vial and shake vigorously for approximately 15 seconds. Allow mixture to set for 3-5 minutes for bubbles to be eliminated. Mixture is now ready to use.

### **- DISCLAIMER NOTICE -**

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**CURE SCHEDULE**

8 hrs. @ 80°C\*  
 or  
 5 hrs. @ 100°C\*  
 or  
 2 hrs. @ 125°C\*

-PLUS-

One of the two following RT post-cures:

1. **NORMAL PRODUCTION USE:** As typical with urethane systems, a relaxation/stabilization period of 3-5 days at RT, 30-60% RH, after cure is required before normal testing, service, or use.

-OR-

2. **DIRECT MIL-SPEC TESTING:** If the coated circuit boards are to be directly tested to the rigors of Mil I 46058C, let heat-cured boards post cure @ RT and 30-65% RH for a minimum of 14 days prior to testing. If RH is below 30%, longer time may be required for ultimate cure.

\* It is recommended that coated substrates air dry 60 minutes at RT prior to heat cure to allow solvent evaporation and minimize chance for bubble formation during heat cure.

**TYPICAL PROPERTIES**

(values not to be used for specification purposes)

<b><u>CHARACTERISTICS</u></b>	<b><u>APTEK 2503R-A</u></b>	<b><u>APTEK 2503R-B</u></b>	<b><u>TEST METHOD</u></b>
Flash point, °C	10	>150	ASTM D-92
Shelf life @ 15-25°C, months in factory sealed containers	6	6	
<b><u>CURED PHYSICAL PROPERTIES:</u></b>	<b><u>APTEK 2503R-A/B</u></b>		<b><u>TEST METHOD</u></b>
Hardness, Durometer A	88		ASTM D-2240
Tensile strength, psi	2800		ASTM D-412
Elongation, %	525		ASTM D-412
Glass transition temp., °C	-74		ASTM E-831
Thermal coefficient of expansion, in/in/°C	180 x 10 <sup>-6</sup>		ASTM E-831
Outgassing @ 10 <sup>-6</sup> Torr			
TML, %	0.187		ASTM E-595
CVCM, %	0.002		ASTM E-595
Evidence of haze	none		

**SAFETY AND FIRST AID**

APTEK 2503R-A is an unfilled polyol resin containing solvent and is thus considered a flammable liquid and should be treated with caution. Avoid storage temperatures above 25°C and keep away from flame, sparks, or other sources of ignition. Use in 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 2503R-B is an organic isocyanate and is safe to handle when used properly. May cause eye and skin irritation with direct contact. Inhalation of vapors may result in breathlessness, coughing, chest discomfort, and irritation of mucous membranes. Avoid skin and eye contact and use in well-ventilated, hooded area. In case of 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.

**FOR INDUSTRIAL USE ONLY**

Revised: 09/20/19 – dh

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