



APTEK LABORATORIES, INC.

ISO 9001 / AS9100 Certified

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TECHNICAL DATA & INFORMATION

APTEK® 2515-1-A/B

Durable, urethane ESD paint

PRODUCT DESCRIPTION

APTEK 2515-1-A/B is a carbon-filled, two component, electrically conductive, durable, flexible urethane coating/adhesive designed to dissipate an electrostatic charge. This low-outgassing system provides a combination of high flexibility and good tensile strength/elongation characteristics.

KEY FEATURES AND BENEFITS

- Capable of full cure at RT for application where heat cure is not desired or possible
- Excellent reversion resistance for good physical stability under high heat and humidity environments
- Excellent substrate adhesion; superior to silicones

HANDLING INFORMATION

Mix ratio, parts by weight: 100 (2515-1-A) / 12.5 (2515-1-B) or 8/1

Work life, 50 gm mass, @ 25°C, 50% RH, mins: > 45 min

Note: Work life will be affected by temperature, humidity, and degree of solvent evaporation.

Tack free time, after spray, hrs. 4-6

Notes:

1. Part A:
 - a. Shake sealed container of Part A thoroughly prior to opening to uniformly distribute the pigment. Once can is open, gently stir with a metal spatula prior to mixing.
 - b. Contains solvent; therefore, replace lid immediately after use to prevent solvent evaporation.
2. Part B:
 - a. Prior to use, examine Part B for crystallization or formation of an insoluble white precipitate which is solid dimer of the liquid Part B. If the precipitate is present, it is not harmful; however follow instructions listed below for best results. DO NOT SHAKE BOTTLE.
 - i. Place unopened Part B bottles into an air circulating oven at 45-60 °C until clear amber to slightly hazy liquid is evident (white precipitate layer may also be present).
 - ii. Carefully remove bottles from oven without disturbing contents. If liquid contains gelled material - DO NOT USE!
 - iii. To use Part B, decant clear liquid out of bottle without disturbing the precipitate. Excess Part B has been packaged to insure sufficient supply of liquid.

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- b. Part B is moisture sensitive; therefore, use entire bottle of Part B for each application if possible. Unused portion must be blanketed with dry nitrogen or argon and resealed to avoid moisture contamination.
 - c. Store at 25°-30°C @ <50% RH
3. Mixed A/B: To reduce mixed viscosity and extend work-life, dilute A/B mixture with reagent grade toluene as needed.

MIXING

Weigh 100 parts of APTEK 2515-1-Part A into a clean dry glass, metal, or plastic container and then add 12.5 parts of APTEK 2515-1-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.

SURFACE PREPARATION

1. Substrate surface to be sprayed should be clean and dry and free from dirt/dust, silicone, mineral, petroleum oils/greases, etc.
2. For best adhesion:
 - i. Scrub with an abrasive oxygen-bleach cleaner and maroon Scotchbrite and DI water and then rinse with DI water to a water-break condition where a uniform "sheet" of water flows smoothly over the surface without the presence of beads of water (like a waxed car) or fisheyes. Rinse with anhydrous IPA and allow to dry for 15 minutes at 65C in an ACO.
 - ii. In some cases, a pre-sanding step may be beneficial for substrates that are hard and shiny and difficult to adhere to. Prior to performing the step above to achieve a water-break condition, lightly sand substrates with 150 – 220 grit sand paper and then follow with step "i" above.

CURE SCHEDULE

*5-7 days at 25°C (≥ 40% RH)
or
≥ 24 hrs RT gel @ 40-60% RH +1 hr @ 65°C

* NOTE: After 24 hours at 25°C, a 1-3 mil film is cured enough to handle coated parts without causing damage to the coating.

TYPICAL PROPERTIES

(values not to be used for specification purposes)

<u>CHARACTERISTICS</u>	<u>2515-1-A</u>	<u>2515-1-B</u>	<u>TEST METHOD</u>
Color	Black	Pale yellow - amber	Visual
Specific gravity	0.89	1.21	ASTM D-1475
Viscosity @ 25°C, cps	350	36	ASTM D-1824
Flash point, °C	7	> 100	ASTM D-92
Shelf life @ 25°C, months factory sealed containers	6	6	

<u>CURED PHYSICAL PROPERTIES</u>	<u>2515-1-A/B</u>	<u>TEST METHOD</u>
Pencil Hardness, 1-3 mil coating thickness	2H	ASTM D-3363-05
Fungus resistance	non-nutrient	ASTM-G-21
Outgassing @10 ⁻⁶ Torr		
TML, %	0.52	ASTM E-595
CVCM, %	0.01	ASTM E-595
 <u>CURED OPTICAL PROPERTIES</u>		
Solar Absorptance, alpha	0.95	ASTM E-903
Total Normal Emittance, epsilon	0.93	ASTM E-408
 <u>CURED ELECTRICAL PROPERTIES</u>		
Surface resistivity @ 25°C, 1-3 mil at 10 volts bias, ohms/square	10 ⁶ – 10 ⁸	ETS 860B

SAFETY AND FIRST AID

APTEK 2515-1-A is a carbon-filled polyol resin containing solvent and is thus considered a flammable liquid and should be treated with caution. Avoid storage temperatures above 35°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 2515-1-B is an organic isocyanate which is considered safe when handled properly. It may cause severe eye and skin irritation with direct and prolonged 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 water and contact physician immediately. Refer to Material Safety Data Sheet for more details

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