



APTEK LABORATORIES, INC.

ISO 9001 / AS9100 Certified

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TECHNICAL DATA & INFORMATION

APTEK 2217/0.005-PMF

Low Modulus Urethane Electrically Conductive, ESD, Adhesive

PRODUCT DESCRIPTION

APTEK 2217/0.005-PMF is a carbon-filled, thixotropic, single component, pre-mixed frozen, electrically conductive, flexible urethane coating/adhesive designed to dissipate an electrostatic charge. This 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
- Non-TDI based for safety
- Excellent reversion resistance for good physical stability under high heat and humidity environments
- Tg BELOW -50°C for excellent low temperature cycling, storage and performance
- Excellent substrate adhesion; superior to silicones
- Available in pre-measured kits to minimize handling
- Contains 5 mil spacer beads for a uniform bondline

HANDLING INFORMATION

1. Work life, 50 gm mass, @ 25°C, 35-50% RH, mins: >30

Note: Work life will be affected by temperature and humidity.

2. APTEK 2217/0.005-PMF syringes and cartridges are shipped in dry ice. Upon receipt, transfer syringes or cartridges to a storage freezer @ -40°C or below.
3. To thaw, remove from freezer and allow to warm to room temperature. DO NOT place in oven or microwave, this will shorten work life.
4. Typical thaw time for a 5cc syringe (or smaller) @ 25-30°C is approximately 15-20 minutes.
5. For a larger mass (such a 6 oz Semco tube), thaw time at 25-30°C is at least 25-30 minutes.

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CURE SCHEDULE

7-10 days at 25°C*
 or
 2 hrs @ RT + 5 hrs @ 80°C
 or
 2 hrs @ RT + 3 hrs @ 100°C

* NOTE: After 72 hours at 25°C, a 5 mil film is cured enough to handle. Allow the full 7-10 day cure to achieve ultimate physical properties.

TYPICAL PROPERTIES

(values not to be used for specification purposes)

<u>CHARACTERISTICS</u>	<u>APTEK 2217/0.005-PMF</u>	<u>TEST METHOD</u>
Color	Black	Visual
Specific gravity	0.99	ASTM D-1475
Viscosity @ 20°C, cps	Smooth thixotropic paste	ASTM D-1824
Flash point, °C	>150	ASTM D-92
Shelf life @ -65°C or below, months Stored in factory sealed containers	2	
<u>CURED PHYSICAL PROPERTIES</u>	<u>APTEK 2217/0.005-PMF</u>	<u>TEST METHOD</u>
Hardness, Durometer A	50	ASTM D-2240
Lap shear, psi	350	ASTM D-1002
Glass transition temp., °C	-60	ASTM D-831
Coefficient of thermal expansion, in/in/°C alpha 1 alpha 2	82 x 10 ⁻⁶ 224 x 10 ⁻⁶	ASTM D-831
Fungus resistance	non-nutrient	ASTM-G-21
<u>CURED ELECTRICAL PROPERTIES</u>	<u>APTEK 2217/0.005-PMF</u>	<u>TEST METHOD</u>
Surface resistivity @ 25°C, 5 mil thick film, ohms/square	10 ⁶	ETS 860B, 10v bias

SAFETY AND FIRST AID

APTEK 2217/0.005-PMF is carbon filled polyol organic isocyanate resin which may cause severe eye and skin irritation with direct contact. 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 physician. Refer to Material Safety Data Sheet for more details.