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ISO 9001 / AS9100 Certified

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TECHNICAL DATA & INFORMATION

APTEK® 2214LV-A/B

Space Grade, Low Modulus Urethane ESD Coating

PRODUCT DESCRIPTION

APTEK 2214LV-A/B is a carbon-filled, thixotropic, two component, electrically conductive, 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.

APTEK 2214LV-A/B is a low viscosity version of standard APTEK 2214-A/B designed for spray or brush applications.

KEY FEATURES AND BENEFITS

- Capable of full cure at RT for application where heat cure is not desired or possible
- Exceeds NASA outgassing requirements for space applications
- Non-TDI based for safety
- Excellent reversion resistance for good physical stability under high heat and humidity environments
- Tg BELOW -60°C for excellent low temperature cycling, storage and performance
- Excellent substrate adhesion; superior to silicones
- Available in pre-measured kits to minimize handling

HANDLING INFORMATION

Mix ratio, parts by weight:	100 (2214LV-A) / 5 (2214LV-B)
Work life, 50 gm mass, @ 25°C, 50% RH, mins:	>60

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

Handling Notes:
- To reduce mixed viscosity, dilute A/B mixture with reagent grade toluene or APTEK 2214 Thinner, as needed.

- APTEK 2214LV-B should be stored in tightly closed, factory sealed containers at a temperature of 20-30°C. Crystallization, cloudiness, or formation of an insoluble white precipitate which is the solid dimer of the liquid Part B may occur upon prolonged storage at temperatures below 20°C. The precipitate is not harmful; however, do not shake the bottle. Decant clear liquid out of bottle without disturbing the precipitate.

- 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.

MIXING

Weigh 100 parts of APTEK 2214LV Part A into a clean dry glass, metal, plastic container, or spray gun reservoir and then add 5 parts of APTEK 2214LV Part B. Machine mix on slow speed, hand stir with glass or metal stirrer, or affix the spray gun lid and shake or mix until complete and thorough blending is achieved.

PAINT APPLICATION

a. Use dry air, free of oils, as pneumatic spraying medium at a suggested pressure setting of ~20 psi. Adjust pressure as needed to achieve a wet coat.
b. Recommended spray equipment is HVLP (high-volume, low-pressure) spray guns, such as a Devilbiss PROLITE-S-HV5-TE5-10-C (part # 905082) gun for lab and small volume use (www.devilbiss.com). The canister for this gun is 265ml. For larger production scale use, the Anest Iwata LPH400-164LV Gravity Gun (www.anestiwata.com) is preferred. The canister for this gun is 600ml.
c. To achieve cured thickness in the~0.3 – 0.4 mils range, spray one wet coat in a serpentine spray pattern.
d. Clean paint gun with toluene or APTEK 2214 thinner

CURE SCHEDULE

1 hr @ RT + 2 hrs @ 85°C

TYPICAL PROPERTIES

(values not to be used for specification purposes)

CHARACTERISTICS	2214LV-A	2214LV-B	TEST METHOD
Color	Black	Pale yellow	Visual
Specific gravity	0.88	1.12	ASTM D-1475
Viscosity @ 20°C, cps	165	10	ASTM D-1824
Flash point, °C	7	7	ASTM D-92
Shelf life @ 25°C, months factory sealed containers	6	6	

Notes: Shelf life may be reduced once containers are opened and material is exposed to air and moisture. To preserve maximum use life, blanket the contents of the containers with dry nitrogen or argon before resealing.

CURED PHYSICAL PROPERTIES	2214LV-A/B	TEST METHOD
Hardness, Durometer A	70	ASTM D-2240
Glass transition temp., °C	<-60	Perkin Elmer TS-2
Outgassing @ 10^{-6} Torr		
TML, %	0.59	ASTM-E-595
CVCM, %	0.04	ASTM-E-595
Fungus resistance	non-nutrient	ASTM-G-21

CURED ELECTRICAL PROPERTIES	2214LV-A/B	TEST METHOD
Surface resistivity @ 25°C, 0.4 mil thick film on nonconductive substrate, ohms/square @ 10 V Bias	$10^4 – 10^7$	QCP-016-0110

SAFETY AND FIRST AID

APTEK 2214LV-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 2214LV-B is an organic isocyanate 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. 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.

Revised: 12/20/23 – mjv