APTEK LABORATORIES, INC.
ISO 9001 / AS9100 Certified

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TECHNICAL DATA & INFORMATION

APTEK® 6550-A/B

Thermally conductive, electrically insulating, "Blob Top" encapsulant

PRODUCT DESCRIPTION

APTEK 6550-A/B is a two component, mineral-filled, epoxy system designed to encapsulate microelectronic chips and circuitry.

KEY FEATURES AND BENEFITS

- High thermal conductivity to prevent unwanted heat buildup in sensitive devices
- 100% solids/no diluents for low outgassing during cure and service
- Low levels of ionic contamination to minimize corrosion problems
- Thixotropic, non-flow for C.O.B. and tab applications
- Easy to vacuum for void-free castings

HANDLING INFORMATION

(not to be used for specification purposes)

Mix ratio, parts by weight	100 (6550-A)/100 (6650-B)
Work life*, @ 25°C, 50% RH, 300 gm, hours *adversely affected by heat and increased humidity	8
Gel time, 10 gms, @ 150°C, mins	3-5
Mixed viscosity, @ 25°C, cps	190,000

Handling Notes

- During storage the filler may settle. Before use, check for settlement in Part A and Part B with a clean metal spatula and remix slowly by hand until uniform.
- Part B is moisture sensitive. After use, purge container with dry N_2 or argon, keep container tightly closed during storage.

MIXING

Weigh 100 parts by weight of APTEK 6550 Part A into a clean, dry, glass, metal, or plastic container and then add 100 parts by weight of APTEK 6550 Part B. Hand mix with a clean, dry, metal spatula until complete and thorough blending is achieved. Care should be taken to avoid any source of moisture contamination or air entrapment during mix. Mixture may be warmed to 35°C to facilitate degassing and handling.

Note: For best results and void free castings, vacuum mixture (25-35°C) at less than 15mm Hg for 5 minutes after "break".

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CURE SCHEDULE

4 hours @ 150°C

TYPICAL PROPERTIES

(not to be used for specification purposes)

CHARACTERISTICS	6550-A	6550-B	TEST METHOD
Color	Black	White	Visual
Viscosity @25°C,cps spindle/speed, rpm	190,000 7/10	200,000 7/10	ASTM D-1824
Specific Gravity	2.54	2.66	ASTM D-1475
Flash point, °C	>125°C	>125°C	ASTM D-92
Shelf life @ 25°C, mos factory sealed containers	6	6	

CURED PHYSICAL PROPERTIES		APTEK 6550-A/B	TEST METHOD
Hardness, durometer D @ 25°C		95	ASTM D-2240
Glass transition temp,°C		145	Perkin-Elmer TMS-2
Thermal coefficient of expansion			
in/in/°C	alpha 1	$27x10^{-6}$	Perkin-Elmer TMS-2
	alpha 2	$95x10^{-6}$	Perkin-Elmer TMS-2
Lap shear @25°,A1 to A1,psi		1800	ASTM D-1002
Thermal conductivity (cal) (cm)/(sec-cm²-°C)		$29x10^{-4}$	Colora

HYDROLYZABLE IONIC CONTAMINANTS

ION	EXTRACTION LEVEL,ppm
Chloride	<15
Sodium	<15
Potassium	<5

Notes
- Sample ground to 40-60 mesh.
- 1 gm of sample to 50 gm of de-ionized water.
- 2 hrs @ 125°C, 15 psig.

CURED ELECTRICAL PROPERTIES	APTEK 6550-A/B	TEST METHOD
Volume resistivity @ 25°C, ohm-cm	$7.5x10^{14}$	ASTM D-257

SAFETY AND FIRST AID

Avoid contact of resin and hardener with skin and eyes. If contact occurs, wash skin with soap and water. For eye contact, flush profusely with fresh water and call physician. Always mix and apply these materials in a well ventilated area. Refer to Material Safety Data Sheet for more details.

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