APTEK LABORATORIES, INC.
ISO 9001 / AS9100 Certified

28570 Livingston Avenue, Valencia, CA 91355-4171 • (661) 257-1677 FAX (661) 257-8939

TECHNICAL DATA & INFORMATION

APTEK® 6109-A/B

Blob-top Optoelectronic Encapsulant

PRODUCT DESCRIPTION

APTEK 6109-A/B is a two component, unfilled, clear, flexible system designed for the encapsulation of LED chips in OPTO devices. **APTEK 6109-A/B** provides excellent environmental protection and when casted becomes the lens portion of the device and displays excellent clarity and light transmissivity.

KEY FEATURES AND BENEFITS

- Fast gel time/ good hot strength for fast demold time
- High purity system to minimize potential of corrosion to die and lead frame surfaces
- No discoloration with prolonged heat aging to 100°C

HANDLING INFORMATION

Mix ratio, parts by weight:	100 (6109-A) / 55 (6109-B)
Work life*, 25°C, 45% RH, 100 gms, hrs.	>2

* adversely affected by heat and humidity. User to determine work life based on individual application.

Handling Notes:

1. Visually inspect containers of Part B before use. It is a very pure material and may crystallize upon prolonged storage below 20°C. If crystals are present, place the container into 60-70°C air circulating oven for 1 to 4 hours until material is totally liquid. Allow to cool to 30-35°C before use. DO NOT FORCE COOL as this may cause re-crystallization.

2. Part B is moisture sensitive. Reseal opened containers immediately after use. If possible, purge with dry nitrogen or argon before resealing to prolong shelf life.

MIXING

Weigh 100 parts by weight of APTEK 6109 Part A into a clean, dry, glass, metal or plastic container and then add 55 parts of APTEK 6109 Part B. Machine mix at slow speed or hand stir with glass or metal stirrer until complete and thorough blending in achieved. Care should be taken to avoid any source of moisture contamination or air entrapment during mix. Mixture may be warmed to 35°C maximum 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. Stop vacuuming when material starts to boil.

CURE SCHEDULES

8 hrs. @ 115°C*

*NOTE: The user should determine the proper cure schedule for individual application requirements. As a guideline increased cure times will improve heat/humidity resistance without adversely effecting physical and electrical properties.

TYPICAL PROPERTIES

(values not to be used for specification purposes)

CHARACTERISTICS	6109-A	6109-B	TEST METHOD
Color	blue	clear to pale yellow	Visual
Specific gravity	1.15	1.20	ASTM D-1475
Viscosity @ 25°C, cps	20,000	350	ASTM D-1824
spindle/speed, rpm	#5/10	#2/50	
Flash point, °C	>200	>150	ASTM D-92
Shelf life @ 25°C, mos, In factory sealed containers	12	12	
Index of refraction, 25°C	1.570	1.480	ABBE
25°C (mixed liquid)	1.538		ABBE

CURED PHYSICAL PROPERTIES		APTEK 6109-A/B	TEST METHOD
Hardness, durometer D		82	ASTM D-2240
Glass transition temp., °C		84	Perkin Elmer TMS-2
Thermal coefficient of expansion, in/in/°C	alpha 1	99×10^{-6}	Perkin Elmer TMS-2
	alpha 2	225×10^{-6}	Perkin-Elmer TMS-2

CURED ELECTRICAL PROPERTIES	APTEK 6109-A/B	TEST METHOD
Volume resistivity @25°C, ohm-cm	>1.0 x 10^{14}	ASTM D-257
Dissipation factor/dielectric constant @ 25°C, 1 KHz, max.	0.016/3.8	ASTM D-150

SAFETY AND FIRST AID

APTEK 6109-A is safe to handle when used properly. Contact with skin or eyes can cause irritation and possible allergic skin reaction with prolonged or repeated use. Avoid contact with skin and eyes and use in a well ventilated area and avoid breathing vapors. Incase 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 6109-B is safe to handle when used properly. It may cause eye irritation, possible eye damage, skin irritation and possible allergic skin reaction with direct contact. Prolonged inhalation of vapors may result in breathlessness, coughing, and irritation of mucous membranes. Avoid skin and eye contact and use in a well-ventilated area. In case of eye contact, flush profusely with fresh clean water for 15 minutes and contact a 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: 10/16/09 – di