



APTEK LABORATORIES, INC.

ISO 9001 / AS9100 Certified

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PRELIMINARY TECHNICAL DATA & INFORMATION

APTEK® 6114-2-PMF

Optoelectronic Encapsulant for IR Devices

PRODUCT DESCRIPTION

APTEK 6114-2-PMF is a one component, unfilled, dark brown, rigid system designed for the encapsulation of IR LED chips in OPTO devices. APTEK 6114-2-PMF provides excellent environmental protection and when casted becomes the lens portion of the device designed to be transparent to IR light while blocking out visible light and therefore appears black when cast in mass.

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.
- Thixotropic consistency for non-sag application.

HANDLING INFORMATION

Work life, 25°C, 45% RH, 500 gms, hrs. >2
(adversely affected by heat and humidity)

Gel time, 10 gms, 120°C, mins. 5-10

1. Syringes are shipped in dry ice. Upon receipt, transfer frozen syringes to a storage freezer @-40°C or below.
2. To thaw remove from freezer and allow to warm to room temperature. Do not place in oven or microwave-this will shorten use life.
3. Typical thaw time for 5cc syringe (or smaller) @25°C ambient is approximately 15-30 minutes.

CURE SCHEDULES*

4 hrs. @ 125°C

*Note: Above schedules were determined by tracking the Tg vs time data at various temperatures. These schedules represent a condition where the Tg of the system has remained constant for at least 35% of the time at each respective temperature.

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

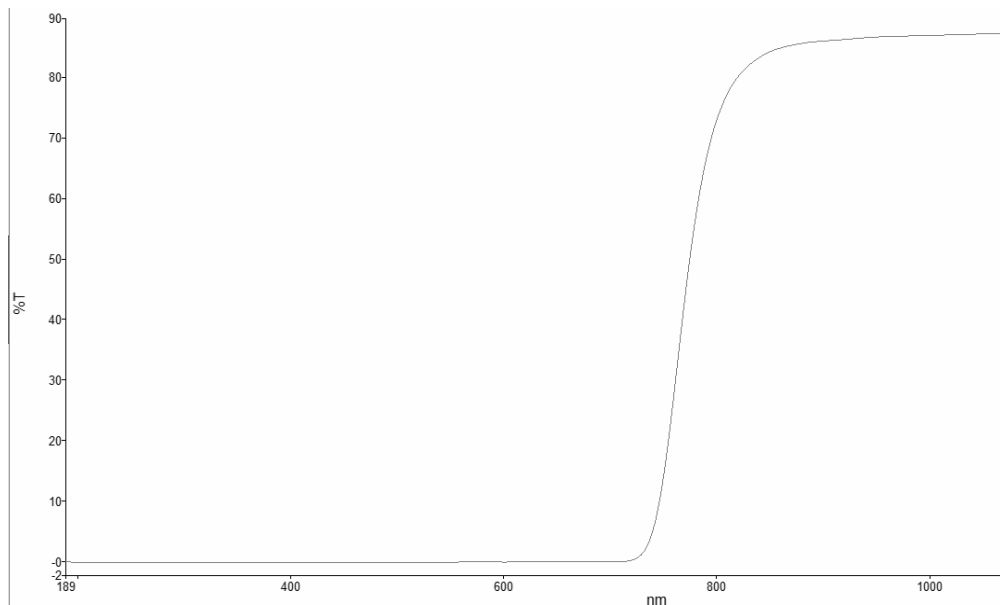
(values not to be used for specification purposes)

<u>CHARACTERISTICS</u>	<u>6114-2-PMF</u>	<u>TEST METHOD</u>
Color	Dark brown	Visual
Specific gravity	1.20	ASTM D-1475
Viscosity @ 25°C, cps	Thixotropic liquid	ASTM D-1824
Flash point, °C	>200	ASTM D-92
Shelf life, months @ ≤ -40°C, factory sealed containers	6	

<u>CURED PHYSICAL PROPERTIES</u>	<u>APTEK 6114-2-PMF</u>	<u>TEST METHOD</u>
Hardness, durometer D	87	ASTM D-2240
Glass transition temp., °C	130	ASTM E-831
Thermal coefficient of expansion, in/in/°C	alpha 1 72 x 10 ⁻⁶ alpha 2 188 x 10 ⁻⁶	ASTM E-831 ASTM E-831

<u>CURED ELECTRICAL PROPERTIES</u>	<u>APTEK 6114-2-PMF</u>	<u>TEST METHOD</u>
Volume resistivity @ 25°C, ohm-cm	5.0 x 10 ¹⁵	ASTM D-257
Dissipation factor/dielectric constant @ 25°C, 1 KHz	0.010/3.1	ASTM D-150

Transmission curve at 0.010" thickness:



SAFETY AND FIRST AID

APTEK 6114-2-PMF is safe to use when handled properly. Contact with skin or eyes may 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. 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.

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