



## TECHNICAL DATA SHEET

### UV-3010 UV CURABLE COATING/ENCAPSULANT

UV-3010 has been engineered specifically for water resistance on **printed circuit board protection** and **LED component protection in membrane switches.**

#### DESCRIPTION

- Insulation resistance of cured films of UV-3010 at 100°C and 95% relative humidity is one of the highest and most stable of any coating in the marketplace, including epoxy, silicone and urethane
- Cured film of UV-3010 will withstand extreme thermal shock and thermal cycling from +150°C to -60°C, while maintaining its electrical integrity over a wide temperature and frequency range
- UV-3010 meets UL 94V-0 flammability requirements, as well as the specifications of MIL 46058-C for printed circuit boards.
- UV cure is accomplished within seconds, allowing for high-speed production.
- Rheology of UV-3010 makes it suitable for syringe dispensing. UV-3010 can also be heated to drop its viscosity for dipping applications.
- High temperature resistance of UV-3010 allows it to be used in wave soldering applications
- 100% solids

#### TYPICAL PROPERTIES

Appearance	Clear liquid
Viscosity, Brookfield DV II Ultra @ 25°, shear rate of 10	13,000 cps +/- 2,000
Weight Per Gallon @ 25°C	9.2 lbs
Specific Gravity @ 25°C	1.10
Shelf Life (uncatalyzed) @25°C	6 months

#### PHYSICAL PROPERTIES AFTER CURE (Free Films)

Hardness, Shore A	85
Linear Coefficient of Expansion	0.69 mm/mm/°C x 10 <sup>-4</sup>
Elongation to Break	10%
Cross Hatch Adhesion	
to treated Mylar	100%
to Copper	100%
to G-10 Board	100%
Water Absorption	0.06%
Volume Resistivity @ 25°C	3.6 x 10 <sup>13</sup> Ω—cm
Surface Resistivity @ 25°C	3.8 x 10 <sup>14</sup> Ω/square/MIL
Dissipation Factor, 1 MHZ, @ 25°C	0.03
Dielectric Constant, 1 MHZ @ 25°C	3.41

# UV-3010 UV CURABLE COATING/ENCAPSULANT

## Application Guidelines

UV-3010 can be applied by all conventional methods including syringe dispensing, dip, roll or knife over roll coating and curtain coating.

## Curing

UV-3010 must be exposed to ultraviolet light of the proper wavelength to activate the curing mechanism. This can be done with any ultraviolet light source, which puts out wavelengths of <380 nanometers. The most common commercial light source is the medium pressure mercury vapor (MPMV lamps), electrode or microwave activated arc, with or without spectral enhancement (doped). Cure can also be accomplished with xenon or carbon arc lamp sources. These sources are available in increasing arc lengths and varying intensities for specific applications from a large number of manufacturers. It is highly recommended that a radiometer be used to verify energy levels in any UV curing system.

As a general guideline, lamp input power settings should be at the highest level (300 watts in most systems), and the belt speed should be adjusted until a reading of between 700 and 950 millijoules/square centimeter ( $\text{mj}/\text{cm}^2$ ) is obtained on the radiometer (especially in applications where it is used as a component encapsulant and not a flat layer dielectric). Some systems may require values outside of this range in order to completely cure UV materials. Always verify completeness of curing of UV materials in an initial process capability study, and then use the energy readings, that provide this optimal curing, as a set up parameter each time the UV line is set up to run production.

## Health & Safety

Products manufactured by Applied Ink Solutions are intended for use in an industrial environment by trained personnel. Please follow proper health/safety processes regarding storage, handling and processing of the products.

Guidelines are intended to provide a starting point for evaluation.

Applied Ink Solutions recognizes that each customer's manufacturing process is unique, and we are available to provide technical assistance to resolve your processing issues. Call us to discuss your application in more detail.

The properties are accurate to the best of our knowledge and Applied Ink Solutions makes no guarantees for customer specifications established in applications where this product is used. Customer assumes responsibility for determining fitness of use in their particular application.