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UV-772 ULTRAVIOLET CURABLE FLUORESCING DIELECTRIC

UV-772 is a 100% solids, UV curable flexible epoxy material designed for use as a printable insulating layer for manufacturing applications where visual inspection is required to assure complete and consistent coverage. Under low energy UV light (black light), UV-772 fluoresces both before and after the curing process so that completeness of coverage can be quickly determined. Cured films of UV-772 exhibit excellent adhesion to glass, metal, indium tin oxide (ITO), polyester, and most other plastic substrates. UV-772 is suitable for high temperature applications and will withstand continuous exposure up to 155° C. Cured films will withstand extreme thermal shock from +200° C to well below -60° C. This material maintains its electrical integrity over a wide temperature and frequency range, and has exceptional moisture resistance. The high temperature resistance of UV-772 allows it to be used in wave soldering applications.

UV-772 is excellent as a protective barrier on silver ink bus bars and will not fracture off ITO substrates when die cut or sheared. It is compatible with all of our silver conductive inks, carbon resistive inks, silver conductive epoxy adhesives, UV curable encapsulants and conformal coatings.

TYPICAL PROPERTIES (Uncured Liquid)

Appearance	Straw Colored Liquid
Viscosity, Brookfield RVT @ 20° C #5 Spindle, 10 rpm	6,100 cps
Weight Per Gallon @ 25° C	9.7 lbs
Specific Gravity @ 25° C	1.17
Flash Point, PMCC	340° F (171° C)
Shelf Life @ 25° C	6 months

TYPICAL CURED PROPERTIES

CURED PROPERTIES – FREE FILMS

Shrinkage On Cure	2.2%
Elongation To Break	4.0%
Tensile Strength At Break	7,600 psi
Glass Transition Temperature (DMA)	157° C
Volume Resistivity @ 25° C	$3.3 \times 10^{14} \Omega\text{-cm}$
Surface Resistivity @ 25° C	$2.9 \times 10^{13} \Omega/\text{Square}$

-More Information On Reverse Side Of Page-

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APPLICATION METHODS:

UV-772 can be applied by all conventional methods including screen, gravure and pad printing, dip, roll, knife over roll and curtain coating or die application.

For screen printing, use stainless steel or monofilament polyester screens from 305 to 390 mesh, with an emulsion thickness from .001" to .003". For thicker coatings, use smaller mesh sizes and thicker emulsions. A polyurethane squeegee with a Shore 'A' durometer between 60 and 70 is recommended. The excellent pot life and UV cure mechanism allow for heating of the material to precisely control viscosity for consistent application weights.

Fluorescing of the ink can be observed by exposing it to low energy UV light sources, such as "black lights". UV-772 will not fluoresce under ambient light conditions.

METHOD OF CURE:

UV-772 must be exposed to ultraviolet light of the proper wavelength to activate the curing mechanism. Curing can be achieved with any ultraviolet light source which puts out wavelengths of <350 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, UV lasers or electron beam 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 600 and 900 millijoules/square centimeter (mj/cm^2) is obtained on the radiometer. Keep in mind that some systems may require values outside of this range in order to completely cure UV materials. Always verify curing completeness of UV materials in an initial process capability study, and then use the optimal curing energy readings as a set up parameter each time the UV line is set up to run production.

NOTE: Although the above information is accurate to the best of our knowledge, Conductive Compounds, Inc. 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.