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Innovative Chemistry For High-Tech Applications

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RO-593 RADIO OPAQUE SCREEN PRINTABLE INK

RO-593 is a solvent based, heat dried ink designed for use in applications requiring visible tags on devices exposed to X-ray, MRI and other imaging technologies. RO-593 can be applied by screen, pad or high speed high speed roll printing processes, as well as coating or dipping. It can also be applied by manual processes such as brush or syringe for making prototypes. Cured films of RO-593 exhibit excellent adhesion to glass, metal and most plastic substrates. RO-593 is also very flexible and can be used on printed substrates that require bending or flexing.

RO-593 can also be overprinted with other protective inks or coatings, and is compatible with Parylene overcoats. It is compatible with all of our silver conductive inks, carbon resistive inks, silver conductive epoxy adhesives, UV curable encapsulants and conformal coatings. RO-593 is available in white, or other colors.

TYPICAL PROPERTIES (Uncured Liquid)

Appearance	Thick White Opaque Paste
Viscosity, Brookfield RVT @ 20° C #5 Spindle, 10 rpm	9,000 cps
Density (Wet) @ 25° C	2.3 gm/ cm ³
Flash Point, PMCC	340°F (171°C)
Shelf Life @ 25° C	3 months, if storage guidelines are followed
Cure Time	10 to 15 Minutes at 140° C (Depending upon Air Flow, Humidity and Print Thickness)

TYPICAL CURED PROPERTIES

Glass Transition Temperature (DMA)	80° C
Volume Resistivity @ 25° C	3.3 x 10 ¹⁴ Ω-cm
Surface Resistivity @ 25° C	2.9 x 10 ¹³ Ω/Square

Caution: Do not allow the material to sit for long periods and settle as it will form a hard pack, see recommended storage guideline on reverse side.

RO-593 RADIO OPAQUE SCREEN PRINTABLE INK GUIDELINES

STORAGE GUIDELINES

The solid filler in RO-593 will settle quickly when left in storage, and the material will thicken towards the bottom of the container. When left undisturbed for long periods, the dense filler will settle to a “hard pack” in the bottom of the container and the material will require very aggressive mixing in order to break up the hard pack and redisperse it into the material. It is essential to mix the material thoroughly before use to re-disperse any settled particles and to return the ink to a more desirable viscosity.

For storage, slowly roll the container of ink continuously or for 2 to 3 hours minimum daily. If this is not possible, then the container should be turned over in storage so that the container end with the lid, sits on the bottom after one or two days and then turned over once again in one or two days. Do not let material sit undisturbed for long periods before printing.

APPLICATION GUIDELINES:

RO-593 can be applied by screen, pad or high speed high speed roll printing processes, as well as coating or dipping. It can also be applied by manual processes such as brush or syringe for making prototypes.

For screening, a monofilament polyester (157 to 230 mesh) or a stainless steel (165 to 325 mesh) screen is recommended, with emulsion thickness between .001" and .004". A polyurethane squeegee with a Shore ‘A’ durometer between 60 and 70 is recommended. In order to obtain optimal opacity under emissions, a wet-wet print cycle will allow for more filler density in the final print pattern. Alternately, two or more print layers can be made between drying cycles to build up the dry film to a suitable thickness.

For thinning and cleanup, use 1-methoxy-2-propanol acetate (PM acetate) or dibasic ester solvents. If faster drying time is required, contact Conductive Compounds, Inc. for solvent recommendations. If solvent based inks are left on screens for any length of time, the ink will gradually thicken as solvent evaporates. If ink is to be left on an inactive press for any length of time, solvent evaporation can be minimized by pooling the ink into a small area instead of leaving it spread out over a large area. Pooling the ink reduces the surface area, thus slowing the drying process. Always check the viscosity of ink that has been recovered from a screen and add small amounts of solvent while mixing thoroughly to restore viscosity. Solvent can be added to reclaim thickened ink as long as the ink has not dried and hardened completely.

It is essential that all residual solvent be removed from this ink once it is applied. Incomplete drying will cause the ink to appear dry on the surface while trapping solvent underneath the surface. Over time, this trapped solvent will migrate out of the ink, and can cause adhesion problems with any material

The above properties are accurate to the best of our knowledge and 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 and the above guidelines are intended to provide a starting point for evaluation. Conductive Compounds, Inc. 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.

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