



RO-593 Radio Opaque Ink

Description

RO-593 Radio Opaque Ink is a solvent-based, heat-dried ink designed for use in applications requiring high contrast visible tags on devices exposed under MRI and other imaging technologies.

Features

- Ceramic-filled ink, not metal-filled
- Cured films exhibit excellent adhesion to glass, metal and most plastic substrates
- Can be overprinted with other protective inks or coatings, and is compatible with parylene overcoats
- Standard white color or pink color
- Compatible with our UV curable dielectrics, conductive epoxy adhesives and UV curable component encapsulants.

Application Guidelines

RO-593 is optimized for screen printing but can be applied by high speed roll-printing processes, coating or dipping. It can also be applied by manual processes such as brush or syringes for making prototypes.

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 to redisperse it into the material. It is essential to mix thoroughly before use to redisperse any settled particles and to return

Typical Properties

| | |
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| Appearance | White or pink opaque paste |
| Hegman Gauge | <25 μm |
| Total % NV Solids | 78.00 - 82.00% |
| Viscosity: Brookfield SC4-14 spindle @ SR 20, 25°C | As tested |
| Cross Hatch Adhesion | Pass |

the ink to a more desirable viscosity.

A monofilament polyester (157 to 230 mesh) or a stainless steel (165 to 325 mesh) screen are 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. Alternatively, two or more print layers can be made between drying cycles to build up the dry film to a suitable thickness.

Drying

The drying process will take 10 to 15 minutes at 140°C depending on air flow, humidity and print thickness. Consult us if lower drying temperatures are required. 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, such as dielectrics, applied over the ink.

If solvent-based inks are left on screens for any length of time, the ink will gradually thicken as solvent evaporates. If the ink is to be left on an inactive press for any length of time, solvent evaporation can be minimized by pooling the ink to reduce the surface 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.

Thinning & Cleanup

If necessary, use Solvent 10 or Solvent 30 to thin or clean the ink. A suitable screen cleaner can be used also for cleaning the surface of a screen or tools. Solvent should only be added to the amount of ink that will be used at that time and not to the entire container. 1 part per 100 is the

recommended starting point with smaller increments added if more is needed. Mix well after each addition.

Storage & Shelf Life

Proper storage is important. Store in a dry area at 25°C (room temperature). Shelf life is 6 months in unopened container.

During 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 the material sit undisturbed for long periods before printing.

Disposal

The material and its container must be disposed in accordance with all local, state, federal and/or international regulations.

Handling

Consult Safety Data Sheet (SDS) for details on the handling procedures and product hazards prior to use. If you have any questions regarding handling precautions or product hazard, please email productsafety@kayakuAM.com.

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