

Technical Data Sheet

RLC Thermoform Coating

Kolorcure's RLC Thermoform Coating was developed to be used in roller coater or blanket coater applications and be thermo formable. Excellent intercoat adhesion and extreme elongation properties enable this UV coating to withstand up to a 6 inch draw.

Substrates

- Acrylic
- ABS
- PVC
- Polycarbonate
- Polystyrene
- PETG

Substrate recommendations are based on commonly available materials intended for the coatings's specific market when the coating are processed according to this technical data. While technical information and advice on the use of this product is provided in good faith, the User bears sole responsibility for selecting the appropriate product for their end-use requirements. Reference the 'Quality Statement' at the end of this document.

Directions for Use

Pretest for adhesion to all substrates prior to production printing, as well as, other properties to determine suitability. Mix well prior to each use.

Surface

A clean dry surface is preferred for superior adhesion.

Roller Blanket

A 15-50 durometer (Shore A Hardness) polyurethane is the recommended range.

Coverage

Estimated 3,200 – 4,200 square feet (295 – 390 square meters) per gallon depending upon coating deposit. See www.kolorcure.com for examples of coverage calculations.

Cleanup

Use a press wash or roller coat cleaner. Check with your equipment supplier that the products are suitable for use with rollers.

Additives

When required, additives should be mixed well before each use. Test any additive adjustments to the coating prior to production. Coatings containing additives should not be mixed with other inks or coatings.

To lower the viscosity which will enhance the transfer of the coating through the screen, use **Thinner #9**.

To increase curing speeds add **Activator #330 (Sensitizer)**.

To eliminate bubbles resulting from the screening process, add **Anti-Bubble #2**.

Thickening Powder can be used when color strength cannot be altered.

Flattening Powder is available to reduce gloss.

Printing

Mix the coating thoroughly prior to printing. Improper mixing can lead to inconsistent color and coating performance.

Coating temperature should be maintained at 65°– 90°F (18°– 32°C) for optimum print and cure performance. Lower temperatures will increase the coating viscosity which impairs flow and increases film thickness. Elevated temperatures will lower the coating viscosity which reduces print definition and film thickness.

Keep coating away from direct sun light and indirect white light. Be cautious using coatings in areas having overhead lights, skylights, or windows as stray UV light can cause the coating to cure in the screen. Light filters are recommended. Ambient lighting may affect uncovered containers of coating, forming a skin on the coating's surface. Keep containers covered.

Curing

RLC Thermoform Coating cures in air upon exposure to a single 600+ mW/cm² medium pressure mercury vapor lamp. For an optimal cure a 140–180 mJ/cm² window is required.

These guidelines are intended only as a starting point for establishing cure parameters, which must be determined under actual production conditions. If a loss of gloss, adhesion, or block resistance occurs due to insufficient cure, the use of mixing base can increase light penetration and improve cure. In addition, faster curing speeds can be achieved by adding 3-5% liquid sensitizer.

Storage

All KOLORCURE photopolymer inks and coatings should be stored in a cool dry area: 80°F (27°C) or below. Keep these inks and coatings away from direct sun light and indirect white light. Do not use these inks and coatings in areas having fluorescent lights overhead. Keep these inks and coatings away from internal heat sources. When stored under recommended conditions, shelf life is expected to be 12 to 18 months from date of manufacture. Specialty glosses may have a shorter shelf life.

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Suitability

RLC Thermoform Coating is suitable for the following processes:

Stacking

Immediate stacking coating to substrate. Degree of cure, weight of the substrate when stacked, and conditions of the printing environment (e.g. heat and humidity) will affect block resistance. Surface hardness of cured coating film has been optimized for handling, however the printer must assume responsibility for pre-testing and qualifying the parameters for stacking prints prior to each production run.

Cutting

Die-cutting, router cutting, guillotine cutting, and laser cutting.

Heat Bending

Heat bending at 180° angle, inward and outward. High heat exposure may create areas of harder coating surface.

Thermoforming/Drape Forming

3-4" (8-10 cm) thermoforming draw and drape forming.

Handling

The use of goggles, gloves, and protective clothing is recommended. Avoid prolonged breathing of vapors. Contact of liquid material with the skin may be irritating; wash exposed area thoroughly with soap and water. Contact of coating with the eyes may cause injury – effects may be delayed; flush eyes with large amounts of water for 15 minutes and call a physician. Consult the applicable Safety Data Sheet (SDS) for further instructions and warnings.

Adhesion Testing

Even when using recommended UV energy output levels, it is imperative to check the degree of cure on a completely cooled print.

Weathering / Outdoor Durability

Outdoor durability cannot be specified exactly. Some color change and loss of gloss is to be expected. Variables affecting a print's durability include:

- Coating film thickness
- Degree of curing
- Color formulation
 - Adding large quantities of mixing base or white to any color
 - Mixing several colors to create a specific color
 - Mixing a small amount of any single color with any other color
- Type and age of substrate. The substrate by itself should provide required durability
- Mounting angle or directional orientation
- Geographical location
- Air pollution
- Exposure to excessive abrasion (e.g. brush car washes)
- Non-clear coated prints will exhibit more color change and loss of gloss

Gloss Variations

RLC Thermoform Coating is available in:

- Gloss
- Matte
- Satin

We warrant our products to be free from defects in material and workmanship; but because their use is beyond our control, we accept no responsibility of liability for damages, whether direct, indirect, or consequential, resulting from failure in performance. User bears sole responsibility in selecting the appropriate product for their end-use requirements. User is also responsible for testing to determine the selected product will perform during the printed item's entire life-cycle. In cases where our products are found to be defective in material and workmanship, our liability is limited to the purchase price of the products found to be defective.