

Imagemark XR is a UV curable screen printing ink formulated specifically for multiple substrate adhesion performance. XR is the broadest ink system of its type offering flexibility for pressure sensitive vinyl applications with the unique versatility to adhere to nearly all point of purchase stocks, including HDPE and fluted polyolefin stocks without the addition of catalyst.

Version 1.10.03.2005

Performance Properties

- Outstanding adhesion to a variety of substrates
- Rapid cure rates, ideal for multi-color presses
- Durable, non-block finish for double-sided prints
- No additives required for Coroplast®
- Low tack finish for easy handling
- Good water resistance
- Flexible for multi-layer applications/die-cutting
- N-VP and heavy metal free

Printing

Mix well prior to use. While supplied in press ready condition, XR may be reduced up to 10% with #11337 Thinner. Care should be taken to print the ink at optimal temperature 70-90°F (21-27°C). Cool ink will have heavier viscosity and will not flow properly. Hot ink will be lower in viscosity resulting in poor definition and decreased opacity.

Coverage

3,200 to 3,600 square feet per gallon based on ink deposit of .40-.60 mil dependant on color and printing conditions.

Curing

Ink will cure well when printed through 355 (140cm) plain weave polyester mesh or finer. XR's optimal cure window of 125-175 mJ / 550-650 mW is generally achieved with one 200 watt per inch mercury vapor lamp at belt speeds between 65-75 feet per minute (19-23m/min). This should provide thorough cure of the product. Cure speeds may vary as thicker material and dark surface colors require more energy.

Adhesion should be a minimum of 95% from curing unit with final adhesion developing within six hours of initial polymerization. Coarser fabrics can be utilized; however, cure parameters may need to be adjusted for increased ink film.

If a loss of gloss or adhesion due to insufficient cure is noticed, the use of 5-10% XR Mixing/Overprint Clear will increase light penetration and improve Cure.

The XR Imagemark system when properly cured develops an extremely versatile high gloss, water resistant ink film. Even though the cured ink film has been engineered to optimize processing and handling, the printer must assume responsibility for pre-testing and qualifying the parameters for stacking printed parts prior to each run.

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MIX WELL BEFORE USE. Follow any indications on the package, ask for the safety data sheets and always follow the indications contained therein. In case of doubt, please contact our Technical Service department. POLYMERIC IMAGING,

The intensity of cure, weight or caliper of the material and/or elevated ambient temperatures and humidity of the printing and storage environments will influence block resistance.

Under curing of XR Imagemark can radically affect the physical properties of the inks. Do not expose stacks of printed materials to environments that may introduce high levels of moisture and water. Printed materials must be stored in a dry area. It is also recommended that additional precautions be made for shipping by truck as temperatures in trailers can exceed 160F / 70C. XR Imagemark is not recommended for polyethylene banner applications.

Recommended Substrates

- Pressure Sensitive Vinyl
- Print Treated Electrostatic Vinyl
- Polystyrene
- ABS
- Polycarbonate
- Rigid Vinyl
- Expanded Foam PVC (Sintra®, Celtec®)
- Coated and Uncoated Paper
- Board Stock
- Acrylic
- Fluted Polyolefins
- Polyethylene Sheet
- Anodized Aluminum
- Many Coated Metals

Lightfastness

XR is lightfast up to three (3) years with a 355/inch or coarser mesh. Weathering tests have been completed on 4-mil vinyl printed with XR Series. The ink withstood 1500 hours of exposure with 4-hour cycle times of light and condensation at elevated temperatures with minimal color change and no shrinkage.

Accelerated machine weathering are reference standards and can not precisely reproduce actual outdoor performance. Based on prior correlation of accelerated testing versus real time exposure, 500 hours is equated to approximately one year, 45° south Florida.

The use of premium grade, calendared vinyl films are recommended for all applications intended to weather up to three (3) years.

Imagemark XR Series



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Storage

Care should be taken to store ink in tightly closed containers located in a cool (60-80°F/15-27°C) dark place. After long production runs excess ink from the screen should be properly disposed. With suitable conditions, unopened ink is expected to have a shelf life of approximately twelve (12) months from date of manufacture.

Metallics

Use the Metallic Mixing Clear to prepare metallic ink as it's increased viscosity helps insure a good particle suspension and extended shelf life. Recommended mixing ratios, by weight are:

- 28% gold paste
- 12% silver paste

For optimum coverage and opacity, 280-305 (110-120cm) plain weave mesh is recommended. Use XR Overprint Clear for extended weatherability and to improve the non-tarnishing properties of the product.

Additives

- 11337 Thinner up to 10% as needed
- 1534 Adhesion Promoter up to 3% as needed
- 11939 Adhesion Promoter, 3-5% as needed
- 2980 Catalyst, 3% as needed (will gel in 4 hours)

Precautions

Read the material safety data sheet prior to processing. It contains instructions for precautions when handling inks. If ink comes in contact with skin, wipe ink off with a clean, dry cloth (do not use solvent). Wash and rinse the affected area with soap and water.

Process Printing

For superior halftone reproduction, Imagemark halftones are available in a range of density levels. Additional control of density may be achieved with use of XR HT Base. For best results, 380 (150 cm) or finer and a smooth, thin stencil coating should be utilized with process printing.

	Press Ready	High Density	Backlit Densit
XR Halftone Yellow	0.90	1.10	1.35
XR Halftone Magenta	1.40	1.75	2.05
XR Halftone Cyan	1.40	1.80	2.20
XR Halftone Black	1.60	2.00	2.25

Color Availability

Imagemark XR is available in twenty opaque standard colors. Custom matches, metallic, fluorescent and transparent colors are obtainable upon request.

XR-101 Primrose Yellow	XR-210 Ultra Blue
XR-111 Lemon Yellow	XR-220 Emerald Green
XR-123 Medium Yellow	XR-225 Forest Green
XR-131 Brilliant Orange	XR-226 Lime Green
XR-135 Vivid Orange	XR-235 Teal
XR-141 Fire Red	XR-240 Purple
XR-151 Scarlet Red	XR-260 Brown
XR-155 Rubine Red	XR-301 Opaque Black
XR-160 Rhodamine Red	XR-311 Opaque White
XR-180 Warm Red	XR-312 Jet Black <small>'NEW MORE OPAQUE'</small>
XR-190 Process Blue	XR-026 Brilliant White
XR-200 Peacock Blue	XR Mixing/Overprint Clear
XR-205 Reflex Blue	XR Metallic Mixing Clear

Pantone Matching System® Colors

The nine PANTONE® approved Color Matching System (CMS) shades are used to simulate the PANTONE Color Specifier colors. Formulas were designed for maximum opacity and are available in book or Imaging Color Source Software formats.

XR-064 CMS GS Yellow
XR-066 CMS RS Yellow
XR-114 CMS Orange XR-
121 CMS YS Red
XR-164 CMS BS Red
XR-165 CMS Magenta
XR-127 CMS Violet
XR-230 CMS Blue
XR-325 CMS Green
XR Tinting White
XR Shading Black
XR Mixing/Overprint Clear

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