PolyMembrane
PCM Series

PolyMembrane PCM is a UV curable ink specifically formulated for multi-colored sub surface applications, such as, membrane switches, nameplates, counter mats, and instrument panel overlays. PCM has an excellent tolerance to pressure sensitive adhesives applied directly to the ink film. This ink has demonstrated remarkable flexibility for embossing, die-cutting and mechanical life cycling.

Performance Properties
- Excellent adhesion range on polycarbonate and polyester films
- Extremely flexible for multi-layer applications and embossing
- Meets GE's test specifications for acceptance on GE Lexan® and Valox® PTX print treated films
- Suitable with high tack pressure sensitive adhesive application
- Mechanical life cycle actuation tested

Recommended Substrates
- Polycarbonate
- Most print treated polyester materials
- Polycarbonate/ Polyester blends
- PVC
- Rigid Vinyl
- Tedlar®

Curing/Processing Guidelines
PCM was designed to cure in an oxygen environment and does not require nitrogen inserting for thorough cure. PCM will cure well when printed through 380-305 plain weave polyester mesh. PCM's optimal cure window of 200Mj at 600 mW for clear and most colors and 300mJ at 600mW for opaque whites, black and greys, with one 200 watt per inch mercury vapor lamp. Special super opaque products like Backing White and Barrier Black are often printed through a 305 (120cm) plain weave mesh and may require at least 300 mJs for complete cure.
Adhesion should be a minimum of 90% form 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% PCM Mixing clear will increase light penetration and improve cure.

Light Fastness
PCM is lightfast up to three (3) years with a 355/inch or coarser mesh. Weathering tests have been completed and the ink withstood 1,500 hours of exposure with 4-hour cycle times of light and condensation at elevated temperatures with minimal color change and no shrinkage.
Accelerated weather testing cannot precisely reproduce actual outdoor performance. Based on prior correlation of accelerated testing vs. real time exposure, 500 hours is equated to approximately one year, 45 degrees south Florida.

Water resistance is required for most outdoor applications; tests should be conducted at a minimum of 24 hours after curing. If additional water resistance is required, use 3%-5% of #2153 adhesion promoter.

Adhesives
Lamination or mounting contact adhesives to printed parts should be done after a 24 hour "post cure" period. This period, between curing and adhesive lamination, provides the ink film and substrate time to stabilize, improving adhesion properties. Pressure sensitive adhesives are known to contain materials, which migrate through the under-cured ink films and weaken the bond between ink and substrate. A properly cured ink film will pass a crosshatch tape test (ASTM D3359-93). Please test each print layer in multiple places throughout the run.

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

Printing
Mix well prior to use. While supplied in press ready condition, PCM Thinner for special viscosity adjustments. Care should be taken to print the ink at optimal temperature 70-90 degrees F. Cool ink will have heavier viscosity and will not flow properly, whereas hot ink will be lower in viscosity resulting in poor definition and decreased opacity.

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 manufacturer, six (6) months for white inks.

Metallic's
Use the Metallic Mixing Clear to prepare metallic ink as its increased viscosity helps insure a good particle suspension.

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
- 4318 PCM Thinner - Use up to 10% as needed

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

(816) 221-5567

www.polymericgroup.com

Polymeric US Inc.
117 E. 14th Avenue
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Process Printing
For superior halftone reproduction, 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, use 380 (150cm) or finer and a smooth, thin stencil coating should be utilized with process printing.

	Press Ready	High Density	Backlit Density
PCM Halftone Yellow0.90	1.10	1.35	
PCM Halftone Magenta	1.40	1.75	2.05
PCM Halftone Cyan	1.40	1.80	2.20
PCM Halftone Black	1.60	2.00	2.25

Color Availability
PolyMembrane PCM is available in opaque standard colors. Custom matches, metallic, fluorescent and transparent colors are obtainable upon request.

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

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

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We strongly recommend testing complete construction as per shop conditions prior to full production. MIX WELL BEFORE USE. Follow the directions on the package, ask for the safety data sheets and always follow the directions contained therein.

Important – Only the correct use of the product will allow satisfactory results. For this reason, closely related to the product supplied, Polymeric must decline all direct and indirect responsibility for the proper or improper use of the product. Make certain that product is right for the desired use, work according to the instructions given in our technical data sheets. Before use contact our Technical Service in case of doubt.

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