



Powerbond AS

Bonding energy in motion

Powerbond AS is a UV curable ink specifically formulated for multi-colored sub surface applications, such as, membrane switches, nameplates, counter mats, and instrument panel overlays. Powerbond 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
- 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

Curing/Processing Guidelines

Powerbond was designed to cure in an oxygen environment and does not require nitrogen inserting for thorough cure. Powerbond will cure well when printed through 380-305 plain weave polyester mesh. Powerbond's optimal cure window of 200mJ/ cm² at 600 mW/ cm² 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% PTP Mixing clear will increase light penetration and improve cure.

Light Fastness

Powerbond AS uses automotive grade pigments and is expected to have excellent lightfastness for approximately 3 years, second surface on suitable material. Comparative weathering tests have been completed on 4-mil vinyl. The ink withstood 1,500+ hours of exposure under ASTM D3424-11 Method 4 in a Q Sun Xenon Arc unit. Although there is no direct correlation between accelerated weathering and real time exposure, the inks are expected to have good lightfastness for three years of outdoor exposure. Weatherability will be determined by material used.

Accelerated machine weathering is used as a reference standard and cannot 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.

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, PTP 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

- 24463 - Use up to 10% as needed

Precautions



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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.

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
PAS Halftone Yellow 0.90	1.10	1.35	
PAS Halftone Magenta	1.40	1.75	2.05
PAS Halftone Cyan	1.40	1.80	2.20
PAS Halftone Black	1.60	2.00	2.25

Color Availability

PolyTouchPro PTP is available in opaque standard colors. Custom matches, metallic, fluorescent and transparent colors are obtainable upon request.

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

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Notwithstanding anything provided herein or any other written material to the contrary, Polymeric only warrants the purchase price and costs of installation. POLYMERIC SHALL HAVE NO LIABILITY OR OBLIGATION TO ANY USER, BUYER, PURCHASER, DISTRIBUTOR OR OTHER PERSON OR ENTITY FOR ANY SPECIAL, DIRECT, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, HOWEVER CAUSED, INCLUDING WITHOUT LIMITATION, PERSONAL INJURY, LOSS OF BUSINESS, LOSS OF PROFIT, OR OTHER DAMAGE, whether or not buyer shall have informed Polymeric of the possibility or likelihood of any such damages.

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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

PAS-064 CMS GS Yellow	PAS-066 CMS RS Yellow
PAS-114 CMS Orange	PAS-121 CMS YS Red
PAS-164 CMS BS Red	PAS-165 CMS Magenta
PAS-127 CMS Violet	PAS-230 CMS Blue
PAS-325 CMS Green	PAS Tinting White
PAS Shading Black	PAS 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.

