Polydyne

Polydyne UV Ink

THINNING

Stir well before every use. PolyDyne inks are supplied in a press ready condition for most printing applications. It may be necessary to thin slightly (3-5% with PN-TH Thinner) for cylinder press users or special applications.

STENCILS

Stencil materials must be solvent resistant and produce a thin film stencil (3-6 microns over mesh). Dirasol 911, SuperCoat 915, and SuperCoat 916 dual cure, AST-210 and 220 dual cure, Dirasol Zenith Triple Cure or Dirasol 132 one pot direct emulsions are recommended to give the highest print quality, minimize deposit variables and improve economy.

Gloss UV ink

for high density

polyethylene sheet and

corrugated plastics

Polydyne UV Ink Features

The main features are:

- Press Ready
- Fast Cure Speeds
- High-Gloss Finish
- Excellent Flexibility and Intercoat Adhesion
- Superior Printability for Large Format Work
- Wide Adhesion Range

CURE PARAMETERS

Ultraviolet cure (UV) inks are dependent on a high dosage of ultraviolet light to initiate cure, the process that converts the ink from a wet to a dry film. The light must, in effect, see through or penetrate the layer of ink to achieve proper cure.

If under-cure is experienced with any color, demonstrated through a wet film or loss of gloss, it is usually due to excessive ink deposit. To correct this, the mechanics, such as mesh, squeegee, color density, belt speed, or the amount of UV energy, must be changed.

Reduction of color density is easily achieved by letting the color down with MX (Mixing Clear) until proper cure is obtained.

Adhesion should be at least 80% immediately out of the reactor with final adhesion developing in one-half hour to four hours. If total cure on a given substrate with a specific color needs to be established, the piece should be passed through the reactor one or two more times. This will usually simulate final adhesion.

COVERAGE

Standard line colors should yield coverage of 2,800- 3,500 square feet/gallon (64 to 80 m²/liter) depending on film thickness.

WASH UP

Wash up on press with Xtend™ press washes and after the production run with Xtend™ ink degradents.

PRE-PRODUCTION TESTS

PolyDyne has been formulated to adhere to most polyethylene and some polypropylene substrates with surface tension levels of 40 dyne/cm or higher. However, it is strongly recommended that all substrates be tested before use as supposedly similar substrates can vary between different manufacturers and even between different batches from the same manufacturers. Certain plastics may be impregnated with lubricants which, like plasticizer migration, may impair adhesion and block resistance, even a considerable period after printing. Other plastics can become brittle or caused to curl after printing.

END-USER MUST DETERMINE SUITABILITY OF THIS PRODUCT FOR THE INTENDED USE PRIOR TO PRODUCTION.

OUTDOOR USE

Accelerated weathering tests indicate Polydyne has an exterior life of up to two years on rigid stocks in a temperate climate. Some rigid fluted stocks degrade rapidly in high humidity and sun exposure environments. To optimize ink adhesion under these conditions, add 3-5% by weight PN-WRA. Once catalyzed, the ink has a four to six hour pot life.

Note the exception of PN-064, 066, 114, and 121, where significant color deterioration was evident within the one year time frame. Color matches intended for outdoor use over 120 days should not contain PN-064, 066, 114, 121. Consider AMP-864, 866, 814, 821, for exterior life of up to two years.

MESH

PolyDyne prints and cures well through 380 to 420 (150 to 165/cm) plain weave monofilament polyester. For optimum flexibility on unsupported substrates, every endeavor should be made to minimize ink film thickness.

COLOR AVAILABILITY

The PolyDyne color range includes ten base Intense Matching System (IMS) colors, eleven standard colors, and intense halftone colors.

THE INTENSE MATCHING SYSTEM

The Intense Matching System has been designed to enable printers to readily simulate PANTONE®* and most other colors in-house. The system consists of 10 IMS base colors, each of which has been selected for its cleanliness of tone and suitability for intermixing. Using the IMS base colors plus Shading Black, Tinting White, and Mixing Clear, almost any color can be produced.

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PN-301 Black is somewhat ink film thickness sensitive. Use of a 380.34 pw mesh or higher is recommended. For lower meshes use PN-300 Opaque Black.

STANDARD HALFTONE COLORS

PolyDyne standard halftone colors comply with the ISO 2846 color standard. ISO 2846 establishes specifications for color and transparency of four color process ink for four-color printing. PolyDyne halftone inks are ISO 2846 compliant as recommended when using the G7 color process control method. The densities are slightly higher than SWOP (Specification Web Offset Publication) under most conditions and, therefore, offer scope for adjustment with the addition of halftone extender base.

PolyDyne halftone inks are developed to meet high speed print conditions. They incorporate the EzFlow rheology that provides improved ink flow out on the screen and achieves excellent release from the screen at extremely high print speeds while using minimal UV energy (80-130 mJ/cm2 of UVA) for curing. PolyDyne halftone inks print with a superior low dot profile and hold the dot structure over long press runs.

INTENSE HALFTONE COLORS

PolyDyne Intense Halftone colors are considerably higher in density than SWOP standards. Reduction of color density is easily achieved by letting down the color with PN-HTX (Halftone Base) until proper density is obtained.

SPECIAL MATCHES

Special colors can be supplied against prints, wet ink, PANTONE®* numbers, or other Fujifilm Sericol standard colors.

*Pantone, Inc's check-standard trademark for reproduction and color reproduction.

THINNERS / MODIFIERS

PolyDyne colors are supplied at a press ready viscosity for most printing applications. It may be necessary to thin slightly (3%-5%) with PN-TH for cylinder presses or special applications. PolyDyne Mixing Clear (PN-MX) may be used to reduce the strength of a color with minimal effect on viscosity.

When printing on low dyne or questionable substrate, between 35 and 42 dyne level, an addition of PN-WRA may be necessary to achieve proper adhesion. PN-WRA should be added 3% to 5% by weight, and once mixed, has a pot life of four to six hours. Unused ink with PN-WRA should be properly disposed of as outlined in the MSDS.

STORAGE

Containers should be tightly closed immediately after use. At the end of long printing runs, surplus ink from the screen should be disposed of. PolyDyne inks and reducers should not be stored in direct sunlight or extreme temperatures. Refer to Material Safety Data Sheet (MSDS) for materials and conditions to be avoided.

In the interest of maximum shelf life, storage temperatures should be between 50°F (10°C) and 77°F (25°C). When stored under these conditions the maximum shelf life is shown by the use by dates, which are clearly marked on all ink containers.

High temperature storage/shipment of prints may have an adverse effect on block resistance

SAFETY AND HANDLING

Refer to MSDS for safety, handling, waste disposal and regulatory information. All colors have been formulated to contain no pigments which contain lead or other heavy metals. These products are formulated to meet CONEG Packing Legislation and ROHS Electrical and Electronic Equipment Directive. If necessary, certification of lead and heavy metals content can be obtained from an independent laboratory.

SPECIFICATIONS:

POLYDYNE UV INK

Light energy level requirements vary from ink to ink and are dependent on a number of factors:

- Ink chemistry
- Color
- Ink deposit (film weight)
- Substrate being printed
- Halftone or line color

For PolyDyne the following guidelines are recommended:

Halftone Inks – 380.34PW Mesh

- Minimum millijoules–80-130 mJ/cm²–measured at the
- UVA component
- Minimum milliwatts-500 mW/cm²-measured at the
- UVA component

Line Colors-355.34PW Mesh

- Minimum millijoules-175 mJ/cm²-measured at the
- UVA component
- Minimum milliwatts-600 mW/cm²-measured at the
- UVA component

Standard Colors

- PN-111 - Lemon Yellow
- PN-123 - Medium Yellow
- PN-131 - Brilliant Orange
- PN-141 - Fire Red
- PN-155 - Rubine Red
- PN-180 - Warm Red
- PN-190 - Process Blue
- PN-200 - Peacock Blue
- PN-205 - Reflex Blue
- PN-210 - Ultra Blue
- PN-221 - Emerald Green
- PN-300 - Opaque Black
- PN-301 - Black
- PN-311 - Opaque White
- PN-026 - Brilliant White
- PN-SB - Shading Black
- PN-TW - Tinting White
- PN-MX/OP - Mixing Overprint Clear

Intense Matching System Colors

- PN-064 - IMS Yellow GS
- PN-066 - IMS Yellow RS
- PN-114 - IMS Orange
- PN-121 - IMS Red YS
- PN-127 - IMS Violet
- PN-164 - IMS Red BS
- PN-165 - IMS Magenta
- PN-230 - IMS Blue GS
- PN-233 - IMS Blue RS
- PN-325 - IMS Green

Standard Halftone Colors

- PN-HTC - Halftone Cyan
- PN-HTM - Halftone Magenta
- PN-HTY - Halftone Yellow
- PN-HTK - Halftone Black

Intense Halftone Colors

- PN-IHC - Intense Halftone Cyan
- PN-IHM - Intense Halftone Magenta
- PN-IHY - Intense Halftone Yellow
- PN-IHK - Intense Halftone Black
- PN-HTX - Halftone Extender Base

Reducers/Modifiers

- PN-TH - Thinner
- PN-WRA - Water Resist Additive

Media Type

- High Density Linear Polyethylene Sheet
- Coroplast® Cor-X®, and other Fluted Polyethylene/ Polypropylene Stocks
- Polystyrene
- Many Rigid Plastics
- Most Rigid Vinyls and Plastics
- Many Top-Coated Polyesters

THE FUJIFILM GREEN POLICY

We at Fujifilm believe that "sustainable development" of the Earth, mankind, and companies in the 21st century is an issue that must be addressed with the highest priority. As a socially responsible corporation, we actively undertake corporate activities with our environmental values in mind. We strive to be a dedicated steward of the environment and assist our customers and corporate partners in doing the same.

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