

PRODUCT INFORMATION

FEATURES

- ▶ Superior Exterior Weatherability
- ▶ Very Fast Cure Speeds
- ▶ Good Flexibility and Intercoat Adhesion
- ▶ Wide Adhesion Range
- ▶ Excellent High-Speed Printability
- ▶ High Gloss
- ▶ Excellent Opacity
- ▶ Excellent Die Cutting

SUBSTRATE APPLICATIONS

- ▶ Pressure-Sensitive Vinyls
- ▶ Most Vinyl Banner Materials
- ▶ Some Rigid Vinyls

THINNING

Stir well before every use. The viscosity of Plastical EL inks is supplied in a press ready condition for most printing applications. It may be necessary to thin slightly (3-5% with PEL-TH Thinner) for cylinder press users or special applications.

MESH

Plastical EL prints and cures well through screen meshes between 355 to 420 (140 to 165/cm) monofilament polyester.

STENCILS

Stencil materials must be solvent resistant and produce a thin film stencil (3-6 microns over mesh).

CURE PARAMETERS

Ultraviolet curable inks are dependent on a high dosage of intense ultraviolet light in a spectral range between 250 and 360 nanometers to initiate cure.

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

1. Ink chemistry
2. Color
3. Ink deposit (film weight)
4. Substrate being printed
5. Halftone or line color

For Plastical EL the following guidelines are recommended:

Halftone Inks – 380.34PW Mesh

Minimum millijoules—130 mJ/cm²—measured at the UVA component

Minimum milliwatts—600 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

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) or for halftones HTX until proper cure is obtained. Adhesion should be at least 80% immediately out of the reactor with final adhesion developing in two 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.

In situations where very low dyne level (36 or less) substrates are used, adhesion may be improved with the addition of up to 5% adhesion modifier (FC-AM).

COVERAGE

Standard line colors should yield coverage of 2,800 to 3,800 square feet/gallon (68 to 93 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

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 have been conducted on prints produced with Plastical EL. Under these conditions, Plastical EL colors withstood 1500 hours of testing before significant color or gloss reduction was evident.

Accelerated machine weathering tests cannot be precisely related to actual outdoor performance but it is considered that 1500 hours of exposure approximately equates to up to three years outdoor exposure in temperate climates.

COLOR AVAILABILITY

The Plastical EL standard color range includes the nine base Intense Matching System (IMS) colors, 14 standard colors, and 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 nine 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.

SPECIAL MATCHES

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

For optimum light fastness in color matched shades, the following recommendations must be observed:

1. The combined proportion by weight of PEL-026 Brilliant White, PEL-TW Tinting White, and PEL-MX Mixing Clear does not exceed 80% of the total color match mix.
2. The individual proportion of any one color except Black is not below 5% of the total mix.

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

STANDARD HALFTONE COLORS

Plastical EL Standard Halftone colors are matched to "SWOP" standards (Specification Web Offset Publication). The densities are slightly higher than SWOP under most conditions and, therefore, offer scope for adjustment with the addition of Halftone Extender Base (PEL-HTX).

STANDARD COLORS

ITEM	DESCRIPTION
PEL-009	Dense Black
PEL-026	Brilliant White
PEL-111	Lemon Yellow
PEL-141	Fire Red
PEL-155	Rubine Red
PEL-180	Warm Red
PEL-190	Process Blue
PEL-205	Reflex Blue
PEL-210	Ultra Blue
PEL-221	Emerald Green
PEL-OP	Overprint Clear

INTENSE HALFTONE COLORS

Plastical EL Intense Halftone colors are considerably higher in density than “SWOP” standards. This system offers a Halftone Extender Base which allows the user to reduce the ink’s density to the desired level.

INTENSE MATCHING SYSTEM COLORS

ITEM	DESCRIPTION
PEL-064	IMS Yellow GS
PEL-066	IMS Yellow RS
PEL-114	IMS Orange
PEL-121	IMS Red YS
PEL-127	IMS Violet
PEL-164	IMS Red BS
PEL-165	IMS Magenta
PEL-230	IMS Blue
PEL-325	IMS Green
PEL-TW	Tinting White
PEL-SB	Shading Black
PEL-MX	Mixing Clear

HALFTONE COLORS

ITEM	DESCRIPTION
PEL-HTY	Halftone Yellow
PEL-HTR	Halftone Red
PEL-HTB	Halftone Blue
PEL-HTK	Halftone Black
PEL-HTX	Halftone Extender Base
PEL-IHY	Intense Halftone Yellow
PEL-IHR	Intense Halftone Red
PEL-IHB	Intense Halftone Blue
PEL-IHK	Intense Halftone Black
PEL-TH	Thinner

METALLICS

Plastical EL Mixing Clear (PEL-MX) is recommended for use with all metallic powders. Recommended mixing ratios are 8% by weight of silver powder and 20% by weight of gold powder.

Meshes should range between 260 and 305 (102 to 120/cm) monofilament polyester. Due to the possibility of chemical changes after mixing, it is recommended that metallic shades are freshly mixed daily. For maximum exterior durability, a nontarnishing gold powder and clear coat should be used.

REDUCERS / MODIFIERS

Plastical EL colors are supplied at a press ready viscosity for most printing applications. It may be necessary to thin slightly (3%-5%) with PEL-TH for cylinder presses or special applications.

Plastical EL Mixing Clear (PEL-MX) may be used to reduce the strength of a color with minimal effect of viscosity.

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.

Plastical EL 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.

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.

The information and recommendations contained in this Technical Data Sheet, as well as technical advice otherwise given by representatives of our Company, whether verbally or in writing, are based on our present knowledge and believed to be accurate. However, no guarantee regarding their accuracy is given as we cannot cover or anticipate every possible application of our products and because manufacturing methods, printing stocks and other materials vary. For the same reason our products are sold without warranty and on condition that users shall make their own tests to satisfy themselves that they will meet fully their particular requirements. Our policy of continuous product improvement might make some of the information contained in this Technical Data Sheet out of date and users are requested to ensure that they follow current recommendations.