Pad Printing ink for printing on almost all plastic materials such as Acrylics (Perspex, Plexiglas), Polystyrene, rigid P.V.C. (Cobex), ABS, CAB, Polycarbonates etc.
High Gloss, good opacity, fast drying 1 or 2 component system, resistant to chemicals and weather elements

DESCRIPTION

EK Series Ink is a high-gloss, fast-drying, easy-to-use, 1- or 2-component plastic pad printing ink. This ink has a very mild smell and a very good resistance to oils, chemicals, and weather elements. As a result, these inks are used in many industries, including printing on packaging, toys, plastic panels, and outdoor signage. Because of this ink's perfect adhesion to plastics, they can resist stretching and vacuum molding operations. Lastly, the EK Series is excellent for printing with high-speed automatic printing machines due to its ultra-fast drying characteristics. Note that because these inks dry very quickly, they are not recommended for printing on heaped containers right out of the oven. Use the i-300x hardener to increase abrasion resistance, but it is not necessary. Using the hardener increases pot life to 10–14 hours, and it also increases abrasion resistance on many substrates.

Packaging
1 Kg (2.2lb)

Warranty
12 Months

SUBSTRATES AND APPLICATIONS

Plastics ABS, SAN, Soft and Rigid PVC, PA, POM, rPETE (recycled PETE), Pre-treated polypropylene (PP), rHDPE (recycled HDPE)Polyester, Polycarbonates, Hard plastics, Thermosetting-plastics, Acrylics, Vinyl, Tritan, Bioplastics

Wood Raw wood and varnish-coated wood

When printing on polyethylene and polypropylene, please note that the surface of the substrate must be pre-treated with flaming, corona, or PP Primers. Our test indicated that good ink adhesion can be achieved with a surface tension of at least 42–48 mN/m. In the case of polypropylene (PP), pretreat the surface with Natron PP Primer.

For multiple-color printing, only the substrate should be pre-treated. Flame-treating the substrate between print sequences will result in reduced intercoat adhesion.
All of the substrates mentioned above may differ in printability even within the same type of material; therefore, preliminary trials are required to determine the suitability of this ink for the intended use.

PROPERTIES & FEATURES

One- or two-component ink
Formulated for outdoor exposure.
High abrasion, Stretching, and vacuum molding resistance
Excellent adhesion on many plastic materials
Very fast drying; excellent for high-speed printing
Easy printability and a mild smell

HIGH OPACITY COLORS

EK370	EK310	EK300	EK314	EK315	EK317	EK322	EK352
EK353	EK348	EK346	EK345	EK330	EK333	EK335	EK336
EK337	EK354	EK341	EK363	EK377	EK371	+ color-matching	

All EK Series colors are intermixable. To maintain this ink's properties and characteristics, this ink series should not be mixed with other ink types or unspecified auxiliaries. All formulations are stored in the Boston Color Management Software. Custom colors are available upon request.

INK ADDITIVES

Hardener	i-300x Hardener	*5% - 15%

Solvents	**SPEED**	**PAD PRINTING**	**SCREEN PRINTING**
TNF Solvent	Fast	5 – 15%	n/a
TNM Solvent	Medium	5 – 15%	n/a
TNS Solvent	Medium-slow	5 – 15%	5 – 25%
TNR Solvent	Slow (Retarder)	5 – 15%	5 – 25%

Cleaner DBX

Ink Removal Ink-Off!

***Ratio.** Add the component as a percentage (%) of ink weight.
***Hardener.** *2 component usage is optional. Use the hardener for added abrasion resistance.
***5% - 15%.** Use 10% for most applications.

*Hardener and solvent ratios can be increased or decreased depending on the printing application and desired viscosity

21 Cummings Park Dr. #272 Woburn, MA 01801, USA
Tel: +1 (781) 281 2558 Fax + 1 (781) 810 0170

Solvent is added to the ink to adjust ink's viscosity. The choice of solvent and the amount added are determined by the printing environment, ink thickness, and the desired printing speed (the rate at which the ink dries). For slow printing speeds and fine-detail prints, use slower solvents and a retarder such as TNR should be mixed with the ink. To slow the reaction, a retarder can be mixed with fast solvents.
In cases where a retarder is used, any additional thinning of the ink mixture requires pure thinners. Excess solvent will cause ink transfer challenges.
Medium Thinner TNM is preferable to increase adhesion on some difficult to print plastic materials.

To increase the inks longevity, use Hardener i-300X. Its work is to aid printing ink adhesion onto tough substrates and increase outdoor and chemical resistance.

The i-300X hardener is sensitive to humidity and should be stored in a tightly sealed container. This hardener increases resistance and adhesion. Once added to the ink, it must be mixed thoroughly and homogenously before using the ink. The ink-hardener mixture must be used within the pot life. The hardener is activated by air, heat, or humidity, hence it should always be stored in a closed container.

Use DBX-Cleaner for manual cleaning of the working equipment and tools.

MIXING PREPARATION

Before printing and, if necessary, during production, the ink should be thoroughly mixed.

Using EK series as a 2-component ink

Stair the ink before pouring it into a mixing cup
Pour the ink into a mixing cup. Note the weight.
Hardener should be added at 10% of the ink weight.
10 parts of ink : 1 part of hardener
Stir the ink and hardener mixture thoroughly to ensure homogeneity.
Add solvent to alter viscosity, using the appropriate solvents for your application.*
Your product can now be pad-printed or screen-printed.
Cure the product at the appropriate temperature. Different substrates cure at different temperatures.

Pot life (Useable life/ working time)

The ink-hardener mixture is chemically reactive. As a result, this mixture must be used within the pot life (at 20 °C and 50% RH), which is 8–12 hours. When the temperature increases, the potency of the mixture decreases.
If the ink-hardener mixture is not used within the mentioned time, it may lose some of its adhesion and abrasion resistance properties, even if it still seems like it can be used.

Scratch resistance

After full cure, the EK Series ink film has excellent adhesion to substrates. This ink exhibits high rubbing, scratching, and abrasion resistance. Adding i-300X hardener increases chemical resistance on difficult-to-print substrates.

Drying

- Ready for overprinting immediately
- At room temperature, it takes 30 - 40 seconds to dry to the touch. At 20 °C after 60–75 seconds
- Full cure: 24–48 hours at room temperature.
The drying times for the inks mentioned vary depending on the substrate, depth of printing plates (cliché), drying conditions, solvents, and other additives used.

Fade resistance

The EK series ink are with high fade pigments. Depending on the mixing ratio, adding clear, also known as overprint varnish or white color, to other color shades reduces fade and weather resistance over time. Color fade resistance also decreases if the printed ink film is thin. Ink film thickness is controlled by the depth of the printing plate and the amount of solvent used.

PAD PRINTING PARAMETERS

Printing Plates

This pad printing ink is compatible with all commercially available pad printing plates (clichés), including photopolymer printing plates, anodized aluminum plates, thin steel plates, and hardened steel plates with a thickness of 10 mm. For a perfect print, the recommended etch depth is 17-25µm.

Printing pads

Any silicone-based printing pad can be used with this ink.

Printing machines

The Natron EK Series is suitable for both closed ink cup high-speed pad printing machines. For open ink-well machines, use slower solvents. Additionally, because the EK ink for pad printing fast-drying ink, it is possible to print multicolor prints.

Storage and Shelf Life

Shelf life depends on the reactivity of the ink system as well as the storage conditions.

Shelf life (unopened ink) stored at room temperature (50 - 80°F).
- Metallics: 3 years
- All other colors: 4 years.

Higher storage temperatures reduce the inks' shelf life.

Warning: Always consult the MSDS prior to use.

Labelling

For Natron EK Series and its additives, there are current Material Safety Data Sheets (MSDS) available according to EC and USA Regulations. The MSDS have in detail all relevant safety data, including labeling according to EC Regulation 1272/2008 (CLP regulation). Health and safety data may also be derived from the respective label.

SPECIFICATIONS

The EK Series Ink is classified as NT (non-toxic) and is formulated with pigments that are free of heavy metals. Safety Data Sheets are available according to UE regulation. The primary indications are displayed on the product label.

The data and information given in this data sheet are based on our present experiences and testing. Our technical consulting, whether done verbally, in writing, or through extensive testing, is based on our best knowledge. This doesn't mean that the client doesn't have to test our products on their own to see if they are good for adhesion and compliance requirements.

Boston Industrial Solutions, Inc. does not warranty the use or application of the products it manufactures or supplies. Our only obligation shall be to replace any defective products supplied by us or to refund the original price of the product after we have determined it to be defective. We are not responsible for any other direct or indirect loss or damage that our products cause.

Before starting a whole production run, it is absolutely necessary to do printing tests and trials to figure out the best temperature, time, and compliance for each application.

If you have technical questions about our products or want more MSDS information, please contact Boston Industrial Solutions, Inc.

–Think . Print . Tech™