

Pad printing ink for Plastics, PVC, Polystyrene, Pre-treated PP, Tritan, Bioplastics, Acrylic glass, ABS, SAN, Polycarbonate, Acrylics, Wood, Leather, Faux leather, Paper, Coated metals, and Varnished substrates

DESCRIPTION

TP Series Ink is a high-gloss, fast-drying, easy-to-use, multi-purpose 1 or 2-component pad printing ink. This hybrid ink dries quickly and adheres to a variety of materials, including coated metal, wood, and plastic. It is the ideal ink for high-end products like housings, packaging for cosmetics, and other things that need excellent abrasion resistance. When the i-300x hardener is used, the pot life of the TP series increases 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), Polyester, Polycarbonates, Hard plastics, Thermosetting-plastics, Acrylics, Vinyl, Tritan, Bioplastics
Wood	Raw wood and varnish-coated wood
Metals	Top coated metals
Leather	Leather and faux leather (synthetic leather)
Paper	Paper and cardboard

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.
- High gloss and opacity
- High abrasion resistance
- Very smooth and excellent printability
- Low sweet smell

HIGH OPACITY COLORS

370	310	300	314	315	322	352	353
348	346	345	330	333	336	337	335
354	341	363	377	371	+ color-matching		

All TP Series Colors are intermixable and have very high opacity. There are no semi-transparent color shades. 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
TMF Solvent	Fast	10 – 35%	n/a
TNM Solvent	Medium	10 – 35%	n/a
TMS Solvent	Medium-slow	10 – 35%	5 – 25%
TDG Solvent	Slow	10 – 35%	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. For flexible items, use 5% hardener ratio.

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

Solvent is added to the ink to adjust ink's viscosity. Ink thinner is another name for solvent. 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). TMF is an excellent all-purpose pad printing solvent for improved ink transfer for fast printing. It features excellent mixing, ink-film release properties, long processing period. For slow printing speeds and fine-detail prints, a retarder such as TDG 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.

Hardener i-300X is also known as a crosslinker. Its work is to aid printing ink adhesion onto tough substrates and increase outdoor and chemical resistance. This hardener dries quickly and hardens into an ink film.

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 homogeneously 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 TP series as a 2-component ink

Stir 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 12–14 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 TP 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.

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 17-21µm.

Printing pads

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

Printing machines

The Natron TP Series is suitable for both closed ink cup systems and open ink well pad printing machines. Use the appropriate amount and type of solvent, depending on the machine. For open ink-well machines, use slower solvents. Additionally, because the TP series is a fast-drying ink, it is possible to print multicolor prints.

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 TP series uses pigments with high fade, solvent, and plasticizer resistance. Depending on the mixing ratio, adding clear, also known as overprint varnish or white, 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.

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 TP 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 TP 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.

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