



Jindal
Films

Breakthrough polymer substrate that simplifies thermal/ barcode printing

No ribbons. No coatings. Exceptional performance.

Innovative Platinum Thermal is a white synthetic facestock that requires no heat sensitive coatings (e.g. leuco dye) or thermal transfer ribbons to create a deep black image from standard thermal/barcode printers. Platinum Thermal is your new alternative to both traditional direct thermal (DT) substrates and the use of thermal transfer ribbons (TTR). Sharp, durable, fade proof images are created from within the substrate itself. Platinum Thermal also has a print surface with excellent receptivity to a broad range of pre-print ink chemistries and an adhesive receptive backside surface that is ideal for pressure-sensitive applications.

- Image permanence with no image fade from heat, cold, light or time.
- Image is UV light resistant to a minimum of 18 months outdoors and decades indoors.
- Facestock is heat stable to 121°C/250° F.
- Print surface and printed image are not affected at all by water and many water based fluids even with full submersion or when boiled.
- Low boiling point solvents (e.g. MEK, Toluene, Xylene, IPA) do not permanently darken the image or print surface.
- Durability comparable to printing on BOPP with a wax/resin ribbon.
- Simplifies thermal/barcode printing by eliminating the thermal transfer ribbon especially in mobile thermal printers but durable for a variety of indoor and outdoor market applications.
- FDA Compliant for DIRECT food contact (pending). FDA's Food Types and Conditions of Use are set forth in 1 C.F.R § 176.170 (c), Tables 1 and 2. Contains no BPA.

In addition, Platinum Thermal film offers the potential for a significant cost reduction compared to synthetic DT substrates and labels printed with full resin or wax/resin TTR.

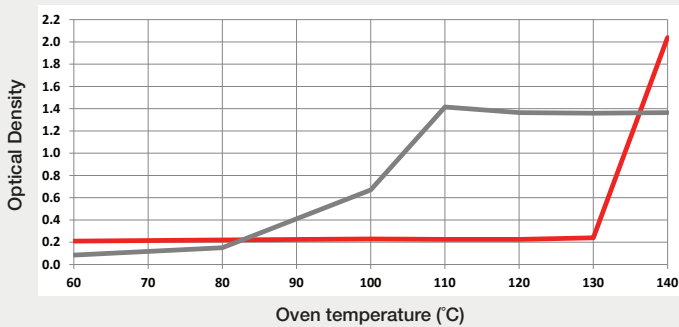
Jindal Films has extensively tested Platinum Thermal film's performance against labels printed with DT and TTR technology. The results are reported here. See for yourself how this groundbreaking technology can deliver cost and performance advantages.



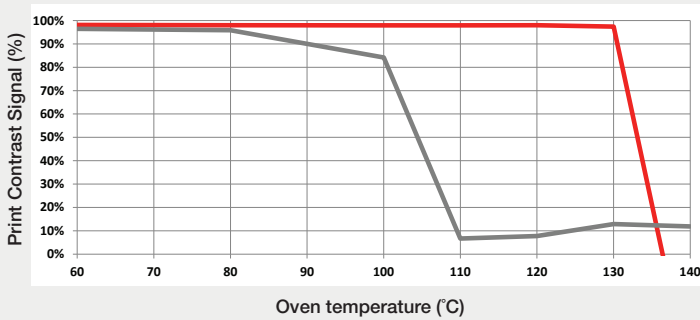


Printed film samples were placed in an oven at the test temperature for 1 hour. White and black optical density was measured.

Optical Density of white area after 1 hour oven conditioning



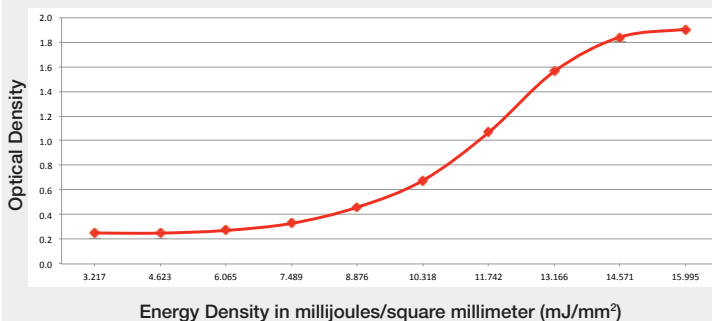
Print Contrast Signal¹ of white area after 1 hour oven conditioning



■ Platinum Thermal film ■ Direct Thermal film

¹ Print Contrast Signal (PCS) – Compares the amount of light reflected by the bars, in contrast to the amount of light reflected by the spaces in a bar code symbol. The Print Contrast Signal value is the bar reflectance expressed as a percentage of the space reflectance. American Barcode and RFID Association.

Dynamic Sensitivity of Platinum Thermal



The above chart presents the print density of Platinum Thermal film as measured on an Atlantek Model 400 Thermal Response Test System. Testing was done with the device on the medium setting, and the response measured at each of the ten energy densities.



Platinum Thermal film is proven to be exceptionally heat-stable up to 121°C/250°F.



Platinum Thermal™ Film was printed on a Zebra 140Xi4 thermal printer, then evaluated in a QUV Weatherometer according to ASTM, BS, and ISO standards. Test samples were exposed to varying conditions of ultraviolet radiation, moisture and heat.

AFTER 1 DAY AFTER 2 DAYS AFTER 5 DAYS AFTER 21 DAYS

DIRECT THERMAL FILM



DIRECT THERMAL PAPER



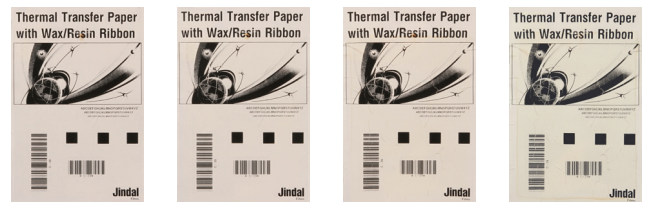
PLATINUM THERMAL 75PT600N



LABEL-LYTE™ 65LT500



THERMAL TRANSFER PAPER

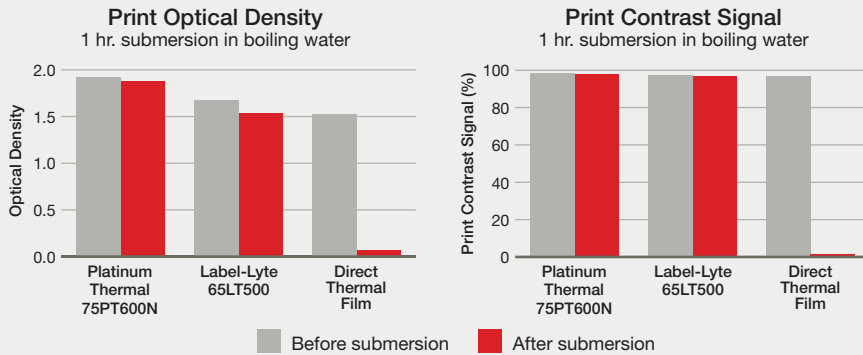


Platinum Thermal film is highly resistant to aggressive weather exposure, outperforming DT and delivering equivalent performance to TTR.



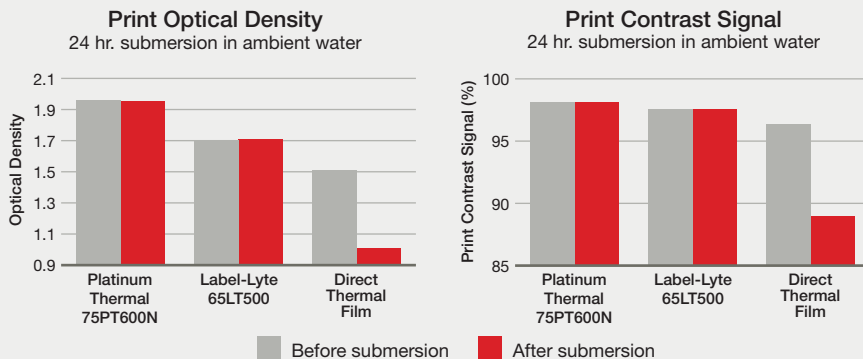
BOILING WATER

Boiling water exposure was tested by measuring white and black optical density after submersion in boiling tap water for 1 hour.



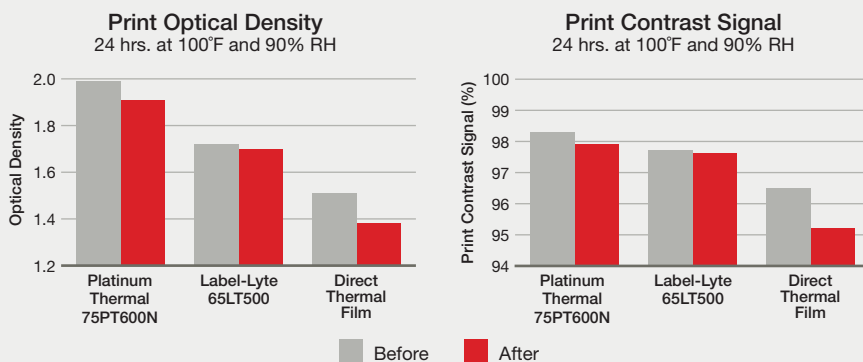
AMBIENT WATER

Deionized water exposure was also tested, by measuring white and black optical density after submersion in room-temperature, de-ionized water for 24 hours.

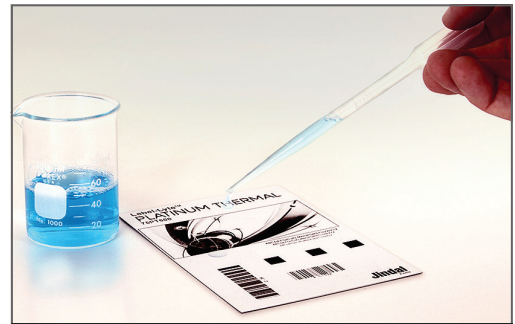


HIGH HEAT & HUMIDITY

Printed test samples were also tested before and after 24 hours at 100°F and 90% relative humidity.

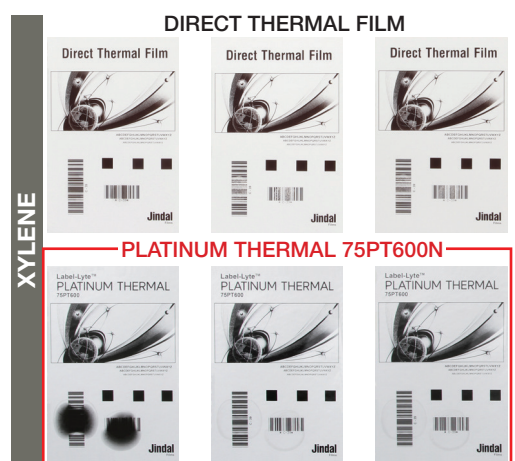
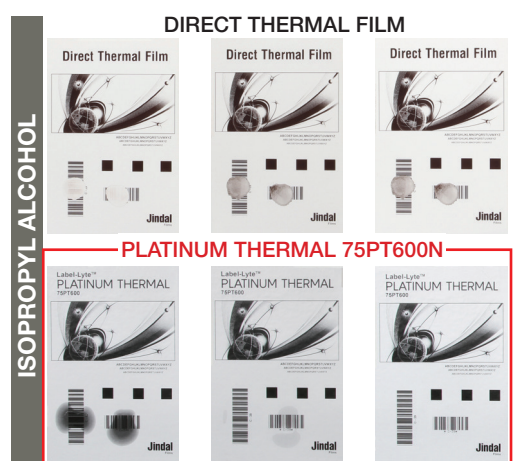


Platinum Thermal film significantly outperforms DT film when exposed to water, making it ideal for outdoor applications.



CHEMICAL EXPOSURE

Two drops of a test solvent were applied to both the horizontal and vertical bar codes.



Volatile chemicals evaporate quickly from Platinum Thermal film, leaving the printed image undisturbed.

Processing methods

Platinum Thermal™ film is compatible with a broad range of print delivery systems.

- Standard thermal/barcode printers (portable handheld and desktops, 3-6 ips)
- Water-based flexographic
- UV flexographic
- UV letterpress
- UV screen
- Solvent rotogravure

Applications

Platinum Thermal can be used for pressure-sensitive labels, tickets and tags. It is ideal for both indoor and outdoor applications where weather, water or chemical resistance is required. As always, please test in your specific application to determine fitness for use.

- Flower/plant pot label
- Horticulture/nursery label
- Outdoor shelf/rack/pallet label
- Test tube/beaker/slide label
- Blood/urine/bio bag label
- Cold storage label
- Automobile window label
- Chemical/drum label
- Freezer labels
- Tamper evident label
- Industrial/WIP labels
- Retail shelf marking label
- Industrial kitchen food preparation label

Suggested Printers for Platinum Thermal 75PT600N

Platinum Thermal 75PT600N is designed for use in most thermal barcode label printers including mobile, desktop and industrial units. Lower energy mobile and small desktop units may only achieve a print speed of 3ips while higher energy printers will attain speeds to 6/7ips.

The following list of thermal printers has successfully printed Platinum Thermal at various heat and speed settings (medium-high). Jindal recommends that you conduct print tests with your specific printer.

Printers

Zebra 104SL Plus, 200 dpi

Zebra 110Xi4, 200-600 dpi

Zebra 140Xi3/Xi4, 200 dpi

Zebra 220Xi4, 200 dpi

Zebra ZM600, 300 dpi

Zebra ZT410, 200 dpi

Zebra GX430t, 300 dpi

Zebra TLP3844-Z, 300 dpi

Zebra QLn420, 200 dpi

Intermec 3400e

TSC 225W

CAB EOS

CAB A+ Series

SATO M84

SATO CLN4X

Citizen CL-S521

Datamax M Class

Printronix T8000

Toshiba/TEC B-EX4T1, T2, D2

Toshiba/TEC B-SX Series



For more information and details about Label-Lyte™ Platinum Thermal 75PT600N film, contact:

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