
THERMOFORM TF PRODUCT DATA SHEET

ThermoForm TF is an extremely flexible UV curable screen printing ink specifically formulated for printing plastics used in vacuum forming. ThermoForm TF exhibits outstanding vacuum forming characteristics and ink elongation while maintaining excellent adhesion and opacity. Additionally, ThermoForm TF provides ideal characteristics for heat bending and routing acrylic sheets with no chipping or loss of adhesion.

PERFORMANCE PROPERTIES

- ➔ Extreme elongation for maximized draw depth, exceeding 6 inches
- ➔ Multiple passes can be heat bent and routed without chipping
- ➔ Flexible for multi-layer applications / and die-cutting
- ➔ High density halftones and Special Last Down White for back-lit applications
- ➔ excellent intercoat adhesion
- ➔ Superb water and moisture resistance
- ➔ NVP and heavy metal free

RECOMMENDED SUBSTRATES

- ➔ Polystyrene
- ➔ PETG
- ➔ Polycarbonate
- ➔ High Impact Polystyrene
- ➔ Acrylic
- ➔ PVC

CURING SPECIFICATIONS

THERMOFORM TF will cure well when printed through a 355 plain weave polyester mesh or finer. **TF's** optimal cure window of 310 to 350 mJ / 755 mW is generally achieved with one 300 watt per inch mercury vapor lamp at a belt speed of 30 feet per minute. This should provide a thorough cure of the product including opaque colors. Belt speeds can be increased dramatically as the substrate gauge is reduced. Thick plastic substrates act as a heat sink and result in slower cure rates. For maximum opacity retention on deep draws coarser screen mesh may be used, increase mW output and test for proper cure and adhesion. Excessive film thickness does not impede vacuum forming properties. Adhesion should be a minimum of 95% from curing unit with final adhesion developing within four hours of initial polymerization. If a loss of gloss or adhesion due to insufficient cure is noticed, the addition of 5-10% TF Mixing / Overprint Clear will increase light penetration and improve cure. Intensity of cure, weight or caliper of the material as well as elevated ambient temperatures and humidity of the printing and storage environments can influence the block resistance of stacked prints. Inktech strongly recommends the use of slip-sheets or racks until the printed parts have cooled.

* It is the printer's responsibility to pre-test and qualify the parameters, prior to each run.

COVERAGE

ThermoForm TF will yield an average of 3200 to 3600 square feet per gallon based on a film deposit of .40 to .60 mil, dependent on color and printing conditions.

SQUEEGEE

A 70-90 Durometer polyurethane blade is recommended.

INK MODIFICATION

Mix well prior to every use. Although **ThermoForm TF** has been supplied in press ready condition for most applications, this system may be reduced up to 10% with TF Thinner for viscosity adjustments.

Use only TF Thinner; any foreign products will render the product useless for vacuum forming. For applications requiring chemical resistance, pretest for required resistance before printing.

LIGHT FASTNESS

At full strength and fully cured, Thermoform TF ink series has been formulated to withstand 2-3 years of exterior exposure when printed subsurface and up to 1 year on top-surface prints using a 355 mesh, or coarser. Factors beyond our control that may negatively impact the outdoor durability expectations include but are not limited to: substrate grade/age, poor cure of ink film, directional positioning, ink film deposit, exposure to excessive abrasives and air pollutants.

METALLICS

TF Metallic Mixing Clear is supplied for use in mixing metallic powders or pastes. The increase in viscosity of Metallic Mixing Clear helps insure a good particle suspension and maintain a good premixed shelf life. The recommended mixing ratios are 8% by weight of silver powder and 20% of gold powder or 12% of silver paste and 28% of gold paste. For optimum coverage and opacity, 260-305 meshes are recommended. With the use of TF Overprint Clear, extended weatherability and improved non-tarnishing properties can be achieved.

COLOR AVAILABILITY

Thermoform TF is available in twenty standard opaque colors and nine Color Matching System shades. Inktech's Color Formulating Guide reproduces over 1,000 colors utilizing the CMS shades. Custom matches, fluorescent, metallic and transparent colors are available upon request.

STANDARD COLORS

TF-0101 Primrose Yellow	TF-0205 Reflex Blue
TF-0111 Lemon Yellow	TF-0225 Forest Green
TF-0123 Medium Yellow	TF-0226 Lime Green
TF-0131 Brilliant Orange	TF-0210 Ultra Blue
TF-0135 Vivid Orange	TF-0220 Emerald Green
TF-0141 Fire Red	TF-0235 Teal
TF-0151 Scarlet Red	TF-0240 Purple
TF-0155 Rubine Red	TF-0260 Brown
TF-0160 Rhodamine Red	TF-0301 Opaque Black
TF-0180 Warm Red	TF-0311 Opaque White
TF-0190 Process Blue	TF-1350 Overprint / Mixing Clear
TF-0200 Peacock Blue	TF-1710 Metallic Mixing Clear
TF - 1800 Thinner	TF-2311 Last Down White

COLOR MATCHING SYSTEM

TF-0064 CMS GS Yellow
TF-0066 CMS RS Yellow
TF-0114 CMS Orange
TF-0121 CMS YS Red
TF-0164 CMS BS Red
TF-0165 CMS Magenta
TF-0127 CMS Violet
TF-0230 CMS Blue
TF-0325 CMS Green
TF-0110 Shading Black
TF-0112 Tinting White

PROCESS COLORS

Thermoform TF four color process colors exceed "SWOP" standards. Variation in densities may be achieved with the use of TF Halftone Base.

	High Density	Back-lit Density
TF-Halftone Yellow	1.10	1.35
TF-Halftone Red	1.75	2.05
TF-Halftone Blue	1.80	2.20
TF-Halftone Black	2.00	2.25
TF-Halftone Extender Base		

CAUTION:

Read Material Safety Data Sheet prior to using.

End user must determine suitability of this product for the intended use prior to production.

Always premix prior to use.