



A L P H A

FLEXTRACE SUBSTRATE

BY CHROMALINE®



# ALPHA

FLEXTRACE SUBSTRATE

30-micron concentric circles resolved with Alpha FlexTrace 5 mil substrate.  
Applied to 400 SS, 500x Magnification. Microphotography supplied by Chromaline Labs™.

## Alpha FlexTrace

*Advanced Substrate Technology for High Accuracy Printing*

FlexTrace™ Printed Electronic Substrate from Chromaline, engineered to improve print accuracy of conductive pastes and ease on-press setup & repeatability. FlexTrace allows engineers to design higher density functionality while providing press operators setup latitude and repeatability. FlexTrace features proprietary surface technology that adheres conductive particles and yields high aspect ratios while restricting lateral spread. Combined with Chromaline's Alpha stencils, precision traces and spaces below 50 microns are easily accomplished.

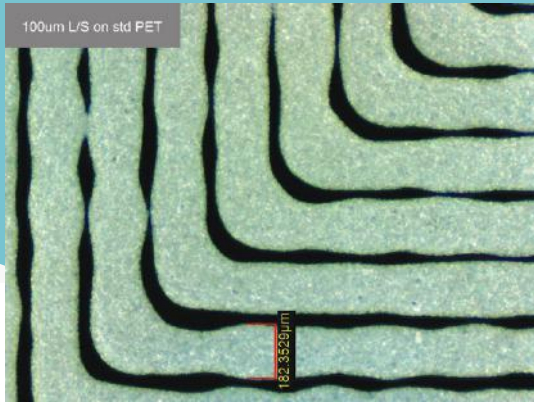
## Alpha FlexTrace Key Features

- Allows precise replication of stencil
- Proprietary surface treatment maximizes ink deposit while significantly reducing lateral ink spread
- Minimizes circuit footprint allowing for new applications, less waste, and lower production costs
- Yields traces with higher aspect ratios and higher cross sectional area for lower resistance values
- Provides latitude in press conditions while maintaining consistency of results
- Optimum results are achieved when used with Chromaline Alpha emulsion and capillary films
- Lowers resistance values by promoting tighter silver particle packing; potentially reducing silver paste consumption

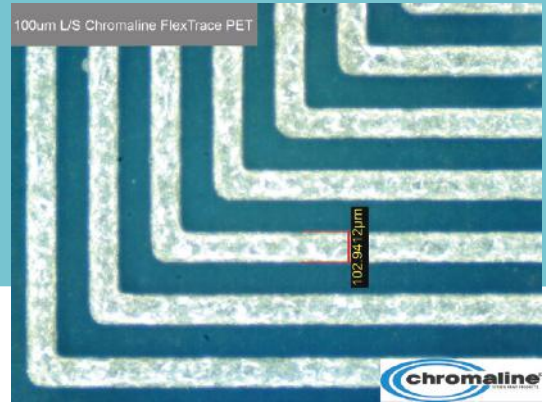
## FlexTrace Products

- Pre-stabilized, flexible PET
- Translucent
- Single & Double sided available
- Custom cut sheets and rolls up to 52" wide

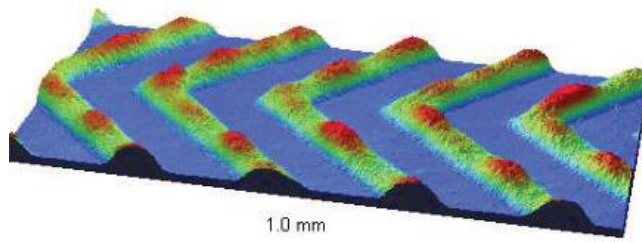




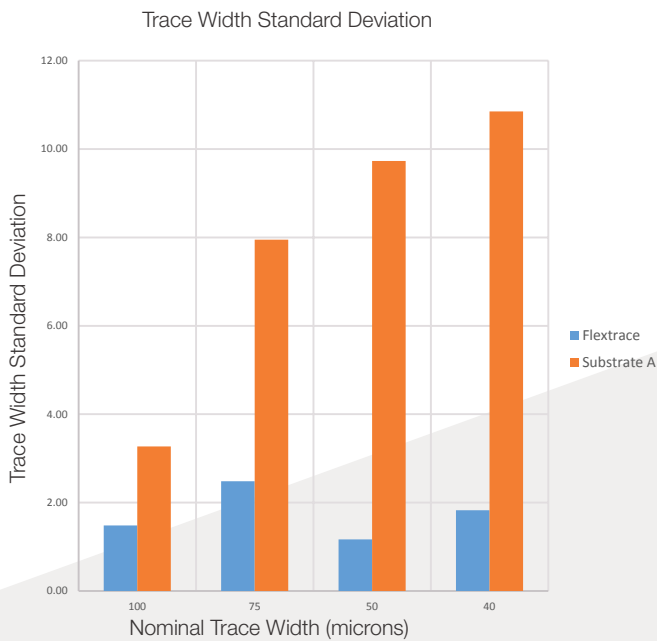
100µm conductive Ag traces printed on standard PET. Printed lines spread as much as 80% over design size.



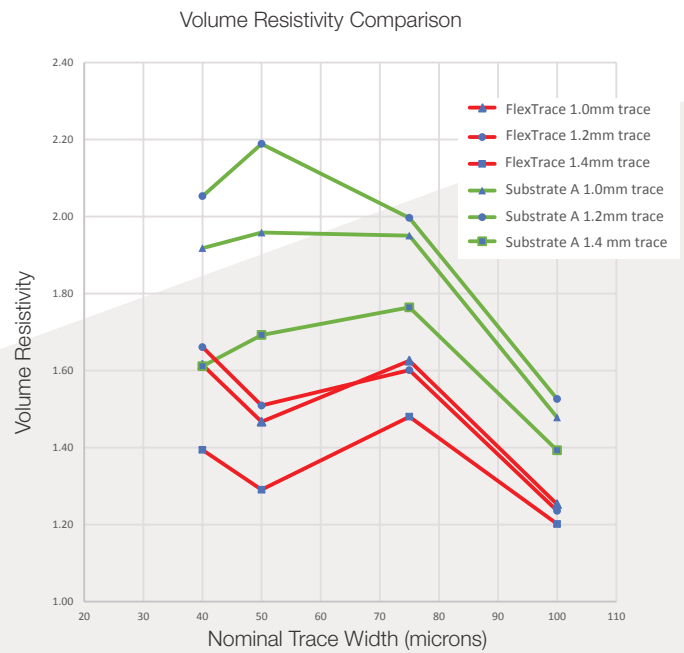
100µm conductive Ag traces printed on Alpha FlexTrace. Printed lines spread less than 5% over design size.



75µm conductive right angle traces printed on Alpha FlexTrace. Printed line width is consistent and accurately reproduces design size.



Standard deviation of printed trace widths remains more consistent on Alpha FlexTrace across different line widths.

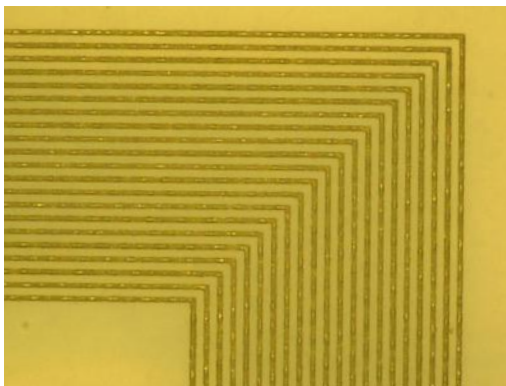


The more uniform trace widths on Alpha FlexTrace equate to a more efficient use of printed paste, resulting in lower line resistance.

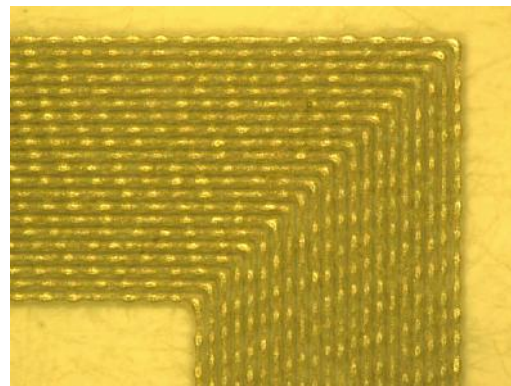
## TYPICAL PRODUCT VALUES

Specification	T15 Value	T26 Value	Units	Test Method
Sides Coated	Single	Double	N/A	N/A
Total Film Thickness	137 +/- 5	150 +/- 5	microns	Micrometer
Transmission / Haze	90 +/- 3%	87 +/- 3%	Light transmittance	X-rite Densitometer
Dimensional Stability	-1.28 fill; -1.78 warp	TBD	mils/inch	IPC-TM-650 sec 2.2.4, A
Tensile Strength	140.4	TBD	MPa	ASTM D882
Elongation	98.3 %	TBD	--	ASTM D882
Water Absorption	0.112 %	TBD	--	IPC-TM-650 2.6.2
Dielectric Strength	110.5 @ 96 hrs	110.5 @ 96 hrs	kV/mm	ASTM D149, 23 °C, 50% RH
Permittivity / Dielectric Constant	3.2	3.2	F/m	ASTM D150 / IPC-TM-650
Volume Resistivity	5.56E+15 @ 96hrs	5.56E+15 @ 96hrs	Ohms-cm	ASTM D257, 23 °C, 50% RH
Surface Resistivity	2.89E+12 @ 96hrs	2.89E+12 @ 96hrs	Ohms-cm	ASTM D257, 23 °C, 50% RH

## 40 MICRON LINES/SPACES



**FLEXTTRACE T15**



**STANDARD PRINT-TREATED PET**

### STORAGE AND HANDLING

- Handle with gloves to avoid contamination. Clean room environment recommended.
- Store at room temperature below 50% humidity in fiber-free packaging.
- Store sheeted material on a flat surface.
- Prior to printing, run film through a forced air oven (120-140°C; max 150°C) to drive-off any residual moisture from storage. To reduce edge curl in the T15, pre-stabilize with the coated side down.
- Clean the treated side if necessary after pre-stabilization.
- Print on the treated side and cure ink under 150°C.



[www.chromaline.com/ALPHA](http://www.chromaline.com/ALPHA)

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