

Melinex® ST™ Stabilized Polyester Films

Leveraging our deep experience and innovation in polyester films to produce an expanded line of high-performing stabilized films.

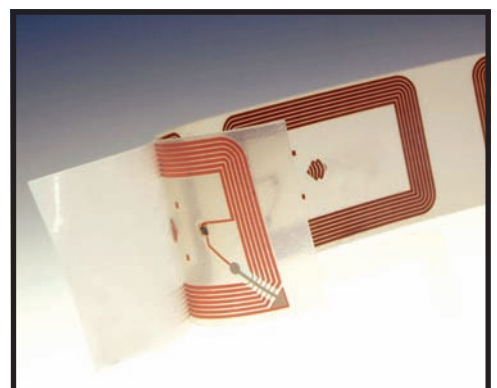
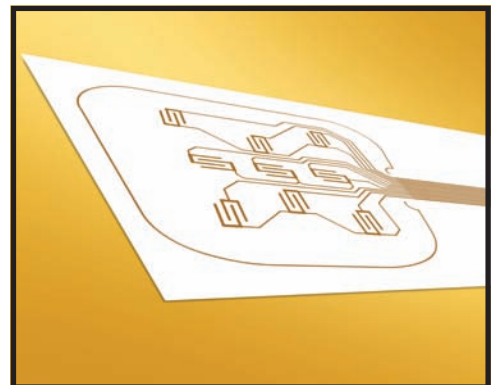
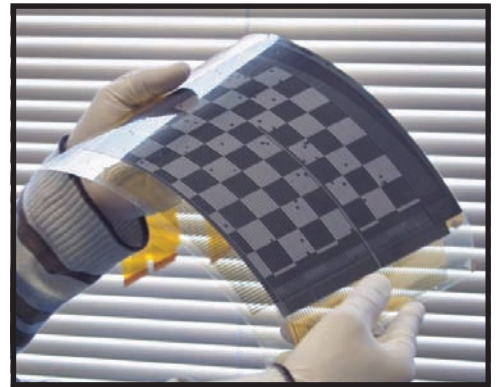
DuPont Teijin Films is a leading global producer of specialized polyester films with over 50 years of experience in developing top quality film products with superior performance and versatility. Our integrated manufacturing and supply chain approach provides customers with highly reliable supply, trusted quality and access to the latest technology in films.

With a deep commitment to research and development and innovation, DuPont Teijin Films is well positioned to consistently deliver cutting-edge film solutions that meet your polyester film requirements. Now, we're introducing the broadest portfolio of stabilized film products in the industry -- for electronics, energy, medical, industrial and other demanding applications that require superior performing and reliable films.

Melinex® ST™ stabilized polyester films.

Superior performance enabled by state-of-the-art processes and technology

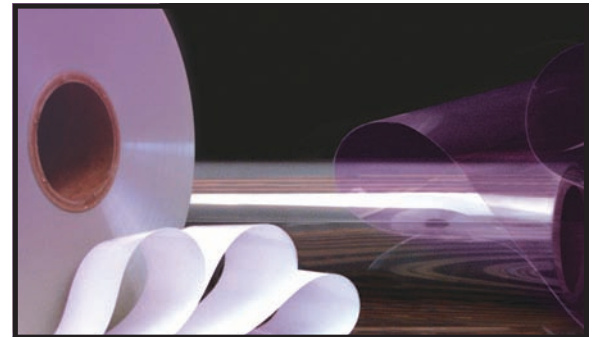
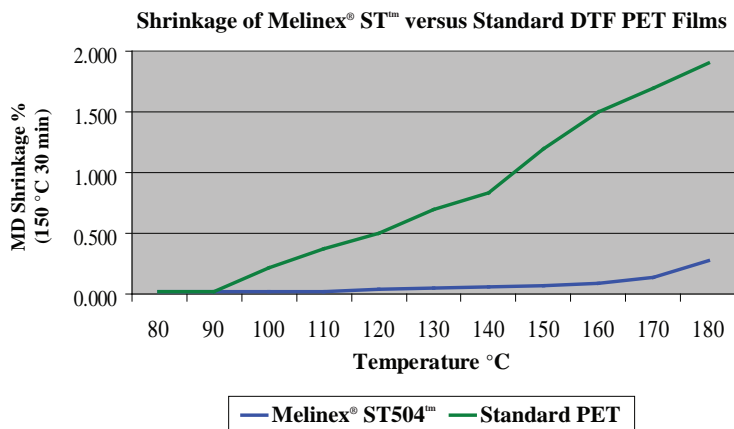
DuPont Teijin Films combines its excellence in biaxially-oriented PET film manufacturing with a proprietary stabilization process to produce Melinex® ST™ films, a premium line of heat-stabilized polyester films. Unlike unstabilized PET films which experience distortion and shrinkage in high temperature applications and skewing during processing, Melinex® ST™ stabilized films provide predictable dimensional stability, lower and more uniform shrinkage and flatter surfaces. Now available in thicknesses as low as 2 mils (50 microns).



Melinex® ST™ films provide:

- Predictable dimensional changes with variable heat and moisture
- Superior sheet flatness for better web handling and higher yields
- High tensile strength and stiffness to permit higher processing speeds
- Resistance to moisture and chemicals in demanding applications
- Engineered surfaces with primer systems to resolve difficult adhesion challenges

By applying a proprietary thermal stabilization technology which enables higher temperature film processing and versatility in a wide range of customer processes and applications, Melinex® ST™ films widen the working temperature of PET films from approximately 185 °F (85 °C) to 302 °F (150 °C) or higher.



Roll widths available up to 79 inches (2 m)

Widest selection of high-performing stabilized films in the market

Base PET Film Key Features	Film Type	Thickness Available		Adhesion Primer System		Market Applications
		(mils)	(microns)	Side 1	Side 2	
Crystal Clear High transparency, clean, smooth, adherable surface	ST504	5, 7	125, 175	T		ITO, Displays, Flexible Electronics, UL 94VTM-2
	ST506	5, 7	125, 175	T	T	Membrane Touch Switch, Solvent Ink Printing, Flexible Circuitry, Displays, UL 94VTM-2
	ST725	7	175	P	P	Membrane Touch Switch, Multi-pass Solvent & UV Printing
	ST730	5, 7, 10	125, 175, 250	Y	P	Membrane Touch Switch, Multi-pass Solvent & UV Printing
	ST617	10	250	T	T	Display, Wide Screen TV
Very Clear Transparency, clean, smooth	HLA*	2, 3, 5	50, 75, 125			ITO, Displays, Flexible Electronics, Membrane Touch Switches, UL 94VTM-2
Slightly Hazy Good handling & tracking, flatness, clean	SL*	2, 3, 5	50, 75, 125			MD Shrinkage < 0.30%, Flexible Printed Circuits, Electronics, Laminations, UL 94VTM-2
	SLA*	2, 5	50, 125			Flexible Printed Circuits, Electronics, Laminations, UL 94VTM-2
	ST507	2, 4, 5	50, 100, 125			Membrane Touch Switch, UL 94VTM-2 Rated
	STXRF24	2	50	M	M	RFID Antenna, Printed Electronics, Solvent and Aqueous Ink Printing
	STXRF26	2	50	N	N	RFID Antenna, Printed Electronics, Solvent and Aqueous Ink Printing
	ST557	2	50	Y	Y	RFID Antenna, Printed Electronics
Bright White Bright white film, flatness, adherable surface	ST329	5, 7, 10	125, 175, 250			Medical Test Strips
	ST529	2	50			Labels, Laminations, UL 94VTM-2
	ST328	14	350	P	P	Medical Test Strips, Solvent Ink Printing
	ST339	5, 7, 10	125, 175, 250	T	T	Medical Test Strips, Cards, Industrial, Solvent Ink Printing

*Teijin Tetoron® brand

Dimensional Stability: MD and TD shrinkage for all stabilized films is < 0.1% (150 °C, 30 minutes) unless indicated otherwise

Innovative designs. Versatile applications.

Market

Applications

Displays

- Flexible Displays
- Touch Screens
- Backplanes
- Electroluminescent Lamps

Membrane Switches and Overlays

- Appliances
- Instrumentation & Controls
- Automotive

Medical Diagnostics

- Medical Test Strips

Electronics

- Printed Electronics
- Flexible Circuitry
- RFID Antennas
- Automotive
- Labels & Cards

Energy

- Photovoltaics
- Active Windows

Industrial

- High Temperature Tapes
- Casting sheets
- Laminates

Product quality assurance and reliable supply.

DuPont Teijin Films integrates its manufacturing and supply chain to ensure a highly reliable supply of quality film products to our customers. By leveraging our experience and technology, we have an outstanding ability to respond quickly and flexibly to market trends and customer needs. Our cutting-edge approach provides other benefits such as:

- Improved quality control and testing
- Batch-to-batch consistency
- Clean film surfaces
- Application design expertise
- Rapid innovation and customized prototyping

Melinex® ST504™ 7 mil

General	
Density	1.395 g/cc
Specific Heat	1.3 kJ/kg•K
Refractive Index (avg)	1.65
Water Absorption (24 hr)	< 0.8% wt
Water Vapor Transmission Rate (WVTR)	~4 g/m ² /day
Oxygen Transmission (@ 1 atm)	7.5 cc/m ² /day
Surface Roughness (Ra)	1.5 nm
Melting Point	255-260 °C
Surface Energy	~40 dyne/cm
Thermal	
Upper Processing Temperature Limit	150 °C
Thermal Shrinkage (150 °C, 30 min, MD & TD)	< 0.10%
Coefficient of Linear Thermal Expansion (25-100 °C)	< 18 ppm/°C
Coefficient of Thermal Conductivity (25-75 °C)	0.14 W/m•K
Continuous Use Temperature	130 °C
Mechanical	
Tensile Strength - Break	23,000 psi
Tensile Strength -Yield	12,500 psi
Tensile Elongation at Break	160 %
Tensile Elongation at Yield	~5%
Tensile Modulus	550,000
Poisson's Ratio	0.33
Optical	
Light Transmission (visible)	89%
Haze	0.3 - 1.0%
Electrical	
Dielectric Strength	2800 V/mil
Dielectric Constant	3.0 - 3.3
Surface Resistivity	10 ¹⁴ ohms/sq
Volume Resistivity	10 ¹⁸ ohms/cm
Chemical Resistance	
Dilute Acids and Alkalis	Good
Concentrated Alkalis	Poor
Concentrated Hydrochloric Acid	Fair
Concentrated Sulphuric Acid	Poor
Greases, Oils, Fats	Good
Organic Solvents, Alcohols, and Hydrocarbons	Good
Ketones, Esters, Chlorinated Compounds	Good
Phenols, Cresols, Chlorinated Phenols	Poor



A formidable partner for your specialized polyester film needs.

Long recognized as a premier producer of specialized polyester films, DuPont Teijin Films has the largest product range of premium quality stabilized films that offer superior performance, versatility and innovative product designs. We are committed to continuing to identify market needs and trends, reinforce our product development and accelerate the introduction of new products to markets around the world.

Working with us is simple. A dedicated account manager will help you select the right film product and will continue to provide support after the sale. To help you design and select the stabilized film that best meets your unique process and application needs, please contact us at:

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These values are typical performance data for Melinex® ST™ polyester film; they are not intended to be used as design data. We believe this information is the best currently available on the subject. It is offered as a possible helpful suggestion in experimentation you may care to undertake along these lines. It is subject to revision as additional knowledge and experience is gained. DuPont Teijin Films makes no guarantee of results and assumes no obligation or liability whatsoever in connection with this information. This publication is not a license to operate under, or intended to suggest infringement of, any existing patents.

CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Teijin Films Medical Caution Statement", H-50102-1-DTF.

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