

# Films for Printed and Flexible Electronics

## Advanced Film Component Solutions for Accelerating Printed and Flexible Electronics

Flexvue™ is striving to play a leading role as e-readers and other flexible displays cross the chasm into mainstream adoption. Designed to help lower the cost of ownership, our films are increasing customer yields while providing industry leading reliability and optical clarity. The forward integrated products in our pipeline are designed to streamline manufacturing and ultimately reduce your costs. Flexvue leverages over 50 years of manufacturing experience to deliver solutions that are uniquely suited to the requirements of the printed and flexible display markets.

## PROVEN SOLUTIONS IN PRINTED ELECTRONICS

### Transparent Conductive Films

Optically-clear Indium Tin Oxide (ITO) and alternative Transparent Conductive Oxides (TCO) are used in all electronics applications that demand high levels of reliability, consistency, and mechanical integrity. Utilized as a conductive or electrode layer in touch screens and various electronic displays, these films offer high visible light transmission, low haze, high durability, and a wide range of resistances. Index matched "Invisible" and "Low b Star Color Value" ITO films were recently developed to meet the demanding requirements of the latest generation of touch panels.

### Barrier Films

High barrier films have low WVTR, helping to defend internal components against corrosion and degradation caused by moisture and oxygen intrusion. With thickness as low as 1 mil (25 microns), and UV absorber as an option, these coated films are both economical and effective when compared to sophisticated sputtered alternatives.

### Protective Masking Films

Where cleanliness and easy removability is required, these films have very low tack and leave no adhesive residue after removal. Coated in a clean room and combined with a release film to avoid contamination, they use an optically-clear polyester base, with low haze values and high

transmittance. It is also suitable for use as a carrier or support film.

### Optically Clear Adhesives and Release Films

Our flexible displays and touch screen customers come to Flexvue for custom toll coating services as well as proprietary optically-clear pressure sensitive adhesives (OCA). OCA products are often combined with our line of silicone coated release films, the cleanest and most consistent liners available.

### Reflective and Anti-Reflective Films

Metalized aluminum or silver films provide high reflectance where needed, such as on back light applications where thin, lightweight mirrors are required. Where reflection is a problem, touch screen manufacturers rely on the unsurpassed performance of Flexvue Anti-Reflective (AR) coated films. In addition to improving sunlight readability, our AR coated films offer exceptional surface hardness for extreme durability.

### Hard Coated Films

Where surface protection is required, we offer a variety of hard coated films with a wide range of haze, gloss, and transparency levels, as well as innovative weatherable UV blocking options.

## ► History

Leveraging over 50 years of product development and manufacturing experience, Solutia's specialty films are used in applications such as:

- Electronic displays
- Touch screen
- Energy products
- Medical devices
- Solar control window film

## ► Capabilities

State of the art, large scale roll-to-roll coating and laminating, vacuum metallizing and sputtering, and deep dyeing capabilities.

## ► Research and Development

Integrated lab and pilot scale development facilities and R&D staff with more than 150 patents issued.

## ► Custom Products

Solutia can deliver custom solutions for your specialty film requirements. Our manufacturing capabilities can be adapted to handle unique application needs including coating chemistry and substrate type.

**FLEXVUE™**  
FILMS WITH TECHNOLOGY INSIGHT

# Product Overview

Product	Features	Attributes	Benefits
TRANSPARENT CONDUCTIVE FILMS	Wide range of resistances	2.5 - 1000 ohm/square	Adaptable to a wide range of applications and needs
	Available on various hard coated and heat stabilized base films, PET, and PEN	Anti-glare and clear hard coated base available	Provides specific levels of haze, smoothness, and VLT as required
	High VLT	> 94%	Improved optics
	Haze options	Haze < 1% - 10%	Improved optics
	Invisible ITO	Minimizes or eliminates signs of etching	Creates uniform appearance and hides patterns on touch screens
	Neutral color ITO	Neutral to bluish appearance	Eliminates the yellow color on touch screens
BARRIER FILMS	Moisture resistant	WVTR performance as low as 10 <sup>-2</sup> gr/m <sup>2</sup> /day with 89% VLT, may be adjusted as needed	Helps prevent corrosion and degradation caused by moisture and oxygen intrusion
	Thin film, may be heat-stabilized with UV absorber and/or ITO added	1 mil (25 microns) thickness	Film is flexible and cost efficient with virtually no shrinkage
LOW TACK PROTECTIVE MASKING FILMS	Very light, low tack adhesive	Adhesion as low as 0.35 ounces / inch (10gr/cm)	Easily removed with virtually no adhesive transfer, used as a protection, carrier or support film
	High VLT	To 87%, haze as low as 3%, on 1.5 or 2 mil base	Improved optics
	Clean room coated	No contamination	Essential for demanding electronics applications
OPTICALLY CLEAR PRESSURE SENSITIVE ADHESIVES	High optical clarity, permanent or repositionable	Low coat weights, no orange peel or optical distortion	Very high optical quality for underlying components
	Wide range of capabilities for toll coating	Solvent or water-based, with mixing, up to 74 inch (1.88m) wide	PSAs may be developed to meet exacting requirements
	Clean room coated	To class 1000	Essential for demanding electronics applications
RELEASE FILMS	Wide range of release levels available	5 - 500 grams / inch, using solvent based tin, thermally cured and UV-cured silicone	Match requirements of various PSAs
	Dependable and proven silicone chemistries	Offers highest level of release consistency, roll-to-roll and run-to-run	Ensures high yields and economies
	Non-silicone and fluorosilicone chemistries	For use where silicone is not tolerated and with silicone based materials	Release offered for specific applications
	Clean room coatings	0.5 - 14 mils (12 - 350 microns)	Best base for die cutting, cleanliness
REFLECTIVE FILMS	Metallized aluminum, silver or other metals on polyester film	65% VLT to opaque, 0.5 - 10 mils (12-350 microns), up to 93% reflection	Wide range of deposits, optical density, or VLT available as required
ANTI-REFLECTIVE FILMS	Conductive and non-conductive sputtered films with optional anti-smudge coating	94% VLT, < 0.5% reflection, < 1% or 7% haze, 3H pencil hardness	Improved sunlight readability and enhanced contrast
HARD COATED FILMS	Range of clear to anti-glare PET based films	Haze < 1% to 10%, > 90% VLT, to 4H pencil hardness	Durability where surface protection is required

Evaluation samples and technical support are available.  
 For general information, pricing, and availability, please contact our sales department.  
 Telephone: 1-888-273-4567 or 1-314-674-3150 outside U.S.A.  
 E-mail: [info@flexvuefilms.com](mailto:info@flexvuefilms.com)

[www.flexvuefilms.com](http://www.flexvuefilms.com)

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