

KODAK 301 Film / ESTAR Base KODAK 302 Film / ESTAR Base

—Put a century of science in your hands—

September 2014



PET Films

KODAK 301 Film/ESTAR Base and KODAK 302 Film / ESTAR Base are polyester (PET) films with high clarity, optical-grade surface quality for use in many industrial applications. These films are manufactured with a proprietary in-line process to control shrinkage and are coated with a PVDC adhesion-promoting primer and winding aid. 301 Film is coated on one sided; 302 Film is coated on both sides. Both films are available in a variety of thickness and shrinkage ranges.

The cost-effective, consistent quality of Kodak 301 and 302 Films is the result of 50 years of experience in manufacturing polyester (PET) film base. Stringent workforce standards for our Six Sigma Black Belt strategy standards include statistical modeling and design, rigorous change management, and unsurpassed manufacturing process control.

As just one example of how that knowledge has led to innovation, a cushion of air is used to transport 301 and 302 Films throughout the entire stretching section of the manufacturing process. This virtually eliminates contact that can compromise quality by creating micro scratches on the film.

Features:

- Optical-grade surface quality — products are manufactured with minimal surface contact, then scanned to meet the stringent requirements for optical applications
- Coated with PVDC adhesion-promoting primer and winding aid. Standard thickness of primer is less than one micron (1 μm).
- Shrinkage in both the machine direction (MD) and transverse direction (TD) of $\leq 3\%$, or $\leq 1\%$, or $\leq 0.2\%$
- Available in thicknesses of as low as 2.5 mil (63.5 μm) to as thick as 7.5 mil (188 μm) up to a maximum width of 1384 mm (54.5 inches)
- Greater than 90% transmittance with less than 1% haze

Uses:

- Flexible electronic displays
- Membrane touch switches
- Metalization
- Labels and printing applications

Physical Condition

Roll Integrity

- The edge of the roll will be free of nicks, cuts or visible telescoping greater than ± 6.3 mm (0.25 inches)
- The roll will not contain gauge bands which will visibly distort the film surface
- There are no splices or cutouts in the roll

Product Quality

- Kodak inspects material during the manufacturing process using in-line scanners to detect, correct, and deliver material that meets or exceeds specifications. Kodak quality technicians consistently evaluate sample product quality using internal and external standards to confirm quality standards are met.

Packaging

- Standard core; inside diameter 152mm \pm 3mm (6 inches \pm 0.04 inch)
- Each roll is suitably wrapped to seal the product.
- Each roll is horizontal, supported on core ends.
- Each container is labeled with product and roll identification.

KODAK 301 and 302 Films / ESTAR Base

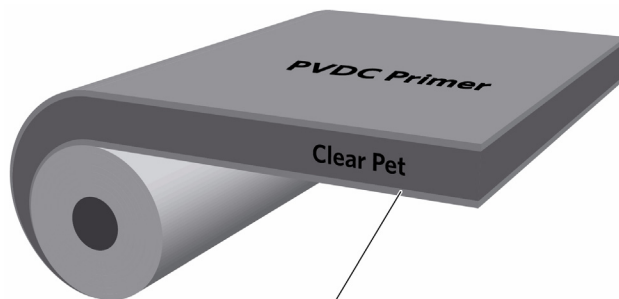
Typical Properties	Value	Test Method
Physical		
Width Tolerance	± 3 mm	Kodak Inline Scanner
Length Tolerance	± 30 m	Kodak Inline Scanner
Knurls — each side	12.5 mm wide	
Planarity	< 0.5 mm	Kodak Planarity Method (Max "flute" — 10 ft sample)
Mechanical		
Tensile Strength	> 25,000 psi	ASTM D 882
Break Elongation	> 70%	ASTM D 882
Young's Modulus	> 500,000 psi	ASTM D 882
Thermal		
Heat Shrinkage — Machine (MD)	≤ 0.2%, 1.0%, and 3.0%*	Kodak Method (30 min @ 150°C)
Heat Shrinkage — Transverse (TD)	≤ 0.2%, 1.0%, and 3.0%*	
Optical		
VLT — with primer	> 90%	ASTM D 1003
Haze — with primer	≤ 1.5%	ASTM D 1003

*There are three levels of shrinkage available, as noted in the table. They do not correspond to material thickness.

SIZES AVAILABLE

The table below shows catalog numbers available at the time of publication. It is by no means inclusive, please contact us regarding your specific needs.

CAT No.	Class	Thickness	Width (mm)	Length (m)	Shrink (%)
KODAK 301 Film / ESTAR BASE (coated on one side)					
114 6075	6RF1-452R	102	1384	1829	1.0
127 7292	6RF1-553P	124	1384	1829	3.0
179 0906	6RF1-504	127	1372	1829	0.2
167 9364	6RF1-838E	178	1346	1280	3.0
KODAK 302 Film / ESTAR BASE (coated on both sides)					
126 0033	6RF1-396A	99	1321	2001	1.0
743 3543	6RF1-409R	102	1422	3048	3.0
189 2280	6RF1-494A	124	1321	2000	3.0
100 5131	6RF1-494N	124	1260	2001	3.0
132 6610	6RF1-496A	125	1321	2001	1.0
188 7934	6RF1-505M	127	1346	1341	0.2
114 2405	6RF1-738P	178	1372	1341	3.0
126 3870	6RF1-705M	178	1346	1341	0.2
839 9990	6RF1-756A	188	1321	1301	1.0



**PVDC Primer
(302 Film only)**

MORE INFORMATION

Kodak has many publications to assist you with information about KODAK Products, Equipment, and Materials.

For the latest version of technical support publications for KODAK Industrial Materials Group, please visit Kodak online at <http://www.kodak.com/go/img>.

To find out what PET Films can do for your business, please send us an email at PETproducts@kodak.com.

NOTICE: While the data in this publication are typical of production coatings, they do not represent standards which must be met by Kodak. Varying storage, exposure, and processing conditions will affect results. Kodak makes no guarantee of results and assumes no obligation or liability whatsoever in connection with this information. The company reserves the right to change and improve product characteristics at any time.

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