

intertape polymer group®

 **Exfilm**®
Shrink Film brand

SHRINK FILM
PRODUCT GUIDE



SURROUNDING CUSTOMERS WITH SOLUTIONS!

A COMPLETE LINE OF SHRINK FILM PRODUCTS... FIND THE PERFECT ONE FOR YOUR APPLICATION.

Exlfilm® Shrink Films guarantee your packaging looks its absolute best, while providing unmatched durability, versatility and value. IPG is the only company offering a complete product line of lighter, 45-gauge films that will increase your yield by 33 percent. Our advanced crosslinking technology ensures sealing on all types of equipment across a wider range of temperatures and improves burn-through resistance, providing the best possible package.

These and other innovations have created a complete product line for any application and made Exlfilm® one of the leading lines of premium shrink film in the packaging industry. IPG's R&D teams continue to bring new and improved products to market, while our experienced team of technical sales professionals can help reduce packaging costs, improve package appearance and increase output.

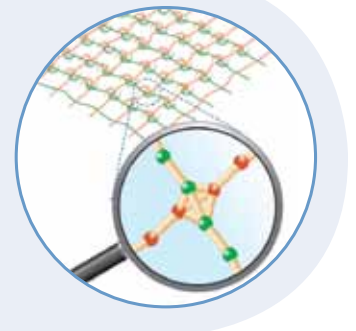
CROSSLINKING TECHNOLOGY

This innovative technique makes Exlfilmplus™ Shrink Films some of the toughest and most versatile on the market. Our films have an inherently greater window of seal and shrink performance at a broader range of temperatures. This is because the polymer chains are permanently bound into a network, significantly increasing their heat stability and strength.

CROSSLINKING TECHNOLOGY ENHANCES OUR FILMS THROUGH:

- The prevention of buildup on wires and knives during sealing
- The prevention of film burn-through in heat tunnels
- Increased film toughness on the finished package

Bonds are created where the molecules crosslink, creating a much stronger film.



EXFILMPLUS™ PERFORMANCE FILM



Our most durable film has been improved to provide better overall shrink performance and seal strength for any application. Ideal for multi-packs, heavier products, and items that encounter extreme shipping and handling.

PERFORMANCE FEATURES

- Crosslinked technology
- Outstanding shrink force
- Superb seal strength
- Exceptional tensile strength & tear resistance
- Excellent hot slip
- Complies with FDA standards



Characteristics	Test Method	Representative Values							
		50,000		40,000		30,000		20,000	
Gauge		60	75	100	125				
Roll length—center fold		4,375	3,500	2,625	2,100				
Roll length—single wound		8,750	7,000	5,250	4,200				
Low temperature usage (°F)		-45°	-45°	-45°	-45°				
Shrink temperature (°F)		240°-340°	240°-340°	240°-340°	240°-340°				
Max. storage temp. (°F) 2 yrs. max.		90°	90°	90°	90°				
Haze (%)	D1003	3.3	3.6	4.0	4.0				
Gloss at 20°F	D2457	130	128	125	120				
Coefficient of friction (film to film), kinetic	D1894	0.20	0.20	0.20	0.15				
Oxygen transmission rate (cc / 100 in ² / 24 hrs.)	D3985	830	700	570	440				
Water vapor transmission rate (g / 100 in ² / 24 hrs.)	F1249	1.70	1.50	1.30	1.10				
Yield in square inches per lb.		50,000		40,000		30,000		20,000	
		MD	TD	MD	TD	MD	TD	MD	TD
Tensile strength (PSI)	D882	19,000	19,000	19,000	19,000	20,000	20,000	18,000	18,000
Elongation at break (%)	D882	131	150	144	160	160	165	150	150
Stiffness modulus (PSI)	D882	40,000	45,000	40,000	45,000	40,000	45,000	50,000	50,000
Unrestrained shrink (%) @250°F	D2732	63	66	63	66	63	66	60	60
Tear propagation (g/ply)	D1922	14	14	18	18	25	25	30	30

Note: These values are typical and are not intended as limiting specifications.



EXFILMPLUS™ GOES GREEN!

IPG's most durable film, Exfilmplus™ is used in the widest variety of applications. Now, that same great performance can be achieved with a socially responsible OXO-Biodegradable formulation. Exfilmplus™OXO is ideal for wrapping paper goods, food products, bakery items, games, wood products and much, much more. If you need a workhorse... this is it!



WHAT IS OXO-BIODEGRADABLE SHRINK FILM?

IPG OXO-Biodegradable shrink films contain an additive that initiates and accelerates the breakdown if exposed to direct sunlight, ultimately reducing it to carbon dioxide, water and biomass. If the film is not exposed to direct sunlight, it will retain virtually all of its original mechanical properties.

PERFORMANCE FEATURES

- Uniquely versatile, Exfilmplus™OXO operates on all types of equipment and sealing technology, ensuring excellent performance across a wide range of applications.
- Crosslinked technology provides consistent sealing and shrinking at a broader range of temperatures.
- Excellent hot slip performance ensures easy package insertion and removal from the master carton.
- Complies with standards for direct contact with food.
- 100% recyclable under recycle code 4.
- Outstanding clarity enhances the retail product presentation to attract more customers.

Characteristics	Test Method	Representative Values			
Gauge		45		60	
Roll length–center fold		5,830		4,375	
Roll length–single wound		11,660		8,750	
Low temperature usage (°F)		-45°		-45°	
Shrink temperature (°F)		240°-340°		240°-340°	
Max. storage temp. (°F) 2 yrs. max.		90°		90°	
Haze (%)	D1003	3.2		3.5	
Gloss at 20°F	D2457	135		130	
Coefficient of friction (film to film), kinetic	D1894	0.20		0.20	
Oxygen transmission rate (cc / 100 in ² / 24 hrs.)	D3985	1,040		830	
Water vapor transmission rate (g / 100 in ² / 24 hrs.)	F1249	1.90		1.70	
Yield in square inches per lb.		66,650		49,000	
		MD	TD	MD	TD
Tensile strength (PSI)	D882	19,000	19,000	19,000	19,000
Elongation at break (%)	D882	120	150	131	150
Stiffness modulus (PSI)	D882	40,000	46,000	40,000	45,000
Unrestrained shrink (%) @250°F	D2732	63	66	63	66
Tear propagation (g/ply)	D1922	12	12	14	14

Note: These values are typical and are not intended as limiting specifications. Exfilmplus™OXO Biodegradable film should be used within 24 months of the manufacturing date. Product should be properly stored before use.

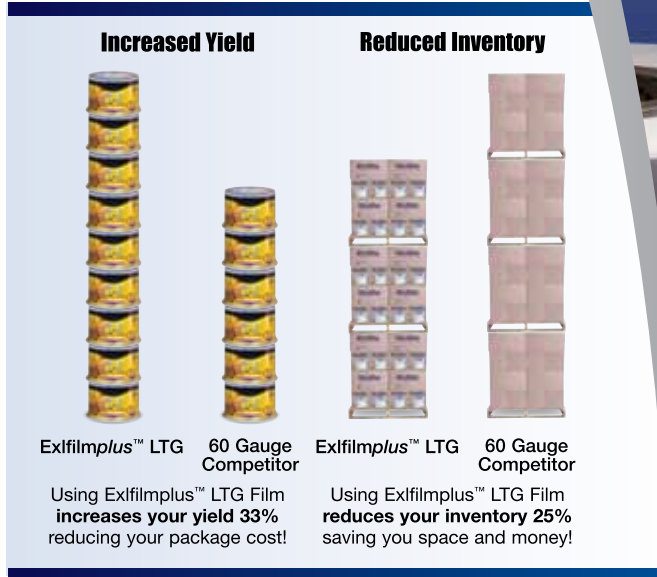
EXFILMPLUS™ LTG LIGHT GAUGE



This film is 25 percent thinner than traditional shrink films, efficiently covering more product per pound. Yet you still get the same superior performance and tear resistance as heavier gauge film. In many applications, replacing 60-gauge polyolefin with LTG means you can really cut your costs. You'll see a jump in your production rates as downtime is reduced by fewer roll changes. And as with all Exfilm® Shrink Films, exceptional clarity and gloss ensure a beautiful product presentation. Products wrapped in Exfilmplus™ LTG include printed materials, gift wrap, board games, irregular shapes and computer software.

PERFORMANCE FEATURES

- Crosslinked technology
- Substantial cost savings
- Outstanding strength
- Reduces downtime
- Exceptional clarity & gloss
- Complies with FDA standards



Characteristics	Test Method	Representative Values	
Gauge		45	
Roll length—center fold		5,830	
Roll length—single wound		11,660	
Low temperature usage (°F)		-45°	
Shrink temperature (°F)		240°-340°	
Max. storage temp. (°F) 2 yrs. max.		90°	
Haze (%)	D1003	3.0	
Gloss at 20°F	D2457	135	
Coefficient of friction (film to film), kinetic	D1894	0.20	
Oxygen transmission rate (cc / 100 in ² / 24 hrs.)	D3985	1,040	
Water vapor transmission rate (g / 100 in ² / 24 hrs.)	F1249	1.90	
Yield in square inches per lb.		66,650	
		MD	TD
Tensile strength (PSI)	D882	19,000	19,000
Elongation at break (%)	D882	120	150
Stiffness modulus (PSI)	D882	40,000	46,000
Unrestrained shrink (%) @250°F	D2732	63	66
Tear propagation (g/ply)	D1922	12	12

Note: These values are typical and are not intended as limiting specifications.



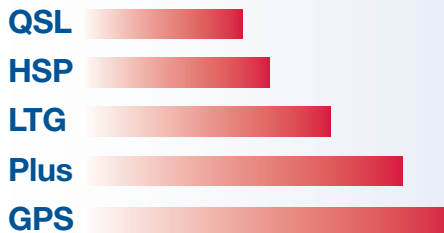
EXFILMPLUS™ GPS GLOBAL PERFORMANCE SHRINK

Exfilmplus®GPS is our newest high performance crosslinked polyolefin shrink film. This multilayered film is versatile enough to perform on all sealing systems and shrink tunnels. The premium resin formulation provides our strongest seals ever. Exfilmplus®GPS offers high shrink force, making it the ideal choice for multipacking and unitizing product.

PERFORMANCE FEATURES

- Consistently strong seals
- Wide operating window
- High shrink force
- Crosslinked technology
- Complies with FDA standards

Shrink Force



Characteristics	Test Method	Representative Values					
		45		60		75	
Gauge		45		60		75	
Roll length—center fold		5,830		4,375		3,500	
Roll length—single wound		11,600		8,750		7,000	
Low temperature usage (°F)		-45°		-45°		-45°	
Shrink temperature (°F)		240°-340°		240°-340°		240°-340°	
Max. storage temp. (°F) 2 yrs. max.		90°		90°		90°	
Haze (%)	D1003	3.2		3.5		3.7	
Gloss at 20°F	D2457	135		135		135	
Coefficient of friction (film to film), kinetic	D1894	0.2		0.2		0.2	
Oxygen transmission rate (cc / 100 in ² / 24 hrs.)	D3985	950		850		750	
Water vapor transmission rate (g / 100 in ² / 24 hrs.)	F1249	1.9		1.7		1.5	
		MD	TD	MD	TD	MD	TD
Tensile strength (PSI)	D882	18,000	18,000	18,000	18,000	18,000	18,000
Elongation at break (%)	D882	115	125	120	130	130	135
Stiffness modulus (PSI)	D882	38,000	40,000	40,000	42,000	42,000	44,000
Unrestrained shrink (%) @250°F	D2732	65	65	65	65	65	65
Tear propagation (g/ply)	D1922	12	12	16	16	18	18

Note: These values are typical and are not intended as limiting specifications.

EXLFILM® QSL QUICK SHRINK



If you want the ultimate in high-speed performance, look no further than this low shrink force, quick-shrink film. Exlfilm® QSL maximizes production speeds with a proprietary fast sealing, quick shrinking formulation providing wrinkle-free packages. Available in 45, 60, 75 and 100 gauge.

PERFORMANCE FEATURES

- High speed wrapping
- Excellent static seals
- Highest shrink percentage
- Quick shrink initiation
- Maximum slip performance
- Low shrink force
- Complies with FDA standards
- Non-corrosive (unlike PVC)

EXLFILM® HSP HIGH SPEED



This fast-sealing film allows for short dwell times that maximize production and increase plant efficiency. Your product is protected from the rigors of high-speed packaging and shipping by consistently strong seals and exceptional tensile strength. The high slip ensures easier material handling, collating and package insertion. Great for computer software, DVDs, labels and more, Exlfilm® HSP gets the job done fast and looks great too, with superior optics and shrinkage. Available in 45, 60, 75 and 100 gauge.

PERFORMANCE FEATURES

- Maximizes production rates (high speed)
- Consistently strong seals
- Superior optics
- High shrink percentage
- High slip
- Complies with FDA standards
- Exceptional tensile strength & tear resistance



**A COMPLETE LINE OF SHRINK FILM PRODUCTS...
FIND THE PERFECT ONE FOR YOUR APPLICATION.**





CORPORATE PROFILE

Intertape Polymer Group Inc. (IPG) is an acknowledged leader in the packaging industry. Leveraging its advanced manufacturing and technologies, extensive research and development capabilities and a comprehensive strategic acquisition program, the company believes it has assembled the broadest and deepest range of products in the industry. IPG is widely recognized for its development and manufacture of specialized polyolefin, plastic and paper-based packaging products, as well as complementary packaging systems for industrial and retail use. Additionally, IPG is a woven and flexible intermediate bulk container (FIBC) manufacturer. Its performance products, including tapes and cloths, are designed for demanding aerospace, automotive and industrial applications and are sold to a broad range of industry/specialty distributors, retail stores and large end-users in diverse industries.



Porto, Portugal



Flensburg, Germany



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