



# **Catalogue (I) Shrink Materials**

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## 1 INTRODUCTION TO SHRINK PACKAGING

Shrink packaging is a relatively simple concept and procedure, using different types of shrink film for effectively displaying and protecting a variety of products. Shrink films have been oriented (stretched) during the manufacturing process. They therefore shrink upon being heated during the wrapping process. The type of shrink film to be used is determined by the type of equipment used and by the needs of the customer.

## 2 The Uses of Shrink Film

**Shrink film**, is clear, thin, low cost plastic sheeting (film). Usually found in roll stock. Used for protection, product enhancement and for protecting packages from being opened prior to purchase

- Provide a see-through over wrap for a clear sparkling display
- Used to bundle multiple products together
- Reduces cost of product packaging

The shrink process typically involves two steps:

- **Wrapping & Sealing** the product

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# Shrink Film Overview

Shrink Materials

- **Applying Heat** to firmly tighten (shrink) the film around the product.

## 3 Wrapping & Sealing

The most popular wrapping and sealing machine is the “L” bar sealer. The name derives from the fact that the sealing bar is in the shape of a backward “L” - . The L-Bar sealer which comes in a variety of sizes, and with a variety of options, trim and seal the film with each down stroke or cycle of the sealing bar. By using a center folded film, side seals of the package are simultaneously formed, producing a fully sealed individual bag around each product - ready to be heated and shrink-wrapped.

## 4 Applying heat

The most common method of applying heat is a hot air circulating chamber, with a conveyor to move the product, otherwise known as the heat tunnel. Products travel through the tunnel, and are exposed to heat for only a few seconds. While traveling through the tunnel, shrinkage occurs. Since this only takes a few seconds, only the shrink film will be affected by the heat, not the product. Occasionally heat guns are used for applying heat and shrinkage.

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## 5 PVC versus POLYOLEFIN

### 5.1 ADVANTAGES OF PVC

- Slightly Higher clarity
- Low heat required to shrink (200-275°F) vs. Polyolefin (300-375°F)
- Can easily use heat gun or a small, less expensive tunnel, to shrink
- Available in lower and preferential shrink forces
- Strong and flexible film
- It's "idiot proof"
- Since it shrinks so quickly, it is also very good on very high speed Applications

### 5.2 ADVANTAGES OF POLYOLEFIN

- Sytec Sytec 307, Sytec 701 or MVP
- Food grade film
- Does not require cool storage as does PVC
- No smell, and no smoke when sealing.
- Not as corrosive as PVC. Creates less build up of material on machine sealing wires. No need to use Teflon curtains over sealing wire like PVC needs.

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## 5.3 SYTEC 307 Multi-Layer Shrink Film

- This film will replace Cryovac, films on most machines without any adjustments to the equipment.
- It's especially a good film to run on flat applications, competing with such films as Cryovac's MPD (Their higher priced film) and with Vanguard films.

## 5.4 SYTEC 701 Cross linked Polyolefin Shrink Film

- This film is cross-linked (irradiated). This gives it, it's extraordinary strength, strong and durable seals, excellent shrinkage and abuse resistance.
- The 701 is also available in 45Gauge.
- The 701 is best suited for high-speed automatic machines.
- The 701 60ga is irradiated in-line, whereas the other 701 formulations are irradiated off-line. The 60ga thus has a bit of a yellowish tinge on the edge. This process also improves the 60ga sealing and shrinking range
- 701 is also available in anti-fog formulations.

## 5.5 SYTEC MVP Cross Linked, Soft Shrink Polyolefin Film

- This film is cross-linked (irradiated). As well as having extraordinary strength, the film is able to conform to unusual shapes, as well as low shrink force on flexible products, when applied correctly.
- MVP has a broader sealing range than any of our films.
- MVP usually shrinks at lower temperatures than other films.
- It works well on all kinds of sealing systems.

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# Shrink Film Overview

Shrink Materials

- While it is a bit more expensive than our other films, it also is the most versatile of our films.
- Available in 45, 60, 75, and 100 gauge at present.

## 5.6 PV RAN PVC (Poly Vinyl Chloride) Shrink Film

- PVC shrink films are used for their high clarity, gloss, low haze and their ability to shrink at a lower temperature.
- PVC is the only shrink film on the market with a variable shrink. In other words, with the capability of being produced to shrink at different percentages in the machine, and transverse direction.
- PVC shrink film has several advantages over other PVC shrink films on the market today.
  1. The high density of our film compared to Reynolon, is more machine-able and less likely to block.
  2. Besides being less susceptible to blocking, the higher density of our film also makes it less likely to shrink on the roll in humid or hot warehouse conditions.
  3. Our pricing is very competitive in the marketplace.

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# Shrink Film Comparison Charts

Shrink Materials

## 6 POLYOLEFIN SHRINK FILM COMPARISON CHART

Competitor's Shrink Film	HSA Equivalent
Cryovac – D955	SYTEC 701
Cryovac -- CorTuff	SYTEC Durafilm
Cryovac – D940, Cryovac – D935 & LS Cryovac– MPD	SYTEC,MVP SYTEC 701 & MVP 45 ga SYTEC 307S
Clysar (Bemis) HP, LLP Clysar LE Clysar VEZ, VHZ Clysar ShrinkBox	SYTEC 701 SYTEC MVP SYTEC 701 45 GA, MVP45GA, 307S 50GA SYTEC Durafilm
Intertape Excell Plus Intertape LTF Intertape LTG	SYTEC 701 SYTEC MVP SYTEC 701 & MVP 45ga
Vanguard (Okura) #501 Vanguard (Okura) 301	SYTEC 307S SYTEV 701
AEP Flextite-AP – 1/AP	SYTEC 307S
Bollore BX Bollore BY & BZ Bollore BLG Bollore BRX	SYTEC 307S SYTEC 701/MVP SYTEC 701 OR MVP 45ga SYTEC MVP
Imported Polyolefin	SYTEC 307S or MVP
OPTI 110 OPTI 200 OPTI 210	SYTEC 307S SYTEC 701 SYTEC MVP

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# Shrink Film Comparison Charts

Shrink Materials

## 7 PVC Shrink Film Comparison Chart

Competitor's Shrink Film	HSA Equivalent
Reynolon (Alcoa) 5044, 5022, 5011, 4011 etc	<b>PV RAN - PVC Shrink film</b>  <b>G44, G22, G11</b>
VCF, Nippon	<b>This is a cast PVC, and currently we have no correlative</b>

This cross- reference table is good to use as a general tool.

- It would however be a good idea to call and check about any particular film.
- There may be other considerations that need to be taken into account before offering an equivalent. Some of these are:
  - ✓ Package shape,
  - ✓ Package size,
  - ✓ Unsupported film areas,
  - ✓ Type of machinery, etc.

## 8 Standard Roll Lengths

Film type	45 Gauge	60 Gauge	75 Gauge	100 Gauge	150 Gauge
<b>POLYOLEFIN</b>					
<b>701</b>	5,830	4,375	3,500'	2,620'	1,750'
<b>307S</b>	N/A	4,375	3,500	2,620	1,750
<b>MVP</b>	5,830	4,375	3,500	2,620	N/A
<b>PVC</b>	N/A	2,500'	2,000	1,500'	1,000'

- The above are lengths for center folded film.
- Lengths are double for flat film.
- Both 307S and 701 are available in 125 gauge also

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# PVC SHRINK FILM RANPAC G-44

**Shrink  
Materials**

## 9 PVC Shrink Film Sizes & Weights

SIZE	40-40 PVC Weight/Gauge (Lbs)				
	150 Gauge	100 Gauge	75 Gauge	60 Gauge	45 Gauge
6 <sup>*1</sup>			9.89	9.89	
8			13.18	13.19	
10			16.48	16.48	
12			19.78	19.78	
14			23.07	23.08	
15			24.72	24.72	
16			26.37	26.37	
18			29.66	29.67	
20			32.96	32.96	
22			36.26	36.26	
24			39.55	39.56	
26			42.85	42.85	
28			46.14	46.15	
30			49.44	49.44	
32			52.74	52.74	
34			56.03	56.04	
36			59.33	59.33	
38 <sup>*1</sup>			60.33	62.63	
40 <sup>*1</sup>			61.33	65.92	

\*1 Not Stock

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# POLYOLEFIN SHRINK FILM

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## 10 Polyolefin Shrink Film Sizes & Weights

SIZE	MVP / 307 / 701 Film Weight/Gauge (Lbs)				
	150 Gauge	100 Gauge	75 Gauge	60 Gauge	45 Gauge
6 <sup>1</sup>			12.29	12.23	12.23
8			16.39	16.30	16.30
10			20.48	20.37	20.37
12			24.58	24.45	24.45
14			28.68	28.52	28.52
15			30.72	30.56	30.56
16			32.77	32.60	32.60
18			36.87	36.67	36.67
20			40.96	40.74	40.74
22			45.06	44.82	44.82
24			49.16	48.89	48.89
26			53.25	52.97	52.97
28			57.35	57.04	57.04
30			61.44	61.11	61.11
32			65.54	65.19	65.19
34			69.64	69.26	69.26
36			73.73	73.34	73.34
38 <sup>1</sup>			77.83	77.41	77.41
40 <sup>1</sup>			81.92	81.48	81.48

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# Shrink Film Markets

Shrink Materials

## 11 SHRINK FILM MARKETS

MARKET SEGMENTS	MARKET SHARE
<p><b>TOYS, GAMES, SPORTING GOODS</b></p> <p>Dolls, Crafts and Hobby kits, Games, Puzzles, Models, Archery equipment, Paint sets, Fishing rods, Skin diving equipment, etc.</p>	<p><b>9%</b></p>
<p><b>PRINTING AND PAPER PRODUCTS</b></p> <p>Gift-wrap, Books, Business forms, Tickets, Greeting cards, Loose-leaf binders, scrap books, Albums, Wallpaper, Stationary, etc.</p>	<p><b>29%</b></p>
<p><b>PACKAGED FOODS</b></p> <p>Baked goods, Ice cream, Pizza, Meat patties, Sweet goods, Candy, Frozen fish and shrimp, Breaded meats, Gift sets (Cheese, Jellies, etc.), Taco shells, Butter/Margarine, Aseptic packs, Citrus, Flour, Vegetables, etc.</p>	<p><b>31%</b></p>

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## Shrink Film Markets

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<b>MARKET SEGMENTS</b>	<b>MARKET SHARE</b>
<p><b>HARDWARE AND HOUSEWARES</b></p> <p>Kitchen cutlery, Cutting boards, Drill sets, Tools, Shutters, Ash trays, Cookware, Clocks, Plastic ware, Glasses, Electric house ware, Serving and Buffet product, Buttons, Linens, etc</p>	<b>9%</b>
<p><b>ELECTRONICS</b></p> <p>PC boards, Computers, Calculators, Watches, Cellular Phones, Audio &amp; videotapes.</p>	<b>5%</b>
<p><b>PHARMACEUTICALS</b></p> <p>Medical supplies, Disposables, OTC Preparation, Over the counter medications, along with drug store Products like shampoo &amp; make-up.</p>	<b>3%</b>
<p><b>TEXTILES</b></p> <p>Linen, Towel sets, Yarns, Cordage, Hosiery</p>	<b>5%</b>
<p><b>INDUSTRIAL PARTS</b></p> <p>Oil &amp; air filters, Wiper blades, Hubcaps, etc.</p>	<b>3%</b>
<p><b>MISCELANEOUS</b></p>	<b>6%</b>

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## 12 SHRINK FILM SIZING CHARTS

### 12.1 FILM WIDTH FORMULA

	Package Height	Formula
Manual & Semi-automatic L Bar Sealers	0 – 2.5 inches	$W + H + 2$ inches
	2.5 – 4.5 inches	$W + H + 2.5$ inches
	4.5 +	$W + H + 3$ inches
Automatic L Bar Sealers	0 – 3 inches	$W + H + 4$ inches
	3 – 6 inches	$W + H + 4.5$ inches
	6 inches +	$W + H + 5 - 6$ inches

### 12.2 Cut-Off Formula (Bag Length)

Package Height	Formula
0 – 2.5 inches	$L + H + 1$ inch
2.5 – 4.5 inches	$L + H + 2.5$ inches
4.5 + inches	$L + H + 4$ inches

UNITS PER ROLL	COST PER UNIT
$\frac{\text{ROLL LENGTH (ft) x 12}}{\text{Bag length (Inches)}}$	$\frac{\text{Cost Per Roll}}{\text{Units Per Roll}}$

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