

## Clysar **ABL**

### Description

Bemis Clysar® ABL is a strong, clear, cross-linked, biaxially-oriented, polyolefin shrink film.

### Uses

Clysar® ABL is used where lower processing temperatures, superior package characteristics, and a tough, durable wrap are required. Excellent shrinkage and seal strength are obtained under a wide range of operating conditions. It is specifically designed to function on the complete range of L-sealers and tunnels. Its outstanding memory and recovery provides attractive packaging after repeated handling.

### Significant Features

#### Sealing

- Compatible with all sealing mechanisms including systems designed for PVC films.
- Clysar ABL is excellent on L-sealers and fin/trim systems. Due to its relatively low modulus other Clysar films are more suited to high speed form/fill/seal systems.
- Sealing temperature range is the widest of any polyolefin shrink film and overlaps the PVC range.
- The sealing temperature range starts 20 to 25°F lower than most polyolefin films.
- Seals easily even under less-than-optimum conditions with virtually no pinholes in the seal.
- Consistently seals at higher speeds than most other polyolefin films.
- Does not corrode sealing wires or equipment.
- Does not leave carbon deposit on sealing wires.

#### Shrinking

- Has a very wide shrink temperature range starting at ~ 285°F.
- This film has no definite burn-through point. It will begin to cloud when approaching overheating.
- Compatible with all air evacuation systems. Pin perforation requires a backup roller or the film may stretch and not perforate over the pins. Air evacuation is critical as the lack of pin holes will not allow evacuation through the seals.
- This film can be run on all shrink tunnels with consistently good results. It is not dependent on high air velocity to achieve good shrinkage.
- Has medium shrink force and very high available shrinkage.
- Shrinkage is balanced.

#### General

- Outstanding film memory
- Good tear and puncture resistance
- Very forgiving on less than optimum equipment
- Resists embrittlement with age
- Remains durable at freezer temperatures

### Standard Put-Ups

- Clysar ABL is available in 50, 60, 75, 100 and 125 gauge.
- Flat film is available as ABL in widths from 5-68 inches in ¼ inch increments
- Folded film is available as ABLF in widths from 5-36 inches in ½ inch increments.
- Folded film will have approximately half the linear footage of flat film for same gauge and roll dimensions
- Available in standardized pre-perforated pattern or as plain film.
- Film is wound on 3 and 6-inch cores to the standard roll sizes shown in Table 1.

**Table 1  
Clysar® ABL  
Linear Footage Flat Film**

Core ID, in.	Roll OD, in.	Gauge				
		50	60	75	100	125
3	9½	10,500	8,750	7,000	5,250	4,200
3	13	21,000	17,500	14,000	10,500	8,400
6	11	10,500	8,750	7,000	5,250	4,200
6	14	21,000	17,500	14,000	10,500	8,400
6	18	--	35,000	28,000	21,000	16,800

## FDA/USDA Status

Clysar films sold for food packaging use comply with U.S. Food and Drug Administration (FDA) requirements under the Federal Food, Drug, and Cosmetic Act as amended. Bemis complies with FDA regulation 21 CFR 177.1520 -- Olefin polymers, allowing use for articles that contact food, except for articles used for packing or holding food during cooking. This FDA compliance and a continuing guarantee from Bemis Clysar will meet USDA requirements for packaging meat and poultry products.

## Use

Bemis Clysar does not recommend heating or cooking foods in Clysar. High temperature and high speed sealing of polyolefin shrink films will release small amounts of "smoke," which should be removed by adequate ventilation in normal commercial practice.

## Disposal

Preferred options for disposal are (1) recycling, SPI Code – Class 7 (2) incineration with energy recovery, and (3) landfill. The high fuel value of this product makes option (2) very desirable for material that cannot be recycled.

## Storage

Storage below 32°C (90°F) is recommended. Prolonged exposure to temperatures moderately above 32°C (90°F) or brief exposure to temperatures well above 32°C (90°F) may cause difficulty in unwinding film.

For more detailed information on the safe handling of Clysar films a "Safety in Handling and Use" guide and OSHA Material Safety Data Sheets can be obtained from your Clysar representative.

**Table 2**  
**Typical Properties of Clysar® ABL**

Property	ASTM Test Method	Unit	Gauge				
			50	60	75	100	125
Haze (avg)	D1003	%	2.2	2.3	2.4	2.6	2.9
Gloss at 20° (min)	D2457	(photocell)	135	130	130	125	120
COF, Kinetic	D1894		0.28	0.26	0.23	0.20	0.16
Shrinkage, 102°C (216°F)* 10 minutes	D1204	% (Area)	65	65	65	65	65
Shrink Force	D2838	g/in @ 100°C	95	110	130	160	190
Stiffness Modulus (avg)	D882	kpsi	37	37	37	37	37
Tensile Strength (avg)	D882	kpsi	13	13	13	13	13
Elongation (avg)	D882	%	120	125	130	135	140
Tear Strength (avg) (Elmendorf)	D1922	g	20	25	30	35	40
Spencer Impact	D3420	in-lbs	8	9.5	11	15	16
WVTR	F1249	g/100 in <sup>2</sup> /24 hr	2.3	2.5	2.0	1.5	1.0
Oxygen Transmission	D3985	cc/100 in <sup>2</sup> /24 hr	1000	900	800	600	400
CO <sub>2</sub> Transmission	D1434	cc/100 in <sup>2</sup> /24 hr	2500	2400	2200	1950	1800

\*Film Temperature

Note: These values are typical for Clysar® ABL shrink film and are not for use as limiting specifications.

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The technical data contained herein are guides to the use of Bemis Clysar films. The advice contained herein is based upon tests and information believed to be reliable, but users should not rely upon it absolutely for specific applications because performance properties will vary with processing conditions. It is given and accepted at user's risk and confirmation of its validity and suitability in particular cases should be obtained independently. Bemis Clysar makes no guarantees of results and assumes no obligations or liability in connection with its advice. This publication is not to be taken as a license to operate under, or recommendation to infringe, any patents.

**CAUTION:** Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see Bemis Medical Caution Statement, MCS\_02.