

Clysar LE

Description

Clysar® LE is a strong, clear, biaxially oriented, heat-shrinkable, multilayer film with the lowest shrink force available in the Clysar® line. Clysar LES is the hot slip version.

Uses

ClysarLE is used where low shrink force is needed such as on thin stacks of paper, boxes that tend to crush, or items that bend easily.

Clysar LE also provides excellent optics, clean shrink appearance, and strong durable seals.

Significant Features

Sealing

- Compatible with all sealing mechanisms including PVC systems.
- Sealing temperature for hot knives starts at approximately 300°F.
- Provides strong, durable seals over a wide temperature range.
- Does not corrode sealing wires or equipment.
- Does not leave a carbon deposit on sealing wires.

Shrinking

- Provides lowest shrink force in the Clysar family.
- Has very high available shrinkage and consistently delivers a clean shrink appearance.
- Tunnel temperature for clean shrink starts at approximately 280°F.
- Forgiving under less than optimum tunnel conditions.
- Compatible with all air evacuation systems.
- Balanced shrinkage.

General

- Excellent film durability, even at freezer temperatures.
- Good tear resistance.
- Will not embrittle with age.
- High gloss, clarity, sparkle.

Standard Put-Ups

- ClysarLE is available in 60 or 75 gauge as either flat or folded film.
- Flat film is available as ClysarLE or silicone coated on one side for improved hot slip as LES.
- Flat film is available in widths from 4-68 inches in ¼ inch increments
- Folded film is available as ClysarLEF; or silicone coated for improved hot slip as LEFS.
- Folded film is available in widths from 5-47 inches in ½ inch increments
- Folded film will have approximately half the linear footage of flat film for same gauge and roll dimensions.
- Film is wound on 3-in. and 6-in. cores to the standard roll sizes as shown in Table 1.

Table 1
Clysar® LE
Linear Footage, Flat Film

Core I.D., in.	Roll O.D., in.	60 Gauge	75 Gauge
3	9½	8,750	7,000
3	13	17,500	14,000
6	11	8,750	7,000
6	14	17,500	14,000
6	18¾	35,000	28,000

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. Clysar 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 FDA requirements for packaging meat and poultry products.

Use

Bemis Clysar does not recommend heating or cooking foods in Clysar Shrink Film. High temperature and high speed sealing of Clysar 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 Bemis Clysar® LE

Property	ASTM Test Method	Units	Gauge	
			60	75
Haze (avg)	D1003	%	1.5	1.5
Gloss at 20° (min)	D2457	(photocell)	130	130
COF (Kinetic)	D1894		0.25	0.22
Shrinkage, 102°C (216°F)* 10 min	D1204	%(area)	50	50
Shrink Force (100°C, 260 psi shrink stress)	D2838	g/in.	70	80
Stiffness Modulus (avg)	D882	kpsi	40	40
Tensile Strength (avg)	D882	kpsi	9	9
Elongation (avg.)	D882	%	135	135
Tear Strength (avg.) (Elmendorf)	D1922	g	48	48
Spencer Impact	D3420	in.-lbs	8	8
WVTR	F1249	g/100 in ² /24 hr	3.3	2.5
Oxygen Transmission	D3985	cc/100 in ² /24 hr	900	800
CO ₂ Transmission	D1434	cc/100 in ² /24 hr	2500	2500

*Film Temperature Note:

These values are typical data for Clysar LE shrink film and are not intended for use as limiting specifications.

Bemis Worldwide

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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_01.