

## Description

Clysar® LTC (Lowest Total Cost) shrink film is a thin-gauge, clear, biaxially oriented, heat-shrinkable polyolefin film.

# Clysar® LTC Film

DATA SHEET

## Uses

The most versatile of Clysar's ultra-thin films, Clysar® LTC is designed for packaging a variety of low-abuse products, including box overwraps, bundled items and multi-packs. It combines excellent optics and seal strength with the economics of high yield, reduced changeover and downtime, and greater use of storage space.

## Significant Features

### Sealing

- Provides strong, durable seals with all sealing systems, including wires, knives and electrostatic overlap.
- Has a wider sealing temperature range than most other thin-gauge films.
- Requires little or no cooling dwell.
- Seals do not become brittle with age.
- Does not corrode sealing wire or equipment.
- Does not leave a carbon deposit on sealing wires.
- Pinhole-free seals.

### Shrinking

- Good burn-through resistance.
- Forgiving under less-than-optimum tunnel conditions.
- Compatible with all air evacuation systems. Pin perforation requires a backup roller or very sharp pins, or the film may stretch and not perforate over the pins.
- Average available shrinkage.
- Balanced shrinkage.

### General

- Good tear resistance. More resistant than most other thin-gauge films.
- High gloss, clarity and sparkle.

### Standard Put-Ups

- Flat film is available in custom widths from 3" to 100" in 1/4" or 1/2" increments.\*
- Folded film is available in custom widths from 3" to 50" in 1/2" increments.\*
- Folded film will have half the linear footage of flat film for same gauge and roll dimensions.
- Film is wound on 3" and 6" cores to the standard roll sizes as shown in Table 1.
- Perforation is optional for folded film only.

\*Contact your Clysar representative for width-specific information.



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# Clysar®

## FDA/USDA Status

Clysar® films sold by Clysar, LLC, 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.

## Use

Clysar, LLC, does not recommend using traditional heating or cooking methods for foods wrapped in Clysar® shrink films. For conditions specific to microwave cooking, please request documentation that is specific for your application through your Clysar representative.

## Disposal

Preferred options for disposal are: (1) recycling, SPI Code 4; (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 can be obtained from your Clysar representative.

## Summary of Properties

### Clysar® LTC - Linear Footage Flat Film (Table 1)

Core I.D., in.	Roll O.D., in.	Gauge
		35
3	11.5	17,500
3	15	35,000
6	12.5	17,500
6	16	35,000

### Typical Properties of Clysar® LTC (Table 2)

Property	ASTM Test Method	Unit	Gauge
			35
Haze (avg)	D1003	%	2.0
Gloss at 20° (min)	D2457	GU	135
COF, Kinetic	D1894	-	0.2
Shrinkage, 102°C (216°F)* -- 10 min	D1204	% (area)	45
Shrink Force	D2838	g/in @ 100°C	75
Stiffness Modulus (avg)	D882	kpsi	62
Tensile Strength (avg)	D882	kpsi	15
Elongation (avg)	D882	%	130
Tear Strength (avg) (Elmendorf)	D1922	g	11
Spencer Impact	D3420	lbf	6.4
WVTR	F1249	g/100 in <sup>2</sup> /24 hr	2.4
Oxygen Transmission	D3985	cc/100 in <sup>2</sup> /24 hr	1000

\* Film Temperature

Note: These values are typical for Clysar® LTC 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 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. 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 Clysar Medical Caution Statement, MCS\_02.