

# Clysar EHC

## Description

Clysar® EHC is a strong, clear, biaxially oriented, heat-shrinkable polyolefin film. Clysar® CHS is a hot slip version of EHC.

## Uses

Clysar EHC is used when excellent optics, high shrink force, and superb sheet flatness are essential. It is an excellent choice for doing multi-packs, high-speed applications, and static sealing. Clysar EHC is the stiffest film of the Clysar line and provides the highest moisture barrier.

## Significant Features

### Sealing

- Best static sealing film on the market
- Electrostatic sealing can be used for all gauges
- Provides very strong, durable impulse wire seals
- Has a wide heat sealing range
- Does not give off harmful gases or corrode sealing wire or equipment
- Does not leave a carbon deposit on sealing wires

### Shrinking

- Has a very wide shrink temperature range and excellent burn through resistance
- Compatible with all air evacuation systems, although special care should be taken with hole punches and pin perforator systems to prevent ripping or tearing the film
- Best results are achieved with tunnels with good air velocity, and it is not recommended to use Clysar EHC on lower end tunnels
- Has high shrink force
- Has average available shrinkage
- Shrinkage is balanced

### General

- Excellent film durability
- Excellent sheet stiffness
- Will not embrittle with age
- High gloss, clarity, sparkle
- Outstanding performance on high-speed automatic shrink equipment
- Remains durable at freezer temperatures
- Print-treatable and considered the best printing film in the market
- Very good moisture barrier properties to reduce water transmission

## Standard Put-Ups

- Clysar EHC® is available in four gauges: 50, 60, 75, and 100, as either flat or folded film.
- Flat film is available as Clysar EHC in widths from 4-68 inches in 1/4 inch increments; print treated on one side as Clysar® EHCT, or sprayed for improved hot slip as CHS.
- Folded film is available as Clysar® EHC in widths of 5 - 35 inches in 1/2 inch increments; or sprayed for improved hot slip as CHSF.
- 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® EHC**  
**Linear Footage -- Flat Film**

Core I.D., in.	Roll O.D., in.	Gauge			
		50	60	75	100
3	9 ½	10,500	8,750	7,000	5,250
3	13	21,000	17,500	14,000	10,500
6	11	10,500	8,750	7,000	5,250
6	14	21,000	17,500	14,000	10,500
6	18 ¾	42,000	35,000	28,000	21,000

### FDA/USDA Status

Clysar films sold for food packaging use comply with U.S. Food and Drug Administration requirements under the Federal Food, Drug, and Cosmetic Act as amended. Bemis complies with FDA regulation 21 CFR 177.1520--Olefin polymers, allowing use in contact with all types of foods. This FDA compliance and a continuing guaranty 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 5 (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. Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulations.

### 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 Bemis Clysar representative.

**Table 2**  
**Typical Properties of Bemis Clysar® EHC**

Property	ASTM Test Method	Unit	Gauge			
			50	60	75	100
Haze (avg)	D1003	%	1.0	1.1	1.2	1.2
Gloss at 20° (min)	D2457	(photocell)	135	135	130	125
COF, Kinetic	D1894		0.50	0.48	0.37	0.33
Shrinkage, 136°C (277°F)* 10 min	D1204	% (area)	50			
Shrink Force, 130°C (266°F) (avg) (based on shrink stress 450 psi)	D2838	g/in	130	150	200	300
Tensile Strength (avg)	D882	kpsi	19			
Stiffness Modulus (avg)	D882	kpsi	190			
Elongation (avg)	D882	%	115			
Tear Strength (avg) (Elmendorf)	D1922	g	6	8	10	11
Spencer Impact	D3420	in-lbs	7	8	9	12
WVTR	F1249	g/100 in <sup>2</sup> /24 hr	1.0	0.9	0.75	0.65
Oxygen Transmission	D3985	cc/100 in <sup>2</sup> /24 hr	390	320	250	200
CO <sub>2</sub> Transmission		cc/100 in <sup>2</sup> /24 hr	805	670	480	420

\*Film Temperature Note:

These values are typical data for Clysar EHC shrink film and are not intended 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\_01.