

TRITAN rolls

Carolear MDL100

Product Datasheet

Caroclear MDL100

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Description

Caroclear MDL100 TRITAN film is a super clear copolymer developed for specific uses requiring extensive impact resistance. Easy grade to thermoform comparable to PETG and not susceptible to crystallisation. It has an outstanding clarity, coupled with high temperature resistance up to 95°C.

Caroclear MDL 100 films have been especially developed for the packaging of orthopaedic implants. It is extruded with Tritan copolyester MP100 from Eastman Chemical Company in a clean, dust-free environment.

Applications

Blister and trays for the packaging of medical devices
 Requiring very high impact resistance and toughness.
 Down gauging on specific PETG medical applications.

Key Features

Certification/Approvals

The following approvals are available on request for the polymer:

Food contact: FDA 21 CFR 174.5(d) (5)

RoHS: Complies with EU legislation 2015/863/EC.

REACH: EC Regulation 1907/2006.

ISO 10993/ USP Class VI and ISO 11607

ISO 9001:2015 and BRC IoP standards

Printing

It is not designed for printing. Please contact our sales department if printing is required.

Thermoforming

Excellent thermoforming ability that allows complex shapes or high speed without any risk of crystallisation.

Conversion

This product can be sealed with a Tyvek lid. It can be sterilised with Gamma Ray or Ethylene Oxide.

It can be sealed on itself using heat seal devices.

Product Availability

Colour

Natural clear

Finish

Natural gloss.

Thickness

0.3 mm to 1,25 mm.

Roll Size Specifications

Gauge	Width	
	Minimum	Maximum
0.30 to 1,25 mm	400 mm	700 mm

Physical properties

Properties	Unit	Standard	Method	Value
Density	g/cm ³	ISO 1183	-	1.19
Dart Impact	g	ASTM 1709A	@ 23°C @ -18°C @ -30°C	882 867 913
Tensile Strength @ Yield	MPa	ASTM	D882	MD 40 CD 41
Elongation at Break	%	ASTM	D882	MD 179 CD 203
Tensile Modulus	MPa	ASTM	D882 MD D882 CD	1462 1383
Glass transition Temperature	°C	-	DSC	110
Water Vapour Transmission Rate	g/m ² /24 h	ASTM	F1249 @23°C	4
Permeability CO ₂	cm ³ .m /24.m ² .atm	ASTM	D1434	149
Permeability O ₂	cm ³ .m /24.m ² .atm	ASTM	D3985	32

Available Options

External anti-block.

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Additional Information

General Description

PET is a thermoplastic polyester (not to be confused with unsaturated polyesters mainly used for composite structures: boats, car body parts...)

Polyester resins are extremely sensitive to humidity, and combined with high temperature conditions (> 70 °C), the polymer chains are broken down by hydrolysis.

They are different type available and a brief description of each is given below:

PET (also known as PETP and PETE)

PET can be found in two molecular states: - Amorphous (transparent with low heat resistance).
 - Crystallised (opaque with high heat resistance).

APET

Amorphous PET: Has excellent transparency due to the lack crystallisation. Ideally temperature conditions should be kept below 80 °C to prevent crystallisation.

CPET

The foil is sold amorphous but crystallises (due to the presence of a nucleating agent) in the mould while thermoforming, which can be very difficult to control. The crystallisation gives the product high temperature resistance and high stiffness.

GPET

This is a copolyester (grafted with a second glycol) that has the advantage of being completely amorphous and never crystallises.

Thermoforming

Caroclear MDL100 is easy to vacuum form on standard thermoforming machines. Typical sheet temperatures of 150 °C to 160 °C are suitable.

Chemical Resistance

Caroclear MDL100 shows an outstanding chemical resistance. It makes dish washer uses possible.

Manufacturing Tolerances

The tolerances below should only be used as a general guide.

SHEET GAUGE	0.21 to .40 mm	0.41 to 1.00 mm	1.01 to 1.20 mm	1.21 to 1.50 mm
GAUGE	± 7 %	± 4 %	± 3 %	± 3 %
WIDTH	± 1 mm	± 1 mm	± 1 mm	± 1 mm

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