APET rolls
Caroclear CST10
Product Datasheet

Caroclear CST10
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Description
CAROCLEAR Amorphous Polyethylene Terephthalate (APET) is a super clear polymer used extensively for the packaging industry. It has excellent clarity, coupled with the stiffness similar to Polycarbonate.

The Caroclear CST 10 has been developed specifically for very demanding cosmetic and luxury packaging. It offers excellent de-nesting capabilities while preserving a very pure transparency.

Applications
Cosmetic and luxury packaging

Key Features

Certification/Approvals
The following approvals are available:
ISO 9001:2015 and BRC IoP standards
Food: 10/2011/EC
RoHS: European Regulation 2015/863/CE.

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

Thermoforming
Good thermoforming ability, it can be processed on most equipment.

Conversion
Gluing can be done with either hot-melt or solvent-based glue.
Welding: Thermal, Ultrasonic.

Physical properties

Properties	Unit	Standard	Method	Value
Density	g/cm^3	ISO 1183	-	1.32
Izod (Notched) Impact Strength	kJ/m^2	ISO 180	1U at 23°C	4.2
Tensile Strength	MPa	ISO 527	50 mm/min	30
Elongation at Break	%	ISO 527	50 mm/min	300
Modulus of Elasticity	MPa	ISO 527	50 mm/min	2000
Vicat Softening Point	°C	ISO 306	A120/oil	80
Water Vapour Transmission Rate	g/m^2/24 h	ASTM	F1249	7
Permeability CO2	cm^3.mm/24.m^2.atm	ASTM	D1434	49
Permeability O2	cm^3.mm/24.m^2.atm	ASTM	D1434	10

Data from 250 micron film

Product Availability

Colour
Natural clear.

Finish
Natural gloss.

Thickness
0.25 mm to 1.25 mm.

Roll Size Specifications

Gauge	Width	
	Minimum	Maximum
0.25 to 0.30 mm	300 mm	980 mm
0.31 to 0.60 mm	300 mm	1200 mm
0.61 mm to 1.25 mm	300 mm	1000 mm

Alternative Solutions
AGL 10 is commonly used for food contact applications

Carolex SAS

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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

To keep the clarity of APET, over heating the sheet must be avoided. Typical sheet temperature of 120 °C to 165 °C, for shortest time possible. Typical mould temperature is around 55 °C to 65 °C. Cold moulds will prevent the material from stretching uniformly.

Chemical Resistance

APET shows a good resistance to aqueous solutions of salts, acids and alkalis. It also has good resistance to most solvents, alcohols, fats and oils, although very limited resistance to ketones.

Manufacturing Tolerances

The tolerances below should only be used as a general guide, as embossing and temperature can have an influence.

SHEET GAUGE	Up to 0.20 mm	0.21 to .40 mm	0.41 to 1.00 mm	1.01 to 1.20 mm	1.21 to 1.50 mm
GAUGE	± 10 %	± 7 %	± 4 %	± 3 %	± 3 %
WIDTH	± 1 mm	± 1 mm	± 1 mm	± 1 mm	± 1 mm

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