

APET rolls

Caroclear METAL10

Product Datasheet

Caroclear METAL 10

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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. Caroclear METAL 10 Grade is based on our food grade material laminated with a metallised film, giving a high quality metal finish. It is mainly used for disposable catering.

Applications

Disposable catering and luxury packaging.

Key Features

Certification/Approvals

The following approvals are available (depending on colour) on request:

ISO 9001:2015 and BRC IoP standards

Food: 10/2011/EC

RoHS: European Regulation 2015/863/EC

Printing

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

Thermoforming

Thermoforming can be achieved to depth up to 20 mm.

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 CO ₂	cm ³ .m /24.m ² .atm	ASTM	D1434	49
Permeability O ₂	cm ³ .m /24.m ² .atm	ASTM	D1434	10

value given from a 250 micron film.

Product Availability

Colour

Metal Silver or Gold.

Finish

Natural gloss.

Thickness

0.4 mm to 0.8 mm.

Roll Size Specifications

Gauge	Width	
	Minimum	Maximum
0.4 to 0.8 mm	300 mm	1100 mm

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 availables 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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