TOPAS® 6013F-04

Cyclic Olefin Copolymer

Topas Advanced Polymers, Inc.

Message:

Product Description
TOPAS 6013F-04 is a high temperature, general purpose film extrusion grade. It is a high clarity amorphous resin with high stiffness, moisture barrier, chemical resistance, thermoformability and purity for food and healthcare applications. It is used in monolayer and blended cast applications, and in coextrusions and blends in both cast and blown processes, for a wide variety of film and sheet products requiring excellent optics in applications such as heat resistant blister, hot fill, and easy tear packaging. If performance at elevated temperatures is not required, we also offer lower glass transition temperature (Tg) grades of TOPAS.
Selected Applications
Pharmaceutical blisters
Decorative film and sheet
General packaging
Food packaging
Healthcare and food contact
Leading Attributes
Clarity, forming, barrier, heat resistance, halogen-free
Gloss, hardness, chemical resistance, forming
Easy or linear tear, heat resistance, hot fill
Not manufactured with BPA, phthalates, or halogens
Broad regulatory compliance
Related Grades for Packaging and Film Extrusion
TOPAS 5013F-04 - high temperature grade with higher flow

General Information	
Features	High purity
	Moisture proof
	Rigidity, high
	Highlight
	Copolymer
	Good chemical resistance
	Heat resistance, high
	Definition, high
	Compliance of Food Exposure
	General
	BPA-free
	amorphous
	Halogen-free
Uses	Packaging
	Films
	Mixing
	cast film
	Sheet
	Food packaging

	General
	Drug packaging
	Medical/nursing supplies
Agency Ratings	DMF 12132
	FDA FCN 405
	ISO 10993
	USP Class VI
	Europe 10/1/2011 12:00:00 AM
Forms	Particle
Processing Method	Film extrusion
	Blow film
	Co-extruded film
	cast film
	Thermoforming

Physical	Nominal Value	Unit	Test Method
Density	1.02	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (230°C/2.16 kg)	0.90	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (230°C/2.16 kg)	1.00	cm³/10min	ISO 1133
Water Absorption (Saturation, 23°C)	0.010	%	ISO 62
Films	**Nominal Value**	**Unit**	**Test Method**
Film Thickness - Tested	70	µm	
Tensile Modulus			ISO 527-3/1
MD: 70 µm, cast film	2400	MPa	ISO 527-3/1
TD: 70 µm, cast film	2250	MPa	ISO 527-3/1
Tensile Stress			ISO 527-3/50
MD: Fracture, 70 µm, cast film	55.0	MPa	ISO 527-3/50
TD: Fracture, 70 µm, cast film	45.0	MPa	ISO 527-3/50
Tensile Elongation			ISO 527-3/50
MD: Fracture, 70 µm, cast film	2.4	%	ISO 527-3/50
TD: Fracture, 70 µm, cast film	2.2	%	ISO 527-3/50
Dart Drop Impact (70 µm, cast film)	< 36	g	ISO 7765-1
Elmendorf Tear Strength			ISO 6383-2
MD: 70 µm, cast film	0.088	N	ISO 6383-2
TD: 70 µm, cast film	0.088	N	ISO 6383-2
Oxygen Permeability (23°C, 70 µm, extruded film, 50% RH)	28	cm³·mm/m²/atm/24 hr	ASTM D3985
Water Vapor Transmission Rate (70 µm, 38°C, Cast Film, 90% RH)	0.16	g·mm/m²/atm/24 hr	ASTM F1249

Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature	138	°C	ISO 11357-2
Optical	**Nominal Value**	**Unit**	**Test Method**
Gloss (60, 70.0 µm, cast film)	> 100		ISO 2813
Haze (70.0 µm, cast film)	< 1.0	%	ISO 14782
Extrusion	**Nominal Value**	**Unit**	
Feed part of extruder	20 - 70	°C	
Extruder Screw L/D Ratio	> 28:1		
Cylinder Zone 1 Temp.	230 - 240	°C	
Cylinder Zone 2 Temp.	250 - 260	°C	
Cylinder Zone 3 Temp.	250 - 260	°C	
Cylinder Zone 4 Temp.	250 - 260	°C	
Die Temperature	230 - 240	°C	

Extrusion instructions

Head pressure: P > 140 bar / 2000 psi; Fine screen packs as neededScrew Speed: RPM > 50% nominalScrew design:
Multi-purpose or barrier screw with mixing section
Screw diameter > 60 mm / 2.5 in
Grooved Feed: Hot temperature: 120°C (212°F)

Recommended distributors for this material

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WECHAT