

Pharmalene® FL 20 PH

Low Density Polyethylene

Versalis S.p.A.

Message:

Pharmalene FL 20 PH is a homopolymer low density polyethylene (LDPE) without additives obtained by high pressure autoclave process. It is manufactured according to good manufacturing practices (GMP).

The main use is in the pharmaceutical sector. Pharmalene FL 20 PH has high swell and good melt strength. It is suitable for injection blow moulding of single-use small containers. The polymer can be used in film. Extruded films are easily heat shrinkable and have good optical properties.

General Information			
Features	Good Melt Strength		
	Homopolymer		
	Low Density		
	Opticals		
Uses	Containers		
	Film		
	Medical/Healthcare Applications		
	Non-specific Food Applications		
	Pharmaceuticals		
Agency Ratings	EP Unspecified Rating		
	EU No 10/2011		
	FDA Food Contact, Unspecified Rating		
	USP 34		
Forms	Pellets		
Processing Method	Blown Film		
Physical	Nominal Value	Unit	Test Method
Density	0.921	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	2.2	g/10 min	ISO 1133
Mechanical	Nominal Value	Unit	Test Method
Coefficient of Friction (Blown Film)	> 0.50		ISO 8295
Films	Nominal Value	Unit	Test Method
Film Thickness - Recommended / Available	28 - 80 µm		
Tensile Modulus			ISO 527-3
1% Secant, MD : 40 µm, Blown Film	160	MPa	
1% Secant, TD : 40 µm, Blown Film	180	MPa	
Tensile Stress			ISO 527-3
MD : Yield, 40 µm, Blown Film	10.0	MPa	

TD : Yield, 40 µm, Blown Film	10.0	MPa	
MD : Break, 40 µm, Blown Film	25.0	MPa	
TD : Break, 40 µm, Blown Film	19.0	MPa	
Tensile Elongation			ISO 527-3
MD : Break, 40 µm, Blown Film	300	%	
TD : Break, 40 µm, Blown Film	550	%	
Dart Drop Impact ¹ (40 µm, Blown Film)	190	g	ISO 7765-1/A
Elmendorf Tear Strength			ISO 6383-2
MD : 40 µm, Blown Film	70	N	
TD : 40 µm, Blown Film	45	N	
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	< -75.0	°C	ASTM D746
Vicat Softening Temperature	90.0	°C	ISO 306/A
Melting Temperature	109	°C	Internal Method
Optical	Nominal Value	Unit	Test Method
Gloss (45°, 40.0 µm, Blown Film)	54		ASTM D2457
Haze (40.0 µm, Blown Film)	9.0	%	ISO 14782
Injection	Nominal Value	Unit	
Processing (Melt) Temp	160 to 190	°C	
NOTE			
1.	F50		

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