



versalis

# Technical Data Sheet

## PHARMALENE®

LDPE

## FC 20 PH

Low density polyethylene

Pharmalene FC 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).

### Main Applications

The main use is in the pharmaceutical sector. Pharmalene FC 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 for the production of extruded films easily heat shrinkable.

### Main Properties

Resin Properties	Value	Unit	Test Method
Melt Flow Rate (190 °C/2.16 kg)	0.25	g/10min	ISO 1133
Melt Flow Rate (190 °C/5 kg)	-	g/10min	ISO 1133
Melt Flow Rate (190 °C/21.6 kg)	-	g/10min	ISO 1133
Density	0.922	g/cm <sup>3</sup>	ISO 1183
Melting Point	112	°C	Internal method
Brittleness temperature	<- 75	°C	ASTM D 746
Vicat softening point (1 kg)	93	°C	ISO 306/A

Film Properties *	Value	Unit	Test Method
Tensile stress at yield MD	10	MPa	ISO 527-3
Tensile stress at yield TD	11	MPa	ISO 527-3
Tensile stress at break MD	25	MPa	ISO 527-3
Tensile stress at break TD	25	MPa	ISO 527-3
Elongation at break MD	400	%	ISO 527-3
Elongation at break TD	550	%	ISO 527-3
1% Secant modulus MD	160	MPa	ISO 527-3
1% Secant modulus TD	180	MPa	ISO 527-3
Elmendorf tear resistance MD	25	N/mm	ISO 6383-2
Elmendorf tear resistance TD	25	N/mm	ISO 6383-2
Impact resistance F50 (Dart Drop Test)	290	g	ISO 7765-1/A
Dynamic coefficient of friction (COF)	> 0.5	-	ISO 8295
Haze	20	%	ISO 14782
Gloss, 45°	30	%	ASTM D 2457
Recommended film thickness	60 ÷ 250	micron	-



## Processing notes

Pharmalene FC 20 PH is easily processable using blown film technology. Melt temperature should be between 180°C and 220°C. Recommended thickness: 60 - 250 µm.

## Storage and Handling

Pharmalene FC 20 PH is supplied in pellet form. This material may readily be conveyed and bulk fed through equipment designed for conventional pelletised polyethylene resin, provided the equipment is designed to prevent accumulation of the fines and dust particles that are contained in all polyethylene resins. These fines and dust particles can, under certain conditions, pose an explosion hazard. We recommend that the conveying system used be equipped with filters of adequate size, operated and maintained in such a manner to ensure that no leaks develop and earthed adequately. We further recommend that good housekeeping should be practised throughout your facility.

The product should be stored in dry conditions at temperatures below 50°C and protected from sunlight. Improper storage can initiate degradation which results in odour generation, colour changes and can have negative effects on the physical properties of the product. Before using this product it is recommended to read and understand the relevant Safety Data Sheet.

## Availability

Contact the versalis sales office nearest to you regarding availability and your specific application requirements.

## Food Contact and Pharmacopoeia Status

Pharmalene FC 20 PH complies with the European Union (Reg. 10/2011) and the USA (FDA) rules, related to the use of plastic materials intended for contact with foodstuffs.

The composition of our product is conform to the sections of the European Pharmacopoeia (8th ed.) and those of the U.S. Pharmacopoeia (USP 35) indicating the requirements for polyethylene.

