Technical Data Sheet

PHARMALENE ®

MP 90 PH

HDPE

High density polyethylene

Pharmalene MP 90 PH is a homopolymer high density polyethylene (HDPE) with antioxidants produced by gas phase process. It is producted is in conformity to the good manufacturing practices (GMP).The antioxidant additives used are approved by the polyethylene monography of the European Pharmacopoeia and used in compliance with it.
The resin formulation is established by years of experience and is not subject to change. The narrow molecular weight distribution and the high density make Pharmalene MP 90 PH ideal for injection molding applications where high rigidity and resistance to distortion are required.
The polymer during the transformation phase has excellent thermal stability.

Main Application

The main use of the product is in the pharmaceutical industry.
Pharmalene MP 90 PH is ideal for injection molding to produce caps, closures, small containers and medical articles requiring high stiffness and hardness.

Main Properties

Resin Properties	Value	Unit	Test Method
Melt Flow Rate (190 °C/2.16 kg)	7	g/10min	ISO 1133
Melt Flow Rate (190 °C/5 kg)	20	g/10min	ISO 1133
Melt Flow Rate (190 °C/21.6 kg)	-	g/10min	ISO 1133
Density	0.960	g/cm3	ISO 1183
Melting point	137	°C	Metodo interno
Brittleness temperature	<- 60	°C	ASTM D 746
Vicat softening point (1 kg)	128	°C	ISO 306/A

Mechanical Properties *	Value	Unit	Test Method
Tensile stress at yield	30	MPa	ISO 527
Tensile stress at break	17	MPa	ISO 527
Elongation at break	400	%	ISO 527
Flexural modulus	1450	MPa	ISO 178
Hardness Shore D	69	-	ISO 868 A
Falling Weight	-	J/mm	ISO 6603-2
Izod impact strength, notched	100	J/m	ISO 180/A
ESCR **	-	h	ASTM 1693/B

Processing notes

Pharmalene MP 90 PH is readily processable by conventional injection moulding equipment with excellent results.

Typical processing conditions (*)

Temperature profile of the barrel	(°C)	190 - 260
Temperature of the mould	(°C)	10 - 40

(*) Processing conditions depend on several parameters: the shape of the part to be manufactured, the localisation of the injection point, the injection moulding machine and the cooling of the mould.

Storage and Handling

Pharmalene MP 90 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.

Availability

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

Food Contact and Pharmacopoeia Status

Pharmalene MP 90 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. Pharmacopeia (USP 35) indicating the requirements for polyethylene.