

# POLYETHYLENE (PE)

Very light thermoplastic material balls, they are available in two versions (high and low density). High density polyethylene presents best mechanical characteristics. They provide good wear and abrasion resistance. Excellent corrosion resistance and resistance to radiations, they are electric insulators.

## APPLICATIONS

Anti evaporation and anti smell devices, they are useful for floating applications. Used in electronic, pharmaceutical and medical industry.

## CHEMICAL COMPOSITION

Technical name	Commercial name	Abbreviation	Molecular formula / %
High Density Polyethylene	High Density Polyethylene	HDPE	(C <sub>2</sub> H <sub>4</sub> ) <sub>n</sub>
Low Density Polyethylene	Low Density Polyethylene	LDPE	(C <sub>2</sub> H <sub>4</sub> ) <sub>n</sub>

## PHYSICAL / MECHANICAL / THERMAL / ELECTRIC / MAGNETIC PROPERTIES

Property	Symbol	U.o.M.	Type	Notes	Values
Density	δ	[g/cm <sup>3</sup> ]	Physical	Room temp.	0,92(L)/0,97(H)
Youngs modulus	E	[MPa]	Mechanical	-	250 / 950
Friction coefficient	μ	-	Mechanical	Room temp	0,38
Water absorption	Aw	%	Physical	24h.	0,013
Coefficient of linear. Thermal expansion	α	[10 <sup>-6</sup> /°C]	Thermal	(ΔT=0-100°C)	150,0
Thermal conductivity	λ	[W/(m·K)]	Thermal	Room temp.	0,32(L)/0,46(H)
Volume resistivity	ρ	[Ω*m]	Electric	-	>10 <sup>15</sup>
Rel. magnetic permeability	μ	-	Magnetical	Diamagnetic	<~1

## TECHNICAL DATA

Property	Type	U.o.M.	Values	U.o.M	Values
Hardness	Mechanical	[ShoreD]	40–55/60-73	-	-
Compressive yield strength	Mechanical	[MPa]	9 – 32	[psix10 <sup>3</sup> ]	1.4 – 4.6
Service temperature	Thermal	[°C]	-30 / 70	[°F]	-22 / 158

## Range

DRM mm	U.o.M.	DRM “	U.o.M.	Quality DIN5401 / ISO 3290
1,000 - 350,000	[mm]	3/64 – 14	["]	0 - I - II - III

## CORROSION RESISTANCE

Excellent corrosion resistance in contact with acids, alcohols, basis, esters, petrol, greases and oils. Fairish resistance to aliphatic and aromatic hydrocarbons, mineral oils, oxidizing agents. They are not resisting in contact with halogenated hydrocarbons.