

HDPE Grades Used in Blow Molding / Consumer Rigid Packaging

PROPERTIES	PHYSICAL			MECHANICAL								SPECIFIC CHARACTERISTICS AND TYPICAL CUSTOMER APPLICATIONS
	Density 23°C	Melt Flow Rate		Tensile Modulus	Tensile Stress at Yield	Tensile Strain at Yield	Tensile Impact Strength; notched	Charpy Impact Strength; notched	Ball indentation hardness (H132/30)	ESCR (FNCT)		
		190°C, 2.16kg	190°C, 5kg				-30°C	-30°C		6 MPa, 50°C, 2% Arkopal	3.5 MPa, 80°C, 2% Arkopal	
Test Method	ISO 1183-1	ISO 1133-1		ISO 527-1, -2			ISO 8256/1A	ISO 179-1/1eA	ISO 2039-1	ISO 16770		
Unit	g/cm³	g/10 min		MPa	MPa	%	kJ/m²	kJ/m²	MPa	h		
High Density Polyethylene - Lupolen												
<i>Lupolen 5021 DX</i>	0.950	0.25	1.0	1000	25	9	100	6.0	45	20	10	Good ESCR; good chemical resistance; good impact resistance; good organoleptic prop.; engineering parts, toys, packaging for surfactants, consumer goods; due to high impact and stress cracking resistance potentially usable for packaging of dangerous goods
High Density Polyethylene - Hostalen												
<i>Hostalen GF 4750</i>	0.950	0.4	1.5	1000	23	10	80	5.5	44	36	15	High ESCR; packaging of surfactants, consumer goods and potentially for dangerous goods
<i>Hostalen ACP 5231 D</i>	0.952	0.3	1.2	1100	25	8	75	6.0	51	70	30	Very high ESCR balanced with good stiffness. Packaging for detergents and personal care, engineering parts, toys. Due to high impact and stress cracking resistance potentially usable for packaging of dangerous goods
<i>Hostalen ACP 5831 D</i>	0.958	0.3	1.2	1350	28	7.5	75	6.5	60	20	8	Excellent balance of high stiffness and high ESCR; high rigidity; toys, packaging of consumer goods
<i>Hostalen ACP 6031 D</i>	0.960	0.35	1.2	1420	30	7	65	6.0	63	14	7	Excellent balance of highest stiffness and good ESCR; very high rigidity; packaging of consumer goods
High Density Polyethylene - CirculenRecover												
<i>CirculenRecover HD5603 Ivory</i>	0.956	0.3	1.5	1200	24	9	-	2.5	-	8	-	HDPE containing at least 98% post consumer material.* Supplied in pellet form. General purpose grade for blow molding and compression molding. Blow molded bottles up to 5 liters for household, industrial chemicals and other blow molded articles. Not intended for higher regulated applications like food. - Good colorability
<i>CirculenRecover HD5603 Ivory Plus</i>	0.956	0.3	1.5	1200	24	9	-	2.5	-	8	-	HDPE containing at least 98% post consumer material.* Supplied in pellet form. General purpose grade for blow molding and compression molding. Blow molded bottles up to 5 liters for personal care, household, industrial chemicals and other blow molded articles. Not intended for higher regulated applications like food. - Low residual odor - Good colorability
<i>CirculenRecover HD5603 Silver</i>	0.956	0.4	1.8	1200	24	9	-	2.5	-	8	-	HDPE containing at least 98% post consumer material.* Supplied in pellet form. General purpose grade for blow molding and compression molding. Blow molded bottles up to 5 liters for household, industrial chemicals and other blow molded articles. Not intended for higher regulated applications like food.
<i>CirculenRecover HD5603 Silver Plus</i>	0.956	0.4	1.8	1200	24	9	-	2.5	-	8	-	HDPE containing at least 98% post consumer material.* Supplied in pellet form. General purpose grade for blow molding and compression molding. Blow molded bottles up to 5 liters for personal care, household, industrial chemicals and other blow molded articles. Not intended for higher regulated applications like food. - Low residual odor

These are typical property values not to be construed as specification limits. ESCR = Environmental Stress Crack Resistance; FNCT = Full Notch Creep Test
CirculenRecover grades: Density measured on IM specimens

* Recycled material fully based on post consumer waste (PCW) from pre-sorted municipal plastic waste.

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PROPERTIES	PHYSICAL		MECHANICAL					OPTICAL	SPECIFIC CHARACTERISTICS AND TYPICAL CUSTOMER APPLICATIONS	
	Density 23°C	Melt Flow Rate 230°C, 2.16 kg	Tensile Modulus	Tensile Stress at Yield	Tensile Strain at Yield	Charpy Impact Strength; notched		Ball indentation hardness (H132/30)		Haze (1mm)
						23°C	0°C			
Test Method	ISO 1183	ISO 1133	ISO 527			ISO 179-1/1eA		ISO 2039-1		ASTM D1003
Unit	g/cm ³	g/10 min	MPa	MPa	%	kJ/m ²		MPa	%	
PP Homopolymer - Moplen										
Moplen HP501H	0.9	2.1	1450	33	9	8	-	72	-	Good stiffness/ impact balance
PP Random Copolymer - Moplen										
Moplen RP210G	0.9	1.8	950	25	14	6	2.0	-	-	Bottles
Moplen RP241H	0.9	1.8	850	24	14	45	4.0	45	9	NU; high transparency and impact strength; bottles for food, detergents, household chemicals
Moplen RP340H	0.9	1.8	1100	30	13	28	2.5	56	11	NU; high transparency and stiffness; bottles
Moplen RP390H	0.9	1.8	1050	29	13	26	3.5	56	15	NU; improved transparency, gloss and processability; bottles with high optical performance
Moplen RP340N	0.9	11	1150	30	14	6	2.0	48	9	NU; high transparency and stiffness; suitable for ISBM
PP Heterophasic Copolymer - Moplen										
Moplen EP 440G	0.9	1.3	1450	27	8	40	10.0	48	-	NU; High stiffness, very high impact strength at room and sub-zero temp.; good dimensional stability and excellent creep resistance
PP Random Copolymer - Clyrell										
Clyrell RC124H	0.9	2.2	750	25	15	30	6.5	-	15	High transparency and impact resistance; Haze (40µm Film): 1%

These are typical property values not to be construed as specification limits.
ISBM = Injection Stretch Blow Molding; NU = Nucleated

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