HDPE

High Density Polyethylene

InnoPlus HDPE is made from the low pressure polymerization using the slurry process of Mitsui Technology. This technology provides uni-modal and bi-modal molecular structure with wide range of melt flow rate and density that gives InnoPlus HDPE excellent processability together with high mechanical strength, which is suitable for various applications. Excellent production control and specific raw material selection of InnoPlus HDPE offers high certainty of specific properties to meet all particular needs and complies with international standard regulations i.e., U.S FDA 21 CFR 177.1520 and EU 10/2011. InnoPlus HDPE also meet the Restriction of Hazardous Substances (RoHS) according to 2002/95/EC.

Properties	Test Method (ASTM)	Unit	Injection								Cap							Blow Molding			
			HD1100J	HD1010J	HD1600J	HD2208J	HD2228J	HD2308J	HD2408J	HD2418J	HD1600JP	HD2401C	HD2200JP	HD2220C	HD3200C	HD3500C/ HD3502C	HD3000C/ HD3001C	HD4200B	HD5200B	HD6200B	HD6600B
MFR (190 °C, 2.16 kg)	D1238	g/10 min	18	20	12	3.7	4	6	7.5	7	12	7	3.5	4	2.3	1	2	0.67	0.45	0.45	0.40
Density	D1505	g/cm^3	0.958	0.956	0.958	0.961	0.960	0.962	0.964	0.964	0.958	0.964	0.961	0.960	0.967	0.956	0.954	0.966	0.966	0.962	0.957
Melting Temperature	D3418	°C	128	131	129	131	136	131	131	137	129	136	131	134	132	130	130	132	133	131	133
Tensile Strength at Yield	D638	kg/cm^2	300	290	280	310	300	300	310	310	290	310	310	300	310	240	260	310	320	330	320
Tensile Strength at Break	D638	kg/cm^2	150	140	150	220	300	170	120	175	200	175	210	300	200	270	320	230	350	350	400
Elongation at Break	D638	%	60	200	210	>1000	>1000	>1000	750	540	230	750	>1000	>1000	150	>1000	900	>1000	>1000	1000	1000
Flexural Modulus	D790	kg/cm^2	12500	11300	13500	12000	12000	15000	16000	14200	13500	15000	14500	12600	17000	11500	11300	18000	17500	15000	14000
Notched Izod Impact Strength	D256	kg.cm/cm	4 (C)*	4 (C)*	3 (C)*	5 (C)*	6 (P)*	4 (C)*	3 (C)*	5(C)*	3 (C)*	4 (C)*	5 (C)*	7 (H)*	2.5 (C)*	6 (NB)*	5 (P)*	13 (P)*	15 (P)*	12 (P)*	10 (P)*
Durometer Hardness	D2240	shore D	64	64	64	65	66	65	65	65	64	65	66	66	67	62	62	65	66	65	65
Vicat Softening Point	D1525	°C	118	122	125	122	127	125	124	127.5	120	127.5	126	127	123	120	122	125	127	125	125
ESCR; 25% Igepal, F_{50} (10% Igepal)	D1693	Hours	Initial	Initial	Initial	6	6	5	2	4	(3)	5	(4)	6	(15)	(460)	(24)	25	30	60	400
Slip Agent			-	-	-	-	-	-	-	-	No	No	No	-	No	Yes/No	Yes/No	-	-	-	-
Application			Small part, Stationery, Household products, Toys			UV added for outdoor application, Garbage bins, Pallets, Crates					Beverage caps and closures for mineral and still water with organoleptic property		Beverage caps and closures for mineral, Stilled and sparkling (light carbonated) water with organoleptic preperty			Beverage caps and closures for new cap design and carbonated soft drinks (CSD) with organoleptic property		Food packaging, Drinking water bottles, Milk bottles		Food packaging, Drinking water bottles, Milk bottles, Personal cares, Detergent, Lubricant oil containers	

Properties	Test Method (ASTM)	Unit	Blow Molding			Thermoform	Wire & Cable	Non-woven		Monofilament		Film				
			HD7200B	HD7808B	HD8200B	HD7000H	HD6000W	HD1000S	HD1010S	HD5000S	HD5050S	HD3355F	HD6000F	HD7000F	HD8000F	HD6100F
MFR (190 °C, 2.16 kg)	D1238	g/10 min	0.04	-	0.03	0.1	0.16	18	20	0.8	1.0	1.1	0.16	0.05	0.03	0.15
MFR (190 °C, 21.6 kg)	D1238	g/10 min	8	6.0	4	10	-	-	-	-	-	-	-	-	-	-
Density	D1505	g/cm^3	0.956	0.950	0.955	0.952	0.956	0.958	0.956	0.954	0.956	0.951	0.956	0.956	0.950	0.955
Melting Temperature	D3418	°C	130	130	131	130	127	130	130	-	-	131	127	125	123	127
Tensile Strength at Yield	D638	kg/cm^2	300	300	300	280	260	260	270	290	290	240	260	300	260	260
Tensile Strength at Break	D638	kg/cm^2	350	370	370	400	370	165	140	390	420	370	370	390	320	440
Elongation at Break	D638	%	800	850	850	900	950	60	300	>1000	>1000	>1000	950	820	790	1000
Flexural Modulus	D790	kg/cm^2	12000	12000	12000	11000	11000	-	-	12000	12000	11000	11000	12000	12500	12000
Notched Izod Impact Strength	D256	kg.cm/cm	25 (NB)*	72 (NB)	64 (NB)*	47 (NB)*	27 (NB)*	-	-	17 (P)*	55 (P)*	14	27 (NB)*	30	52 (NB)*	37 (NB)*
Durometer Hardness	D2240	shore D	63	61	64	63	65	-	-	-	-	62	65	64	62	64
Vicat Softening Point	D1525	°C	124	125	128	126	125	118	122	125	128	122	125	125	123	127
ESCR; 25% Igepal, F_{50}	D1693	Hours	>1000	>1000	>1000	>1000	>500	-	-	-	-	25	>1000	>1000	>1000	>500
Application			Food packaging, Drinking water bottles, Milk bottles, Personal cares, Detergent, Lubricant oil containers, Large blow molding drums, Hazardous chemical drums		Large blow molding drums, Intermediate bulk container (IBC)	Truck bed liners	Telecom-munication and Power cable jacketing	Bicomponent staple fibers for non-wovens	Bicomponent staple fibers and spunbond for non-wovens	Standard grade	Advantage for high speed machine	Laminated films, Laminated tubes, General purpose films	General purpose bags, Shopping bags, Liner films, Bags on roll, Garbage bags, Industrial films		MATT Compounds, General purpose bags
										Ropes, Fishing nets, Agricultural nets, Tarpaulins, Woven sack						

Properties	Test Method (ASTM)	Unit	Pipe
			HD8100M
MFR (190 °C, 5 kg)	ISO 1133	g/10 min	0.25
Density	ISO 1183	g/cm^3	0.952
Melting Temperature	D3418	°C	128
Tensile Strength at Yield	ISO 527	MPa	25
Tensile Strength at Break	ISO 527	MPa	33
Elongation at Break	ISO 527	%	750
Flexural Modulus	D790	kg/cm^2	11000
Notched Izod Impact Strength	D256	kg.cm/cm	48 (NB)*
Durometer Hardness	D2240	shore D	64
Vicat Softening Point	D1525	°C	124
ESCR; 25% Igepal, F_{50}	D1693	Hours	>1000
Carbon Black Content	ISO 6964	%	-
Oxidative Induction Time (OIT, 200 °C)	ISO 11357-6	min	>40
Classification	ISO 12162	-	PE 100
Application			The natural color resin for high quality pressure pipes, Drinking water pipes, Industrial pipes, Sewer pipes

Note: *C = Complete Break *P = Partial Break *NB = Non Break

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose. All above values are typical values, not to be construed as specification.