

# CCP PBT Compound

## PBT (Polybutylene Terephthalate)



### Quality Specifications

Physical property	Analysis Method	Unit	Grade					
			PBT1100	PBT1200	PBT2000	PBT2100	PBT3015	PBT3020
Tensile Strength	ASTM D638	kg/cm <sup>2</sup>	500-600	500-600	500-700	500-700	800-1000	900-1200
Tensile Elongation	ASTM D638	%	120-180	50-90	7-9	4-8	3-5	3-5
Flextural Strength	ASTM D790	kg/cm <sup>2</sup>	700-850	750-850	700-800	800-1200	1300-1500	1700-2000
Flextural Modulus	ASTM D790	kg/cm <sup>2</sup>	>=20000	>=22000	>=20000	>=25000	>=40000	>=60000
Izod Impact Strength ---notched 1/4"	ASTM D256	kg/cm <sup>2</sup>	5-6	4.5-5.5	2.5-3.5	2.5-6.0	4-7	5-8
Dielectric constant	ASTM D150	60 Hz	3.3	3.2	3.2	3.3	3.4	3.7
Dissipation factor	ASTM D150	60 Hz	0.001	0.001	0.001	0.001	0.001	0.001
Volume resistivity	ASTM D257	ohm-cm	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>
Surface resistivity	ASTM D257	ohm	10 <sup>13</sup>	10 <sup>13</sup>	10 <sup>13</sup>	10 <sup>13</sup>	10 <sup>13</sup>	10 <sup>13</sup>
Sdielectric Strength, 2mm	ASTM D149	KV/mm	>20	>20	>20	>20	>20	>20
Arc resistance	ASTM D495	sec	120	120	120	130	130	130
Melting Point	DSC	°C	225	225	225	225	225	225
Heat Deflection Temp. --18.6 kg/cm <sup>2</sup>	ASTM D648	°C	60	60	65	65	206	206
--4.6 kg/cm <sup>2</sup>			155	155	165	165	220	220
Coefficient of Thermal Expansion	ASTM D696	10 <sup>-5</sup> cm/cm °C	9	9	9	9	5	4
Flammability	UL94		HB	HB	V-0(0.8mm)	V-0(0.8mm)	HB	HB
Specific Gravity	ASTM D792	-	1.30-1.32	1.30-1.32	1.39-1.45	1.42-1.45	1.39-1.43	1.44-1.46
Water Absorption	ASTM D570	%	0.06	0.06	0.05	0.05	0.04	0.04
Mould Shrinkage, 1.6 mm -- in flow direction	ASTM D955	%	0.8-1.8	0.8-2.0	1.1-1.9	1.1-1.9	0.2-0.6	0.1-0.5
--in transverse direction			1.0-2.0	1.3-2.1	1.3-2.1	1.3-2.1	0.9-1.3	0.8-1.2
Glass Fiber Content	-	%	0	0	0	0	15	20

Physical property	Analysis Method	Unit	Grade					
			PBT3030	PBT4115	PBT4120	PBT4130	PBT4140	PBT4815
Tensile Strength	ASTM D638	kg/cm <sup>2</sup>	1100-1400	900-1100	900-1200	1100-1400	1000-1400	800-1100
Tensile Elongation	ASTM D638	%	3-5	2.5-4.5	2.5-4.5	2.5-4.5	2.5-4.5	2.5-4.5
Flextural Strength	ASTM D790	kg/cm <sup>2</sup>	1800-2000	1400-1800	1400-1800	1500-2300	1500-2300	1400-1800
Flextural Modulus	ASTM D790	kg/cm <sup>2</sup>	>=70000	>=45000	>=50000	>=70000	>=70000	>=40000
Izod Impact Strength ---notched 1/4"	ASTM D256	kg/cm <sup>2</sup>	8-12	4-7	4-7	7-13	8-13	4-7
Dielectric constant	ASTM D150	60 Hz	5.5	4	3	3	5.5	4
Dissipation factor	ASTM D150	60 Hz	0.001	0.001	0.001	0.001	0.001	0.001
Volume resistivity	ASTM D257	ohm-cm	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>
Surface resistivity	ASTM D257	ohm	10 <sup>13</sup>	10 <sup>13</sup>	10 <sup>13</sup>	10 <sup>13</sup>	10 <sup>13</sup>	10 <sup>13</sup>
Sdielectric Strength, 2mm	ASTM D149	KV/mm	>20	>20	>20	>20	>20	>20
Arc resistance	ASTM D495	sec	90	90	100	100	90	90
Melting Point	DSC	°C	225	225	225	225	225	225
Heat Deflection Temp.								
--18.6 kg/cm <sup>2</sup>	ASTM D648	°C	208	212	205	205	208	208
--4.6 kg/cm <sup>2</sup>			220	220	220	220	220	220
Coefficient of Thermal		10 <sup>-5</sup>						
Expansion	ASTM D696	cm/cm °C	3	5.5	4	3	3	5.5
Flammability	UL94		HB	V-0(0.8mm)	V-0(0.8mm)	V-0(0.8mm)	V-0(0.8mm)	V-0(0.8mm)
Specific Gravity	ASTM D792	-	1.52-1.54	1.50-1.56	1.52-1.58	1.62-1.68	1.74-1.80	1.46-1.52
Water Absorption	ASTM D570	%	0.04	0.03	0.03	0.03	0.03	0.03
Mould Shrinkage, 1.6 mm								
-- in flow direction	ASTM D955	%	0.1-0.4	0.2-0.6	0.1-0.5	0.1-0.4	0.1-0.3	0.2-0.6
--in transverse direction			0.8-1.1	0.9-1.3	0.8-1.2	0.8-1.1	0.7-1.0	0.9-1.3
Glass Fiber Content	-	%	30	15	20	30	40	15

Physical property	Analysis Method	Unit	Grade					
			PBT4820	PBT4830	PBT5115	PBT5130	PBT6730	
Tensile Strength	ASTM D638	kg/cm <sup>2</sup>	900-1200	1000-1400	800-1000	950-1250	950-1200	
Tensile Elongation	ASTM D638	%	2.5-4.5	2.5-4.5	2.5-4.5	2.5-4.5	2.5-4.5	
Flextural Strength	ASTM D790	kg/cm <sup>2</sup>	1400-1800	1500-2300	1300-1600	1500-1900	1450-1800	
Flextural Modulus	ASTM D790	kg/cm <sup>2</sup>	>=50000	>=70000	>=50000	>=70000	>=75000	
Izod Impact Strength ---notched 1/4"	ASTM D256	kg/cm <sup>2</sup>	4-7	7-11	4-7	7-11	6-10	
Dielectric constant	ASTM D150	60 Hz	3	3	3	3	3.5	
Dissipation factor	ASTM D150	60 Hz	0.001	0.01	0.01	0.01	0.001	
Volume resistivity	ASTM D257	ohm-cm	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	
Surface resistivity	ASTM D257	ohm	10 <sup>13</sup>	10 <sup>13</sup>	10 <sup>13</sup>	10 <sup>13</sup>	10 <sup>13</sup>	
Sdielectric Strength, 2mm	ASTM D149	KV/mm	>20	>20	>19	>19	>20	
Arc resistance	ASTM D495	sec	100	120	120	120	90	
Melting Point	DSC	°C	225	225	225	225	225	
Heat Deflection Temp.								
--18.6 kg/cm <sup>2</sup>	ASTM D648	°C	205	208	185	195	140	
--4.6 kg/cm <sup>2</sup>			220	220	205	210	200	
Coefficient of Thermal		10 <sup>-5</sup>						
Expansion	ASTM D696	cm/cm °C	4	3	5	3	2.5	
Flammability	UL94		V-0(0.3mm)	V-0(0.3mm)	V-0(0.8mm)	V-0(0.8mm)	V-0(0.8mm)	
Specific Gravity	ASTM D792	-	1.50-1.56	1.56-1.62	1.4-1.46	1.50-1.56	1.57-1.63	
Water Absorption	ASTM D570	%	0.03	0.03	0.03	0.03	0.03	
Mould Shrinkage, 1.6 mm								
-- in flow direction	ASTM D955	%	0.1-0.5	0.1-0.4	0.1-0.5	0.1-0.4	0.1-0.3	
--in transverse direction			0.8-1.2	0.8-1.1	0.8-1.3	0.8-1.1	0.3-0.6	
Glass Fiber Content	-	%	20	30	15	30	30	

# CCP PBT Pure Resin

## PBT (Polybutylene Terephthalate)



### Quality Specifications

Physical property	Analysis Method	Unit	Grade						
			1200-211L	1200-211M	1100-211L	1100-211M	1100-211H	1100-211S	1100-211X
Intrinsic Viscosity	ASTM D2857	dl/gr	0.79 ± 0.02	0.83 ± 0.02	0.94 ± 0.02	1.00 ± 0.02	1.10 ± 0.02	1.20 ± 0.02	1.30 ± 0.02
Carboxyl End Groups	Titrimetric Method	meq/kg	<= 50	<= 50	<= 50	<= 50	<= 45	<= 45	<= 45
Color L	Color Difference Meter	--	>= 84	>= 84	>= 84	>= 84	>= 87	>= 87	>= 87
Color b	Color Difference Meter	--	<= 2	<= 2	<= 3	<= 3	<= 4	<= 4	<= 4
Melting Flow Index	ASTM D1238	g/10min	50-64	41-50	23-29	18-22	11-14	8-10	4-7
Specific Gravity	ASTM D792	--	1.30-1.32	1.30-1.32	1.30-1.32	1.30-1.32	1.30-1.32	1.30-1.32	1.30-1.32
Tensile strength	ASTM D638	kg/cm <sup>2</sup>	500-600	500-600	500-600	500-600	500-600	500-600	500-600
Tensile Elongation	ASTM D638	%	>= 30	>= 50	>= 90	>= 120	>= 150	>= 180	>= 200
Izod Impact Strength	ASTM D256	kg-cm/cm	>= 4.0	>= 4.5	>= 4.5	>= 5.0	>= 5.5	>= 6.0t	>= 6.0
Dielectric Strength	ASTM D149	KV/mm	>= 20	>= 20	>= 20	>= 20	>= 20	>= 20	>= 20
Melting Point	DSC	°C	225 ± 2	225 ± 2	225 ± 2	225 ± 2	225 ± 2	225 ± 2	225 ± 2

1. I.V. is analyzed by Dichloro acetic acid solvent in 25°C

2. The analyzed of M.I. Is determined in 235 °C, 2.16kg

3. Packing :

\* in 25 kg multiple bag ( 2-ply Krafty Paper, 1-ply PE coated)

\* in 850 kg super sack (PP woven bag with one PE inner liner)

4. The physical property table is for reference only

5. CCP has implemented ISO 9000 and has been verified ISO 9002 by the Bureau of Commodity Inspection and Quarantine, Ministry of Economic Affairs in 1994

6. CCP has implemented ISO 14000 and has been verified ISO 14004 by the Bureau of Commodity Inspection and Quarantine, Ministry of Economic Affairs in 1996

7. The physical property table is for reference only