Product Comparison

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Technical Data

Product Description	
POLYblend 83FR	POLYblend 83FR is a Polycarbonate + ABS (PC+ABS) product. It is available in Asia Pacific, Europe, Latin America, or North America. Characteristics include: • Flame Rated • Flame Retardant • Halogen Free
Generic PC+ABS	This data represents typical values that have been calculated from all products classified as: Generic PC +ABS This information is provided for comparative purposes only.

General	POLYblend 83FR	Generic PC+ABS
Manufacturer / Supplier	• Polykemi AB	• Generic
Generic Symbol	• PC+ABS	• PC+ABS
Material Status	• Commercial: Active	• Commercial: Active
Search for UL Yellow Card	• Polykemi AB	--
Availability	• Asia Pacific • Europe • Latin America • North America	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America
Additive	• Flame Retardant	--
Features	• Flame Retardant • Halogen Free	--
Also Available In	--	• Asia Pacific • Europe • Latin America • North America

Physical	POLYblend 83FR	Generic PC+ABS	Unit	Test Method
Density / Specific Gravity				
--	--	1.10 to 1.21	g/cm³	ASTM D792
--	1.20	1.10 to 1.21	g/cm³	ISO 1183
--	--	1.10 to 1.19	g/cm³	ASTM D1505
Apparent (Bulk) Density	--	0.60 to 0.65	g/cm³	ISO 60
Melt Mass-Flow Rate (MFR)				
260°C/5.0 kg	--	4.8 to 30	g/10 min	ASTM D1238
260°C/5.0 kg	50	12 to 29	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (260°C/5.0 kg)	--	8.0 to 49	cm³/10min	ISO 1133
Spiral Flow	--	39.6 to 68.6	cm	

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Physical	POLYblend 83FR	Generic PC+ABS	Unit	Test Method
Molding Shrinkage				
Flow	--	0.45 to 0.74	%	ASTM D955
Across Flow	--	0.54 to 0.62	%	ASTM D955
--	--	0.48 to 0.65	%	ISO 294-4
Across Flow	0.50 to 0.70	--	%	Internal Method
Flow	0.50 to 0.70	--	%	Internal Method
Water Absorption				
24 hr	--	0.096 to 0.22	%	ASTM D570
24 hr, 23°C	--	0.088 to 0.70	%	ISO 62
Saturation	--	0.10 to 0.61	%	ASTM D570
Saturation, 23°C	--	0.090 to 0.70	%	ISO 62
Equilibrium, 23°C, 50% RH	--	0.057 to 0.25	%	ISO 62

Mechanical	POLYblend 83FR	Generic PC+ABS	Unit	Test Method
Tensile Modulus				
--	--	1850 to 3050	MPa	ASTM D638
--	--	1620 to 3190	MPa	ISO 527-1
Tensile Strength				
Yield	--	48.4 to 65.2	MPa	ASTM D638
Yield	--	35.0 to 67.1	MPa	ISO 527-2
Break	--	39.2 to 62.3	MPa	ASTM D638
Break	70.0	39.2 to 58.5	MPa	ISO 527-2
--	--	39.5 to 66.2	MPa	ASTM D638
--	--	47.8 to 60.5	MPa	ISO 527-2
Tensile Elongation				
Yield	--	1.5 to 21	%	ASTM D638
Yield	8.0	2.5 to 7.4	%	ISO 527-2
Break	--	29 to 110	%	ASTM D638
Break	--	28 to 100	%	ISO 527-2
Nominal Tensile Strain at Break	--	49 to 100	%	ISO 527-2
Flexural Modulus				
--	--	2010 to 2770	MPa	ASTM D790
--	--	1810 to 2700	MPa	ISO 178
23°C	2600	--	MPa	ISO 178
Flexural Strength				
--	--	68.4 to 105	MPa	ASTM D790
--	100	69.0 to 102	MPa	ISO 178
Yield	--	68.4 to 105	MPa	ASTM D790
Break	--	63.7 to 83.7	MPa	ASTM D790
Taber Abrasion Resistance	--	54.0 to 82.0	mg	ASTM D1044

Impact	POLYblend 83FR	Generic PC+ABS	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
--	--	6.5 to 63	kJ/m²	
-30°C	7.0	--	kJ/m²	
23°C	15	--	kJ/m²	

Impact	POLYblend 83FR	Generic PC+ABS	Unit	Test Method
Charpy Unnotched Impact Strength				ISO 179
--	--	22 to 100	kJ/m²	
-30°C	No Break	--		
23°C	No Break	--		
Notched Izod Impact				
--	--	48 to 710	J/m	ASTM D256
--	--	9.0 to 57	kJ/m²	ISO 180
Notched Izod Impact (Area)	--	39.2 to 65.1	kJ/m²	ASTM D256
Unnotched Izod Impact				
--	--	380 to 2200	J/m	ASTM D4812
--	--	94 to 100	kJ/m²	ISO 180
Instrumented Dart Impact				
--	--	42.8 to 65.3	J	ASTM D3763
--	--	35.0 to 105	J	ISO 6603-2
Multi-Axial Instrumented Impact Peak Force	--	4260 to 5400	N	ISO 6603-2
Gardner Impact	--	35.6 to 36.3	J	ASTM D3029

Hardness	POLYblend 83FR	Generic PC+ABS	Unit	Test Method
Rockwell Hardness				
--	--	100 to 120		ASTM D785
--	--	106 to 124		ISO 2039-2
Shore Hardness	--	79 to 80		ISO 868
Ball Indentation Hardness	--	89.3 to 133	MPa	ISO 2039-1

Thermal	POLYblend 83FR	Generic PC+ABS	Unit	Test Method
Deflection Temperature Under Load				
0.45 MPa, Unannealed	--	86.9 to 131	°C	ASTM D648
0.45 MPa, Unannealed [2]	92.0	--	°C	ISO 75-2/B
0.45 MPa, Unannealed	--	87.6 to 131	°C	ISO 75-2/B
0.45 MPa, Annealed [2]	95.0	--	°C	ISO 75-2/B
0.45 MPa, Annealed	--	92.0 to 129	°C	ISO 75-2/B
1.8 MPa, Unannealed	--	79.9 to 116	°C	ASTM D648
1.8 MPa, Unannealed [2]	82.0	--	°C	ISO 75-2/A
1.8 MPa, Unannealed	--	78.9 to 113	°C	ISO 75-2/A
1.8 MPa, Annealed [2]	92.0	--	°C	ISO 75-2/A
1.8 MPa, Annealed	--	94.6 to 110	°C	ISO 75-2/A
Continuous Use Temperature	--	60.0 to 100	°C	ASTM D794
Vicat Softening Temperature				
--	--	89.9 to 139	°C	ASTM D1525
--	97.0	--	°C	ISO 306/B50
--	105	--	°C	ISO 306/A50
--	--	92.5 to 141	°C	ISO 306
Ball Pressure Test (90°C)	Pass	--		IEC 60335-1

Thermal	POLYblend 83FR	Generic PC+ABS	Unit	Test Method
CLTE				
Flow	--	7.1E-5 to 8.3E-5	cm/cm/°C	ASTM D696
Flow	--	5.3E-5 to 7.6E-5	cm/cm/°C	ASTM E831
Flow	--	5.5E-5 to 1.0E-4	cm/cm/°C	ISO 11359-2
Transverse	--	6.9E-5 to 9.1E-5	cm/cm/°C	ASTM E831
Transverse	--	5.6E-5 to 8.6E-5	cm/cm/°C	ISO 11359-2
Thermal Conductivity				
--	--	0.20 to 0.37	W/m/K	ASTM C177
--	--	0.20	W/m/K	ISO 8302
RTI Elec	--	60.0 to 90.4	°C	UL 746B
RTI Imp	--	60.0 to 90.0	°C	UL 746B
RTI Str	--	60.0 to 90.4	°C	UL 746B
Electrical	**POLYblend 83FR**	**Generic PC+ABS**	**Unit**	**Test Method**
Surface Resistivity				
--	--	1.0E+4 to 2.5E+15	ohms	ASTM D257
--	--	5.1E+3 to 1.3E+16	ohms	IEC 60093
Volume Resistivity				
--	--	1.0 to 1.0E+17	ohms·cm	ASTM D257
--	--	1.0E+11 to 5.0E+16	ohms·cm	IEC 60093
Dielectric Strength				
--	--	8.5 to 40	kV/mm	ASTM D149
--	--	15 to 37	kV/mm	IEC 60243-1
Dielectric Constant				
--	--	3.00 to 3.01		ASTM D150
--	--	2.89 to 3.10		IEC 60250
--	--	2.95		IEC 60250
Dissipation Factor				
--	--	4.9E-3 to 9.1E-3		ASTM D150
--	--	1.0E-3 to 9.6E-3		IEC 60250
Arc Resistance	--	119 to 123	sec	ASTM D495
Comparative Tracking Index	--	218 to 600	V	IEC 60112
Flammability	**POLYblend 83FR**	**Generic PC+ABS**	**Unit**	**Test Method**
Burning Rate	--	33 to 100	mm/min	ISO 3795
Flame Rating (1.6 mm)	V-0	--		UL 94
Glow Wire Flammability Index				IEC 60695-2-12
--	--	642 to 960	°C	
1.6 mm	960	--	°C	
Glow Wire Ignition Temperature	--	694 to 960	°C	IEC 60695-2-13
Oxygen Index				
--	--	28 to 32	%	ASTM D2863
--	--	23 to 34	%	ISO 4589-2
Fill Analysis	**POLYblend 83FR**	**Generic PC+ABS**	**Unit**	**Test Method**
Melt Viscosity	--	170 to 255	Pa·s	ASTM D3835

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Injection	POLYblend 83FR	Generic PC+ABS	Unit
Drying Temperature	80 to 100	79 to 110	°C
Drying Time	2.0 to 8.0	2.7 to 5.0	hr
Drying Time, Maximum	--	6.0	hr
Suggested Max Moisture	< 0.020	0.020 to 0.024	%
Suggested Shot Size	--	50 to 55	%
Hopper Temperature	--	70 to 74	°C
Rear Temperature	--	218 to 266	°C
Middle Temperature	--	229 to 274	°C
Front Temperature	--	234 to 270	°C
Nozzle Temperature	--	249 to 273	°C
Processing (Melt) Temp	240 to 280	243 to 275	°C
Mold Temperature	70 to 100	59 to 86	°C
Injection Pressure	--	85.3 to 99.0	MPa
Holding Pressure	--	74.7 to 75.0	MPa
Back Pressure	6.00 to 10.0	0.138 to 10.0	MPa
Screw Speed	--	52 to 56	rpm
Vent Depth	--	0.050 to 0.057	mm
Peripheral Screw Speed	18 to 30	--	m/min

Injection Notes	
Generic PC+ABS	This data represents typical values that have been calculated from all products classified as: Generic PC +ABS This information is provided for comparative purposes only.

Extrusion	POLYblend 83FR	Generic PC+ABS	Unit
Drying Temperature	--	89 to 95	°C
Drying Time	--	3.0 to 7.0	hr
Melt Temperature	--	250 to 257	°C

Extrusion Notes	
Generic PC+ABS	This data represents typical values that have been calculated from all products classified as: Generic PC +ABS This information is provided for comparative purposes only.

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] 120°C/h