Bayer MaterialScience

Product Range, Typical Values & Applications

BAYBLEND

Bayblend® (PC+ABS) blends Product Range - Reference Data

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Characterization

Bayblend® is Bayer MaterialScience's brand name for its product class of amorphous, thermoplastic polymer blends based on polycarbonate and ABS.

The Bayblend® product line comprises:
- non-reinforced general purpose grades
- non-reinforced grades with flame retardant
- glass fiber reinforced grades
- special-purpose grades for specific applications

Properties

Characteristic properties:
- high impact and notched impact strength
- high stiffness
- heat resistance to 136 °C as per Vicat VST/B 120
- high dimensional accuracy
- low tendency to warp
- low overall shrinkage
- light stability
- good processing properties

Fields of application

The main applications for Bayblend® are found in the following sectors:
- automotive
- IT industry
- electrical/electronic
- household, sports, leisure

Delivery form

The products are supplied in the form of oval or cylindrical granules in 25-kg PE bags, large cartons with a PE liner, or by silo truck.

The production plants for Bayblend® in Europe and Asia have been certified to DIN EN ISO 9001:2000, and those in the United States to ISO 9001:2000 by the DQS (DQS = German Association for the Certification of Quality Systems, Berlin).

Grade Descriptions

General-purpose grades, non-reinforced

T45	Injection molding grade; Vicat/B 120 temperature = 112 °C.
T45 PG	Injection molding grade; Vicat/B 120 temperature = 112 °C; for electroplating applications.
T65	Injection molding grade; Vicat/B 120 temperature = 120 °C; good low temperature impact strength.
T85	Injection molding grade; Vicat/B 120 temperature = 131 °C; high impact and notched impact strength.
KU 1-1446*	Grade with low-temperature impact strength and improved petrol resistance for automotive parts; in version BBS904 suitable for extrusion/extrusion blow molding and electroplating applications; Vicat/B 120 temperature = 120 °C.
DP T50*	Injection molding grade; Vicat/B 120 temperature = 118 °C; excellent flow.
DP T65 TX*	Injection molding grade; Vicat/B 120 temperature = 120 °C; better flow than T65.
DP T90*	Injection molding grade; Vicat/B 120 temperature = 127 °C; excellent flow.
DP W65*	(PC+AES) blend; grade with improved weather resistance; Vicat/B 120 = 113 °C; good low temperature impact strength.

General-purpose grades, glass fiber reinforced

T88-2N	10 % glass fiber filled; tensile modulus = 3900 MPa; Vicat/B 120 temperature = 131 °C.
T88-4N	20 % glass fiber filled; tensile modulus = 5900 MPa; Vicat/B 120 temperature = 134 °C.
KU 2-1522*	10 % glass fiber filled; improved heat aging stability; very good flow; tensile modulus = 4200 MPa; Vicat/B 120 temperature = 134 °C.

* Developmental product: see disclaimer

Flame retardant grades, non-reinforced

FR 2000 Injection molding grade; easy-flow; Vicat/B 120 temperature = 95 °C; UL-listing 94 V-0 (1.5 mm); antimony-, chlorine- and bromine-free flame retardant; glow wire test (GWFI): 960 °C (2.0 mm); optimized processability; good light stability.

FR 2000 BBS052 Injection molding grade; improved resistance to chemicals; Vicat/B 120 temperature = 93 °C; UL-listing 94 V-0 (1.5 mm); antimony-, chlorine- and bromine-free flame retardant; good light stability.

FR 2010 Injection molding grade; easy-flow; Vicat/B 120 temperature = 108 °C; UL-listing 94 V-0 (1.5 mm); antimony-, chlorine- and bromine-free flame retardant; glow wire test (GWFI): 960 °C (2.0 mm); optimized processability; good light stability.

FR 3000 Injection molding grade; improved version of FR 2000; easy-flow; Vicat/B 120 temperature = 97 °C; UL-listing 94 V-0 (1.5 mm); antimony-, chlorine- and bromine-free flame retardant; glow wire test (GWFI): 960 °C (2.0 mm); no juicing; good light stability.

FR 3000 BBS081 Injection molding grade; improved resistance to chemicals; Vicat/B 120 temperature = 97 °C; UL-listing 94 V-0 (1.5 mm); antimony-, chlorine- and bromine-free flame retardant; no juicing; good light stability.

FR 3005 Injection molding grade; easy-flow; Vicat/B 120 temperature = 95 °C; UL-listing 94 V-0 (1.5 mm); antimony-, chlorine- and bromine-free flame retardant; glow wire test (GWFI): 960 °C (2.0 mm); no juicing; good light stability; improved chemical resistance.

FR 3005 HF Injection molding grade; very good flow; Vicat/B 120 temperature = 96 °C; UL-listing 94 V-0 (1.5 mm); antimony-, chlorine- and bromine-free flame retardant.

FR 3010 Injection molding grade; Vicat/B 120 temperature = 108 °C; UL-listing 94 V-0 (1.5 mm); antimony-, chlorine- and bromine-free flame retardant; glow wire test (GWFI): 960 °C (2.0 mm); optimized processabilty; good light stability; successor to FR 2010.

KU 2-3020* Injection molding grade; Vicat/B 120 temperature = 102 °C; antimony-, chlorine-and bromine-free flame retardant; thin wall grade; excellent UL-listing at minimal wall thicknesses, (V-0 at 0.75 mm).

FR 3030 Flame retardant extrusion grade; Vicat/B 120 temperature = 115 °C; good extrusion and vacuum-forming behavior; UL-listing 94 V-0 (1.5 mm); halogen-free according to cable general-purpose DIN VDE 0472,815; glow wire test (GWFI): 960 °C at 2.0 mm.

KU 2-1514* High heat resistant injection molding grade; Vicat/B 120 temperature = 136 °C; UL-listing 94 V-0 at 1.5 mm; antimony-, chlorine- and bromine-free flame retardant; ball indentation temperature >=125 °C.

KU 2-1514* BBS073 High heat resistant injection molding grade; improved resistance to chemicals; Vicat/B 120 temperature = 136 °C; UL-listing 94 V-0 at 1.5 mm; antimony-, chlorine- and bromine-free flame retardant; ball indentation temperature >=125 °C.

* Developmental product: see disclaimer

Bayblend® Guide Values

Standard grades

Properties	Test conditions	Units	Standards	non-reinforced					
				T45	T45 PG	T65	T85	KU 1-1446*	DP T50*
Rheological Properties									
Spiral flow length	260 °C; 2x8.7 mm	mm	Bayer test	450	450	410	345	330	495
• Melt volume-flow rate (MVR)	240 °C; 5 kg	cm^3/(10 min)	ISO 1133						
• Melt volume-flow rate (MVR)	260 °C; 5 kg	cm^3/(10 min)	ISO 1133	12	12	12	12	5	25
Molding shrinkage, parallel	150x105x3 mm; 500 bar	%	based on ISO 2577	0.55 - 0.75	0.55 - 0.75	0.55 - 0.75	0.55 - 0.75	0.65 - 0.85	0.55 - 0.75
Molding shrinkage, normal	150x105x3 mm; 500 bar	%	based on ISO 2577	0.55 - 0.75	0.55 - 0.75	0.55 - 0.75	0.55 - 0.75	0.65 - 0.85	0.55 - 0.75
Mechanical Properties (23 °C/50% r.h.)									
• Tensile modulus	1 mm/min	MPa	ISO 527-1, -2	2100	2100	2200	2300	1800	2400
• Tensile yield stress	50 mm/min	MPa	ISO 527-1, -2	49	49	52	55	45	50
• Tensile yield strain	50 mm/min	%	ISO 527-1, -2	3.7	3.7	4.2	4.7	4.5	3.8
Tensile stress at break	50 mm/min	MPa	ISO 527-1, -2	40	40	45	48	44	42
Strain at break	50 mm/min	%	based on ISO 527-1,-2	>50	>50	>50	>50	>50	>50
Izod impact strength	23 °C	kJ/m^2	ISO 180-1U	N	N	N	N	N	N
Izod impact strength	-30 °C	kJ/m^2	ISO 180-1U	N	N	N	N	N	N
Izod notched impact strength	23 °C	kJ/m^2	ISO 180-1A	40	40	45	48	45	40
Izod notched impact strength	-30 °C	kJ/m^2	ISO 180-1A	36	36	41	38	35	20
Thermal Properties									
• Heat deflection temperature	1.80 MPa	°C	ISO 75-1, -2	95	95	100	109	98	97
• Heat deflection temperature	0.45 MPa	°C	ISO 75-1, -2	112	112	122	127	118	116
• Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	110	110	118	129	118	116
• Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	112	112	120	131	120	118
• Coeff. of linear thermal expansion	23 - 55 °C, parallel	10^{-4}/K	ISO 11359-1, -2	0.85	0.85	0.8	0.75	0.9	0.8
• Coeff. of linear thermal expansion	23 - 55 °C, transverse	10^{-4}/K	ISO 11359-1, -2	0.9	0.9	0.85	0.8	0.95	0.85
• Flammability UL 94	Thickness: ( ) mm	Class	UL 94	HB (0.85)	HB (0.85)	HB (0.85)	HB (0.85)	HB (1.5)	HB (0.9)
• Flammability UL 94-5V	Thickness: ( ) mm	Class	UL 94						
• Flammability UL 94-5V	Thickness: ( ) mm	Class	UL 94						
Electrical Properties (23 °C/50% r.h.)									
• Relative permittivity	100 Hz		IEC 60250	3.1	3.1	3.1	3.1	3	3.1
• Relative permittivity	1 MHz		IEC 60250	3	3	3	3	2,9	3
• Dissipation factor	100 Hz	10^{-4}	IEC 60250	35	35	30	20	25	32
• Dissipation factor	1 MHz	10^{-4}	IEC 60250	85	85	85	85	85	85
• Volume resistivity		Ohm·m	IEC 60093	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}
• Surface resistivity		Ohm	IEC 60093	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}
• Electrical strength	1 mm	kV/mm	IEC 60243-1	35	35	35	35	35	35
• Comparative tracking index	Solution A	Rating	IEC 60112	275	275	250	225	275	250
Other Properties									
• Water absorption, saturation value	in water at 23 °C	%	ISO 62	0.7	0.7	0.7	0.7	0.7	0.7
• Water absorption, equilibrium value	at 23 °C/50 % r. h.	%	ISO 62	0.2	0.2	0.2	0.2	0.2	0.2
• Density		kg/m^3	ISO 1183	1100	1100	1130	1150	1110	1120
Glass fiber content		%	ISO 3451-1						
Processing conditions for test specimens									
• Injection molding: melt temperature		°C	ISO 294	260	260	260	260	260	260
• Injection molding: mold temperature		°C	ISO 294	80	80	80	80	80	80
• Injection molding: injection velocity		mm/s	ISO 294	240	240	240	240	240	240

• These property characteristics are taken from the CAMPUS® plastics data bank and are based on the international catalogue of basic data for plastics according to ISO 10350 (Plastics Acquisition and Presentation of Comparable Single-Point Data, 1993).

1) Test speed: 5 mm/min
N = No break
* Developmental product: see disclaimer

Bayblend® Guide Values

Standard grades

Properties	Test conditions	Units	Standards	non-reinforced			glass fiber reinforced		
				DP T65 TX*	DP T90*	DP W65*	T88-2N	T88-4N	KU 2-1522*
Rheological Properties									
Spiral flow length	260 °C; 2x8.7 mm	mm	Bayer test		440	455	300	280	450
• Melt volume-flow rate (MVR)	240 °C; 5 kg	cm^3/(10 min)	ISO 1133						
• Melt volume-flow rate (MVR)	260 °C; 5 kg	cm^3/(10 min)	ISO 1133	20	25	12			
Molding shrinkage, parallel	150x105x3 mm; 500 bar	%	based on ISO 2577	0.55 - 0.75	0.55 - 0.75	0.55 - 0.75	0.35 - 0.55	0.2 - 0.4	0.3 - 0.5
Molding shrinkage, normal	150x105x3 mm; 500 bar	%	based on ISO 2577	0.55 - 0.75	0.55 - 0.75	0.55 - 0.75	0.35 - 0.55	0.3 - 0.6	0.3 - 0.5
Mechanical Properties (23 °C/50% r.h.)									
• Tensile modulus	1 mm/min	MPa	ISO 527-1, -2	2200	2300	2000	3900	5900	4200
• Tensile yield stress	50 mm/min	MPa	ISO 527-1, -2	54		46	65[1)]	77[1)]	70[1)]
• Tensile yield strain	50 mm/min	%	ISO 527-1, -2	4.5		4	3[1)]	2[1)]	3[1)]
Tensile stress at break	50 mm/min	MPa	ISO 527-1, -2	46		42	63[1)]	77[1)]	68[1)]
Strain at break	50 mm/min	%	based on ISO 527-1,-2	>50	>50	>50	4[1)]	2[1)]	3[1)]
Izod impact strength	23 °C	kJ/m^2	ISO 180-1U	N	N	N	25	20	25
Izod impact strength	-30 °C	kJ/m^2	ISO 180-1U		N		25	20	25
Izod notched impact strength	23 °C	kJ/m^2	ISO 180-1A	45	42	45	11	9	10
Izod notched impact strength	-30 °C	kJ/m^2	ISO 180-1A	30	20	20	9	8	6
Thermal Properties									
• Heat deflection temperature	1.80 MPa	°C	ISO 75-1, -2			98	118	122	121
• Heat deflection temperature	0.45 MPa	°C	ISO 75-1, -2			116	130	134	134
• Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	118	125	111	129	132	132
• Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	120	127	113	131	134	134
• Coeff. of linear thermal expansion	23 - 55 °C, parallel	10^{-4}/K	ISO 11359-1, -2			0.95	0.42	0.3	0.4
• Coeff. of linear thermal expansion	23 - 55 °C, transverse	10^{-4}/K	ISO 11359-1, -2			1	0.8	0.8	0.75
• Flammability UL 94	Thickness: ( ) mm	Class	UL 94	HB (1.5)	HB (1.5)	HB (1.5)	HB (1.5)	HB (1.1)	HB (1.5)
• Flammability UL 94-5V	Thickness: ( ) mm	Class	UL 94						
• Flammability UL 94-5V	Thickness: ( ) mm	Class	UL 94						
Electrical Properties (23 °C/50% r.h.)									
• Relative permittivity	100 Hz		IEC 60250			3.1	3.3	3.3	3.3
• Relative permittivity	1 MHz		IEC 60250			3	3.2	3.2	3.2
• Dissipation factor	100 Hz	10^{-4}	IEC 60250			30	25	25	30
• Dissipation factor	1 MHz	10^{-4}	IEC 60250			75	85	85	100
• Volume resistivity		Ohm·m	IEC 60093			10^{14}	10^{14}	10^{14}	10^{14}
• Surface resistivity		Ohm	IEC 60093			10^{16}	10^{16}	10^{16}	10^{16}
• Electrical strength	1 mm	kV/mm	IEC 60243-1			35	35	35	40
• Comparative tracking index	Solution A	Rating	IEC 60112			275	175	175	200
Other Properties									
• Water absorption, saturation value	in water at 23 °C	%	ISO 62			0.7	0.6	0.6	0.6
• Water absorption, equilibrium value	at 23 °C/50 % r. h.	%	ISO 62			0.2	0.2	0.2	0.2
• Density		kg/m^3	ISO 1183	1110		1100	1200	1250	1220
Glass fiber content		%	ISO 3451-1				10	20	10
Processing conditions for test specimens									
• Injection molding: melt temperature		°C	ISO 294	260	260	260	260	260	260
• Injection molding: mold temperature		°C	ISO 294	80	80	80	80	80	80
• Injection molding: injection velocity		mm/s	ISO 294	240	240	240	540	540	540

- These property characteristics are taken from the CAMPUS® plastics data bank and are based on the international catalogue of basic data for plastics according to ISO 10350 (Plastics Acquisition and Presentation of Comparable Single-Point Data, 1993).

1) Test speed: 5 mm/min
N = No break
* Developmental product: see disclaimer

Bayblend® Guide Values

FR grades

Properties	Test conditions	Units	Standards	non-reinforced				
				FR 2000	FR 2000 BBS052	FR 2010	FR 3000	FR 3000 BBS081
Rheological Properties								
Spiral flow length	260 °C; 2x8.7 mm	mm	Bayer test	480	450	400	470	390
• Melt volume-flow rate (MVR)	240 °C; 5 kg	cm^3/(10 min)	ISO 1133	26	19	25	24	14
• Melt volume-flow rate (MVR)	260 °C; 5 kg	cm^3/(10 min)	ISO 1133					
Molding shrinkage, parallel	150x105x3 mm; 500 bar	%	based on ISO 2577	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7
Molding shrinkage, normal	150x105x3 mm; 500 bar	%	based on ISO 2577	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7
Mechanical Properties (23 °C/50% r.h.)								
• Tensile modulus	1 mm/min	MPa	ISO 527-1, -2	2700	2700	2700	2700	2700
• Tensile yield stress	50 mm/min	MPa	ISO 527-1, -2	60	60	60	60	60
• Tensile yield strain	50 mm/min	%	ISO 527-1, -2	4	4	4	3,5	3,5
Tensile stress at break	50 mm/min	MPa	ISO 527-1, -2	45	45	50	45	45
Strain at break	50 mm/min	%	based on ISO 527-1,-2	>50	>50	>50	>40	>40
Izod impact strength	23 °C	kJ/m^2	ISO 180-1U	N	N	N	N	N
Izod impact strength	-30 °C	kJ/m^2	ISO 180-1U					
Izod notched impact strength	23 °C	kJ/m^2	ISO 180-1A	35	45	35	35	40
Izod notched impact strength	-30 °C	kJ/m^2	ISO 180-1A	10	10	10	10	10
Thermal Properties								
• Heat deflection temperature	1.80 MPa	°C	ISO 75-1, -2	80	78	90	82	82
• Heat deflection temperature	0.45 MPa	°C	ISO 75-1, -2	90	88	100	92	92
• Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	93	91	106	95	95
• Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	95	93	108	97	97
• Coeff. of linear thermal expansion	23 - 55 °C, parallel	10^{-4}/K	ISO 11359-1, -2	0.76	0.76	0.76	0.76	0.76
• Coeff. of linear thermal expansion	23 - 55 °C, transverse	10^{-4}/K	ISO 11359-1, -2	0.8	0.8	0.8	0.8	0.8
• Flammability UL 94	Thickness: ( ) mm	Class	UL 94	V-0 (1.5)	V-0 (1.5)	V-0 (1.5)	V-0 (1.5)	V-0 (1.5)
• Flammability UL 94-5V	Thickness: ( ) mm	Class	UL 94	5VB (2.0)	5VB (2.0)	5VB (2,2)	5VB (2.0)	5VB (2.0)
• Flammability UL 94-5V	Thickness: ( ) mm	Class	UL 94	5VA (3.0)		5VA (3.0)	5VA (3.0)	5VA (3.0)
Electrical Properties (23 °C/50% r.h.)								
• Relative permittivity	100 Hz		IEC 60250	3.2	3.2	3.2	3.2	3.2
• Relative permittivity	1 MHz		IEC 60250	3.1	3.1	3.1	3.1	3.1
• Dissipation factor	100 Hz	10^{-4}	IEC 60250	50	50	40	50	50
• Dissipation factor	1 MHz	10^{-4}	IEC 60250	70	70	70	60	60
• Volume resistivity		Ohm·m	IEC 60093	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}
• Surface resistivity		Ohm	IEC 60093	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}
• Electrical strength	1 mm	kV/mm	IEC 60243-1	30	30	35	35	35
• Comparative tracking index	Solution A	Rating	IEC 60112	400	400	350	350	350
Other Properties								
• Water absorption, saturation value	in water at 23 °C	%	ISO 62	0.5	0.5	0.5	0.5	0.5
• Water absorption, equilibrium value	at 23 °C/50 % r. h.	%	ISO 62	0.2	0.2	0.2	0.2	0.2
• Density		kg/m^3	ISO 1183	1180	1180	1180	1180	1180
Glass fiber content		%	ISO 3451-1					
Processing conditions for test specimens								
• Injection molding: melt temperature		°C	ISO 294	240	240	240	240	240
• Injection molding: mold temperature		°C	ISO 294	80	80	80	80	80
• Injection molding: injection velocity		mm/s	ISO 294	240	240	240	240	240

• These property characteristics are taken from the CAMPUS®plastics data bank and are based on the international catalogue of basic data for plastics according to ISO 10350 (Plastics Acquisition and Presentation of Comparable Single-Point Data, 1993).

1) Test speed: 5 mm/min
N = No break
* Developmental product: see disclaimer

Bayblend® Guide Values

FR grades

Properties	Test conditions	Units	Standards	non-reinforced			
				FR 3005	FR 3005 HF	FR 3010	KU 2-3020*
Rheological Properties							
Spiral flow length	260 °C; 2x8.7 mm	mm	Bayer test	550	590	380	440
• Melt volume-flow rate (MVR)	240 °C; 5 kg	cm^3/(10 min)	ISO 1133	30	40	15	25
• Melt volume-flow rate (MVR)	260 °C; 5 kg	cm^3/(10 min)	ISO 1133				
Molding shrinkage, parallel	150x105x3 mm; 500 bar	%	based on ISO 2577	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.3 - 0.5
Molding shrinkage, normal	150x105x3 mm; 500 bar	%	based on ISO 2577	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7	0.3 - 0.5
Mechanical Properties (23 °C/50% r.h.)							
• Tensile modulus	1 mm/min	MPa	ISO 527-1, -2	2800	2700	2700	2900
• Tensile yield stress	50 mm/min	MPa	ISO 527-1, -2	60	60	60	65
• Tensile yield strain	50 mm/min	%	ISO 527-1, -2	3,5	3,5	4	4
Tensile stress at break	50 mm/min	MPa	ISO 527-1, -2	45	45	50	50
Strain at break	50 mm/min	%	based on ISO 527-1,-2	>30	>40	>50	>30
Izod impact strength	23 °C	kJ/m^2	ISO 180-1U	N	N	N	N
Izod impact strength	-30 °C	kJ/m^2	ISO 180-1U				
Izod notched impact strength	23 °C	kJ/m^2	ISO 180-1A	18	13	35	15
Izod notched impact strength	-30 °C	kJ/m^2	ISO 180-1A	8	8	10	
Thermal Properties							
• Heat deflection temperature	1.80 MPa	°C	ISO 75-1, -2	78	81	90	86
• Heat deflection temperature	0.45 MPa	°C	ISO 75-1, -2	87	90	100	96
• Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	93		106	100
• Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	95	96	108	102
• Coeff. of linear thermal expansion	23 - 55 °C, parallel	10^{-4}/K	ISO 11359-1, -2	0.76	0.76	0.76	
• Coeff. of linear thermal expansion	23 - 55 °C, transverse	10^{-4}/K	ISO 11359-1, -2	0.8	0.8	0.8	
• Flammability UL 94	Thickness: ( ) mm	Class	UL 94	V-0 (1.5)	V-0 (1.5)	V-0 (1.5)	V-0 (0.75)
• Flammability UL 94-5V	Thickness: ( ) mm	Class	UL 94	5VB (2,0)	5VB (2.0)	5VB (2.0)	
• Flammability UL 94-5V	Thickness: ( ) mm	Class	UL 94	5VA (3.0)	5VA (3.0)	5VA (3.0)	
Electrical Properties (23 °C/50% r.h.)							
• Relative permittivity	100 Hz		IEC 60250	3.2	3.2	3.2	
• Relative permittivity	1 MHz		IEC 60250	3.1	3.1	3.1	
• Dissipation factor	100 Hz	10^{-4}	IEC 60250	50	50	50	
• Dissipation factor	1 MHz	10^{-4}	IEC 60250	65	65	70	
• Volume resistivity		Ohm·m	IEC 60093	10^{14}	10^{14}	10^{14}	
• Surface resistivity		Ohm	IEC 60093	10^{16}	10^{16}	10^{16}	
• Electrical strength	1 mm	kV/mm	IEC 60243-1	35	35	35	
• Comparative tracking index	Solution A	Rating	IEC 60112	350	350	350	
Other Properties							
• Water absorption, saturation value	in water at 23 °C	%	ISO 62	0.5	0.5	0.5	0.5
• Water absorption, equilibrium value	at 23 °C/50 % r. h.	%	ISO 62	0.2	0.2	0.2	0.2
• Density		kg/m^3	ISO 1183	1180	1180	1180	1190
Glass fiber content		%	ISO 3451-1				
Processing conditions for test specimens							
• Injection molding: melt temperature		°C	ISO 294	240	240	240	240
• Injection molding: mold temperature		°C	ISO 294	80	80	80	80
• Injection molding: injection velocity		mm/s	ISO 294	240	240	240	240

- These property characteristics are taken from the CAMPUS® plastics data bank and are based on the international catalogue of basic data for plastics according to ISO 10350 (Plastics Acquisition and Presentation of Comparable Single-Point Data, 1993).

1) Test speed: 5 mm/min
N = No break
* Developmental product: see disclaimer

Bayblend® Guide Values

FR grades

Properties	Test conditions	Units	Standards	non-reinforced		
				FR 3030	KU 2-1514*	KU 2-1514* BBS073
Rheological Properties						
Spiral flow length	260 °C; 2x8.7 mm	mm	Bayer test		270	240
• Melt volume-flow rate (MVR)	240 °C; 5 kg	cm^3/(10 min)	ISO 1133			
• Melt volume-flow rate (MVR)	260 °C; 5 kg	cm^3/(10 min)	ISO 1133	10	19	15
Molding shrinkage, parallel	150x105x3 mm; 500 bar	%	based on ISO 2577	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7
Molding shrinkage, normal	150x105x3 mm; 500 bar	%	based on ISO 2577	0.5 - 0.7	0.5 - 0.7	0.5 - 0.7
Mechanical Properties (23 °C/50% r.h.)						
• Tensile modulus	1 mm/min	MPa	ISO 527-1, -2	2700	2400	2400
• Tensile yield stress	50 mm/min	MPa	ISO 527-1, -2	69	60	57
• Tensile yield strain	50 mm/min	%	ISO 527-1, -2	5	5	5
Tensile stress at break	50 mm/min	MPa	ISO 527-1, -2	53	54	50
Strain at break	50 mm/min	%	based on ISO 527-1,-2	>50	>50	>50
Izod impact strength	23 °C	kJ/m^2	ISO 180-1U	N	N	N
Izod impact strength	-30 °C	kJ/m^2	ISO 180-1U			
Izod notched impact strength	23 °C	kJ/m^2	ISO 180-1A	40	45	55
Izod notched impact strength	-30 °C	kJ/m^2	ISO 180-1A	10	15	15
Thermal Properties						
• Heat deflection temperature	1.80 MPa	°C	ISO 75-1, -2	96	115	115
• Heat deflection temperature	0.45 MPa	°C	ISO 75-1, -2	106	126	126
• Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	113	134	134
• Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	115	136	136
• Coeff. of linear thermal expansion	23 - 55 °C, parallel	10^{-4}/K	ISO 11359-1, -2	0.76	0.68	0.68
• Coeff. of linear thermal expansion	23 - 55 °C, transverse	10^{-4}/K	ISO 11359-1, -2	0.8	0.68	0.68
• Flammability UL 94	Thickness: ( ) mm	Class	UL 94	V-0 (1.5)	V-0 (1.5)	V-0 (1.5)
• Flammability UL 94-5V	Thickness: ( ) mm	Class	UL 94	5VB (2.0)	5VB (2.0)	5VB (2.0)
• Flammability UL 94-5V	Thickness: ( ) mm	Class	UL 94	5VA (3.0)	5VA (3.0)	5VA (3.0)
Electrical Properties (23 °C/50% r.h.)						
• Relative permittivity	100 Hz		IEC 60250	3.2	3.2	3.2
• Relative permittivity	1 MHz		IEC 60250	3.1	3.1	3.1
• Dissipation factor	100 Hz	10^{-4}	IEC 60250	37	20	20
• Dissipation factor	1 MHz	10^{-4}	IEC 60250	75	80	80
• Volume resistivity		Ohm·m	IEC 60093	10^{15}	10^{15}	10^{15}
• Surface resistivity		Ohm	IEC 60093	10^{17}	10^{17}	10^{17}
• Electrical strength	1 mm	kV/mm	IEC 60243-1	35	35	35
• Comparative tracking index	Solution A	Rating	IEC 60112	350	350	350
Other Properties						
• Water absorption, saturation value	in water at 23 °C	%	ISO 62	0.5	0.5	0.5
• Water absorption, equilibrium value	at 23 °C/50 % r. h.	%	ISO 62	0.2	0.2	0.2
• Density		kg/m^3	ISO 1183	1180	1180	1180
Glass fiber content		%	ISO 3451-1			
Processing conditions for test specimens						
• Injection molding: melt temperature		°C	ISO 294	260	260	260
• Injection molding: mold temperature		°C	ISO 294	80	80	80
• Injection molding: injection velocity		mm/s	ISO 294	240	240	240

- These property characteristics are taken from the CAMPUS® plastics data bank and are based on the international catalogue of basic data for plastics according to ISO 10350 (Plastics Acquisition and Presentation of Comparable Single-Point Data, 1993).

1) Test speed: 5 mm/min
N = No break
* Developmental product: see disclaimer

*This is a developmental product. Further information, including amended or supplementary data on hazards associated with its use, may be compiled in the future. For this reason no assurances are given as to type conformity, processability, long-term performance characteristics or other production or application parameters.
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Unless specified to the contrary, the values given have been established on general-standardized test specimens at room temperature. The figures should be regarded as guide values only and not as binding minimum values.

Please note that, under certain conditions, the properties can be affected to a considerable extent by the design of the mold/die, the processing conditions and the coloring.

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