SABIC Innovative Plastics™

Cycoloy* Resin C3650

Americas: COMMERCIAL

Flame retardant PC/ABS blend using non-brominated and non-chlorinated flame retardant systems, offering high impact and excellent extrusion and thermoforming characteristics. Halogen free according to DIN VDE 0472/815 for cable channels

TYPICAL PROPERTIES [1]	TYPICAL VALUE	UNIT	STANDARD
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	660	kgf/cm²	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	520	kgf/cm²	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	4.9	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	35	%	ASTM D 638
Tensile Modulus, 50 mm/min	29100	kgf/cm²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	1030	kgf/cm²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	27400	kgf/cm²	ASTM D 790
Tensile Stress, yield, 5 mm/min	55	MPa	ISO 527
Tensile Stress, break, 5 mm/min	50	MPa	ISO 527
Tensile Stress, yield, 50 mm/min	65	MPa	ISO 527
Tensile Stress, break, 50 mm/min	55	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	3	%	ISO 527
Tensile Strain, break, 5 mm/min	55	%	ISO 527
Tensile Strain, yield, 50 mm/min	4.5	%	ISO 527
Tensile Strain, break, 50 mm/min	>50	%	ISO 527
Tensile Modulus, 1 mm/min	2600	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	100	MPa	ISO 178
Flexural Modulus, 2 mm/min	2700	MPa	ISO 178
Hardness, H358/30	113	MPa	ISO 2039-1
Hardness, Rockwell R	124	-	ISO 2039-2
IMPACT			
Izod Impact, notched, 23°C	70	cm-kgf/cm	ASTM D 256

1) Typical values only. Variations within normal tolerances are possible for variose colours.All values are measured at least after 48 hours storage at 230C/50% relative humidity.
All properties, expect the melt volume rate are measured on injection moulded samples.
All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose.Not to be used for part or tool design.
3) This rating is not intended to reflect hazards presented this or any other material under actual fire conditions.
4) Own measurement according to UL.
5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

SABIC Innovative Plastics™

Cycoloy* Resin C3650

Americas: COMMERCIAL

TYPICAL PROPERTIES [1]	TYPICAL VALUE	UNIT	STANDARD
IMPACT			
Instrumented Impact Total Energy, 23°C	662	cm-kgf	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	45	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 0°C	15	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	13	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	48	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	13	kJ/m²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	110	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	100	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	88	°C	ASTM D 648
CTE, -40°C to 40°C, flow	7.2E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.2E-05	1/°C	ASTM E 831
Thermal Conductivity	0.2	W/m-°C	ISO 8302
CTE, 23°C to 60°C, flow	8.E-05	1/°C	ISO 11359-2
CTE, 23°C to 60°C, xflow	8.E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	108	°C	ISO 306
Vicat Softening Temp, Rate B/120	110	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	102	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	91	°C	ISO 75/Ae
Relative Temp Index, Elec	60	°C	UL 746B
Relative Temp Index, Mech w/impact	60	°C	UL 746B
Relative Temp Index, Mech w/o impact	60	°C	UL 746B
PHYSICAL			
Specific Gravity	1.2	-	ASTM D 792
Water Absorption, (23°C/sat)	0.6	%	ASTM D 570

1) Typical values only. Variations within normal tolerances are possible for variose colours.All values are measured at least after 48 hours storage at 230C/50% relative humidity.
All properties, expect the melt volume rate are measured on injection moulded samples.
All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose.Not to be used for part or tool design.
3) This rating is not intended to reflect hazards presented this or any other material under actual fire conditions.
4) Own measurement according to UL.
5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

SABIC Innovative Plastics™

Cycoloy* Resin C3650

Americas: COMMERCIAL

TYPICAL PROPERTIES [1]	TYPICAL VALUE	UNIT	STANDARD
PHYSICAL			
Mold Shrinkage, flow, 3.2 mm (5)	0.4 - 0.6	%	SABIC Method
Melt Flow Rate, 260°C/5.0 kgf	8.5	g/10 min	ASTM D 1238
Density	1.18	g/cm³	ISO 1183
Melt Volume Rate, MVR at 260°C/5.0 kg	8	cm³/10 min	ISO 1133
ELECTRICAL			
Dissipation Factor, 50/60 Hz	0.006	-	ASTM D 150
Volume Resistivity	>1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ohm	IEC 60093
Dielectric Strength, in oil, 0.8 mm	35	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 1.6 mm	25	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 3.2 mm	17	kV/mm	IEC 60243-1
Relative Permittivity, 50/60 Hz	2.8	-	IEC 60250
Relative Permittivity, 1 MHz	2.7	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.004	-	IEC 60250
Dissipation Factor, 1 MHz	0.006	-	IEC 60250
Comparative Tracking Index	600	V	IEC 60112
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (3)	1.49	mm	UL 94
UL Recognized, 94-5VB Rating (3)	2.48	mm	UL 94
Oxygen Index (LOI)	37	%	ISO 4589

1) Typical values only. Variations within normal tolerances are possible for variose colours.All values are measured at least after 48 hours storage at 230C/50% relative humidity.
All properties, expect the melt volume rate are measured on injection moulded samples.
All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose.Not to be used for part or tool design.
3) This rating is not intended to reflect hazards presented this or any other material under actual fire conditions.
4) Own measurement according to UL.
5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

SABIC Innovative Plastics™

Cycoloy* Resin C3650

Americas: COMMERCIAL

PROCESSING PARAMETERS	TYPICAL VALUE	UNIT
Injection Molding		
Drying Temperature	80 - 90	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	8	hrs
Maximum Moisture Content	0.04	%
Melt Temperature	245 - 275	°C
Nozzle Temperature	245 - 275	°C
Front - Zone 3 Temperature	245 - 275	°C
Middle - Zone 2 Temperature	220 - 265	°C
Rear - Zone 1 Temperature	220 - 255	°C
Mold Temperature	60 - 80	°C
Back Pressure	0.3 - 0.7	MPa
Screw Speed	40 - 70	rpm
Shot to Cylinder Size	30 - 80	%
Vent Depth	0.038 - 0.076	mm
Extrusion Blow Molding		
Drying Temperature	80 - 90	°C
Drying Time	2 - 4	hrs
Drying Time (Cumulative)	8	hrs
Maximum Moisture Content	0 - 0.02	%
Melt Temperature (Parison)	225 - 250	°C
Barrel - Zone 1 Temperature	205 - 230	°C
Barrel - Zone 2 Temperature	215 - 245	°C
Barrel - Zone 3 Temperature	215 - 245	°C
Barrel - Zone 4 Temperature	220 - 250	°C
Adapter - Zone 5 Temperature	225 - 250	°C
Head - Zone 6 - Top Temperature	225 - 250	°C
Head - Zone 7 - Bottom Temperature	225 - 250	°C
Mold Temperature	65 - 90	°C

1) Typical values only. Variations within normal tolerances are possible for variose colours.All values are measured at least after 48 hours storage at 230C/50% relative humidity.
All properties, expect the melt volume rate are measured on injection moulded samples.
All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose.Not to be used for part or tool design.
3) This rating is not intended to reflect hazards presented this or any other material under actual fire conditions.
4) Own measurement according to UL.
5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

SABIC Innovative Plastics™

Cycoloy* Resin C3650

Americas: COMMERCIAL

PROCESSING PARAMETERS	TYPICAL VALUE	UNIT
Extrusion Blow Molding		
Die Temperature	240 - 250	°C
Profile Extrusion		
Drying Temperature	80 - 90	°C
Drying Time	2 - 4	hrs
Drying Time (Cumulative)	8	hrs
Minimum Moisture Content	0 - 0.02	%
Melt Temperature	225 - 270	°C
Barrel - Zone 1 Temperature	205 - 250	°C
Barrel - Zone 2 Temperature	215 - 260	°C
Barrel - Zone 3 Temperature	215 - 260	°C
Barrel - Zone 4 Temperature	225 - 270	°C
Adapter Temperature	225 - 270	°C
Die Temperature	225 - 270	°C
Calibrator Temperature	60 - 80	°C

1) Typical values only. Variations within normal tolerances are possible for variose colours.All values are measured at least after 48 hours storage at 230C/50% relative humidity.
All properties, expect the melt volume rate are measured on injection moulded samples.
All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose.Not to be used for part or tool design.
3) This rating is not intended to reflect hazards presented this or any other material under actual fire conditions.
4) Own measurement according to UL.
5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.