



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/cm ²	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	520	kgf/cm ²	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/cm ²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	1030	kgf/cm ²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	27400	kgf/cm ²	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



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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/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 0°C	15	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	13	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	48	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	13	kJ/m ²	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



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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/cm ³	ISO 1183
Melt Volume Rate, MVR at 260°C/5.0 kg	8	cm ³ /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, 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
Relative Permittivity, 50/60 Hz	2.8	-	IEC 60250
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



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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



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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