



**CYCOLOY™ Resin C2950HF**  
**Americas: COMMERCIAL**

Non-chlorinated and non-brominated flame retardant PC/ABS offering balanced impact and heat properties plus improved flow for various applications.

TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 50 mm/min	650	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	5	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	40	%	ASTM D 638
Flexural Stress, yld, 2.6 mm/min, 100 mm span	980	kgf/cm <sup>2</sup>	ASTM D 790
Flexural Modulus, 2.6 mm/min, 100 mm span	26300	kgf/cm <sup>2</sup>	ASTM D 790
Hardness, Rockwell R	121	-	ASTM D 785
<b>IMPACT</b>			
Izod Impact, notched, 23°C	46	cm-kgf/cm	ASTM D 256
Instrumented Impact Energy @ peak, 23°C	553	cm-kgf	ASTM D 3763
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	112	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	87	°C	ASTM D 648
HDT, 0.45 MPa, 6.4 mm, unannealed	101	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	93	°C	ASTM D 648
CTE, -30°C to 30°C, flow	7.2E-05	1/°C	ASTM D 696
CTE, -30°C to 30°C, xflow	7.2E-05	1/°C	ASTM D 696
Thermal Conductivity	0.2	W/m-°C	ASTM C 177
Relative Temp Index, Elec	85	°C	UL 746B
Relative Temp Index, Mech w/impact	85	°C	UL 746B
Relative Temp Index, Mech w/o impact	85	°C	UL 746B
<b>PHYSICAL</b>			
Specific Gravity	1.18	-	ASTM D 792
Water Absorption, 24 hours	0.1	%	ASTM D 570
Water Absorption, equilibrium, 23C	0.4	%	ASTM D 570

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.

(2) Only typical data for selection purposes. Not to be used for part or tool design.

(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.

(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.

(6) Needs hard coat to consistently pass 60 sec Vertical Burn.

Source GMD, last updated:

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TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>PHYSICAL</b>			
Mold Shrinkage, flow, 3.2 mm (5)	0.4 - 0.6	%	SABIC Method
Mold Shrinkage, xflow, 3.2 mm (5)	0.4 - 0.6	%	SABIC Method
Melt Flow Rate, 260°C/2.16 kgf	22	g/10 min	ASTM D 1238
<b>ELECTRICAL</b>			
Volume Resistivity	1.6E+17	Ohm-cm	ASTM D 257
Surface Resistivity	>1.E+16	Ohm	ASTM D 257
Dielectric Strength, in oil, 3.2 mm	24.3	kV/mm	ASTM D 149
Relative Permittivity, 50/60 Hz	2.8	-	ASTM D 150
Relative Permittivity, 1 MHz	2.7	-	ASTM D 150
Dissipation Factor, 50/60 Hz	0.0052	-	ASTM D 150
Dissipation Factor, 1 MHz	0.0071	-	ASTM D 150
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	2	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	3	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	0	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94V-2 Flame Class Rating (3)	0.76	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating (3)	1.49	mm	UL 94
UL Recognized, 94-5VA Rating (3)	3.4	mm	UL 94
UL Recognized, 94-5VB Rating (3)	2.48	mm	UL 94
Oxygen Index (LOI)	30	%	ASTM D 2863

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
<b>Injection Molding</b>		
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

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