

Cycology* Resin CH6410

Americas: COMMERCIAL

CH6410 is a high heat, impact modified PC resin, with nonbrominated, nonchlorinated flame retardant system. Limited colors only.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	640	kgf/cm ²	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	550	kgf/cm ²	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	5.5	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	88	%	ASTM D 638
Tensile Modulus, 50 mm/min	25900	kgf/cm ²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	970	kgf/cm ²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	26500	kgf/cm ²	ASTM D 790
Tensile Stress, yield, 50 mm/min	63	MPa	ISO 527
Tensile Stress, break, 50 mm/min	55	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5	%	ISO 527
Tensile Strain, break, 50 mm/min	95	%	ISO 527
Tensile Modulus, 1 mm/min	2300	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	90	MPa	ISO 178
Flexural Modulus, 2 mm/min	2400	MPa	ISO 178
Hardness, H358/30	100	MPa	ISO 2039-1
IMPACT			
Izod Impact, notched, 23°C	92	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	740	cm-kgf	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	50	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 0°C	19	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	15	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	55	kJ/m ²	ISO 179/1eA

(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±176.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.

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TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
IMPACT			
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	15	kJ/m ²	ISO 179/1eA
THERMAL			
HDT, 0.45 MPa, 3.2 mm, unannealed	127	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	118	°C	ASTM D 648
CTE, -40°C to 40°C, flow	7.74E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	5.94E-05	1/°C	ASTM E 831
CTE, 23°C to 60°C, flow	7.E-05	1/°C	ISO 11359-2
CTE, 23°C to 60°C, xflow	7.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	134	°C	ISO 306
Vicat Softening Temp, Rate B/120	135	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	126	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	113	°C	ISO 75/Ae
PHYSICAL			
Specific Gravity	1.19	-	ASTM D 792
Mold Shrinkage on Tensile Bar, flow (2)	0.05 - 0.07	%	SABIC Method
Mold Shrinkage, flow, 3.2 mm	0.4 - 0.5	%	SABIC Method
Melt Flow Rate, 260°C/2.16 kgf	6.3	g/10 min	ASTM D 1238
Density	1.2	g/cm ³	ISO 1183
Melt Volume Rate, MVR at 260°C/5.0 kg	16	cm ³ /10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	>1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ohm	IEC 60093
Dielectric Strength, in oil, 3.2 mm	18	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.7	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.001	-	IEC 60250

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TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
ELECTRICAL			
Dissipation Factor, 1 MHz	0.01	-	IEC 60250
Comparative Tracking Index	225	V	IEC 60112
Relative Permittivity, 50/60 Hz	2.7	-	IEC 60250
FLAME CHARACTERISTICS			
UL Recognized, 94V-1 Flame Class Rating (3)	0.99	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating (3)	1.49	mm	UL 94

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	90 - 100	°C
Drying Time	2 - 4	hrs
Drying Time (Cumulative)	8	hrs
Maximum Moisture Content	0.04	%
Melt Temperature	270 - 300	°C
Nozzle Temperature	265 - 300	°C
Front - Zone 3 Temperature	265 - 300	°C
Middle - Zone 2 Temperature	260 - 300	°C
Rear - Zone 1 Temperature	260 - 300	°C
Mold Temperature	60 - 90	°C
Back Pressure	0.3 - 0.7	MPa
Screw Speed	40 - 70	rpm
Shot to Cylinder Size	40 - 80	%
Vent Depth	0.038 - 0.076	mm

• NOTE: Back Pressure, Screw Speed, Shot to Cylinder Size and Vent Depth are only mentioned as general guidelines. These may not apply or need adjustment in specific situations such as low shot sizes, thin wall molding and gas-assist molding.

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