

## Cycoloy\* Resin CY6012

### Asia Pacific: COMMERCIAL

Cycoloy\* resin grade CY6012 is an injection moldable PC/ABS blend with non-brominated and non-chlorinated flame retardant systems. Excellent impact/flow balance together with a UL-94 V0 & 5VB rating at 1.5mm makes it an ideal candidate for various thin wall applications.

TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	UNIT	STANDARD
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 50 mm/min	59	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	44	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	3.4	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	65	%	ASTM D 638
Tensile Modulus, 50 mm/min	2800	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	93	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2700	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	59	MPa	ISO 527
Tensile Stress, break, 50 mm/min	48	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	3.5	%	ISO 527
Tensile Strain, break, 50 mm/min	95	%	ISO 527
Tensile Modulus, 1 mm/min	2700	MPa	ISO 527
Flexural Stress, break, 2 mm/min	92	MPa	ISO 178
Flexural Modulus, 2 mm/min	2660	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, notched, 23°C	550	J/m	ASTM D 256
Izod Impact, notched, -30°C	113	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	63	J	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	34	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	11	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	27	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL</b>			
HDT, 0.45 MPa, 3.2 mm, unannealed	73	°C	ASTM D 648

1) Typical values only. Variations within normal tolerances are possible for various colours. All values are measured at least after 48 hours storage at 23°C/50% relative humidity.  
All properties, except 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 by this or any other material under actual fire conditions.  
4) Own measurement according to UL.

Source, GMD, Last Update:

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TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	UNIT	STANDARD
<b>THERMAL</b>			
HDT, 1.82 MPa, 6.4 mm, unannealed	83	°C	ASTM D 648
CTE, -40°C to 40°C, flow	7.3E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.7E-05	1/°C	ASTM E 831
Vicat Softening Temp, Rate B/50	92	°C	ISO 306
Vicat Softening Temp, Rate B/120	94	°C	ISO 306
<b>PHYSICAL</b>			
Specific Gravity	1.19	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.4 - 0.6	%	SABIC Method
Melt Flow Rate, 260°C/2.16 kgf	21	g/10 min	ASTM D 1238
Density	1.19	g/cm <sup>3</sup>	ISO 1183
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94V-0 Flame Class Rating (3)	1.5	mm	UL 94
UL Recognized, 94-5VB Rating (3)	1.5	mm	UL 94

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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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