

## Cycolac\* Resin S157

### Europe-Africa-Middle East: COMMERCIAL

CYCOLAC S157 is a high flow flame retardant ABS with good processability developed for applications requiring UL94 V0 at reduced wall thickness.

TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	UNIT	STANDARD
<b>MECHANICAL</b>			
Taber Abrasion, CS-17, 1 kg	145	mg/1000cy	SABIC Method
Tensile Stress, yield, 5 mm/min	40	MPa	ISO 527
Tensile Stress, break, 5 mm/min	35	MPa	ISO 527
Tensile Stress, yield, 50 mm/min	45	MPa	ISO 527
Tensile Stress, break, 50 mm/min	35	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	2	%	ISO 527
Tensile Strain, break, 5 mm/min	10	%	ISO 527
Tensile Strain, yield, 50 mm/min	2	%	ISO 527
Tensile Strain, break, 50 mm/min	10	%	ISO 527
Tensile Modulus, 1 mm/min	2700	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	70	MPa	ISO 178
Flexural Modulus, 2 mm/min	2500	MPa	ISO 178
Hardness, H358/30	100	MPa	ISO 2039-1
Hardness, Rockwell R	112	-	ISO 2039-2
<b>IMPACT</b>			
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	55	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	9	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	4	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	8	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	3	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL</b>			
Thermal Conductivity	0.2	W/m-°C	ISO 8302

<sup>1</sup> 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.

<sup>2</sup> Only typical data for material selection purpose. Not to be used for part or tool design.  
<sup>3</sup> This rating is not intended to reflect hazards presented this or any other material under actual fire conditions.  
<sup>4</sup> Own measurement according to UL.  
<sup>5</sup> 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.

Dongguan Yi-Ming Plastic Chemical Co., Ltd.

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<b>THERMAL</b>			
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
Ball Pressure Test, 75°C +/- 2°C	PASSES	-	IEC 60695-10-2
Ball Pressure Test, approximate maximum	80	°C	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	84	°C	ISO 306
Vicat Softening Temp, Rate B/120	86	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	81	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	74	°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
<b>PHYSICAL</b>			
Mold Shrinkage on Tensile Bar, flow (2) (5)	0.4 - 0.7	%	SABIC Method
Density	1.18	g/cm <sup>3</sup>	ISO 1183
Water Absorption, (23°C/sat)	1	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.2	%	ISO 62
Melt Flow Rate, 220°C/5.0 kg	17	g/10 min	ISO 1133
Melt Flow Rate, 220°C/10.0 kg	78	g/10 min	ISO 1133
Melt Volume Rate, MVR at 220°C/5.0 kg	16	cm <sup>3</sup> /10 min	ISO 1133
Melt Volume Rate, MVR at 220°C/10.0 kg	72	cm <sup>3</sup> /10 min	ISO 1133
<b>ELECTRICAL</b>			
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	26	kV/mm	IEC 60243-1

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<b>ELECTRICAL</b>			
Dielectric Strength, in oil, 3.2 mm	18	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	0.005	-	IEC 60250
Dissipation Factor, 1 MHz	0.01	-	IEC 60250
Comparative Tracking Index	450	V	IEC 60112
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94V-0 Flame Class Rating (3)	1.5	mm	UL 94
UL Recognized, 94-5VA Rating (3)	3	mm	UL 94
UL Recognized, 94-5VB Rating (3)	2.5	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12
Oxygen Index (LOI)	28	%	ISO 4589

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PROCESSING PARAMETERS	TYPICAL VALUE	UNIT
<b>Injection Molding</b>		
Drying Temperature	80 - 85	°C
Drying Time	2 - 4	hrs
Maximum Moisture Content	0.1	%
Melt Temperature	180 - 210	°C
Nozzle Temperature	180 - 200	°C
Front - Zone 3 Temperature	185 - 205	°C
Middle - Zone 2 Temperature	185 - 205	°C
Rear - Zone 1 Temperature	170 - 190	°C
Hopper Temperature	60 - 80	°C
Mold Temperature	40 - 80	°C

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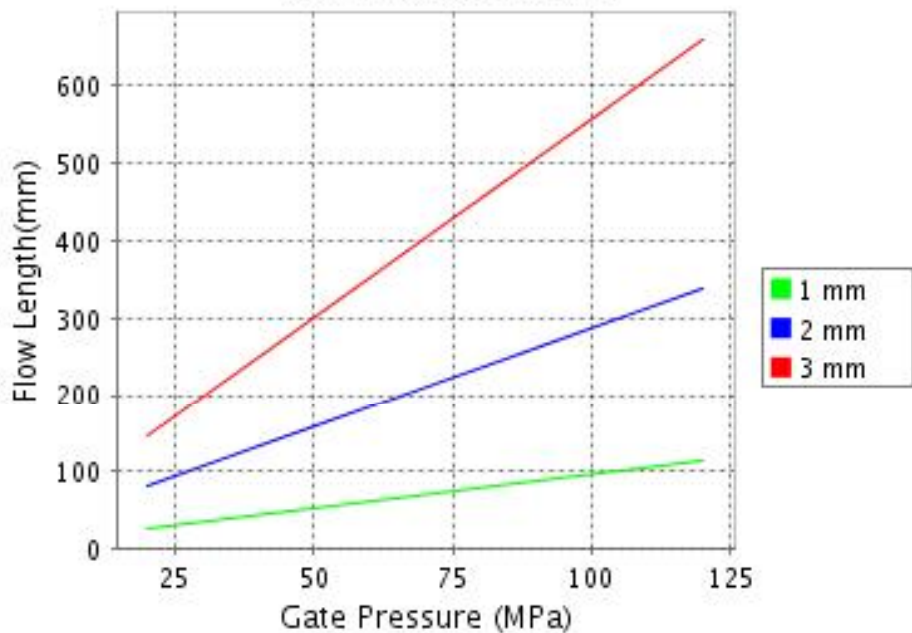
**CALCULATED FLOW LENGTH INDICATION**

**Moldflow® Radial Flow Analysis**

**Cycolac\* S157**

**Melt Temperature : 220°C**

**Mold Temperature : 60°C**



**Note: Technical support is recommended if Gate Pressure is greater than 80 MPa. Contact your local representative.**

**® Moldflow is a registered trademark of the Moldflow Corporation.**

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