SABIC Innovative Plastics™

Cycolac* Resin EX39

Americas: COMMERCIAL

Highest impact extrusion ABS for sheet and blow molding applications.

TYPICAL PROPERTIES [1]	TYPICAL VALUE	UNIT	STANDARD
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	360	kgf/cm²	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	290	kgf/cm²	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	3.5	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	108	%	ASTM D 638
Tensile Modulus, 5 mm/min	17100	kgf/cm²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	590	kgf/cm²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	19400	kgf/cm²	ASTM D 790
IMPACT			
Izod Impact, notched, 23°C	47	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -30°C	32	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	403	cm-kgf	ASTM D 3763
THERMAL			
Vicat Softening Temp, Rate B/50	95	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	91	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	77	°C	ASTM D 648
CTE, -40°C to 40°C, flow	1.01E-04	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	1.17E-04	1/°C	ASTM E 831
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	1.03	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.7 - 0.9	%	SABIC Method
Melt Viscosity, 240°C, 100 sec-1	15200	poise	ASTM D 3825

1) Typical values only. Variations within normal tolerances are possible for variose colours.All values are measured at least after 48 hours storage at 230C/50% relative humidity.
All properties, expect 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 this or any other material under actual fire conditions.
4) Own measurement according to UL.
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
PHYSICAL			
Melt Volume Rate, MVR at 220°C/10.0 kg	4	cm³/10 min	ISO 1133
FLAME CHARACTERISTICS			
UL Recognized, 94HB Flame Class Rating (3)	1.52	mm	UL 94

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PROCESSING PARAMETERS	TYPICAL VALUE	UNIT
Extrusion Blow Molding		
Drying Temperature	80 - 90	°C
Drying Time	5 - 4	hrs
Drying Time (Cumulative)	24	hrs
Maximum Moisture Content	0.02 - 0.04	%
Minimum Moisture Content	0.04	%
Melt Temperature (Parison)	210 - 225	°C
Barrel - Zone 1 Temperature	190 - 220	°C
Barrel - Zone 2 Temperature	190 - 220	°C
Barrel - Zone 3 Temperature	190 - 220	°C
Barrel - Zone 4 Temperature	190 - 220	°C
Adapter - Zone 5 Temperature	195 - 220	°C
Head - Zone 6 - Top Temperature	195 - 220	°C
Head - Zone 7 - Bottom Temperature	195 - 220	°C
Screw Speed	20 - 60	rpm
Extruder Feed Zone Temperature	60 - 80	°C
Mold Temperature	40 - 90	°C
Die Temperature	195 - 220	°C
Sheet Extrusion		
Drying Temperature	90 - 95	°C
Drying Time	2 - 4	hrs
Maximum Moisture Content	0	%
Melt Temperature	210 - 240	°C
Barrel - Zone 1 Temperature	195 - 210	°C
Barrel - Zone 2 Temperature	200 - 220	°C
Barrel - Zone 3 Temperature	205 - 230	°C
Barrel - Zone 4 Temperature	210 - 235	°C
Adapter Temperature	200 - 225	°C
Die Temperature	210 - 240	°C

• Purge with HDPE prior to changing screw, head, or die tooling and/or machine shutdown.
• For extended downtime, lower barrel, head and die temperatures to 95°C (200°F).

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