CYCOLAC™ Resin FR23

Europe-Africa-Middle East: COMMERCIAL

Flame retardant ABS (non-PBBE additives). Good properties/toughness. Excellent moldability. UL94 V-0 rated.

TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	430	kgf/cm²	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	350	kgf/cm²	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	2.1	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	11	%	ASTM D 638
Tensile Modulus, 5 mm/min	24600	kgf/cm²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	740	kgf/cm²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	27700	kgf/cm²	ASTM D 790
IMPACT			
Izod Impact, notched, 23°C	27	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	426	cm-kgf	ASTM D 3763
THERMAL			
Vicat Softening Temp, Rate B/50	90	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	83	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	72	°C	ASTM D 648
CTE, -40°C to 40°C, flow	7.92E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.92E-05	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	1.17	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.5 - 0.7	%	SABIC Method
Melt Flow Rate, 230°C/3.8 kgf	6.8	g/10 min	ASTM D 1238
Melt Viscosity, 200°C, 1000 sec-1	3100	poise	ASTM D 3825

(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:

+135-3858-6433 (GuangDong)
+188-1699-6168 (ShangHai)
+852-6957-5415 (HongKong)

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TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
PHYSICAL			
Melt Flow Rate, 220°C/5.0 kg	9	g/10 min	ISO 1133
Melt Volume Rate, MVR at 220°C/10.0 kg	37	cm³/10 min	ISO 1133
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (3)	2.31	mm	UL 94
UL Recognized, 94-5VB Rating (3)	2.49	mm	UL 94

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	80 - 90	°C
Drying Time	2 - 4	hrs
Drying Time (Cumulative)	6	hrs
Maximum Moisture Content	0.1	%
Melt Temperature	200 - 220	°C
Nozzle Temperature	200 - 220	°C
Front - Zone 3 Temperature	200 - 215	°C
Middle - Zone 2 Temperature	195 - 205	°C
Rear - Zone 1 Temperature	170 - 180	°C
Mold Temperature	50 - 70	°C
Back Pressure	0.3 - 0.7	MPa
Screw Speed	30 - 60	rpm
Shot to Cylinder Size	50 - 70	%
Vent Depth	0.038 - 0.051	mm

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