



CYCOLAC™ RESIN FR15

REGION EUROPE

DESCRIPTION

Flame retardant ABS (non-PBBE additive). Good property/toughness. Excellent moldability. UL94 V-0/5VA rated.

TYPICAL PROPERTY VALUES

Revision 20170816

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	41	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	35	MPa	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	2.3	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	9	%	ASTM D 638
Tensile Modulus, 5 mm/min	2340	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	71	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2720	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	41	MPa	ISO 527
Tensile Stress, break, 50 mm/min	31	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	2.1	%	ISO 527
Tensile Strain, break, 50 mm/min	33.5	%	ISO 527
IMPACT			
Izod Impact, notched, 23°C	213	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	33	J	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	18	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	6	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	19	kJ/m ²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	86	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	82	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	70	°C	ASTM D 648
CTE, -40°C to 40°C, flow	8.46E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	8.64E-05	1/°C	ASTM E 831
Vicat Softening Temp, Rate B/50	81	°C	ISO 306
Vicat Softening Temp, Rate B/120	84	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	73	°C	ISO 75/Af
Relative Temp Index, Elec	60	°C	UL 746B

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Relative Temp Index, Mech w/impact	60	°C	UL 746B
Relative Temp Index, Mech w/o impact	60	°C	UL 746B
PHYSICAL			
Specific Gravity	1.2	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.5 – 0.7	%	SABIC method
Melt Flow Rate, 230°C/3.8 kgf	4	g/10 min	ASTM D 1238
Melt Viscosity, 200°C, 1000 sec-1	2900	Poise	ASTM D 3825
Density	1.19	g/cm³	ISO 1183
Melt Flow Rate, 220°C/5.0 kg	10	g/10 min	ISO 1133
ELECTRICAL			
Arc Resistance, Tungsten {PLC}	7	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	3	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	4	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (3)	1.5	mm	UL 94
UL Recognized, 94-5VA Rating (3)	2.49	mm	UL 94
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	

DISCLAIMER

The information contained herein may include typical properties of our products or their typical performances when used in certain typical applications. Actual properties of our products, in particular when used in conjunction with any third party material(s) or for any non-typical applications, may differ from typical properties. It is the customer's responsibility to inspect and test our product(s) in order to satisfy itself as to the suitability of the product(s) for its



and its customers particular purposes. The customer is responsible for the appropriate, safe and legal use, processing and handling of all product(s) purchased from us.

Nothing herein is intended to be nor shall it constitute a warranty whatsoever, in particular, warranty of merchantability or fitness for a particular purpose.

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