

# CYCOLACT™ RESIN FR15U

REGION AMERICAS

## DESCRIPTION

Flame retardant ABS. Excellent indoor UV properties. Excellent moldability. UL94V-0/5VA rated. Elevated UL RTI rating.

## TYPICAL PROPERTY VALUES

Revision 20220720

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 5 mm/min	37	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	30	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	2.4	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	17	%	ASTM D638
Tensile Modulus, 5 mm/min	2060	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	67	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2340	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	41	MPa	ISO 527
Tensile Strain, break, 50 mm/min	22.0	%	ISO 527
Tensile Modulus, 1 mm/min	2210	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	63	MPa	ISO 178
Flexural Modulus, 2 mm/min	2260	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, notched, 23°C	213	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	28	J	ASTM D3763
Izod Impact, notched 80*10*4 +23°C	12	kJ/m <sup>2</sup>	ISO 180/1A
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	93	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	86	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	75	°C	ASTM D648
CTE, -40°C to 40°C, flow	9.E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	9.18E-05	1/°C	ASTM E831
Vicat Softening Temp, Rate B/50	92	°C	ISO 306
Relative Temp Index, Elec	90	°C	UL 746B
Relative Temp Index, Mech w/impact	85	°C	UL 746B
Relative Temp Index, Mech w/o impact	90	°C	UL 746B
<b>PHYSICAL</b>			
Specific Gravity	1.19	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm	0.5 – 0.7	%	SABIC method
Melt Flow Rate, 230°C/3.8 kg	3.3	g/10 min	ASTM D1238
Melt Viscosity, 200°C, 1000 sec-1	3200	Poise	ASTM D3825
Density	1.19	g/cm <sup>3</sup>	ISO 1183
Melt Flow Rate, 220°C/5.0 kg	7	g/10 min	ISO 1133
Melt Volume Rate, MVR at 220°C/10.0 kg	40	cm <sup>3</sup> /10 min	ISO 1133
<b>ELECTRICAL</b>			

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Arc Resistance, Tungsten {PLC}	7	PLC Code	ASTM D495
Hot Wire Ignition {PLC}	2	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}	1	PLC Code	UL 746A
Volume Resistivity	>1.E+14	Ω.cm	IEC 60093
Dielectric Strength, in oil, 3.2 mm	20	kV/mm	IEC 60243-1
<b>FLAME CHARACTERISTICS</b>			
UL Yellow Card Link	E121562-220718	-	-
UL Yellow Card Link 2	E121562-220719	-	-
UL Recognized, 94V-0 Flame Class Rating	1.49	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	2.79	mm	UL 94
<b>INJECTION MOLDING</b>			
Drying Temperature	80 – 90	°C	
Drying Time	2 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.1	%	
Melt Temperature	205 – 230	°C	
Nozzle Temperature	205 – 230	°C	
Front - Zone 3 Temperature	205 – 220	°C	
Middle - Zone 2 Temperature	200 – 210	°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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