

CYCOLACTM RESIN MG47F

REGION AMERICAS

DESCRIPTION

Multi-purpose, injection molding ABS providing a favorable balance of engineering properties. FDA compliant.

TYPICAL PROPERTY VALUES

Revision 20220619

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	44	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	33	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	2	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	24	%	ASTM D638
Tensile Modulus, 5 mm/min	2270	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	70	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2300	MPa	ASTM D790
Hardness, Rockwell R	112	-	ASTM D785
Tensile Stress, yield, 50 mm/min	47	MPa	ISO 527
Tensile Stress, break, 50 mm/min	35	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	2.6	%	ISO 527
Tensile Strain, break, 50 mm/min	25	%	ISO 527
Tensile Modulus, 1 mm/min	2370	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	70	MPa	ISO 178
Flexural Modulus, 2 mm/min	2200	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	320	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	30	J	ASTM D3763
Izod Impact, notched 80*10*4 +23°C	22	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	8	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	26	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	9	kJ/m²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	99	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	94	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	80	°C	ASTM D648
CTE, -40°C to 40°C, flow	8.82E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	8.82E-05	1/°C	ASTM E831
Vicat Softening Temp, Rate B/50	98	°C	ISO 306
Vicat Softening Temp, Rate B/120	100	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	81	°C	ISO 75/Af
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			



PROPERTIES TYPICAL VALUES UNITS TEST METHODS Specific Gravity 1.04					
Mold Shrinkage, flow, 3.2 mm 0.5 – 0.8 % In Mold Shrinkage, 100 mm ASTM D1238 Melt Flow Rate, 230°C/3.8 kg 5.6 9.10 mm ASTM D1238 Melt Viscosity, 240°C, 1000 sec¹ 2.00 pole ASTM D1238 Melt Flow Rate, 220°C/10.0 kg 1.04 g/m³ IS 1133 But Effork Rate, 220°C/10.0 kg 18 9.00 mm g/m³ 10 1133 EUCTRICA V V V V V Re Resistance, Tungsten (PLC) 6 9.00 mm PLC Ode MTM D495 ASTM D495 High Vindrey Art Engly, surface (PLC) 3 9.00 mm PLC Ode U.7 46A ASTM D495 High Ampere Are Ligh, surface (PLC) 9 PLC Ode U.7 46A ASTM D495	PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS	
Metr Flow Asia, 230°C, 3.8 kg 5.6 9.0 km ASTM D123 km Metr Viscosity, 240°C, 1000 sec-1 250 9.0 km ATM D325 Density 104 9.0 km 150 1183 Metr Flow Rate, 220°C/10.0 kg 18 10 1183 10 1183 Blet Flow Rate, 220°C/10.0 kg 18 20 1183 10 1183 Blet Flow Rate, 220°C/10.0 kg 18 20 12 12 12 12 12 12 12 12 12 12 12 12 12	Specific Gravity	1.04	-	ASTM D792	
Melt Viscosity, 240°C, 1000 sec-1 250 Pole ASM D3825 Density 1,04 g/cm³ 150 183 Melt Flow Rate, 220°C/1,0 kg 18 g/cm³ 150 183 ELECTRICA V V V Brot Wire Ighiton (PLC) 3 CC Code ASTM D45 Hot Wire Ighiton (PLC) 3 CC Code U.746A Hot Wire Ighit (PLC) 3 CC Code U.746A High Ampere Arc Ign, surface (PLC) 3 CC Code U.746A Comparative Tracking Index (UL) (PLC) 3 CC Code U.746A Comparative Tracking Index (UL) (PLC) 3 CC Code U.746A Use Led CHARACTERISTICS U.746A V CC Code U.746A Use Led Recognized, 941B Flame Class Rating 8 9 C V V Use Led Recognized, 941B Flame Class Rating 8 9 9 C V V Use Led Recognized, 941B Flame Class Rating 8 9 9 Y Y Y Y Y	Mold Shrinkage, flow, 3.2 mm	0.5 – 0.8	%	SABIC method	
Density 10.44 9/cm² 151183 Melt Flow Rate, 220°C/10.0 kg 18 9/10 min 150 1133 ELECTICIA Fact Resistance, Tungsten (PLC) 6 PLC Code ASTM D495 Hot Wire Ignition (PLC) 3 PLC Code U. 746A High Voltage Arc Track Rate (PLC) 3 PLC Code U. 746A High Ampere Arc Ign, surface (PLC) 0 0 0 0 0 Comparative Track Rate (PLC) 3 0<	Melt Flow Rate, 230°C/3.8 kg	5.6	g/10 min	ASTM D1238	
Melt Flow Rate, 220°C/10.0kg 18 g/l min bill 13 ELECTRICAL C C AC Code ASTM 0495 Hot Wire Ignition (PLC) 3 PLC Code U.746A High Anger Ar Track Rate (PLC) 3 PLC Code U.746A High Amper Art Gun, surface (PLC) 0 PLC Code U.746A Comparative Tracking Index (UL) (PLC) 0 PLC Code U.746A Comparative Tracking Index (UL) (PLC) 0 PLC Code U.746A LU Vellow Card Link 5 1 9 1 U. Recognized, 94HB Flame Class Rating 1 9 9 1 <t< th=""><th>Melt Viscosity, 240°C, 1000 sec-1</th><th>2250</th><th>Poise</th><th>ASTM D3825</th></t<>	Melt Viscosity, 240°C, 1000 sec-1	2250	Poise	ASTM D3825	
ELECTRICAL Arc Resistance, Tungsten (PIC) 6 PIC Code ASTM D495 Hot Wire Ignition (PIC) 3 PIC Code U.746A High Voltage Arc Track Rate (PIC) 3 PIC Code U.746A High Ampere Arc Ign, surface (PIC) 0 PIC Code U.746A Comparative Tracking Index (UI) (PIC) 0 PIC Code U.746A UL Vellow Card Link 1 PIC Code U.746A UL Vellow Card Link 1 PIC Code U.746A UL Recognized, 94HB Flame Class Rating 1 1 9 4 UL Recognized, 94HB Flame Class Rating 80 - 95 C 1 9 1 USECTION MOLDING 2-4 Hrs 1	Density	1.04	g/cm³	ISO 1183	
Arc Resistance, Tungsten (PLC)6PLC CodeASTM D495Hot Wire Ignition (PLC)3PLC CodeU.7 46AHigh Voltage Arc Track Rate (PLC)3PLC CodeU.7 46AHigh Ampere Arc Ign, surface (PLC)0PLC CodeU.7 46AComparative Tracking Index (UI) (PLC)0PLC CodeU.7 46AUL Vellow Card Link121562-100324185UL Vellow Card Link121562-100324185UL Recognized, 94H8 Flame Class Rating80-95**Drying Time2-4HrsDrying Time (Cumulative)8+-Maximum Moisture Content20-260**Mozil Temperature20-260**Nozel Temperature20-260**Moid Temperature20-2760**Middle-Zone 2 Temperature10-210**Moid Temperature90-210**Moid Temperature50-70**Moid Temperature50-70MPaBack Pressure30-60MPaScew Speed30-60MPaStock Updated Size50-70MPaStock Updated Size50-70MPaStock Updated Size50-70MPaStock Updated Size50-70MPa <th>Melt Flow Rate, 220°C/10.0 kg</th> <th>18</th> <th>g/10 min</th> <th>ISO 1133</th>	Melt Flow Rate, 220°C/10.0 kg	18	g/10 min	ISO 1133	
Hot Wire Ignition (PLC) 3 PLC Code U.746A High Voltage Arc Track Rate {PLC} 3 PLC Code U.746A High Ampere Arc Ign, surface {PLC} 0 PLC Code U.746A Comparative Tracking Index (UL) {PLC} 0 PLC Code U.746A FAME CHARACTERISTICS UL Yellow Card Link £121562-100324185 - - - U. Recognized, 94HB Flame Class Rating 15 mm U.94 - INJECTION MOLDING ** ** - - - Drying Time (Cumulative) 8 9-95 ** Hirs -	ELECTRICAL				
High Voltage Arc Track Rate {PLC} 3 PLC Code U. 746A High Ampere Arc Ign, surface {PLC} 0 PLC Code U. 746A Comparative Tracking Index (UL) {PLC} 0 PLC Code U. 746A FLAME CHARACTERISTICS UL Yellow Card Link £121562-100324185 - - - U. Recognized, 94HB Flame Class Rating 15 m U. 94 - INJECTION MOLDING Drying Time (Cumulative) 80 - 95 **C - </th <th>Arc Resistance, Tungsten {PLC}</th> <th>6</th> <th>PLC Code</th> <th>ASTM D495</th>	Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D495	
High Amper Arc Ign, surface (PLC) 0 0 PC Code U. 746A Comparative Tracking Index (UL) (PLC) 0 0 PC Code U. 746A FLAME CHARACTERISTICS UL Yellow Card Link 15 12562-100324185 PC	Hot Wire Ignition (PLC)	3	PLC Code	UL 746A	
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FLAME CHARACTERISTICS UL Yellow Card Link UL Recognized, 94HB Flame Class Rating INJUSURING INJUSTION MOLDING INJUSTION MOLDING Drying Temperature Prying Fline (Cumulative) Maximum Moisture Content Maximum Moisture Content Maximum Moisture Content Mozzle Temperature 200 – 260 Nozzle Temperature 305 – 225 Nozzle Temperature 305 – 225 Nodidle - Zone 2 Temperature Nodid Temperature 305 – 207 Nodid Temperature 306 – 207 Nodid Temperature 307 – 207 Nodid Temperature 308 – 207 Nodid Temperature 309 – 210 Nodid Temperature 300 – 207 Nodid Tem	High Ampere Arc Ign, surface {PLC}	0	PLC Code	UL 746A	
LI Yellow Card Link121562-100324185UL Recognized, 94HB Flame Class Rating1.5mmUL 94INJECTION MOLDINGDrying Temperature80 – 95°C-Drying Time (Cumulative)8Hrs-Maximum Moisture Content0.1%-Mozel Temperature20 – 260°C-Nozel Temperature20 – 260°C-Font - Zone 3 Temperature20 – 260°C-Middle - Zone 2 Temperature20 – 225°C-Middle - Zone 2 Temperature190 – 210°C-Mold Temperature50 – 70°C-Back Pressure0.3 – 0.7MPA-Screw Speed30 – 60pm-Storew Speed50 – 70pm-Storew Speed50 – 70pm-Storew Speed50 – 70pm-	Comparative Tracking Index (UL) {PLC}	0	PLC Code	UL 746A	
UL Recognized, 94HB Flame Class Rating1.5mmUL 94INJECTION MOLDINGDrying Temperature80 – 95CCDrying TimeHrsDrying Time (Cumulative)8Hrs-Maximum Moisture Content0.1%-Melt Temperature200 – 260°C-Nozzle Temperature200 – 260°C-Front - Zone 3 Temperature215 – 240°C-Middle - Zone 2 Temperature205 – 225°C-Mold Temperature50 – 70°C-Mold Temperature50 – 70°C-Back Pressure30 – 60MPA-Screw Speed30 – 60mpm-Stot Cylinder Size50 – 70%-	FLAME CHARACTERISTICS				
INJECTION MOLDING Drying Temperature 80 – 95 °C Drying Time (Cumulative) 88 Hrs Maximum Moisture Content 0.1 % Melt Temperature 200 – 200 °C Nozzle Temperature 200 – 200 °C Nozzle Temperature 200 – 200 °C Front - Zone 3 Temperature 205 – 225 °C Middle - Zone 2 Temperature 205 – 225 °C Mold Temperature 30 – 210 °C Mold Temperature 50 – 70 °C Mold Temperature 50 – 70 °C Screw Speed 30 – 60 °C Front - Sone 3 Femperature 50 – 70 °C Mold Temperature 50 – 70 °C Mold	UL Yellow Card Link	E121562-100324185	-		
Drying Temperature80 – 95°CDrying Time2 – 4HrsDrying Time (Cumulative)8HrsMaximum Moisture Content0.1%Melt Temperature220 – 260°CNozzle Temperature220 – 260°CFront - Zone 3 Temperature215 – 240°CMiddle- Zone 2 Temperature205 – 225°CRear - Zone 1 Temperature190 – 210°CMold Temperature50 – 70°CBack Pressure0.3 – 0.7MPaScrew Speed30 – 60pmShot to Cylinder Size50 – 70%	UL Recognized, 94HB Flame Class Rating	1.5	mm	UL 94	
Drying Time (Cumulative) 8 8 Hrs Maximum Moisture Content 0.1 % Melt Temperature 220 – 260 °C Nozzle Temperature 220 – 260 °C Front - Zone 3 Temperature 215 – 240 °C Middle - Zone 2 Temperature 205 – 225 °C Rear - Zone 1 Temperature 190 – 210 °C Mold Temperature 50 – 70 °C Mold Temperature 50 – 70 °C Screw Speed 9.3 – 0.7 MPA Screw Speed 50 – 70 % Sone Speed 50 – 70 % Mear - Sone 1 Femperature 50 – 70 % Mear - Sone 3 Femperature 50 – 70 % Sone 3 Femperature 50 – 70 % Mear - Sone 3 Femperature 50 – 70 % Mear - Sone 3 Femperature 50 – 70 % Sone 3 Femperature 50 – 70 % Mear - Sone 3 Femperature 50 – 70 % Mear - Sone 3 Femperature 50 – 70 % Sone 3 Femperature 50 – 70 % Mear - Sone 3 Fempe	INJECTION MOLDING				
Drying Time (Cumulative) Maximum Moisture Content O.1 Melt Temperature 220 – 260 Nozzle Temperature 220 – 260 ront - Zone 3 Temperature 215 – 240 Middle - Zone 2 Temperature 205 – 225 Middle - Zone 1 Temperature 305 – 225 Mold Temperature 507 – 70 Back Pressure O.3 – 0.7 MPa Screw Speed Son – 70 Tym MPa Screw Speed Son – 70 Son –	Drying Temperature	80 – 95	°C		
Maximum Moisture Content 0.1 % Melt Temperature 220 - 260 °C Nozzle Temperature 220 - 260 °C Front - Zone 3 Temperature 215 - 240 °C Middle - Zone 2 Temperature 205 - 225 °C Rear - Zone 1 Temperature 190 - 210 °C Mold Temperature 50 - 70 °C Back Pressure 0.3 - 0.7 MPa Screw Speed 30 - 60 rpm Shot to Cylinder Size 50 - 70 %	Drying Time	2 – 4	Hrs		
Melt Temperature 220 – 260 °C Nozzle Temperature 220 – 260 °C Front - Zone 3 Temperature 215 – 240 °C Middle - Zone 2 Temperature 205 – 225 °C Rear - Zone 1 Temperature 190 – 210 °C Mold Temperature 50 – 70 °C Back Pressure 0.3 – 0.7 MPa Screw Speed 30 – 60 rpm Shot to Cylinder Size 50 – 70 %	Drying Time (Cumulative)	8	Hrs		
Nozzle Temperature 220 – 260 °C Front - Zone 3 Temperature 215 – 240 °C Middle - Zone 2 Temperature 205 – 225 °C Rear - Zone 1 Temperature 190 – 210 °C Mold Temperature 50 – 70 °C Back Pressure 0.3 – 0.7 MPa Screw Speed 30 – 60 rpm Shot to Cylinder Size 50 – 70 %	Maximum Moisture Content	0.1	%		
Front - Zone 3 Temperature 215 – 240 °C Middle - Zone 2 Temperature 205 – 225 °C Rear - Zone 1 Temperature 190 – 210 °C Mold Temperature 50 – 70 °C Back Pressure 0.3 – 0.7 MPa Screw Speed 30 – 60 rpm Shot to Cylinder Size 50 – 70 %	Melt Temperature	220 – 260	°C		
Middle - Zone 2 Temperature 205 – 225 °C Rear - Zone 1 Temperature 190 – 210 °C Mold Temperature 50 – 70 °C Back Pressure 0.3 – 0.7 MPa Screw Speed 30 – 60 rpm Shot to Cylinder Size 50 – 70 %	Nozzle Temperature	220 – 260	°C		
Rear - Zone 1 Temperature 190 – 210 °C Mold Temperature 50 – 70 °C Back Pressure 0.3 – 0.7 MPa Screw Speed 30 – 60 rpm Shot to Cylinder Size 50 – 70 %	Front - Zone 3 Temperature	215 – 240	°C		
Mold Temperature 50 - 70 °C Back Pressure 0.3 - 0.7 MPa Screw Speed 30 - 60 rpm Shot to Cylinder Size 50 - 70 %	Middle - Zone 2 Temperature	205 – 225	°C		
Back Pressure 0.3 – 0.7 MPa Screw Speed 30 – 60 rpm Shot to Cylinder Size 50 – 70 %	Rear - Zone 1 Temperature	190 – 210	°C		
Screw Speed 30 – 60 rpm Shot to Cylinder Size 50 – 70 %	Mold Temperature	50 – 70	°C		
Shot to Cylinder Size 50 – 70 %	Back Pressure	0.3 – 0.7	MPa		
•	Screw Speed	30 – 60	rpm		
Vent Depth 0.038 – 0.051 mm	Shot to Cylinder Size	50 – 70	%		
	Vent Depth	0.038 - 0.051	mm		

DISCLAIMER

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