

## Iupital™ FX-11

Mitsubishi Engineering-Plastics Corp - Acetal (POM) Copolymer

### General Information

#### Product Description

Abrasion resistant; Lubricant

#### General

Additive	• Lubricant	
Features	• Abrasion Resistant	• Lubricated
Uses	• Automotive Applications • Automotive Electronics	• Electrical/Electronic Applications • General Purpose

### ASTM & ISO Properties <sup>1</sup>

Physical	Nominal Value	Unit	Test Method
Density	1.39	g/cm <sup>3</sup>	ISO 1183
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	10	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (190°C/2.16 kg)	8.6	cm <sup>3</sup> /10min	ISO 1133
Molding Shrinkage - Flow (3.00 mm)	2.1	%	Internal Method
Water Absorption - 60% RH (23°C)	0.22	%	Internal Method
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	2700	MPa	ISO 527-1/1
Tensile Stress (Yield)	55.0	MPa	ISO 527-2/50
Tensile Strain			ISO 527-2/50
Yield	9.0	%	
Break	35	%	
Flexural Modulus <sup>2</sup>	2500	MPa	ISO 178
Flexural Stress <sup>2</sup>	81.0	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	7.0	kJ/m <sup>2</sup>	ISO 179
Charpy Unnotched Impact Strength (23°C)	200	kJ/m <sup>2</sup>	ISO 179
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed	156	°C	ISO 75-2/B
1.8 MPa, Unannealed	95.0	°C	ISO 75-2/A
Melting Temperature	166	°C	ISO 11357-3
CLTE			ISO 11359-2
Flow	1.1E-4	cm/cm/°C	
Transverse	1.1E-4	cm/cm/°C	
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+16	ohms	IEC 60093
Volume Resistivity	1.0E+14	ohms·cm	IEC 60093

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Electrical	Nominal Value	Unit	Test Method
Electric Strength			IEC 60243-1
1.00 mm		36 kV/mm	
3.00 mm		19 kV/mm	
Comparative Tracking Index	600	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.8 mm)	HB		UL 94

### Processing Information

Injection	Nominal Value	Unit
Drying Temperature - Hot Air Dryer	80	°C
Drying Time - Hot Air Dryer	3.0 to 4.0	hr
Rear Temperature	170	°C
Middle Temperature	180	°C
Front Temperature	190	°C
Nozzle Temperature	180 to 210	°C
Mold Temperature	60 to 80	°C
Injection Pressure	50.0 to 100	MPa
Injection Rate	Moderate	
Screw Speed	80 to 120	rpm

### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> 2.0 mm/min

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