Friday, April 01, 2005

Iupilon® S-3000UR

Mitsubishi Engineering-Plastics Corp - *Polycarbonate*

General Information

General	
Material Status	• Commercial: Active
Availability	• Europe • North America • Pacific Rim
Test Standards Available	• ASTM • ISO
Features	• Clarity, High • Colorability, Good • Dimensional Stability, Good • Electrically Insulating • Extinguishing, Self • Heat Resistance, High • Impact Resistance, Good • Mold Release, Good • Toxicity, None • UV Resistance, Good • Viscosity, Low • Weather Resistance, Good
Uses	• Automotive Applications • Electrical/Electronic Applications • Medical Appliances • Optical Applications • Sporting Goods
Forms	• Pellets
Processing Method	• Injection Molding

ASTM and ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density -Specific Gravity	1.20	sp gr 23/23°C	ASTM D792
Density	1.20	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	16	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	0.976	in³/10min	ISO 1133
Mold Shrink, Linear-Flow (0.118 in)	0.0050 to 0.0080	in/in	ASTM D955
Mold Shrink, Linear-Trans (0.118 in)	0.0050 to 0.0080	in/in	ASTM D955
Molding Shrinkage			ISO 294-4
(Across Flow)	0.50 to 0.70	%	
(Flow)	0.50 to 0.70	%	
Water Absorption @ 24 hrs	0.25	%	ASTM D570
Water Absorption 24h/23C	0.24	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	348000	psi	ISO 527-1, -2
Tensile Strength (73 °F)	9020	psi	ASTM D638
Tensile Stress at Yield	8990	psi	ISO 527-1, -2
Tensile Strain at Yield	6.7	%	ISO 527-1, -2
Tensile Elongation @ Brk (73 °F)	120	%	ASTM D638
Nominal Tensile Strain at Break	120	%	ISO 527-1, -2
Flexural Modulus (73 °F)	334000	psi	ASTM D790
Flexural Modulus	334000	psi	ISO 178
Flexural Strength (73 °F)	12400	psi	ASTM D790
Flexural Strength	13500	psi	ISO 178
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength (73 °F)	31.9	ft-lb/in²	ISO 179
Charpy Unnotched Impact Strength (73 °F)	No Break	ft-lb/in²	ISO 179
Notched Izod Impact (0.126 in)	16.3	ft-lb/in	ASTM D256
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness			ASTM D785
(M-Scale)	65		
(R-Scale)	123		
Thermal	**Nominal Value**	**Unit**	**Test Method**
DTUL @66psi - Unannealed	302	°F	ASTM D648
HDT B (0.45 MPa) Unannealed	282	°F	ISO 75B-1, -2
DTUL @264psi - Unannealed	277	°F	ASTM D648
HDT A (1.80 MPa) Unannealed	255	°F	ISO 75A-1, -2
CLTE, Flow (68 to 176°F (20 to 80°C))	0.000036	in/in/°F	ASTM D696
Coefficient of Linear Thermal Expansion, Flow	0.000036	in/in/°F	ISO 11359-1, -2
Coefficient of Linear Thermal Expansion, Transverse	0.000037	in/in/°F	ISO 11359-1, -2
Electrical	**Nominal Value**	**Unit**	**Test Method**

Surface Resistivity	1.0E+15	ohms	ASTM D257
Surface Resistivity	6.0E+15	ohms	IEC 60093
Volume Resistivity	2.1E+16	ohm-cm	ASTM D257
Volume Resistivity	3.0E+16	ohm-cm	IEC 60093
Dielectric Strength	508	V/mil	ASTM D149
Dielectric Constant (1E+6 Hz)	2.850		ASTM D150
Dissipation Factor (1E+6 Hz)	0.0082		ASTM D150
Dissipation Factor			IEC 60250
(100 Hz)	0.000600		
(1E+6 Hz)	0.00900		
Comp Track Index	280	V	IEC 60112
Electric Strength			IEC 60243-1
(0.0394 in)	790	V/mil	
(0.118 in)	460	V/mil	
Relative Permittivity			IEC 60250
(100 Hz)	3.10		
(1E+6 Hz)	3.10		

Additional Properties

Water Absorption, ASTM D570, 24 hr, 73°F: 0.23 - 0.26 %
Deflection Temperature Under Load, ASTM D648, 66 psi: 293 - 311°F
Deflection Temperature Under Load, ASTM D648, 264 psi: 270 - 284°F
Coefficient of Linear Thermal Expansion, ASTM D696, 68 to 176°F: 3.33 - 3.88 in^-5/in-°F
Tensile Strength, ASTM D638, 73°F: 8528 - 9514 psi
Tensile Elongation, ASTM D638, 73°F: 90 - 140 %
Flexural Strength, ASTM D790, 73°F: 11661 - 13082 psi
Izod Impact Strength, ASTM D256, Notched, 0.125 in: 13.9 - 18.7 ft-lb/in
Rockwell Hardness, ASTM D785, R-Scale: 122 - 124
Rockwell Hardness, ASTM D785, M-Scale: 60 - 70
Dielectric Strength, ASTM D149: 18 - 22 kV/mm
Molding Shrinkage, ISO 294-4, 3.2 mm, Flow: 0.5 to 0.7%
Molding Shrinkage, ISO 294-4, 3.2 mm, Across Flow: 0.5 to 0.7%

Notes

1 Typical properties: these are not to be construed as specifications.

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