

IUPILON® POLYCARBONATE

ENGINEERING THERMOPLASTIC

IUPILON® IS A REGISTERED TRADEMARK OF MITSUBISHI ENGINEERING PLASTICS CORPORATION

IUPILON® H3000R

IUPILON® H3000R / H3001R / H3003R are the low viscosity (ultra high melt flow) grades in the Iupilon® range and are well suited to intricate or "difficult to fill" injection moulding applications which require a mould release agent (R). Offering an excellent balance of transparency, toughness, heat resistance, flame retardency and processability, typical applications include drinking tumblers, food processors and other kitchen appliances and domestic serving trays.

Note: [Standard grade = H3000R] / [FDA approved = H3001R] / [Steam resistant = H3003R].

	<u>CONDITIONS</u>	<u>UNITS</u>	<u>TYPICAL VALUES</u>	<u>TESTING METHODS</u>
<u>1. Mechanical Properties</u>				
Notched Izod Impact Strength	12.7 x 3.2 mm	J/m	250	ASTM D256
Falling Dart Impact	3.2 mm	J	65	ASTM D3029
Tensile Strength	12.7 x 3.2 mm @ 20 mm/min	MPa	62	ASTM D638
Elongation to Fail	12.7 x 3.2 mm @ 20 mm/min	%	100	ASTM D638
Flexural Strength	12.7 x 6.4 mm @ 2.8 mm/min	MPa	87	ASTM D790
Flexural Modulus	12.7 x 6.4 mm @ 2.8 mm/min	MPa	2300	ASTM D790
<u>2. Thermal Properties</u>				
Heat Deflection Temperature	12.7 x 6.4 mm @ 1.82 MPa	°C	128	ASTM D648
	12.7 x 6.4 mm @ 0.46 MPa	°C	132	ASTM D648
Coefficient of Linear Thermal Expansion		cm/cm/°C	(6-7) exp-5	ASTM D696
<u>3. Electrical Properties</u>				
Volume Resistivity		Ohm.cm	2.1 exp16	ASTM D149
Dielectric Constant		MHz	2.85	ASTM D150
<u>4. Physical Properties</u>				
Melt Flow Rate	300°C, 1.20 kg	g/10 min	28	ASTM D1238
Specific Gravity		-	1.20	ASTM D792
Rockwell Hardness		R	123	ASTM D785
UL Flammability	1.6 mm	Rating	V-2	UL 94
Water Absorption	24 hours	%	0.24	ASTM D570
Total Light Transmittance	3.0 mm	%	85	ASTM D1003
Reinforcement Level		%	-	n/a
Mould Shrinkage	3.0 x Ø100 mm disc	%	0.6±0.2	ASTM D955

All test results were obtained using natural material.

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Material Safety Data Sheet (MSDS): Code Iupilon

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TYPICAL PROCESSING CONDITIONS

IUPILON® H3000R

The following typical guidelines are offered as initial processing conditions for IUPILON® H3000R. In practice, processing parameters may need to be varied to give commercially acceptable performance in conjunction with optimum physical properties. For specific technical advice on part design or processing conditions, contact the Marplex Technical Service Department.

Temperature of pellet bed in dehumidifying drier		120 - 125 °C
Minimum drying time at desired pellet bed temp		4 - 6 hours
Mould temperature		60 - 110 °C
Nozzle temperature		Do not exceed stock temperature
Stock temperature		240 - 270 °C
Cylinder temperatures	Rear	230 - 245 °C
	Middle	240 - 255 °C
	Front	250 - 265 °C
Fill speed		Medium
Screw speed		40 - 60 rpm
Screw back pressure		0.1 - 0.5 MPa
Injection pressure		60 - 140 MPa
Clamp pressure		4 - 8 kN/cm ²

Comment(s):

- 1 Cleanliness of the dryer, machine hopper and machine screw/barrel/nozzle assembly are essential for processing Iupilon® Polycarbonate and producing contamination free moulded components.
- 2 Iupilon® Polycarbonate is not compatible with other polymers.
- 3 It is suggested that the pre-drying, moulding die and material temperatures are manually confirmed using a hand held temperature measuring device.

Conversions: 1 MPa = 145 psi
= 10.2 kg/cm²
= 10 bar
°C = 5(°F-32)/9
1 kN/cm² = 0.65 ton/in²