MARPLEX

Marplex Australia Pty Ltd
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IUPITAL® ACETAL COPOLYMER
ENGINEERING THERMOPLASTIC

IUPITAL® FG2025

IUPITAL® FG2025 is a 25% glass fibre reinforced medium viscosity (medium melt flow) grade of Iupital® Polyacetal which is suited for general purpose injection moulding applications requiring exceptional rigidity, heat and creep resistance and high chemical resistance. Typical applications include whitegoods structural brackets and framework, automotive interior mirror mounts, various locking linkages and high load mechanical retaining clips.

	CONDITIONS	UNITS	TYPICAL VALUES	TESTING METHODS
1. Mechanical Properties				
Notched Izod Impact Strength	12.7 x 3.2 mm	J/m	83	ASTM D256
Tensile Strength	12.7 x 3.2 mm @ 5.0 mm/min	MPa	137	ASTM D638
Elongation to Fail	12.7 x 3.2 mm @ 5.0 mm/min	%	3	ASTM D638
Flexural Strength	12.7 x 6.4 mm @ 2.8 mm/min	MPa	206	ASTM D790
Flexural Modulus	12.7 x 6.4 mm @ 2.8 mm/min	MPa	9120	ASTM D790
Shear Strength	2.0 mm	MPa	74.5	ASTM D732
Tensile Impact Strength	1.6 mm	kJ/m²	120	ASTM D1822
2. Thermal Properties				
Heat Deflection Temperature	12.7 x 6.4 mm @ 1.82 MPa	ºC	163	ASTM D648
	12.7 x 6.4 mm @ 0.46 MPa	ºC	164	ASTM D648
Melting Temperature		ºC	165	DSC
Coefficient of Linear Thermal Expansion		cm/cm/°C	(2-3)exp-5	ASTM D696
4. Physical Properties				
Melt Flow Rate	190ºC, 2.16 kg	g/10 min	-	ASTM D1238
Specific Gravity		-	1.59	ASTM D792
Rockwell Hardness		M	95	ASTM D785
UL Flammability	0.8 mm	Rating	HB	UL 94
Water Absorption	24 hours	%	0.20	ASTM D570
Reinforcement Level		%	25	n/a
Mould Shrinkage	3.0 x Ø100 mm disc	%	0.6±0.2	ASTM D955

TYPICAL PROCESSING CONDITIONS

IUPITAL® FG2025

The following typical guidelines are offered as initial processing conditions for IUPITAL® FG2025
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		80 - 90 ºC
Minimum drying time at desired pellet bed temp		2 - 3 hours
Mould temperature		50 - 90 ºC
Nozzle temperature		Do not exceed stock temperature
Stock temperature		190 - 210 ºC
Cylinder temperatures	Rear	165 - 185 ºC
	Middle	175 - 195 ºC
	Front	185 - 205 ºC
Fill speed		Medium - Fast
Screw speed		40 - 60 rpm
Screw back pressure		0.1 - 0.5 MPa
Injection pressure		60 - 130 MPa
Clamp pressure		3 - 5 kN/cm²

Comment(s):

1 Cleanliness of the dryer, machine hopper and machine screw/barrel/nozzle assembly are essential for processing Iupital® Polyacetal and producing contamination free moulded components.

2 Iupital® Polyacetal is not compatible during moulding 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.

4 Minimise the screw recharge speed and screw backpressure to limit breakage of the glass reinforcement.

Conversions:

1 MPa = 145 psi
= 10.2 kg/cm²
= 10 bar
ºC = 5(ºF-32)/9
1 kN/cm² = 0.65 ton/in²