

ProteQ™

POLYPROPYLENE ENGINEERING THERMOPLASTIC

ProteQ™ IS A REGISTERED TRADEMARK OF MARPLEX AUSTRALIA PTY. LTD.

PROTEQ™ C1U

PROTEQ™ C1U is a UV stabilised grade of high impact copolymer for extrusion and blow moulding applications. PROTEQ™ C1U can also be used for outdoor applications where toughness and durability are required.

	<u>CONDITIONS</u>	<u>UNITS</u>	<u>TYPICAL VALUES</u>	<u>TESTING METHODS</u>
<u>1. Mechanical Properties</u>				
Unnotched Izod Impact Strength	12.7 mm x 3.2 mm	J/m	No Break	ASTM D256
Notched Izod Impact Strength	12.7 mm x 3.2 mm	J/m	150	ASTM D256
Tensile Strength	12.7 mm x 3.2 mm @ 5.0 mm/min	MPa	27	ASTM D638
Elongation to Fail	12.7 mm x 3.2 mm @ 5.0 mm/min	%	>300	ASTM D638
Flexural Strength	12.7 mm x 3.2 mm @ 1.3 mm/min	MPa	35	ASTM D790
Flexural Modulus	12.7 mm x 3.2 mm @ 1.3 mm/min	MPa	1300	ASTM D790
<u>2. Thermal Properties</u>				
Heat Deflection Temperature	12.7 mm x 3.2 mm @ 0.455 Mpa	°C	109	ASTM D648
	12.7 mm x 3.2 mm @ 1.82 MPa	°C	51	ASTM D648
Coefficient of Linear Thermal Expansion		cm/cm/°C	1.00E-04	ASTM D696
<u>3. Flammability Properties</u>				
UL Flammability	1.6 mm	Rating	HB	UL 94
Glow Wire Temperature	1.6 mm	°C	550	AS/NZS 60695
<u>4. Physical Properties</u>				
Melt Flow Rate	230°C, 2.16 kg	g/10 min	0.80	ASTM D1238
Shore D Hardness	instantaneous		68	ISO 868
	15 seconds		62	ISO 868
Specific Gravity		-	0.90	ASTM D792
Mould Shrinkage	3.0 mm plaque	%	1.80	ASTM D955

All test results were obtained using uncoloured material.

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Material Safety Data Sheet (MSDS): Code 17957

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IXOM OPERATIONS PTY LTD 1 NICHOLSON ST, EAST MELBOURNE, VIC. 3002 AUSTRALIA
 PH: 1300 550 036 FAX: 1300 550 081

CUSTOMER SERVICE: PH: 1300 557 862 marplex.com.au

MARPLEX AUSTRALIA PTY LTD 165 FITZGERALD RD, LAVERTON NORTH, VIC. 3026 AUSTRALIA
 24 HR EMERGENCY • AU 1800 033 111 • NZ 0800 734 607 • INTERNATIONAL +61 3 9663 2

TYPICAL PROCESSING CONDITIONS

PROTEQ™ C1U

The following typical guidelines are offered as initial processing conditions for **PROTEQ™ C1U**. 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		85 - 90°C
Minimum drying time at desired pellet bed temp		2-4 hours
Mould temperature		50 - 80°C
Nozzle temperature		Do not exceed stock temperature
Melt temperature		220 - 270°C
Cylinder temperatures	Rear	195 - 215°C
	Middle	205 - 225°C
	Front	215 - 235°C
Fill speed		Medium
Screw speed		40 - 60 rpm
Screw back pressure		0.1 - 0.5 MPa
Injection pressure		60 - 140 MPa
Clamp pressure		3 - 6 kN/cm ²

Comment(s):

- 1 Cleanliness of the dryer, machine hopper and machine screw/barrel/nozzle assembly are essential for processing PROTEQ™ and producing contamination free moulded components.
- 2 PROTEQ™ 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