

# ProteQ™

# POLYPROPYLENE ENGINEERING THERMOPLASTIC

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

## PROTEQ™ C16ST8

PROTEQ™ C16ST8 is a medium flow 40% talc filled grade of polypropylene copolymer. PROTEQ™ C16ST8 highly heat stabilised for continuous service temperatures up to 120 deg C and is designed to meet the stringent performance requirements of automotive durability specifications. Typical applications are HVAC housings and engine compartment components.

	<u>CONDITIONS</u>	<u>UNITS</u>	<u>TYPICAL VALUES</u>	<u>TESTING METHODS</u>
<b><u>1. Mechanical Properties</u></b>				
Notched Izod Impact Strength	12.7 mm x 3.2 mm	J/m	50	ASTM D256
Unnotched Izod Impact Strength	12.7 mm x 3.2 mm	J/m	350	ASTM D256
Tensile Strength	12.7 mm x 3.2 mm @ 5.0 mm/min	MPa	29	ASTM D638
Elongation to Fail	12.7 mm x 3.2 mm @ 5.0 mm/min	%	25	ASTM D638
Flexural Strength	12.7 mm x 3.2 mm @ 1.3 mm/min	MPa	38	ASTM D790
Flexural Modulus	12.7 mm x 3.2 mm @ 1.3 mm/min	MPa	2900	ASTM D790
<b><u>2. Thermal Properties</u></b>				
Heat Deflection Temperature	12.7 mm x 3.2 mm @ 0.455 MPa	°C	132	ASTM D648
	12.7 mm x 3.2 mm @ 1.82 MPa	°C	70	ASTM D648
Coefficient of Linear Thermal Expansion		cm/cm/°C	7.00E-05	ASTM D696
<b><u>3. Flammability Properties</u></b>				
UL Flammability	1.6 mm	Rating	HB	UL 94
Glow Wire Temperature	1.6 mm	°C	550	AS/NZS 60695
<b><u>4. Physical Properties</u></b>				
Melt Flow Rate	230°C, 2.16 kg	g/10 min	15	ASTM D1238
Shore D Hardness	instantaneous		72	ISO 868
	15 seconds		67	ISO 868
Specific Gravity		-	1.24	ASTM D792
Mould Shrinkage	3.0 mm plaque	%	0.90	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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# TYPICAL PROCESSING CONDITIONS

## **PROTEQ™ C16ST8**

The following typical guidelines are offered as initial processing conditions for **PROTEQ™ C16ST8**. 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 <sup>2</sup>

### **Comment(s):**

- 1 Cleanliness of the dryer, machine hopper and machine screw/barrel/nozzle assembly are essential for processing Astaprop™PP 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/cm<sup>2</sup>
- = 10 bar
- °C = 5(F-32)/9
- 1 kN/cm<sup>2</sup> = 0.65 ton/in<sup>2</sup>