

# ASTALOY™

# PC/ABS ALLOY

## ENGINEERING THERMOPLASTIC

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

### ASTALOY™ PC/ABS TWG

ASTALOY™ PC/ABS TWG is a high weldline impact strength alloy of ABS and Polycarbonate and is designed for injection moulding applications with multiple weldlines and requiring a balance of impact toughness, heat resistance, product rigidity, mouldability and easy painting. Typical applications in the automotive area are interior instrument panel fascia panels, console capping mouldings and glovebox assemblies, together with exterior painted components such as wheeltrims, front grilles, rear appliques and other trim panels.

Note: The letters "U" or "W" indicate UV stabilisation has been added [ ie: ASTALOY™ PC/ABS TWGU ].

	<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	510	ASTM D256
Falling Dart Impact Strength	3.2 mm plaque	J	60	ASTM D3029
Tensile Strength	12.7 mm x 3.2 mm @ 5.0 mm/min	MPa	51	ASTM D638
Elongation to Fail	12.7 mm x 3.2 mm @ 5.0 mm/min	%	70	ASTM D638
Flexural Strength	12.7 mm x 3.2 mm @ 1.3 mm/min	MPa	90	ASTM D790
Flexural Modulus	12.7 mm x 3.2 mm @ 1.3 mm/min	MPa	2630	ASTM D790
<b><u>2. Thermal Properties</u></b>				
Heat Deflection Temperature	12.7 mm x 3.2 mm @ 1.82 MPa	°C	102	ASTM D648
VICAT Softening Temperature	1 kg	°C	135	ASTM D1525
Coefficient of Linear Thermal Expansion		cm/cm/°C	7.20E-05	ASTM D696
<b><u>3. Flammability Properties</u></b>				
UL Flammability	1.6 mm	Rating	HB	UL 94
<b><u>4. Physical Properties</u></b>				
Melt Flow Rate	250°C, 3.8 kg	g/10 min	10	ASTM D1238
	250°C, 2.16 kg	g/10 min	4.6	ASTM D1238
Specific Gravity		-	1.12	ASTM D792
Rockwell Hardness	R Scale	R	116	ASTM D785
Water Absorption	24 hours	%	0.25	ASTM D570
Mould Shrinkage	3.0 mm plaque	%	0.6	ASTM D955

All test results were obtained using uncoloured material.

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Material Safety Data Sheet (MSDS): Code 17314

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# TYPICAL PROCESSING CONDITIONS

## ASTALOY™ PC/ABS TWG

The following typical guidelines are offered as initial processing conditions for **ASTALOY™ PC/ABS TWG**. 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		95 - 100°C
Minimum drying time at desired pellet bed temp		3 - 5 hours
Mould temperature		50 - 90°C
Nozzle temperature		Do not exceed stock temperature
Melt temperature		250 - 280°C
Cylinder temperatures	Rear	235 - 255°C
	Middle	245 - 265°C
	Front	255 - 275°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 <sup>2</sup>

### Comment(s):

- 1 Cleanliness of the dryer, machine hopper and machine screw/barrel/nozzle assembly are essential for processing ASTALOY™ PC/ABS alloy and producing contamination free moulded components.
- 2 ASTALOY™ PC/ABS alloys are not compatible during moulding with other polymers - this also includes ASTALAC™ ABS.
- 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>