

ASTAGLAS™ DR

ASTAGLAS™ DR is a transparent high impact and heat resistance Poly(Methyl Methacrylate) Acrylic for injection moulding and extrusion processes. Typical applications require an optimum balance of toughness and heat resistance products for automotive, lighting, appliance and houseware applications.

	CONDITIONS	UNITS	TYPICAL VALUES	TESTING METHODS
1. Mechanical Properties				
Notched Izod Impact Strength	12.7 mm x 3.2 mm	J/m	46	ASTM D256
Tensile Strength	12.7 mm x 3.2 mm @ 5.0 mm/min	MPa	42	ASTM D638
Tensile Modulus	12.7 mm x 3.2 mm @ 5.0 mm/min	MPa	2000	ASTM D638
Elongation to Fail	12.7 mm x 3.2 mm @ 5.0 mm/min	%	35	ASTM D638
Flexural Strength	12.7 mm x 3.2 mm @ 1.3 mm/min	MPa	65	ASTM D790
Flexural Modulus	12.7 mm x 3.2 mm @ 1.3 mm/min	MPa	1820	ASTM D790
2. Thermal Properties				
HDT (Annealed @ 80°C, 4hrs)	12.7 mm x 3.2 mm @ 1.82 MPa	°C	87	ASTM D648
VICAT Softening Temperature	1 kg (Unannealed)	°C	105	ASTM D1525
Coefficient of Linear Thermal Expansion		cm/cm/°C	1.00E-04	ASTM D696
4. Physical Properties				
Melt Flow Rate	230°C, 3.8 kg	g/10 min	1.3	ASTM D1238
	220°C, 10 kg	g/10 min	n/a	ASTM D1238
Specific Gravity		-	1.16	ASTM D792
Rockwell Hardness		M	45	ASTM D785
	R Scale	R	110	ASTM D785
UL Flammability	1.6 mm	Rating	HB	UL 94
Haze	3.2 mm	%	< 2	ASTM D1003
Water Absorbtion	24 hours	%	0.40	ASTM D570
Total Light Transmittance	3.2 mm	%	90	ASTM D1003
Refractive Index		-	1.49	ASTM D542
Mould Shrinkage		%	0.55	ASTM D955

All test results were obtained using uncoloured material.

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Material Safety Data Sheet (MSDS) Code: 17628

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TYPICAL PROCESSING CONDITIONS

ASTAGLAS™ DR

The following typical guidelines are offered as initial processing conditions for ASTAGLAS™ DR. 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 - 85°C
Minimum drying time at desired pellet bed temp		3 - 5 hours
Mould temperature		50 - 85°C
Nozzle temperature		Do not exceed stock temperature
Melt temperature		220 - 250°C
Cylinder temperatures	Rear	200 - 230°C
	Middle	210 - 240°C
	Front	220 - 250°C
Fill speed		Slow - Medium
Screw speed		40 - 80 rpm
Screw back pressure		0.1 - 1.0 MPa
Injection pressure		60 - 130 MPa
Clamp pressure		5 - 9 kN/cm ²

Comments:

01. Cleanliness of the dryer, machine hopper and machine screw/barrel/nozzle assembly are essential for processing ASTAGLAS™ PMMA and producing contamination free components.
02. ASTAGLAS™ PMMA is not compatible during moulding with other polymers.
03. It is suggested that the pre-drying, moulding die and material temperatures are manually confirmed using a hand held temperature measuring device.
04. If required, component annealing at 70 - 80 °C for 2 - 4 hours is suggested.

Conversions:

1 MPa = 145psi
1 MPa = 10.2kg/cm²
1 MPa = 10 bar
°C = 5(°F-32)/9
1 kN/cm² = 0.85 ton/in²