

ASTALON™ N5+

ASTALON™ N5+ is a clear, flame retardant polycarbonate grade with standard medium viscosity (medium melt flow) in the ASTALON™ range. It is designed to meet the stringent UL94 V-0 rating while still keeping very high clarity and many other features of polycarbonate. N5+ is suited to injection moulding applications which require a mould release agent. N5+ offers an exceptional combination of flame retardancy, transparency, toughness, heat resistance and processability, typical applications include computer and electrical appliances.

Note: [Suffix "+" = R for mould release or "+" =UR for UV stabilised for improved weatherability]

	CONDITIONS	UNITS	TYPICAL VALUES	TESTING METHODS
1. Mechanical Properties				
Notched Izod Impact Strength	12.7 mm x 3.2 mm	J/m	65	ASTM D256
Falling Dart Impact Strength	3.2 mm plaque	J	n/a	ASTM D3029
Tensile Strength	12.7 mm x 3.2 mm @ 20 mm/min	MPa	70	ASTM D638
Elongation to Fail	12.7 mm x 3.2 mm @ 20 mm/min	%	123	ASTM D638
Flexural Strength	12.7 mm x 3.2 mm @ 2.8 mm/min	MPa	100	ASTM D790
Flexural Modulus	12.7 mm x 3.2 mm @ 2.8 mm/min	MPa	2550	ASTM D790
2. Thermal Properties				
Heat Deflection Temperature	12.7 mm x 3.2 mm @ 1.82 Mpa	°C	125	ASTM D648
Coefficient of Linear Thermal Expansion		cm/cm/°C	6.50E-05	ASTM D696
3. Electrical Properties				
Volume Resistivity		Ohm.cm	2.00E+16	ASTM D149
Dielectric Constant	1MHz	pF/m	27	ASTM D150
4. Physical Properties				
Melt Flow Rate	300°C, 1.20 kg	g/10 min	12	ASTM D1238
Specific Gravity		-	1.27	ASTM D792
Rockwell Hardness	R Scale	R	122	ASTM D785
UL Flammability	2.0 mm	Rating	V-0	UL 94
Total Light Transmittance	3.0 mm	%	-	ASTM D1003
Reinforcement Level	By mass	%	-	n/a
Mould Shrinkage	3.0 x Ø100 mm disc	%	0.60	ASTM D955

All test results were obtained using uncoloured material.

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Material Safety Data Sheet (MSDS) Code: 17313

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TYPICAL PROCESSING CONDITIONS

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The following typical guidelines are offered as initial processing conditions for ASTALON™ N5+. 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		120 - 125°C
Minimum drying time at desired pellet bed temp		4 - 6 hours
Mould temperature		60 - 110°C
Nozzle temperature		Do not exceed stock temperature
Melt temperature		270 - 300°C
Cylinder temperatures	Rear	245 - 265°C
	Middle	260 - 280°C
	Front	275 - 295°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 ²

Comments:

01. Cleanliness of the dryer, machine hopper and machine screw/barrel/nozzle assembly are essential for processing ASTALON™ Polycarbonate and producing contamination free moulded components.
02. ASTALON™ Polycarbonate is not compatible 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.

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