

ISSUED: 14/01/2022

ISO 9001 CERTIFIED

Promyde ® B300 P2 M40 is a high flow Polyamide 6 injection moulding grade with 40% mineral filler and heat stabilized.

PROPERTIES	CONDITIONS	TEST METHOD	UNITS	VALUES
PHYSICAL PROPERTIES				
Density	23 °C	ISO 1183	g/cm ³	1,45
Viscosity Number	25 °C	ISO 307	cm ³ /g	130
Moisture absorption	23 °C / 50% r.h.	ISO 62	%	1,8
Water absorption	23 °C / saturation in water	ISO 62	%	5,4
Flammability	1,5 mm	UL-94		HB
PROCESSING CONDITIONS				
Melt Volume rate	275°C/5 kg	ISO 1133	cm ³ /10 min	45
Melt temperature, injection moulding			°C	250-290
Mould temperature			°C	40-80
MECHANICAL PROPERTIES (dry/cond.)*				
Tensile modulus	23 °C, 1 mm/min	ISO 527-1-2	MPa	6.600 / 3.000
Tensile strength	23 °C, 50 mm/min	ISO 527-1-2	MPa	90 / 60
Elongation at yield	23 °C, 50 mm/min	ISO 527-1-2	%	-
Elongation at break	23 °C, 50 mm/min	ISO 527-1-2	%	3 / 7
Flexural modulus	23 °C, 2 mm/min	ISO 178	MPa	6.300 / 3.000
Flexural strength	23 °C, 2 mm/min	ISO 178	MPa	130 / 100
Charpy unnotched impact strength	23°C -30°C	ISO 179/1eU	kJ/m ²	- / - -
Charpy notched impact strength	23°C -30°C	ISO 179/1eA	kJ/m ²	3,5 / 20 3
THERMAL PROPERTIES				
Melting temperature (DSC)	10°C/min	ISO 3146	°C	222
Heat Deflection Temperature (HDT)	1,8 MPa	ISO 75-1-2	°C	160
	0,45 MPa			-
Thermal coefficient of linear expansion	23-80°C long.	ISO 11359-1/-2	10 ⁻⁴ /K	0,3
	23-80°C transv.			0,6
ELECTRICAL PROPERTIES (dry/cond.)*				
Dielectric constant	1MHz	IEC 60250		3,9 / 6,2
Dissipation factor	1 MHz	IEC 60250		180 / 1.800
Volume resistivity		IEC 60093	Ω.m	10 ¹³ / 10 ¹⁰
Surface resistivity		IEC 60093	Ω	10 ¹³ / 10 ¹⁰
Comparative tracking index		IEC 60112		500

* dry = dry as moulded / cond.= conditioned according to ISO 1110

CHARACTERISTICS

Promyde B300 P2 M40 is distinguished by high mechanical strength, hardness, rigidity and thermo stability. Parts made from Promyde B300 P2 M40 have particularly high dimensional stability.

The outstanding flow properties of Promyde B300 P2 M40 allow a reduction in molding temperature. This has two advantages: the cycle time is shorter and less energy is needed in injection molding. Because Promyde B300 P2 M40 has better flow, lower injection pressure is needed which reduces the clamping force, longer flow paths are possible and the mold is easier to design.

APPLICATIONS

Promyde B300 P2 M40 is used in a wide range of applications where a combination of mechanical properties and dimensional stability is needed.

Mineral reinforced grades are suitable for housings, supports, industrial articles and electrical insulating parts.

FORMAT AND STORAGE

Promyde B300 P2 M40 is supplied in moisture-proof packaging. Typical formats are Big Bag, octabin, and 25kg bags.

All containers are perfectly sealed. The product should be stored in a dry place and opened just before processing.

PROCESSING GUIDELINES

Drying

Material is supplied ready to process with low moisture content. When moisture absorption is prevented drying is not required. When drying is necessary, conditions are:

Drying temperature ≤ 80 °C

Drying time: 4-6 hours

Injection moulding

The recommended processing parameters for injection moulding are:

Melt temperature: 250-290°C

Mould temperature: 40-80 °C

Injection speed: medium to high

Back pressure: moderate

Shrinkage

The shrinkage of a moulded part is influenced by wall thickness, mould gating, and moulding conditions.

Moisture

A particular characteristic of reinforced polyamide 6 is its combination of moderate tensile and flexural strength with rigidity, good impact strength, and friction resistance. However, when a moulded part absorbs moisture, tensile and flexural strength decrease and toughness increases.

NOTE

All recommendations are based on knowledge and experience; The values have been established on standardized tests. The figures should be regarded as guide values and not as binding minimum values. As many factors may affect processing or applications, we recommend that customers make their own tests to determine the suitability of a product for its particular use.