

ISSUED: 05/11/2014

ISO 9001 CERTIFIED

Promyde B40 BR1 is a high viscosity lubricated and nucleated Polyamide 6 for injection moulding applications.

PROPERTIES	CONDITIONS	TEST METHOD	UNITS	VALUES
PHYSICAL PROPERTIES				
Density	23 °C	ISO 1183	g/cm ³	1,13
Viscosity Number	25 °C	ISO 307	cm ³ / g	263
Moisture absorption	23 °C / 50% r.h.	ISO 62	%	3
Water absorption	23 °C / saturation	ISO 62	%	9,5
Flammability	1,5 mm	UL-94		V-2
PROCESSING CONDITIONS				
Melt Volume Rate	275°C/5 kg	ISO 1133	cm ³ /10 min	14
Melt temperature, injection moulding			°C	260-290
Mould temperature			°C	40-80
Moulding Shrinkage	longitudinal transversal		%	0,9-1,1 0,8-1,1
MECHANICAL PROPERTIES (dry/cond.)*				
Tensile modulus	23 °C, 1 mm/min	ISO 527-1-2	MPa	3.400 / 1.100
Tensile strength	23 °C, 50 mm/min	ISO 527-1-2	MPa	90 / 40
Elongation at yield	23 °C, 50 mm/min	ISO 527-1-2	%	4 / 25
Elongation at break	23 °C, 50 mm/min	ISO 527-1-2	%	70 / > 50
Flexural modulus	23 °C, 2 mm/min	ISO 178	MPa	2.900 / 1.000
Flexural strength	23 °C, 2 mm/min	ISO 178	MPa	115 / 30
Charpy unnotched impact strength ¹⁾	23°C -30°C	ISO 179/1eU	kJ/m ²	NB / NB - / -
Charpy notched impact strength	23°C -30°C	ISO 179/1eA	kJ/m ²	6,2 / 38 - / -
THERMAL PROPERTIES				
Melting temperature (DSC)	10°C/min	ISO 3146	°C	223
Heat Deflection Temperature (HDT)	1,8 MPa 0,45 MPa	ISO 75-1-2	°C	65 197
Thermal coefficient of linear expansion	23-80°C long. 23-80°C transv.	ISO 11359-1/-2	10 ⁻⁴ /K	0,7 1
ELECTRICAL PROPERTIES (dry/cond.)*				
Dielectric constant	1MHz	IEC 60250		3,5 / 7
Dissipation factor	1 MHz	IEC 60250		300 / 3.000
Volume resistivity		IEC 60093	Ω.m	10 ¹³ / 10 ¹⁰
Surface resistivity		IEC 60093	Ω	10 ¹³ / 10 ¹⁰
Comparative tracking index		IEC 60112		600

1) NB: No break.

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

CHARACTERISTICS

Promyde B40 BR1 is a high viscosity polyamide 6 heat stabilized, lubricated and nucleated for **injection moulding**.

APPLICATIONS

Promyde B40 BR1 is typically used for the manufacturing of both large and small heavy duty wheels, also small technical parts where more resistance to wear and tear is needed over standard viscosity polyamide.

FORMAT AND STORAGE

Promyde B40 BR1 is supplied in moisture-proof packaging. Typical formats are Big Bags, Octabins, 25kg bags and bulk silo trucks. 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 unreinforced 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.