

UBE NYLON 1030B

Technical Product Information: Monofilament properties

UBE NYLON 1030B is a basic, high viscosity Polyamide 6 homopolymer. The grade is suitable for small diameter monofilament extrusion. This material has the following features:

- Good processability
- Good mechanical properties
- Good heat resistance

Basic Properties ⁽¹⁾	Method	Unit	Value
Polymer	-	-	PA6
Melting Point	ISO 11357	°C	220
Relative Viscosity (96% H ₂ SO ₄)	JIS K6810	-	4,08
Density	DIN 53479	g/cm ³	1,14

Mechanical Properties ⁽²⁾ Unit Value

Mechanical properties of monofilament d = 0,3mm								
Draw ratio (G3/G1)			4,5	5,0	5,5	6,0	6,5	7,0
Line	Strength	g/d	6,5 - 7,5	7,5 - 8,5	8,5 - 9,5	10,0 - 11,0		
	Tenacity	kg	4,0 - 5,0	5,0 - 6,0	6,0 - 7,0	7,0 - 8,0		
	Elongation	%	30 - 34	24 - 28	22 - 26	20 - 24		
Tensile modulus		g/d	20 - 24	22 - 26	24 - 28	24 - 28		
Knot	Strength	g/d	5,0 - 6,0	4,0 - 5,0	3,5 - 4,5	3,0 - 4,0		
	Tenacity	kg	3,0 - 4,0	2,5 - 3,5	2,0 - 3,0	1,5 - 2,5		
	Elongation	%	20 - 24	14 - 18	12 - 16	10 - 14		
Mechanical properties of monofilament d = 2,0mm								
Draw ratio (G3/G1)			4,5	5,0	5,5	6,0	6,5	7,0
Line	Strength	g/d	4,5 - 5,5	5,5 - 6,5	5,0 - 6,0			
	Tenacity	kg	160 - 180	190 - 210	170 - 190			
	Elongation	%	22 - 26	18 - 22	12 - 16			
Tensile modulus		g/d	22 - 26	24 - 28	26 - 30			
Knot	Strength	g/d	1,5 - 2,5	1,5 - 2,5	1,0 - 2,0			
	Tenacity	kg	50 - 70	50 - 70	40 - 60			
	Elongation	%	18 - 22	16 - 20	14 - 18			

(1) Measured on base resin
 (2) All tests carried out on monofilaments produced with a 35mm screw
 Extrusion temperatures between 240-275°C
 Quench bath temperature: 15°C
 Drawing temperature: 1st = 95°C (hot water); 2nd = 180°C; Heat set = 180°C
 Relaxation ratio (G4/G3) = 1; Line speed (G4) = 28 m·min⁻¹
 Sample conditioning and testing conditions: T = 23°C, RH =50%

Processing conditions

	Extruder					Adaptor	Die
	Hopper	Zone 1	Zone 2	Zone 3	Zone 4		
Temperature (°C)	40 - 120	200 - 210	240 - 250	250 - 260	245 - 255	250 - 260	250 - 260

	Quenching bath	1 st drawing	2 nd drawing	Heat setting
Temperature (°C)	8 - 15	90 - 100	170 - 190	170 - 190

Drying conditions

UBE NYLON is supplied dry (moisture content < 0,1%) and packed in high barrier films. However, as polyamide is a hygroscopic material, the user should take a special care of the possible moisture absorption once the bag or liner box has been opened. In case of moisture absorption, the material should be dried with dehumidified air at 80°C for more than 4 hours.

Storage

Well-sealed packages could be stored in cool and dry conditions over long periods of time. Protect the packages from heat and direct sunlight to prevent possible damages.

Health & environmental data

Please refer to the corresponding **UBE NYLON** grade SDS.

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