UBE NYLON 5034TX25

Technical Product Information: Monofilament properties

UBE NYLON 5034TX25 is a high viscosity modified Polyamide 6/6.6 copolymer for monofilament application, suitable for small and large diameter size. The material allows high drawing ratios resulting in superior line strength. This material has the following features:

- Good transparency
- Superior line strength and tenacity
- Outstanding processability

Basic Properties [1]	Method	Unit	Value
Polymer	-	-	PA6/6.6
Melting Point	ISO 11357	°C	192
Relative Viscosity (96% H_2SO_4)	JIS K6810	-	4,05
Density	DIN 53479	g/cm³	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	5,5 - 6,5	6,5 - 7,5	7,5 - 8,5	7,5 - 8,5	8,0 - 9,0	
	Tenacity	kg	3,5 - 4,5	4,5 - 5,5	5,0 - 6,0	5,0 - 6,0	5,5 - 6,5	
	Elongation	%	45 - 55	35 - 45	30 - 40	20 - 30	15 - 25	
Tensile modulus		g/d	12 - 16	14 - 18	16 - 20	18 - 22	18 - 22	
Knot	Strength	g/d	5,0 - 6,0	6,0 - 7,0	6,5 - 7,5	6,5 - 7,5	6,0 - 7,0	
	Tenacity	kg	3,5 - 4,5	4,0 - 5,0	4,5 - 5,5	4,5 - 5,5	4,0 - 5,0	
	Elongation	%	45 - 55	30 - 40	25 - 35	15 - 25	10 - 20	
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	4,0 - 5,0	5,0 - 6,0	6,0 - 7,0	6,0 - 7,0		
	Tenacity	kg	140 - 160	170 - 190	210 - 230	210 - 230		
	Elongation	%	35 - 45	25 - 35	25 - 35	20 - 30		
Tensile modulus		g/d	16 - 20	18 - 22	20 - 24	22- 26		
Knot	Strength	g/d	2,5 - 3,5	3,0 - 4,0	3,0 - 4,0	2,5 - 3,5		
	Tenacity	kg	80 - 100	110 - 130	110 - 130	90 -110		
	Elongation	%	25 - 35	25 - 35	20 - 30	20 - 30		

(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	180 - 200	200 - 220	210 - 230	220 - 240	230 - 250	230 - 250

	Quenching bath	1st drawing	2nd 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.