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UBE NYLON 6434T1

Technical Product Information: Monofilament properties

UBE NYLON 6434T1 (TERPALEX®) is a high viscosity modified Polyamide 6/6.6/12 terpolymer for monofilament application, suitable for small and large diameter size where superior line and knot tenacity are requested. This material has the following features:

- Outstanding processability and low melting point
- Superior line strength and tenacity
- Outstanding optical properties

Basic Properties [1]	Method	Unit	Value
Polymer	-	-	PA6/6.6/12
Melting Point	ISO 11357	°C	188
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	5,0 - 6,0	6,5 - 7,5	7,0 - 8,0	8,0 - 9,0	8,0 - 90	
	Tenacity	kg	3,0 - 4,0	4,0 - 5,0	4,5 - 5,5	5,5 - 6,5	5,5 - 6,5	
	Elongation	%	60 - 70	45 - 55	35 - 45	25 - 35	20 - 30	
Tensile modulus		g/d	10 - 14	12 - 16	14 - 18	16 - 20	16 - 20	
Knot	Strength	g/d	5,0 - 6,0	6,0 - 7,0	6,5 - 7,5	7,5 - 8,5	7,5 - 8,5	
	Tenacity	kg	3,5 - 4,5	4,0 - 5,0	4,5 - 5,5	5,0 - 6,0	5,0 - 6,0	
	Elongation	%	60 - 70	45 - 55	30 - 40	25 - 35	20 - 30	
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	3,5 - 4,5	4,5 - 5,5	5,5 - 6,5	7,0 - 8,0	6,0 - 7,0	
	Tenacity	kg	130 - 150	150 - 170	190 - 210	240 - 260	210 - 230	
	Elongation	%	45 - 55	35 - 45	25 - 35	25 - 35	20 - 30	
Tensile modulus		g/d	14 - 18	16 - 20	18 - 22	18 - 22	18 - 22	
Knot	Strength	g/d	2,0 - 3,0	2,5 - 3,5	3,5 - 4,5	3,5 - 4,5	4,0 - 5,0	
	Tenacity	kg	80 - 100	100 - 120	120 - 140	130 - 150	150 - 170	
	Elongation	%	30 - 40	25 - 35	25 - 35	25 - 35	25 - 35	

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(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	160 - 180	160 - 180

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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