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# 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 | | |

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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 | 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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