

## UBE NYLON 1024FD50

### Technical Product Information: CAST – PA monolayer film properties

UBE NYLON 1024FD50 is a medium viscosity modified Polyamide 6 homopolymer. The grade is especially suitable for retort applications. This material has the following features:

- Good processability
- Good mechanical properties
- Excellent slip properties
- Outstanding hydrolysis resistance

| Basic Properties <sup>(1)</sup>                             | Method    | Unit              | Value |
|-------------------------------------------------------------|-----------|-------------------|-------|
| <b>Polymer</b>                                              | -         | -                 | PA6   |
| <b>Melting Point</b>                                        | ISO 11357 | °C                | 220   |
| <b>Relative Viscosity (96% H<sub>2</sub>SO<sub>4</sub>)</b> | JIS K6810 | -                 | 3,52  |
| <b>Density</b>                                              | DIN 53479 | g/cm <sup>3</sup> | 1,14  |

| Mechanical Properties <sup>(2)</sup>                    | Method      | Unit                     | Value       |
|---------------------------------------------------------|-------------|--------------------------|-------------|
| <b>Tensile strength at yield</b>                        | ISO 527-3   | MPa                      | 33 - 37     |
| <b>Tensile strength at break</b>                        |             | MPa                      | 90 - 110    |
| <b>Tensile elongation at break</b>                      |             | %                        | 400 - 420   |
| <b>Tensile modulus</b>                                  |             | MPa                      | 900 - 1000  |
| <b>Tear resistance</b>                                  | ASTM D 1922 | N                        | 0,8 - 1,0   |
| <b>Puncture energy</b>                                  | JAS P-1019  | mJ                       | 28 - 30     |
| <b>Puncture deformation</b>                             |             | mm                       | 8,0 - 9,0   |
| <b>Spencer impact resistance</b>                        | ASTM D 3420 | mJ                       | 700 - 800   |
| <b>Flex crack (23°C, 1000 cycles / 5°C, 100 cycles)</b> | Mil B-131C  | Holes/0,04m <sup>2</sup> | < 80 / < 20 |

| Optical Properties <sup>(2)</sup> | Method      | Unit | Value     |
|-----------------------------------|-------------|------|-----------|
| <b>Haze</b>                       | ASTM D 1003 | %    | 2 - 3     |
| <b>Gloss</b>                      | ASTM D 523  | %    | 125 - 145 |

| Gas Barrier <sup>(2)</sup>           | Method      | Unit                   | Value     |
|--------------------------------------|-------------|------------------------|-----------|
| <b>Oxygen (T=23°C, RH=0%)</b>        | ASTM D 3985 | ml/m <sup>2</sup> .day | 30 - 32   |
| <b>Water Vapour (T=40°C, RH=90%)</b> | JIS Z-0208  | g/m <sup>2</sup> .day  | 130 - 150 |

| Slip Properties <sup>(2)</sup>    | Method      | Unit | Value       |
|-----------------------------------|-------------|------|-------------|
| Coefficient of friction (static)  | ASTM D 1894 | -    | 0,34 - 0,38 |
| Coefficient of friction (dynamic) |             | -    | 0,34 - 0,38 |

| Regulation | Method | Unit | Value     |
|------------|--------|------|-----------|
| FDA / EC   | -      | -    | I&D / I&D |

I: Approved for indirect food contact D: Approved for direct food contact

(1) Measured on base resin

(2) All tests carried out with a monolayer cast line, Die width = 350 mm (Coat hanger type)

Structure: PA monolayer

Layer thickness distribution: PA = 50 µm

Cooling conditions: Chiller roll temperature = 20 °C

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 |

## 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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