

UBE NYLON 5024FDN1

Technical Product Information: CAST – PA monolayer film properties

UBE NYLON 5024FDN1 is a nucleated, medium viscosity Polyamide 6/6.6 copolymer. The grade is especially suitable as outer layer for a wide range of applications where high optical properties are requested. This material has the following features:

- Excellent processability
- Excellent transparency and gloss
- Excellent puncture and pin hole resistance
- Deep drawability

Basic Properties ⁽¹⁾	Method	Unit	Value
Polymer	-	-	PA6/6.6
Melting Point	ISO 11357	°C	192
Relative Viscosity (96% H₂SO₄)	JIS K6810	-	3,40
Density	DIN 53479	g/cm ³	1,14

Mechanical Properties ⁽²⁾	Method	Unit	Value
Tensile strength at yield	ISO 527-3	MPa	23 - 27
Tensile strength at break		MPa	105 - 125
Tensile elongation at break		%	430 - 450
Tensile modulus		MPa	500 - 600
Tear resistance	ASTM D 1922	N	2,1 - 2,3
Puncture energy	JAS P-1019	mJ	37 - 39
Puncture deformation		mm	10,0 - 11,0
Spencer impact resistance	ASTM D 3420	mJ	850 - 950
Flex crack (23°C, 1000 cycles / 5°C, 100 cycles)	Mil B-131C	Holes/0,04m ²	< 20 / < 5

Optical Properties ⁽²⁾	Method	Unit	Value
Haze	ASTM D 1003	%	< 0,5
Gloss	ASTM D 523	%	145 - 165

Gas Barrier ⁽²⁾	Method	Unit	Value
Oxygen (T=23°C, RH=0%)	ASTM D 3985	ml/m ² .day	33 - 35
Water Vapour (T=40°C, RH=90%)	JIS Z-0208	g/m ² .day	180 - 200

Slip Properties ⁽²⁾	Method	Unit	Value
Coefficient of friction (static)	ASTM D 1894	-	> 1
Coefficient of friction (dynamic)		-	> 1

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

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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