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UBE NYLON 6434FD14

Technical Product Information: AIR-BLOWN – PA monolayer film properties

UBE NYLON 6434FD14 (TERPALEX®) is a Polyamide 6/6.6/12 terpolymer. This grade is suitable for deep drawing thermoforming applications. This material has the following features:

- Outstanding processability and low melting point (suitable for coextrusion with EVOH)
- Outstanding flexibility, puncture and pin hole resistance
- Outstanding optical properties in all processes
- Outstanding shrinkability and deep drawability

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/cm^3	1,14

Mechanical Properties [2]	Method	Unit	Value
Tensile strength at yield	ISO 527-3	MPa	26 - 30
Tensile strength at break		MPa	115 - 135
Tensile elongation at break		%	500 - 520
Tensile modulus		MPa	600 - 700
Tear resistance	ASTM D 1922	N	2,2 - 2,4
Puncture energy	JAS P-1019	mJ	38 - 40
Puncture deformation		mm	10,5 - 11,5
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	< 70 / < 10

Optical Properties [2]	Method	Unit	Value
Haze	ASTM D 1003	%	1 - 3
Gloss	ASTM D 523	%	140 - 160

Gas Barrier [2]	Method	Unit	Value
Oxygen (T=23°C, RH=0%)	ASTM D 3985	ml/m^2.day	47 - 49
Water Vapour (T=40°C, RH=90%)	JIS Z-0208	g/m^2.day	90 - 110

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Slip Properties [2]	Method	Unit	Value
Coefficient of friction (static)	ASTM D 1894	-	0,50 - 0,54
Coefficient of friction (dynamic)		-	0,50 - 0,54

Thermoforming Properties [2]	Method	Unit	Value
Max. Thermoforming depth	UBE METHOD	mm	100 - 120

Regulation	Method	Unit	Value
FDA / EC	-	-	I / 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 5 layers airblown line, Die diameter = 90 mm · Die gap=1,4 mm
Structure: PE (outer) / PE / PA (medium) / PE / PE (inner), PA layer delaminated for the tests
Layer thickness distribution: PE = 50 µm, PA = 50 µm, PE = 50 µm (Total film thickness = 150 µm) · Cooling conditions: Chiller temp. = 13 °C · Take off rolls = 35 °C
Film orientation: Blow-up ratio = 2,1 · Take-off speed = 6m 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	220 - 240	230 - 250	225 - 245	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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