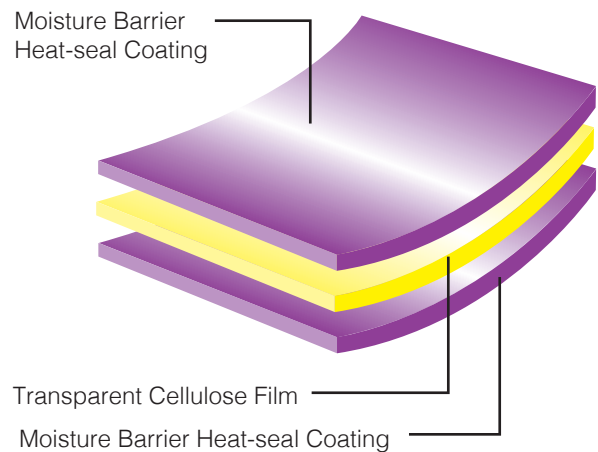


## NatureFlex™ NK

Data

### Features - Transparent High Barrier Heat-sealable Compostable Film

- Based on renewable resources
- Certified as compostable in both industrial and home composting environments, also suitable for anaerobic digestion
- Excellent moisture barrier
- Heat sealable on both sides
- Formulated for enhanced print and conversion receptivity
- Excellent transparency and gloss
- Excellent dead-fold characteristics
- Inherent anti-static properties
- Controlled slip characteristics
- Excellent barrier to gases and aromas
- Resistant to oils and grease



### Applications

The incorporation of a minimal amount of PVdC to optimise moisture and gas barrier functionality allows for simpler and lighter packaging to extend and maintain shelf life of the packaged products. The film maintains good conversion receptivity as well as heat-sealability on both sides. Target applications include twist-wrap, VFFS, overwrap, flow-wrap and lamination for moisture sensitive products.

### Technical Properties (Typical Values)

Property	Test Basis	Test Conditions	Units	NK			
				19μ	23μ	30μ	45μ
Thickness	Futamura Test		Micron	19.4	23.3	29.9	45.0
Yield	Futamura Test		m <sup>2</sup> /kg g/m <sup>2</sup>	35.7 28.0	29.9 33.5	23.3 43.0	15.5 64.5
Permeability to: Water vapour	ASTM E96	38°C 90% RH	g/m <sup>2</sup> .24 hrs	20			
Oxygen	ASTM F 1927	23°C 0% RH 23°C 50% RH	cc/m <sup>2</sup> .24 hrs	1.0 5.0			
Optical: Gloss Haze (wide angle)	ASTM D 2457	45°	units	105			
	ASTM D 1003	2.5°	%	5.5			
Coefficient of friction (film to film)	ASTM D 1894	Static Dynamic		0.35 0.30			
Tensile strength	ASTM D 882		MN/m <sup>2</sup>	MD TD	125 70		
Elongation at break	ASTM D 882		%	MD TD	22 70		
Elasticity modulus (1% secant)	ASTM D 882		MN/m <sup>2</sup>	MD TD	≥1200 ≥600		
Sealing range	Futamura Test	0.5 secs; 69 kN/m <sup>2</sup>	°C	115-170			
Seal strength	Futamura Test	135°C; 0.5 secs; 69 kN/m <sup>2</sup>	g(f)/25mm	225			

All properties are tested under standard laboratory conditions: 23±2°C; 50±5% RH, unless otherwise stated.

Where relevant, tests are based on international testing standards.

MD - Machine Direction TD - Transverse Direction

## Environmental Data

Measure	Typical Value/ Suitability for use	Validation or Test Method
Biobased carbon content ( <sup>14</sup> C)	90%	ASTM D6866
Biomass content (total)	90%	Futamura calculation
Carbon footprint (GHG) kgCO <sub>2</sub> eq/kg (incl.biogenic)	5.05	Peer reviewed LCA 2010 GaBi software
Industrial compostability	Certified	EN13432, EN14995, ASTM D6400 and ISO 17088
Home compostability	Certified	OK Compost Home
Anaerobic digestion	Approved	ISO 15985
Marine biodegradation	Approved	ASTM D6691-09



NatureFlex films are suitable for a range of Organic Recycling methods, as detailed above, and for incineration with energy recovery. However they are not designed for thermal (melt) recycling methods. Please check for availability of FSC™ certified film.

## Reel Specifications

### Nominal Reel Diameters

Film	Length/(metres)			
	2000	4000	8000	12000
19μ	2000	4000	8000	12000
23μ	1600	3200	6400	9600
30μ	1250	2500	5000	7500
45μ	850	1700	3400	5100
Outside diameter for 77mm core	240mm	330mm	450mm	ns
Outside diameter for 153mm core	ns	355mm	475mm	570mm

Other reel lengths are available subject to negotiation.

ns = non-standard.

## Food Contact

NatureFlex NK is formulated to comply with EU legislation for many room temperature food contact applications. Customers intending to use the film in a food contact application must request the Declaration of Compliance which gives full details. For information on other countries please contact your Futamura Sales Office.

## Health and Safety Guidelines

For Health and Safety information, refer to literature reference N190.



## Film Storage

To maintain the high quality of this product during storage it is recommended that NatureFlex NK should be stored in its original wrapping away from any source of local heating or direct sunlight.

Recommended conditions of storage are:

Temperature: 17-23°C

Relative Humidity: 35-55%

NatureFlex NK is suitable for use for 6 months from the date of delivery and stocks should be used in rotation.

Film should be allowed to reach operating room temperatures for 24 hours before use.

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