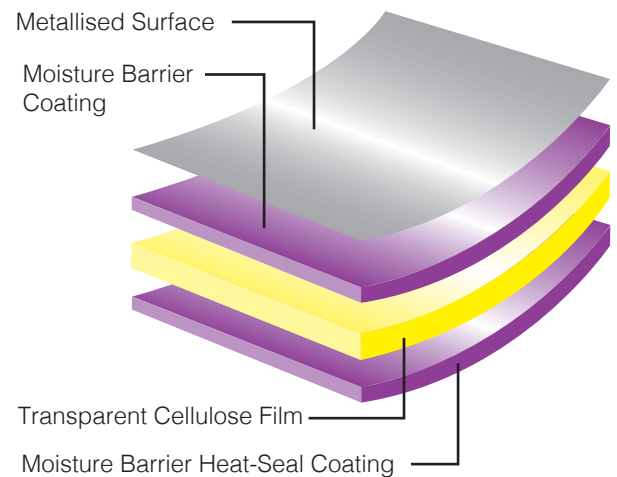


NatureFlex™ NKME

Data

Features - High Barrier Metallised Compostable Film

- Based on renewable resources
- Certified as compostable in both industrial and home composting environments, also suitable for anaerobic digestion
- Excellent moisture barrier
- Excellent dead-fold characteristics
- Highly receptive surfaces for ease of conversion
- Ultra high lustre and sparkle
- Excellent barrier to UV/visible light
- Heat-sealable on non-metallised surface
- Inherent anti-static properties
- Controlled slip characteristics
- Excellent barrier to gases and aromas
- Resistant to oils and greases



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.

NKME has been specifically formulated for lamination applications.

Technical Properties (Typical Values)

Property	Test Basis	Test Conditions	Units	NKME 20µ
Thickness	Futamura Test		Micron	20.1
Yield	Futamura Test		m ² /kg g/m ²	34.5 29.0
Permeability to: Water vapour	ASTM F 1249	38°C 90% RH	g/m ² . 24hrs	10
Oxygen	ASTM F 1927	23°C 50% RH	cc/m ² . 24hrs	1.0
Optical Density	Futamura Test			2.5
Coefficient of friction (film to film)	ASTM D 1894	Non-metallised Surface		0.30
Tensile strength	ASTM D 882		MN/m ² MD TD	125 70
Elongation at break	ASTM D 882		% MD TD	22 70
Elasticity modulus (1% secant)	ASTM D 882		MN/m ² MD TD	≥1200 ≥600
Sealing range	Futamura Test	0.5secs 69kN/m ²	°C	115-170
Seal strength	Futamura Test	135°C;0.5 secs; 69 kN/m ²	g(f)/25mm	225

Typical Barrier data as part of a laminate:

Film	MVTR (38°C, 90% RH) g/m ² /day	OTR(23°C, 50% RH) cc/m ² /day	Recommended Adhesive Type	Structures
NKME	2	<0.1	WB only	Paper//NKME//Biosealant NKME//Biosealant

Futamura do not recommend laminating the metal face of NKME using a solvent based adhesive.

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.

Metallising is conducted by a sub-contractor.

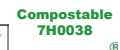
MD - Machine Direction TD - Transverse Direction

NatureFlex™ NKME

Data

Environmental Data

Measure	Typical Value/ Suitability for use	Validation or Test Method
Biobased carbon content (14C)	90%	ASTM D6866
Biomass content (total)	87%	Futamura calculation
Carbon footprint kgCO ₂ eq/kg (incl.biogenic)	5.35	Peer reviewed LCA 2019 GaBi software Impact 2002+ (Global warming 500yr - mid-point)
Industrial compostability	Certified	EN13432, EN14995, AS4736 ASTM D6400 and ISO 17088
Home compostability	Certified	OK Compost Home, AS 5810 & NF T 51-800
Anaerobic digestion	Approved	ISO 15985



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 mechanical recycling methods. Please check for availability of FSC™ certified film.

Reel Specifications

Nominal Reel Diameters

Film	Length/(metres)			
	1900	3800	7600	11400
20µ	1900	3800	7600	11400
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.

NatureFlex NKME is available with the metallised surface wound facing either the inside or the outside of the reel. The metallised surface is identified by the code:

I - for inside

O - for outside

Food Contact

The non-metallised surface of NatureFlex NKME 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. The metallised surface should not be placed in contact with foods. For information on other countries please contact your Futamura Sales Office.

Film Storage

To maintain the high quality of this product during storage it is recommended that NatureFlex NKME 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 NKME is suitable for use for 6 months from the date of delivery and stocks should be used in rotation.

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

Health and Safety Guidelines

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



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