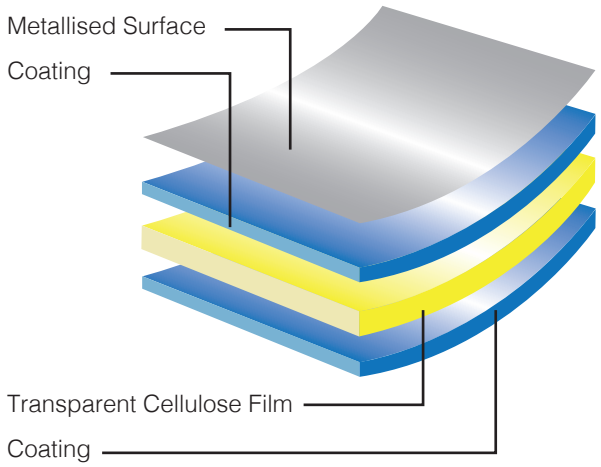
NatureFlex™ NM Data

Features - High Performance Metallised Compostable Film

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



Applications - Packaging and Labels

NM film combines excellent optical properties with enhanced barrier and deadfold capabilities. Target applications include twistwrap and flow-wrap of confectionery, bakery and non-food products.
NM is ideal for premium-look labelling applications

Technical Properties (Typical Values)

Property	Test Basis	Test Conditions	Units	NM 23µ	NM 30µ	NM 45µ
Thickness	Futamura Test		Micron	23.3	29.9	45.0
Yield	Futamura Test		m^2/kg g/m^2	29.9 33.5	23.3 43.0	15.5 64.5
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		0.3		
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		
Seal strength	Futamura Test	135°C;0.5 secs; 69 kN/m^2	g(f)/25mm	200		

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
NM	1.3	<0.7	SB or WB	Paper//NM//Biosealant NM//Biosealant

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

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Environmental Data

Measure	Typical Value/ Suitability for use	Validation or Test Method
Biobased carbon content (^{14}C)	91%	ASTM D6866
Biomass content (total)	88%	Futamura calculation
Carbon footprint $kgCO_2eq/kg$ (incl.biogenic)	5.2	Peer reviewed LCA 2019 GaBi software Impact 2002+ (Global warming 500yr - midpoint)
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.

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FSC www.fsc.org FSC® C119399 The mark of responsible forestry

BPI COMPOSTABLE

Compostable 7H0029

HOME OK compost TÜV AUSTRIA HOME S0020

Home Compostable AS 5810 ABAM 20019

Reel Specifications

Nominal Reel Diameters

Film	Length/(metres)			
23µ 30µ 45µ	1600 1250 850	3200 2500 1700	6400 5000 3400	9600 7500 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.

NatureFlex NM is available with the metallised surface 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 NM 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 NM 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 NM 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.

www.futamuragroup.com
email: info@futamuragroup.com

Sales Offices
Europe (UK) Tel +44 (0)16973 41212
Americas (USA) Tel +1 770 818 3012
Asia-Pacific (Japan) Tel +81 52 562 1841