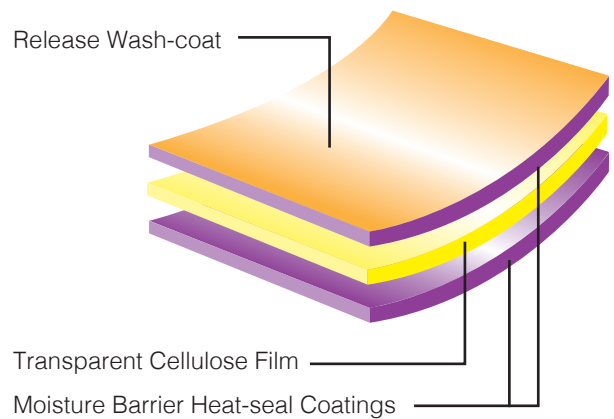


NatureFlex™ NKR

Data

Features - Transparent High Barrier Heat-sealable Film with Release Coat

- Based on renewable resources
- Certified as compostable in both industrial and home composting environments, also suitable for anaerobic digestion
- Excellent moisture barrier
- Heat-sealable
- 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 greases
- Recommended as outer web in lamination



Applications

The incorporation of a minimal amount of PVdC to optimize moisture and gas barrier functionality allows for simpler and lighter packaging to extend and maintain shelf life of the packaged products. One surface has an additional wash-coat to enhance jaw release properties.

Target applications include twist-wrap, VFFS, overwrap, flow-wrap and lamination for moisture sensitive products.

NKR can be used in both standard adhesive and extrusion lamination technologies.

Technical Properties (Typical Values)

| Property | Test Basis | Test Conditions | Units | NKR | | |
|---|---------------|----------------------------|-------------------------------|--------------|-------|-------|
| | | | | 75 | 90 | 120 |
| Thickness | Futamura Test | | mil | 0.75 | 0.92 | 1.18 |
| Yield | Futamura Test | | in ² /lb | 25500 | 21000 | 16400 |
| Permeability to: Water vapor | ASTM E96 | 100°F 90% RH | g/100in ² .24 hrs | 1.25 | | |
| Oxygen | ASTM F 1927 | 73°F 0% RH 73°F 50% RH | cc/100in ² .24 hrs | 0.06 0.32 | | |
| Optical: Gloss | ASTM D 2457 | 45° | units | 105 | | |
| Haze (wide angle) | ASTM D 1003 | 2.5° | % | 5 | | |
| Coefficient of friction (film to film) | ASTM D 1894 | Static Dynamic | | 0.35 0.30 | | |
| Tensile strength | ASTM D 882 | | kpsi MD TD | 18 8.5 | | |
| Elongation at break | ASTM D 882 | | % MD TD | 18 70 | | |
| Elasticity modulus (1% secant) | ASTM D 882 | | kpsi MD TD | ≥435 ≥220 | | |
| Sealing Range | Futamura Test | 0.5 secs; 10 psi | °F | 240-340 | | |
| Seal Strength | Futamura Test | 275°F; 0.5 secs; 10 psi | g(f)/in | 250* | | |

All properties are tested under standard laboratory conditions: 73±4°F; 50±5% RH, unless otherwise stated. Where relevant, tests are based on international testing standards.

MD - Machine Direction TD - Transverse Direction

*Non release side to non release side.

NatureFlex™ NKR

Data

Environmental Data

| Measure | Typical Value/ Suitability for use | Validation or Test Method |
|---|---------------------------------------|---|
| Biobased carbon content (¹⁴ C) | 88% | ASTM D6866 |
| Biomass content (total) | 86% | Futamura calculation |
| Carbon footprint (GHG) kgCO ₂ 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.

Roll Specifications

Nominal Reel Diameters

| Film | Length/(feet) | | | |
|-------------------------------|---------------|-------|-------|-------|
| | 6200 | 12400 | 24800 | 37200 |
| 75 | 6200 | 12400 | 24800 | 37200 |
| 90 | 5250 | 10500 | 21000 | 31500 |
| 120 | 4100 | 8200 | 16400 | 24600 |
| Outside diameter for 3in core | 9½in | 13in | 18in | ns |
| Outside diameter for 6in core | ns | 14in | 18¾in | 22½in |

Other roll lengths are available subject to negotiation.

ns = non-standard.

Food Contact

NatureFlex NKR is formulated to comply with US 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, please refer to literature reference N190.



Film Storage

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

Recommended conditions of storage are:

Temperature: 60-75°F

Relative Humidity: 35-55%

NatureFlex NKR 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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