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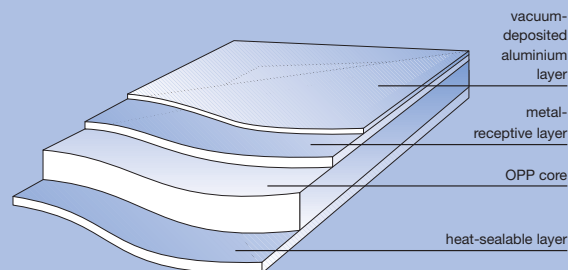
## MNM

- Standard barrier metallized co-extruded OPP film
- Light, moisture and odour barrier



## TREOFAN PACKAGING FILM MNM

Metallized co-extruded OPP film



Treofan MNM is a biaxially oriented, co-extruded polypropylene film. Treofan MNM gives excellent light, moisture and odour barrier. With its excellent metal adhesion it allows high laminate bond strengths. Its heat-sealable layer on the non-metallized face provides good heat-seal integrity. The unmetallized version Treofan MND is sometimes available. Reels are normally wound with the metallized face on the outside, but can sometimes be supplied on request with the metallized face wound inside.

## PRODUCT FEATURES

### Physical characteristics:

- high resistance to tear and puncture
- excellent resistance to low temperatures
- dimensionally stable under conditions of varying humidity
- high heat-seal strength

### Film characteristics:

- low water vapour permeability
- water-repellent
- resistance to biological oil and biological grease

- odourless and taste-free
- physiologically harmless, thus suitable for food packaging

### Special properties:

- printable
- can be laminated
- suitable for cold-seal coating

## APPLICATIONS AND PROCESSING

Treofan MNM can be used for packaging various types of products, for example products which need to be protected against moisture or dehydration.

### Printing:

- flexographic and rotogravure printing (half-tone and line) and sandwich printed in laminates
- in order to achieve good ink adhesion, we recommend the use of a primer in line in the conversion operation. We also recommend the use of a lacquer to protect the metal surface on partially printed single webs

### Laminating:

- suitable for adhesive lamination with OPP or with other substrates, depending on application

### Packaging:

- Treofan MNM is suitable for use on a variety of form, fill and seal machines

### Storage:

- place Treofan MNM in the processing area approximately 24 hours prior to processing

Certified according to

## DIN EN ISO 9001:2000

Compliance with industrial health and safety standards: Treofan OPP films do not present any significant danger to health and safety in the workplace, provided they are used for the intended purpose in accordance with conventional practices and that health and safety regulations are observed. Relevant guidelines can be found in our safety information.

## TECHNICAL DATA (typical values)

Properties	MNM 15	MNM 20	MNM 25	MNM 30	Unit	Measuring method
Nominal thickness	15	20	25	30	µm	–
Unit weight	13.7	18.2	22.7	27.3	g/m <sup>2</sup>	ISO 4591
Density	0.91	0.91	0.91	0.91	g/cm <sup>3</sup>	–
Yield	73.0	54.9	44.0	36.6	m <sup>2</sup> /kg	–
Heat-seal strength	1.8	2.0	2.0	2.0	N/15 mm	Treofan
Optical density	2.0	2.0	2.0	2.0	–	Tobias Densitometer
Tensile strength: machine direction transverse direction	150 270	150 300	150 300	150 300	N/mm <sup>2</sup> N/mm <sup>2</sup>	DIN EN ISO 527-1/-3 DIN EN ISO 527-1/-3
Elongation at break: machine direction transverse direction	160 60	160 60	160 60	160 60	% %	DIN EN ISO 527-1/-3 DIN EN ISO 527-1/-3
Water vapour permeability: 38°C/90% rh	0.8	0.8	0.8	0.8	g/m <sup>2</sup> ·d ±10%	ASTM F 1249
Oxygen transmission rates: 23°C, 0–90% rh	100	100	100	100	cm <sup>3</sup> /m <sup>2</sup> ·d·bar	DIN 53380-3

## AVAILABILITY (unprinted film)

Reel length (m):

Packaging film	Standard length	Up to 6-times standard
MNM 15	4,400	26,400
MNM 20	3,500	21,000
MNM 25	2,800	16,800
MNM 30	2,350	14,100

8-times standard or other reel lengths available on request

Maximum reel outside diameter (mm):

Core diameter	Standard length	Up to 6-times standard
77 mm	approx. 330	–
152 mm	approx. 360	approx. 800

Max. reel width: 2,000 mm (widths > 2,000 mm on request)

The figures and the data provided in this data sheet are consistent with the current state of our knowledge, and are intended to provide general information on our products and their applications. They do not constitute a guarantee of any specific product attributes or the suitability of products for specific applications. Any existing commercial rights or patents must be observed.

Tests have shown that under the prescribed storage conditions the characteristics of Treofan MNM will maintain consistent performance and will be best before use throughout a 3-months period after delivery. Treofan MNM is largely unaffected by climatic influences, but should not be stored at temperatures above 30°C (86°F). The rolls should be kept in their original wrapping until used. After the rolls have been unwrapped, they should be stored safely in horizontal position.

### Food Safety

Treofan MNM has been developed specially for packaging foods and meets the specific requirements on health and safety. It meets the FDA and EC regulations, which includes the specific “German Food and Commodity Act” and the current recommendations of the BfR. Compliance with other specific national regulations is available on request. It is not recommended that the metallized surface is used in direct contact with food.

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