

# Barrier Papers

*barr)i(cote*

# Mitsubishi HiTec Paper

## Passion for First Class HiTec Papers

As a leading international supplier of direct thermal, inkjet, carbonless, label and barrier papers, we produce first class coated speciality papers for many applications and printing technologies. Our HiTec papers combine decades of know-how with state-of-the-art coating technology and professional converting equipment.

The responsible handling of resources is particularly important to us. We manufacture in the framework of an integrated management system (DIN EN ISO 9001, 14001 and 50001 as well as DIN ISO 45001 and DIN EN 15593). Our locations in Bielefeld and Flensburg are FSC® and PEFC™ certified.

We are a flexible medium sized enterprise within the international Mitsubishi Group. Consistent research and development is the foundation for great innovation. We offer a large portfolio of standard products and develop individual, customized solutions for our customers. We offer the best global sales network and technical service to our customers all over the world.

- › Huge experience and competence in paper making
- › State-of-the-art coating technologies and formulations
- › German-Japanese Research & Development
- › Wide range of products
- › Excellent Technical Service
- › Worldwide Sales Network
- › High innovative power
- › Made in Germany



» Quality paper is the foundation.  
Incomparable added value is created  
by excellent coating. This is our  
passion: First class HiTec Paper. «

# Protected.

## Foods, consumers and the environment sustainably protected

In the food industry, packaging is no longer just about the protection of foods, its storage or smooth transport. The focus is on topics such as waste prevention, replacement of plastic packaging, circular economy as well as using more sustainable materials.

In short: innovative solutions that, in addition to the efficient protection of packaged goods, also take into account aspects such as environmental responsibility and sustainability. Solutions that protect consumers and the environment. Solutions such as our barricote barrier papers for flexible food packaging.

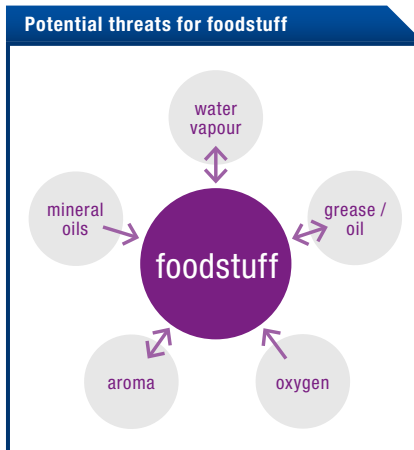
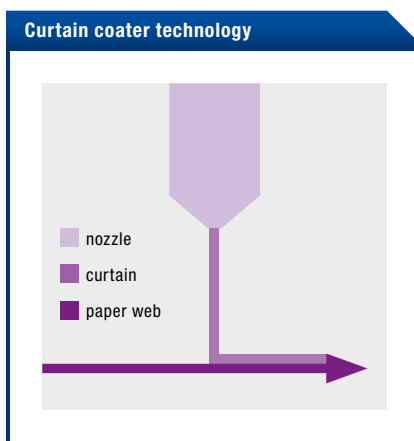
As a sustainable high-tech material, paper is the ideal basis for many food packaging. At Mitsubishi HiTec Paper, we use renewable raw materials that are not in competition with food production. Whether as primary or secondary packaging - all barricote products are fully recyclable and therefore ideally suited for the circular economy. Environmentally friendly, sustainable and safe.

Innovations such as barricote are possible because of our many years of experience in coating various speciality papers. We have six different coating technologies at our disposal for the application of many different functional, protective and barrier coatings, including multiple and double-sided coatings.



Check out our barricote video!

Our curtain coater technology enables us to apply coatings in an extremely uniform and highly effective way, safely and accurately.



### AT A GLANCE:

**All barricote barrier papers** are characterized by the following features:

- > Paper products made from virgin fibres
- > Water-based coatings for combinable barrier functions against
  - water vapour
  - grease / oil
  - oxygen / aroma
  - mineral oil migration
- > 100 % free of
  - plastic films, extruded polymers or laminates
  - fluorocarbons (PFAS and PFOS)
  - chlorinated hydrocarbons (PVDC)
  - optical brighteners (OBA)
- > High content of biodegradable ingredients
- > Fully recyclable in the waste paper cycle
- > Reverse side offset and flexo printable

### Applications

- > Food and non-food packaging

## Certifications

**All barricote barrier papers** feature the following certifications:

- > Direct food contact (e. g. BfR XXXVI)
- > ISO 9001, ISO 14001, ISO 45001, ISO 50001
- > INREKA DIN EN 15593
- > FSC® Mix or PEFC™

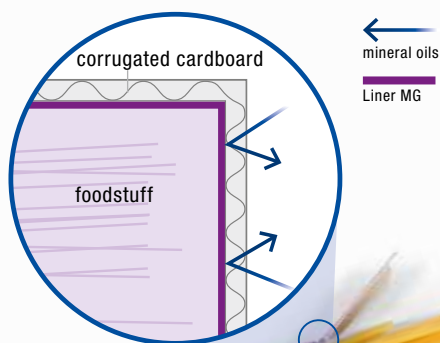


# barricote LINER

## Glued or laminated – No chance for mineral oil migration

Laminated or glued packaging made from our barrier papers barricote **LINER MG\*** and **LINER MGO\*** provide an optimal and secure barrier against the migration of mineral oils (MOSH / MOAH) and similar substances. The migration is demonstrably lower than current draft legislation to protect packaged foods. Further advantages of the water-based coatings are the barrier against grease / oil and the additional oxygen and aroma barrier (**LINER MGO**).

LINER barrier papers are used for both primary packaging and secondary packaging for food and non-food. The special barrier function is of course maintained during all further processing steps such as printing, folding, creasing, etc. Thanks to their excellent heat-sealability, **LINER MG** and **LINER MGO** are ideally suited for pouch packaging for dry and greasy foods such as pasta, oat flakes, cereals and other bulk food. Natural and safe.



### LINER MG

#### Special features

- > Combined barrier against
  - mineral oil migration
  - grease / oil (KIT level 12)
- > Heat-sealable
- > Protective function not reduced by further processing
- > Certified seawater decomposability

#### General features

- > Paper products made from virgin fibres
- > 100 % free of
  - plastic films, extruded polymers or laminates
  - fluorocarbons (PFAS and PFOS)
  - chlorinated hydrocarbons (PVDC)
  - optical brighteners (OBA)
- > High content of biodegradable ingredients
- > Fully recyclable in the waste paper cycle
- > Reverse side offset and flexo printable

#### Applications

- > Lining papers for recycled cardboards and corrugated cardboards
- > Bags for dry and greasy foods
- > Secondary packaging

### barricote LINER MG

Grade	Substance	Thick-ness	Mineral oil migration (Tenax method, DIN EN 14338)		Grease resistance		Heat-Sealability (1 sec., 170 °C, 500 kPa)
			Hexanes	MOSH / MOAH	Turpentine test (according to T454)	Palm kernel oil (DIN 53116, Lev. 1, V. II)	
LINER MG	82 g/m <sup>2</sup>	95 µm	10 g/(m <sup>2</sup> *d)	< 0,5 mg/kg LM	> 1800 s	A=0 B=0	4 N/15 mm

Information about test procedures can be found in the technical data sheets.

\* M – mineral oil barrier, G – grease and oil barrier, O - oxygen and aroma barrier



## LINER MG0

### Special features

- > Combined barrier against
  - mineral oil migration
  - grease / oil (KIT level 12)
  - oxygen / aroma
- > Heat-sealable
- > Protective function not reduced by further processing

### General features

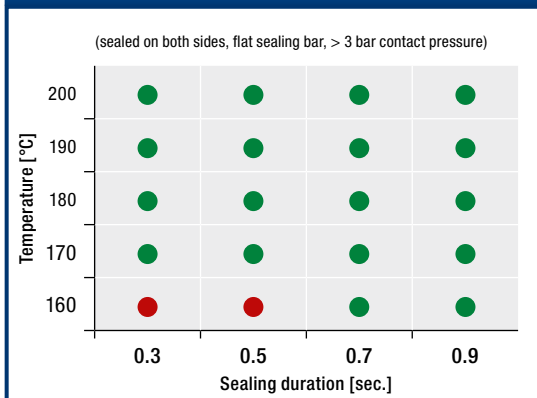
- > Paper products made from virgin fibres
- > 100 % free of
  - plastic films, extruded polymers or laminates
  - fluorocarbons (PFAS and PFOS)
  - chlorinated hydrocarbons (PVDC)
  - optical brighteners (OBA)
- > High content of biodegradable ingredients
- > Fully recyclable in the waste paper cycle
- > Reverse side offset and flexo printable

### Applications

- > Lining papers for recycled cardboards and corrugated cardboards
- > Bags for dry and greasy foods
- > Secondary packaging



Heat-Sealability Liner MG0 70



## barricote LINER MG0

Grade	Substance	Thick-ness	Mineral oil migration (Tenax method, DIN EN 14338)		Grease resistance		OTR	Heat-Sealability (1 sec., 170 °C, 500 kPa)
			Hexanes	MOSH / MOAH	Turpentine test (according to T454)	Palm kernel oil (DIN 53116, Lev. 1, V. II)		
LINER MG0	55 g/m <sup>2</sup>	57 µm	< 12 g/(m <sup>2</sup> *d)	< 0,5 mg/kg LM	> 1800 s	A=0 B=0	< 100 cc/(m <sup>2</sup> *d)	> 4.3 N/15 mm
	70 g/m <sup>2</sup>	75 µm	6 – 15 g/(m <sup>2</sup> *d)	< 0,5 mg/kg LM	> 1800 s	A=0 B=0	< 100 cc/(m <sup>2</sup> *d)	5 N/15 mm

Information about test procedures can be found in the technical data sheets.

\* M – mineral oil barrier, G – grease and oil barrier, O – oxygen and aroma barrier

# barricote BAG

## Heat-sealed bags – Food permanently protected

Our barrier paper barricote **BAG WG\*** offers an excellent combined barrier against water vapour as well as against grease and oil. In addition, **BAG WGOM\*** with its oxygen and aroma barrier ensures a long shelf life of the packaged food. The integrated barrier against mineral oil migration reliably protects against MOSH / MOAH impurities - the migration is below current legislation on the protection of packaged food.

Another feature of this particularly universal barrier paper is the certified seawater decomposability. Our barricote BAG papers are particularly suitable for bag packaging and are intelligent alternatives to foils and laminates. Environmentally friendly and sustainable.

### BAG WG

#### Special features

- > Durable combined barrier against
  - water vapour
  - grease / oil (KIT level 12)
- > Very good heat-sealability

#### General features

- > Paper product made from virgin fibres
- > 100 % free of
  - plastic films, extruded polymers or laminates
  - fluorocarbons (PFAS and PFOS)
  - chlorinated hydrocarbons (PVDC)
  - optical brighteners (OBA)
- > High content of biodegradable ingredients
- > Fully recyclable in the waste paper cycle
- > Reverse side offset and flexo printable

#### Applications

- > Heat-sealed bags for dry and greasy foods and non-foods



### barricote BAG WG

Grade	Substance	Thick-ness	Water absorption (Cobb <sub>300</sub> EN ISO 535)	Water vapour permeability (DIN 53122-1)		Grease resistance		OTR	Heat-Sealability (1 sec., 150 °C, 500 kPa)
				(23 °C / 85 % r. h.)	(38 °C / 90 % r. h.)	Turpentine test (according to T454)	Palm kernel oil (DIN 53116, Lev. 1, V. II)		
BAG WG	49 g/m <sup>2</sup>	55 µm	1 g/m <sup>2</sup>	35 g/(m <sup>2</sup> *d)	75 g/(m <sup>2</sup> *d)	> 1800 s	A=0 B=0	-	5N/15 mm
	87 g/m <sup>2</sup>	90 µm	< 1 g/m <sup>2</sup>	30 g/(m <sup>2</sup> *d)	70 g/(m <sup>2</sup> *d)	> 1800 s	A=0 B=0	-	6N/15 mm

Information about test procedures can be found in the technical data sheets.

\* W – water vapour barrier, G – grease and oil barrier, O – oxygen and aroma barrier, M – mineral oil barrier

## BAG WGOM

### Special features

- > Durable combined barrier against
  - water vapour
  - grease / oil (KIT level 12)
  - oxygen / aroma
  - mineral oil migration
- > Very good heat-sealability
- > Particularly high proportion of renewable raw materials
- > Certified seawater decomposability

### General features

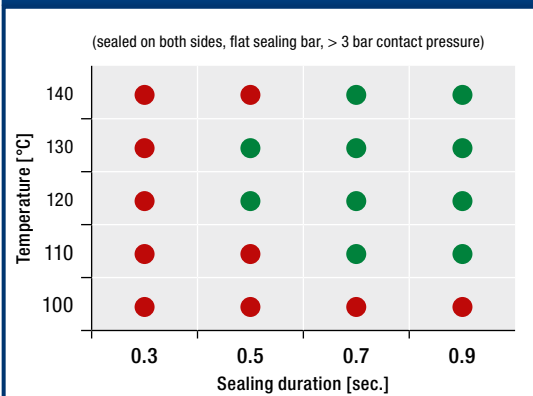
- > Paper product made from virgin fibres
- > 100 % free of
  - plastic films, extruded polymers or laminates
  - fluorocarbons (PFAS and PFOS)
  - chlorinated hydrocarbons (PVDC)
  - optical brighteners (OBA)
- > High content of biodegradable ingredients
- > Fully recyclable in the waste paper cycle
- > Reverse side offset and flexo printable

### Applications

- > Heat-sealed bags for dry foods and non-foods



Heat-Sealability BAG WGOM



## barricote BAG WGOM

Grade	Substance	Thick-ness	Water absorption (Cobb <sub>300</sub> , EN ISO 535)	Water vapour permeability (DIN 53122-1)		Grease resistance		OTR	Heat-Sealability (1 sec., 150 °C, 500 kPa)
				(23 °C / 85 % r. h.)	(38 °C / 90 % r. h.)	Turpentine test (according to T454)	Palm kernel oil (DIN 53116, Lev. 1, V. II)		
BAG WGOM	89 g/m <sup>2</sup>	95 µm	15 g/m <sup>2</sup>	< 30 g/(m <sup>2</sup> *d)	< 50 g/(m <sup>2</sup> *d)	> 1800 s	A = 0 B = 0	< 100 cc/(m <sup>2</sup> *d)	6N/15 mm

Information about test procedures can be found in the technical data sheets.

\* W – water vapour barrier, G – grease and oil barrier, O - oxygen and aroma barrier, M – mineral oil barrier

# barricote WRAP

Wrapped, glued or heat-sealed – Everything stays where it belongs

Whether wrapped or glued, the speciality paper barricote **WRAP WG\*** is the ideal wrapping paper for the food industry. The reliable barrier against water vapour and against grease or oil is complemented by a very good release effect. Barricote WRAP WG contains a particularly high proportion of renewable raw materials and protects dry and greasy foods in an optimal way. Safe and highly sustainable.

## WRAP WG

### Special features

- > Combined barrier against
  - water vapour
  - grease / oil (KIT level 12)
- > Excellent freshness effect
- > Barrier side hot melt glueable
- > Particularly high proportion of renewable raw materials
- > Excellent release effect
- > Certified seawater decomposability

### General features

- > Paper product made from virgin fibres
- > 100 % free of
  - plastic films, extruded polymers or laminates
  - fluorocarbons (PFAS and PFOS)
  - chlorinated hydrocarbons (PVDC)
  - optical brighteners (OBA)
- > High content of biodegradable ingredients
- > Fully recyclable in the waste paper cycle
- > Reverse side offset and flexo printable

### Applications

- > Wrapping papers for dry and greasy foods



## barricote WRAP WG

Grade	Substance	Thick-ness	Water absorption (Cobb <sub>300</sub> EN ISO 535)	Water vapour permeability		Grease resistance		Heat-Sealability (1 sec., 150 °C, 500 kPa)
				(DIN 53122-1, 23 °C / 85 % r. h.)	(DIN 53122-1, 38 °C / 90 % r. h.)	Turpentine test (according to T454)	Palm kernel oil (DIN 53116, Lev. 1, V. II)	
WRAP WG	44 g/m <sup>2</sup>	53 µm	1 g/m <sup>2</sup>	100 g/(m <sup>2</sup> *d)	130 g/(m <sup>2</sup> *d)	> 1800 s	A < 10 B = 0	-

Information about test procedures can be found in the technical data sheets.

\* W – water vapour barrier, G – grease and oil barrier





Grade overview barricote

		LINER MG	LINER MGO	
<b>Substance</b>		82 g/m <sup>2</sup>	55 g/m <sup>2</sup>	70 g/m <sup>2</sup>
<b>Thickness</b>		95 µm	57 µm	75 µm
<b>WATER VAPOUR</b>	<b>Cobb<sub>300</sub></b> (EN ISO 535)	-	-	-
	<b>WVTR</b> (23 °C/85% r. h.)	-	-	-
	<b>WVTR</b> (38 °C/90% r. h.)	-	-	-
<b>GREASE &amp; OIL</b>	<b>KIT value</b>	12	12	12
	<b>Turpentine</b>	> 1800 s	> 1800 s	> 1800 s
	<b>Palm kernel oil</b> (DIN 53116, Lev. 1, V. II)	A = 0 B = 0	A = 0 B = 0	A = 0 B = 0
<b>OXYGEN</b>	<b>OTR</b>	-	< 100 cc/(m <sup>2</sup> *d)	< 100 cc/(m <sup>2</sup> *d)
<b>MINERAL OILS</b>	<b>Hexanes</b>	10 g/(m <sup>2</sup> *d)	< 12 g/(m <sup>2</sup> *d)	6 – 15 g/(m <sup>2</sup> *d)
	<b>MOSH / MOAH</b>	< 0.5 mg/kg LM	< 0.5 mg/kg LM	< 0.5 mg/kg LM
<b>Heat-sealability</b>		4 N/15 mm	> 4.3 N/15 mm	5 N/15 mm
<b>Certifications</b>		direct contact with food (e.g. BfR XXXVI) ISO 9001, ISO 14001, ISO 50001 INREKA, DIN EN 15593 FSC® Mix or PEFC™		
<b>Sea water decomposability</b>		✓	-	-
<b>Applications</b>		lining papers for recycled cardboards and corrugated cardboards, bags for dry and greasy foods, secondary packaging	lining papers for recycled cardboards and corrugated cardboards, bags for dry and greasy foods, secondary packaging	lining papers for recycled cardboards and corrugated cardboards, bags for dry and greasy foods, secondary packaging

BAG WG		BAG WGOM		WRAP WG	
49 g/m <sup>2</sup>	87 g/m <sup>2</sup>	89 g/m <sup>2</sup>	44 g/m <sup>2</sup>		
55 µm	90 µm	95 µm	53 µm		
1 g/m <sup>2</sup>	< 1 g/m <sup>2</sup>	15 g/m <sup>2</sup>	1 g/m <sup>2</sup>		
35 g/(m <sup>2</sup> *d)	30 g/(m <sup>2</sup> *d)	< 30 g/(m <sup>2</sup> *d)	100 g/(m <sup>2</sup> *d)		
75 g/(m <sup>2</sup> *d)	70 g/(m <sup>2</sup> *d)	< 50 g/(m <sup>2</sup> *d)	130 g/(m <sup>2</sup> *d)		
12	12	12	12		
> 1800 s	> 1800 s	> 1800 s	> 1800 s		
A = 0 B = 0	A = 0 B = 0	A = 0 B = 0	A < 10 B = 0		
-	-	< 100 cc/(m <sup>2</sup> *d)	-		
-	-	25 - 50 g/(m <sup>2</sup> *d)	-		
-	-	< 0.5 mg/kg LM	-		
5 N/15 mm	6 N/15 mm	6 N/15 mm	-		
direct contact with food (e.g. BfR XXXVI) ISO 9001, ISO 14001, ISO 50001 INREKA, DIN EN 15593 FSC® Mix or PEFC™					
-	-	✓	✓		
heat-sealed bags for dry and greasy foods and non-foods	heat-sealed bags for dry and greasy foods and non-foods	heat-sealed bags for dry foods and non-foods	wrapping papers for dry and greasy foods		



As a responsible manufacturer, we strive to produce and process our products in the most environmentally friendly way and to the highest standards of quality. We take our social responsibility seriously and are active in various environmental associations and organizations. Complying with and conforming to rules and regulations goes without saying. Social commitment is an important part of our corporate culture.

#### Certifications:

- › FSC® Chain-of-Custody
- › PEFC™ Chain-of-Custody
- › DIN EN ISO 9001
- › DIN EN ISO 14001
- › DIN EN ISO 50001
- › DIN ISO 45001
- › INREKA, DIN EN 15593



#### Memberships:

- › B.A.U.M.
- › ChePap Rhein-Ruhr
- › Klimapakt Flensburg
- › Ökoprofit® Klub OWL
- › Two Sides
- › Wirtschaft pro Klima



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**Mitsubishi HiTec Paper Europe GmbH**  
Niedernholz 23 | 33699 Bielefeld | Germany  
Sales | Tel: +49 521 2091-535 | sales.mpe@mitsubishi-paper.com

[www.mitsubishi-paper.com](http://www.mitsubishi-paper.com)