

UNFOLDED

A PAPER ABOUT CARTONBOARD



FOODBOARD™

Protects Food

N O . 1 / 2 0 1 6

SETTING A NEW STANDARD FOR PRODUCT SAFETY



Dear ladies and gentlemen,
Dear business partners,

Over 6 years of research and development by 20 experts of Mayr-Melnhof Karton, more than 15,000 individual laboratory analyses and several million pieces of safe folding cartons produced from FOODBOARD™ made this breakthrough technology ready for industrial production! The Austrian board mill in Frohnleiten is supplying FOODBOARD™ with a brown reverse side (GT4) and a bright reverse side (GT1). MMK is thus setting a new standard for the safety of packaged food. The intensively discussed subject of mineral oil has been solved on an industrial scale based on MMK's own research and innovation.

Thanks to ongoing investment in research and development as well as the latest technology, MMK is already capable today of meeting the requirements of tomorrow. This is also reflected in the pharmaceutical sector:

With the forthcoming implementation of the EU Falsified Medicines Directive, it will be obligatory in future to give every pharmaceutical packaging its own individual identifying feature. All MMK's virgin fibre qualities and selected high-quality recycled cartonboard qualities are excellently suited for the use of 2D matrix codes thanks to their outstanding laser and inkjet coding properties, and are therefore the first choice for pharmaceutical applications.

There is additional news from our Dutch mill in Eerbeek: With Accurate™ Top Natural we now have a FBB quality in our product range which is perfectly suited for applications in the food industry with its matt, natural look, pleasantly tactile feel and conformity for direct contact with food. The bio trend is booming and Accurate™ Top Natural is therefore the ideal choice to highlight the naturalness of the packaged product.

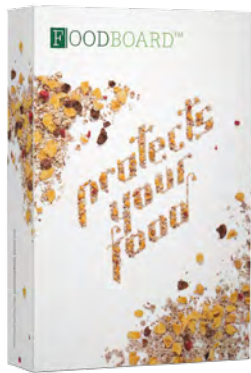
Innovative, future-oriented and sustainable solutions form the basis of our customers' success, and the same applies to MM Karton. As cartonboard experts for all packaging questions, we continuously demonstrate this through new solutions.

A handwritten signature in black ink, consisting of a large, sweeping loop at the top and a smaller, more complex scribble below it.

Franz Rappold
Member of the Board

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FOODBOARD™ ON SUPERMARKET SHELVES

The intensively discussed subject of mineral oil has been solved on an industrial scale based on MMK's own research and innovation: With FOODBOARD™, Mayr-Melnhof Karton has developed a new generation of cartonboard which ensures the highest level of product safety. The first food, packed in FOODBOARD™, is already on the shelves, helping to ensure consumer confidence on a lasting basis.

FOODBOARD™ is available on an industrial scale

The new cartonboard grade is a protected internal development from Mayr-Melnhof Karton with an innovative barrier concept as the core component. FOODBOARD™ is a pure cartonboard solution and is produced with a brown reverse side (GT4), or a bright reverse side (GT1) inline on the board machine at the Frohnleiten mill in Austria. The annual available capacity of this safe food packaging cartonboard is about 300,000 tonnes.

FOODBOARD™ stands for product safety

FOODBOARD™ shields packed food against the migration of defined unintended substances such as mineral oils, phthalates, DIPN and bisphenol A. The barrier provides comprehensive protection against influences from printing inks and the environment, which can compromise the packed food during transportation, storage and when presented on the shelf. Thanks to the FOODBOARD™ app a continuous traceability of the packaging

on the shelf covering the entire production process is enabled. FOODBOARD™ protects reliably against cross-contamination, and it means transparency in the supply chain.

FOODBOARD™ preserves product quality

Since the end of 2011, in close collaboration with leading international consumer goods producers, extensive long-term real-life tests (up to 36 months) have been carried out in a wide variety of food segments like cereals, chocolate, pasta, tea, bakery products, fast food or rice. The results of more than 15,000 internal and external migration analyses confirm conclusively the effectiveness of the functional barrier. The real-life tests of FOODBOARD™ demonstrated excellent printing and converting results as well as the highest packing line performance. The knowledge gained from the real-life tests has been summarised in a Converting Guideline. Laboratory analyses and test series of our customers confirm a longer shelf-life for certain packed foods, top protection from organoleptic influences as well as slightly grease resistant attributes. FOODBOARD™ reliably preserves the quality of the packed foods.

FOODBOARD™ ensures consumer confidence

FOODBOARD™ complies with the current European regulations and laws for direct and indirect food contact. Leading European institutes have issued relevant declarations of food conformity and reinforced that FOODBOARD™ meets the latest published statutory requirements of a possible “mineral oil regulation” from the German Federal Ministry for Food and Agriculture (BMEL). Furthermore these external analyses based on the EU convention prove that by the use of FOODBOARD™ no migration of MOAH into food above the detection limit 0.15 mg/kg exists.

However, the market is also demanding a migration barrier independently of any statutory regulation in order to maintain consumer confidence and avoid product complaints.

The subject of mineral oil migration has been repeatedly seized upon in the media, most recently in the middle of February 2016 by the WDR consumer magazine “markt”. The continual information is arousing the attention of consumers who are now demanding a solution. With the optional use of

the FOODBOARD™ logo on their packaging, food producers can send a clear signal of their commitment with regard to product safety, thereby strengthening consumer confidence and informing authorities of the functional barrier on supermarket shelves.

The market launch of FOODBOARD™ is a ground-breaking event with impressive potential for the future, above all in view of the fact that new requirements to protect against the migration of unintended substances in the field of food packaging are being continually added. FOODBOARD™ already offers optimum protection against the migration of certain defined, unintended substances, and ensures that food manufacturers are well equipped to face the challenges of the future.

If you have further questions or are interested in our detailed FOODBOARD™ brochure, please contact our team of experts at FOODBOARD@mm-karton.com.

FOODBOARD™ PROTECTS FOOD AGAINST MINERAL OILS

Cartonboard with functional barrier

- ✓ protects against mineral oils and other defined unintended substances
- ✓ protects against cross-contamination during transport, storage and at the point of sale
- ✓ is recyclable, bio-degradable and available with FSC® or PEFC™ certification



ALL MMK GC QUALITIES CERTIFIED FOR LASER AND INKJET CODING, PERFECT FOR 2D MATRIX CODES

The ordered implementation of the EU Falsified Medicines Directive will in future oblige every pharmaceutical packaging to carry its own unique identifier.

Mayr-Melnhof Karton can already meet the increased quality demands placed on cartonboard: an external institute confirms the excellent laser and inkjet codability of all MMK virgin fibre qualities.

New EU Directive requires two safety features

In February 2016, the European Commission published the final version of the delegated acts which will define the specific details of Directive 2011/62/EU (Falsified Medicines Directive). The Directive serves to make the fight against counterfeit drugs more effective and therefore aims to protect patients. The regulation provides for safety features which can be divided into two groups:

1. Anti-tampering devices such as glue dots, adhesive seals and perforated tear strips will in future allow inspection to see if a carton has been manipulated.
2. The unique identifier on every pharmaceutical packaging – the 2D matrix code – will serve to show if a drug is genuine and to identify the individual packaging.

These codes can supply additional information and thereby allow seamless product traceability as well as reliable counterfeit protection. The fundamental requirement here is the optimum codability of the cartonboard.

MMK's GC qualities meet requirements in full

MMK's R&D department has already spent several years working to meet the future requirements in full. All laboratories in our virgin fibre cartonboard mills have special equipment to test the coding and its readability under real conditions.

When a product is coded with a laser, the surface layer is quickly and precisely vaporised or engraved, thereby achieving a product coding that cannot be rubbed off. With individual inkjet coding, the 2D matrix code is printed on the folding carton directly in the pharmaceutical packaging plant. The challenge with these inkjet codes is that they have to be dry and wipe resistant within 0.3 seconds in order to be correctly readable in accordance with the FFPI guideline (Forschungsgemeinschaft Faltschachteln für die Pharmaindustrie, engl.: Research Group Folding Boxes for the Pharmaceutical Industry) and the criteria contained in ISO standard 15415. This requires optimised coating of the cartonboard quality.

The optimum coding properties of our GC qualities, both for laser and inkjet coding, have now been confirmed by PTS (Papiertechnische Stiftung): all MMK virgin fibre qualities

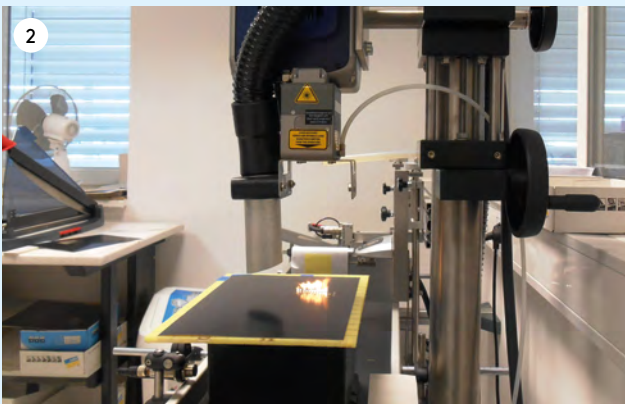
as well as the WLC products, Multicolor Mirabell™ (GD2), Starcolor Mirabell™ (GD2) and Supra™ (GT2) are excellently suited for the use of 2D matrix codes and are therefore first choice for pharmaceutical companies.

Scope and timetable for implementation

It will be compulsory to implement the Falsified Medicines Directive by the beginning of 2019: it will comprise all prescription drugs sold in the European Union. Exceptions are shown on the so-called white list. The new regulation do not yet apply to non-prescription, OTC drugs: the safety features are not to be compulsory for OTC products. Drugs where there is a high risk of counterfeiting form an exception to the above (black list).

Whether a drug requires a prescription is normally decided at a national level and can be different in individual member states. This means it is possible that one and the same drug will have to carry the safety features in one member state but not in another.

Continuous investment in research and development together with deployment of the latest technology form the basis for us to take account of market trends and imminent legislation at an early stage. It is only thanks to this approach that MMK is already in a position today to meet the rising demands of tomorrow.



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2D MATRIX CODES HAVE ONE OBJECTIVE: SEAMLESS PRODUCT TRACEABILITY AND RELIABLE COUNTERFEIT PROTECTION.

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ALL LABORATORIES IN OUR VIRGIN FIBRE CARTONBOARD MILLS ARE ABLE TO TEST THE CODING AND ITS READABILITY UNDER REAL CONDITIONS.
(HERE: KOLICEVO KARTON, SLOVENIA)

MMK ON LOCATION – THE MOST IMPORTANT INDUSTRY EVENTS Q4 2015 / Q1 2016

2016 began for us as 2015 finished: with exciting events where future topics were intensively discussed with an audience made up of industry professionals.



PACKAGING INNOVATION PROGRAMME

10TH TO 11TH DECEMBER 2015,
MUNICH

The Packaging Innovation Programme is one of the important platforms for discussing sustainable, innovative and inspiring packaging trends as well as for positioning packaging as the “carrier“ of exceptional brand identities. Our presentation made one thing clear above all others: only through permanent innovation can you successfully meet the challenges of the future and keep your finger on the pulse of the times. This philosophy is underlined by FOODBOARD™, our barrier cartonboard for the highest product safety, as well as our new arrivals, Starcolor Mirabell™ (GD2), tailor-made for the pharmaceutical market, and UD Brown (UD2), a single-coated, sustainable duplex cartonboard with a brown front side and brown reverse side.



RISI EUROPEAN CONFERENCE

29TH FEBRUARY TO 3RD MARCH 2016,
BERLIN

The annual RISI conference has one primary goal – to take a 360° look at the entire forestry industry and act as a driving force across all aspects of it.

Our presentation entitled “How to Protect as well as Boost Consumer Brands with Fiber Based Packaging“ which attracted much attention, made one essential point clear: cartonboard is uniquely suited to meeting the challenges of the future and successfully conveying the brand message to the consumer.



PCD (PACKAGING OF PERFUMES, COSMETICS & DESIGN)

3RD TO 4TH FEBRUARY 2016,
ESPACE CHAMPERRET, PARIS

At the beginning of February, over 5,800 packaging experts met at the PCD Fair in Paris, which is dedicated to the premium segment of cosmetics and perfumes. As well as elaborately designed, ingenious packaging which impresses through its individual look and special tactility, the focus is shifting ever more to the aspect of sustainability even for luxury products. This is where MMK can win the argument with its production of environmentally friendly and attractive packaging solutions.



BPIF CARTONS: COMMON GROUND

20TH APRIL 2016,
NOTTINGHAM

In mid-April MMK discussed with numerous participants at the one-day Common Ground event of BPIF Cartons, British Printing Industries Federation, in Nottingham the latest technological developments and how they affect the packaging industry. All aspects of food safety were also a key topic of the event. MMK informed the representatives of British and international companies about our solution in terms of highest product safety for food packaging, FOODBOARD™, and discussed particularly the subject of converting. The results of extensive long-term real-life tests confirm the effectiveness of our migration barriers, best converting results and highest packing line performance for FOODBOARD™.

YOU CAN MEET US AT THE FOLLOWING UPCOMING EVENTS:

FEFCO Summit | 18th to 20th May 2016, Berlin
 DRUPA | 31st May to 10th June 2016, Düsseldorf
 RosUpack | 14th to 17th June 2016, Moscow
 Fachpack | 27th to 29th September 2016, Nuremberg

LIGHTWEIGHTING IN THE LINER PORTFOLIO – MM LINER™ 180 GSM

Using the slogan, “High Performance – Low Substance“, we have responded to the high demand for a low grammage for offset printing: the established quality MM Liner™ is now also available in 180 gsm from our Slovenian mill Kolicovo, making the offset range “more lightweight“

MM Liner™ impresses with good visual parameters – high gloss and high opacity – as well as best results in printing and converting and is therefore for all forms of corrugated applications perfectly suited. MM Liner™ is available in the grammage range 180-250 gsm and, as is the case with all MMK qualities, is available with FSC® or PEFC™ certification.

Thanks to our MultiMill concept, customers can rely on maximum reliability of supply as well as consistently high quality: MM Liner™ is produced at two locations (Kolicovo, Slovenia, and Neuss, Germany) and combines ecological benefits with economic ones: The strategically favourable, central European location of our mills to the Eastern, Southern and West European markets also guarantees short transportation routes and flexible service for the corrugated industry. By the production at two mills maximum supply security is guaranteed – even at exceptionally short lead times and even for very high quantities.

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Quality	Name		Range gsm
Neuss			
Offset Printing	MML	MM Liner™	210–230
Offset Printing	MMT	MM Topliner™	160–250
Flexo Printing	XL	MM X-Liner™	145–230
Flexo Printing	XL AF	MM X-Liner aqua-fit™	160–210
Kolicovo			
Offset Printing	MML	MM Liner™	180–250

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MMK SUPPORTS INITIATIVE FOR CHILDREN, “READING AND TELLING STORIES IMPROVES HEALTH”

Reading aloud to children not only promotes the development of their speech and their ability to concentrate, but also boosts their imagination and makes a significant contribution to their social skills. With their unique project entitled “Reading and telling stories improves health”, Austria’s paediatricians are aiming to make parents aware of the importance of reading aloud.

Mayr-Melnhof Karton supports this initiative.

The collection of four postcards aimed at encouraging the practice of reading aloud, are printed on MMK’s virgin fibre cartonboard, Silvawhite™ (GC1), from the Dutch mill in Eerbeek. The procedure is very simple: every time they visit the paediatrician, parents are given a story postcard. As well as high-quality illustrations, picture puzzles and story quizzes, they will also find a voucher code on the card with which they can register on the website www.geschichtenbox.com and select high-quality stories to match their child’s profile (e.g. age, likes and dislikes) or have them sent by email.

A total of around 500 doctors as well as paediatric wards in hospitals are taking part in this campaign in Austria. This commitment and the information handed over personally on

the importance of reading aloud to children are helping to raise awareness in society. Folke Tegetthoff, author, narrator and initiator of the online platform, geschichtenbox.com, and the campaign “Paediatricians mobilising”, explains: “The aim of the project is to emphasise that the simplest and at the same time most sensible “communication bridge” between parents and children consists in reading aloud and telling quality stories. Reading aloud and telling stories can be equated with giving time, attention and warmth.”

In many countries in which MMK operates, we commit to a wide variety of sensible social projects. We are proud to be part of such a great story.

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STORY POSTCARDS, PRINTED
ON SILVAWHITE™, ENCOURAGE
READING ALOUD.

NATURAL LOOK THANKS TO ACCURATE™ TOP NATURAL (FBB)

Accurate™ Top Natural (ACN) is MM Karton's convincing answer to the strong demand for a natural, rustic look. This visual appearance has been achieved in the past by printing on the cartonboard reverse side. Accurate™ Top Natural can score by printing on the front side and its advantages. Reverse side printing is history and Accurate™ Top Natural the future, guaranteeing a perfect symbiosis of sustainable presentation and good converting performance.

Challenge of reverse side printing solved

In order to provide a perfect packaging solution when printing on the top side and to solve the challenges of reverse side printing (set-off of printing ink, irregular result of print design), a new special quality based on the FBB standard quality Accurate™ from our Dutch mill in Eerbeek has been developed for this purpose after many customer requests. Due to a special preparation on the top side Accurate™ Top Natural achieves a natural, matt look which is also pleasantly tactile. Horst Bittermann, Head of MMK Marketing: “The choice of material and its surface play a decisive role in any successful packaging. With its matt surface and with its special roughness, Accurate™ Top Natural acts as an optical and sensory USP and constitutes a genuine sales argument.”

Tailor-made for natural and vegan food packaging

Accurate™ Top Natural knows how to convince converters and brand manufacturers:

The new cartonboard quality is suitable for direct food contact on top and reverse side. This makes Accurate™ Top Natural the perfect quality for applications in the food sector. ACN is also available with a freeze treatment and is therefore additionally considered to be an ideal, natural packaging solution for e.g. chilled and frozen food or yoghurt multi-packs.

ACN impresses with high runnability, whereby more sheets per hour can be printed: The coating enables fast ink absorption with good colour stability and therefore savings in terms of printing ink. Due to the special surface preparation there is no set-off of the printing ink and the print image will be reproduced perfectly.

YOU WILL FIND PRODUCT DETAILS AT
WWW.CARTONETTE.COM

We are looking forward to your enquiries!

E-Mail: marketing@mm-karton.com

Tel: +43 1 50136-0



WOULD YOU LIKE TO HAVE THE PICTURED
STROOPWAFEL PACKAGING WITH CONTENT?
SEND AN EMAIL TO MARKETING@MM-KARTON.COM -
THE FIRST 100 ENTRIES WILL RECEIVE THIS DUTCH SPECIALTY
PACKED IN ACCURATE™ TOP NATURAL.

CARTONBOARD INDUSTRY REDUCES CO₂ FOOTPRINT STILL FURTHER

Good news for the environment: The latest figures show a further improvement in the CO₂ footprint of the European cartonboard and folding carton industry. Due to a reduction of 3 % in 3 years, the carbon footprint now stands at 885 kg of CO₂ equivalent per tonne of converted cartonboard and is significantly compensated by the sequestration of -730 kg biogenic CO₂. With this result, cartonboard has extended its lead as the most sustainable packaging material.

3 % reduction in carbon footprint in just 3 years

Besides the product benefits and economic advantages it offers, cartonboard also represents a particularly sustainable packaging solution from an ecological viewpoint: it is based on renewable resources, showing the highest collection and recycling rate and – with 885 kg of fossil fuel CO₂ emissions per tonne of cartonboard produced and converted – absolutely low CO₂ values within the value chain.

The responsible use of resources, particularly energy, and the increased use of bio energy and optimised water consumption have contributed significantly to this positive development, and they show clearly that our industry is steadily improving its environmental performance.

The raw material of cartonboard are wood fibres – the renewable resource is made at MMK exclusively from sustainably managed forests. Growing trees capture and store CO₂. When the wood fibres are processed to folding cartons, the CO₂ continues to be stored. Also recycling of folding cartons keeps the CO₂ locked up and prevents it from returning to the atmosphere. A study by the Swedish Environmental Research Institute IVL shows the link between folding carton consumption and the net carbon sequestration in sustainably managed forests in Europe. This is 730 kg biogenic CO₂ per tonne, which are removed from the atmosphere by the use of folding boxes.

The Pro Carton approach: binding for Mayr-Melnhof Karton

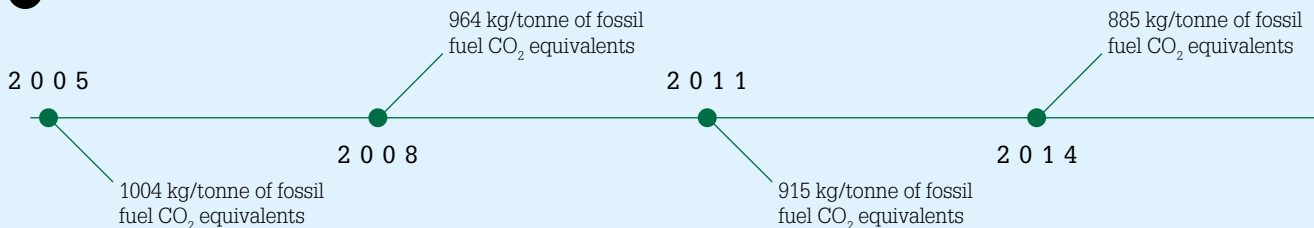
In measuring the average CO₂ footprint, Pro Carton is following the high demands contained in the scientifically well-founded CEPI framework (Confederation of European Paper Industry). This takes as its starting point a comprehensive, integrated approach to calculating the carbon footprint, beginning with the raw materials (cradle) and finishing at the exit gate of the folding carton producer (gate). In the process, the CO₂ footprint reflects the entire value added chain of a product and therefore represents the total amount of carbon dioxide emissions (measured in CO₂) and greenhouse gas emissions (measured in CO₂ equivalents, CO₂e) occurring directly and indirectly over the life cycle of a product. This means consumers can assess the environmental effects of the production process all the way to the finished folding carton product.

The figures published by Pro Carton clearly underline the positive contribution of cartonboard packaging to the subject of climate change and the environment.

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AVERAGE GREENHOUSE GAS BALANCE SHEET FOR THE PRODUCTION AND CONVERSION OF CARTONBOARD AND FOLDING CARTONS (CRADLE TO GATE).

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PRO CARTON / ECMA AWARDS 2016

The annual Pro Carton / ECMA Awards for outstanding cartonboard packaging represent the most highly regarded prize of its kind. There is no better opportunity to show how innovative and creative folding cartons can be!

Among the prize-winning ideas in its 19-year history there have been important, forward-looking best practice examples and many which provided food for thought. The various categories cover all fields of application for cartonboard: from food and pharmaceutical packaging all the way to shelf-ready packaging and displays. There are also special awards for innovative or especially environmentally friendly packaging solutions. All partners in the supply chain who are involved in the development of cartonboard concepts may enter – the trade, designers, the brand owners, folding carton manufacturers and cartonboard producers.

Please take this opportunity to put your best folding

carton creations centre-stage! Of course we would be happy if they were made out of MMK cartonboard. Your contact at MM Karton will be happy to help you to process your entry or revert directly to MMK Marketing (marketing@mm-karton.com).

Closing date for entries is May 19th, 2016.

For further information please contact:
www.procartonecmaaward.com

The awards ceremony will take place in Antibes/ Juan-les-Pins, France, on September 15th, 2016 in the course of the Pro Carton / ECMA Congress.

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- Embossing
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