



**METNIN™ SHIELD FOR PACKAGING**

**APPLICATIONS**

# METNIN™ Technology

- MetGen has developed a breakthrough lignin refining technology **METNIN™**.
- This technology enables the production of **METNIN™ Lignin fractions** to match the **specific requirements** of the end-user applications.
- METNIN™ process is lignin agnostic that allows industrial scale refining of lignin in an **economic** and **sustainable** way.

## Packaging Products – Current problems

- Wax-coated cardboards are **unsustainable** forms of packaging providing humidity and strength control.
- The wax used for coating is made from **petrochemicals** (polyethylene).
- These coatings are **non-recyclable** and usually go directly to the landfill.
- **No biobased alternative** has been found during decades of search matching the needs of packaging board industry



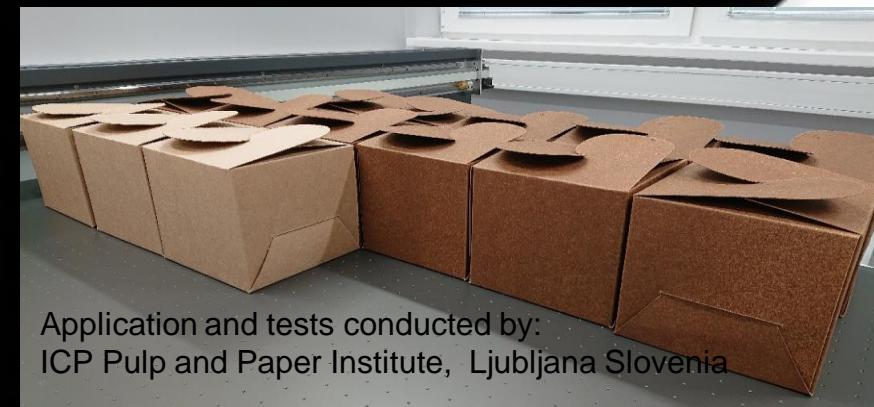
# Packaging Products - Our Solution

- METNIN™ SHIELD formulation uses METNIN™ Lignin to produce sustainable **BIO-BASED ADDITIVE** for fibre based packaging products.
- The **SHIELD** improves strength and moisture resistance properties of the packaging board.
- METNIN™ lignin is tailor-made for SHIELD and **OUTPERFORMS** all Industrially available lignins tested in the formulation.



# METNIN™ SHIELD – STRENGTHS/HIGHLIGHTS


- Resistance to creep in high moisture conditions → 50% strength improvement.
- High resistance to water penetration (sizing) → meets the industrial standard (Cobb60 <30 g/m<sup>2</sup>)
- Long Shelf life → minimum 3 months
- Improved Box compression Test performance → 16% increase of the coated boxes as compared to boxes made with reference papers.



Application and tests conducted by:  
ICP Pulp and Paper Institute, Ljubljana Slovenia

# CERTIFIED COMPLIANCE

- Regulation (EC) No 1935/2004 on materials and articles intended to come into contact with food.
- German Recommendation XXXVI for health related evaluation of materials food.
- Code of Federal Regulations, Food and Drugs (FDA), 21 CFR Ch I § 176.170 and 176.180.
- 100% recyclability of METNIN™ SHIELD boxes.



INŠTITUT ZA  
CELULOZO IN PAPIR  
Innovative Cellulose Products

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matična št.: 5051681  
ID za DDV: SI28572955  
TRR pri NLB: 02017-0020227809

### CERTIFICATE OF CONFORMITY

N20-MT10-CoC21

Customer information	
Order identification number:	N20-MT106
	Date of order: 10.08.2020
Customer:	MetGen Oy, Rakentajantie 26, 20780 Kaarina, Finland
Role of the customer:	Producer

Product information	
Product description:	Unprinted paper grade intended for use for food packaging
Product name:	OCC based paper with Metnin®SHIELD™003 Coating

Conformity control information	
Date of issue of the certificate	28.09.2020
Validity of the certificate	28.09.2022

**Subject of control:**

Conformity of the paper grade according to

Regulation (EC) No 1935/2004 of the European Parliament and of the Council of 27. October 2004 on materials and articles intended to come into contact with food

and


German Recommendation XXXVI for the health-related evaluation of materials on objects for the contact with foodstuff from 01.06.2019

and

Code of Federal Regulations, Food and Drugs (FDA), 21 CFR Ch I (1 april 2019 edition) § 176.170 and 176.180 for the used raw materials, fabrication additives and special paper finishing agents as well as for the release of substances which might endanger health.

All technical documents related to the subject of the control were delivered to the Pulp and Paper Institute by the contractor and their conformity was compared with the legal regulations (laws, standards, directives) valid at the time of the examination.

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On the basis of the documentation presented to us and verified by us, we confirm that the product fulfills the requirements and is in compliance with:

Regulation (EC) No 1935/2004 of the European Parliament and of the Council of 27. October 2004 on materials and articles intended to come into contact with food

and


German Recommendation XXXVI for the health-related evaluation of materials on objects for the contact with foodstuff from 01.06.2019

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The paper grade OCC based paper with Metnin®SHIELD™003 Coating according to the sample material submitted may be used safely for food packaging. It may stand in direct contact with dry, fatty and moist foodstuffs. However there has been recognized as potential issue the increased level of presence in MOSH value. The reason for this is because the OCC board is a significant source of MOSH.

Performed by:	Approved by:
Bojan Borin	Mateja Zajc
Date: 28.09.2020	28.09.2020



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**IT'S TIME TO  
STRENGTHEN  
PACKAGING  
WITH  
METNIN™ SHIELD**



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