

**Test Report No.:** 170300589a 001

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**Client:** GREEN-PAPER PACKAGING KFT  
8152 koszarhegy, Kando k.u.2 Hungary

**Test item(s):** PAPER WITH PE FILM BOWL

**Identification / Model No(s):** -

**Sample Receiving date:** 2022-01-18

**Testing Period:** 2022-01-24 to 2022-02-11

**Test specification:**

Performed parameter(s) for the compliance with the following regulations concerning materials in contact with foodstuff:

- Regulation (EC) No 1935/2004

**Test conclusion:**

PASS

**Other Information:**

Sales Destination: Hungary

**Sample Photo**

(For detailed sample picture please refer to last page)

For and on behalf of TÜV Rheinland (Guangdong) Ltd.

Elaine Zhang

2022-02-13

Date

Elaine Zhang / Sub-Group Leader

Name / Position



Test result is drawn according to the kind and extent of tests performed.

This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.

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**1. Sample List:**

Sample No.	Material	Color	Location
1	Paper + PE film	Light brown + transparent	Bowl

**2. Overall Results:**

Test No.	Tested Item	Conclusion
1.	Sensorial examination	Pass
2.	Global Migration	Pass
3.	Specific Migration of Metals	Pass
4.	Fastness of Optical Brighteners	Pass
5.	Colourfastness	Pass
6.	Determination of Transfer of Antimicrobial Constituents	Pass
7.	Extraction of Primary Aromatic Amines	Pass
8.	Specific Migration of Lead	Pass

### 3. Results

#### 3.1 Sensorial examination

Test method: It is examined to the extent of food simulant being used, which comes into contact with the product, undergoes detectable changes in taste and smell.

For this purpose, the food simulant was stored in the product under the below mentioned time and temperature. Afterwards, the food simulant was examined by an appropriate number of tasters with regard to any divergence in smell and taste. Another test sample, which was used as a reference, was treated by the same way except that it had no contact with the product to be tested.

*Before testing, the product had been cleaned according to the product's instruction manual or in the absence of such manual, by normal household cleaning.*

The test is carried out on the basis of ISO 13302 by paired comparison test:

Evaluation scheme:

0 =	No discernible deviation
1 =	Barely discernible deviation
2 =	Weak deviation
3 =	Clear deviation
4 =	Strong deviation
Limit:	3 (failed)

The following food simulants and conditions were applied:

Food simulant	Test duration / Temperature
Water	2 hour(s) / 70 °C

Test No.:	1
Sample No.:	1
<b>Parameter:</b>	<b>Result</b>
Transfer of Smell:	1.0
Transfer of Taste:	1.0

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**3.2 Global Migration**

Test method: The migratory behaviour was examined with reference to Commission Regulation (EU) No. 10/2011 and its amendments

Limit: With reference to Commission Regulation (EU) No 10/2011 and its amendments

The following food simulants and conditions were applied:

Food simulant	Test duration / Temperature
Acetic acid 3 %	2 hour(s) / 70 °C
Ethanol 95 %	2 hour(s) / 60 °C
Isooctane	0.5 hour(s) / 40 °C

Test No.:	1			
Sample No.:	1			
Migration ratio:	500 ml / 2.8 dm <sup>2</sup>			
Parameter	Unit	RL	Result	Limit
Acetic acid 3 %	mg/dm <sup>2</sup>	2	2	10
Ethanol 95 %	mg/dm <sup>2</sup>	2	5	10
Isooctane	mg/dm <sup>2</sup>	2	<RL	10

## Abbreviations:

RL = Reporting Limit

ml/dm<sup>2</sup> = Mililitre per square decimetre

< = Less than

## Remark:

\*1 The sample is a disposable article; therefore repeat use conditions are not applicable

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**3.3 Specific Migration of Metals**

Test method: The migratory behaviour was examined with reference to Commission Regulation (EU) No. 10/2011 and its amendments. Determination by ICP-MS.

Limit: With reference to Commission Regulation (EU) No 10/2011 and its amendments

The following food simulant and condition were applied:

Food simulant	Test duration / Temperature
Acetic acid 3 %	2 hour(s) / 70 °C

Test No.:	1			
Material No.:	1			
Migration ratio:	500 ml / 2.8 dm <sup>2</sup>			
Parameter	Unit	RL	Result	Limit
Aluminium	mg/kg	0.1	n.d.	1
Antimony	mg/kg	0.01	n.d.	0.04
Arsenic	mg/kg	0.01	n.d.	n.d.
Barium	mg/kg	0.1	n.d.	1
Cadmium	mg/kg	0.002	n.d.	n.d.
Total Chromium	mg/kg	0.01	n.d.	n.d.
Cobalt	mg/kg	0.01	n.d.	0.05
Copper	mg/kg	0.5	n.d.	5
Iron	mg/kg	5	n.d.	48
Lead	mg/kg	0.01	n.d.	n.d.
Lithium	mg/kg	0.1	n.d.	0.6
Manganese	mg/kg	0.1	n.d.	0.6
Mercury	mg/kg	0.01	n.d.	n.d.
Nickel	mg/kg	0.01	n.d.	0.02
Zinc	mg/kg	1	n.d.	5
Europium	mg/kg	0.01	n.d.	-
Gadolinium	mg/kg	0.01	n.d.	-
Lanthanum	mg/kg	0.01	n.d.	-
Terbium	mg/kg	0.01	n.d.	-
Sum of Lanthanide substances	mg/kg	0.01	n.d.	0.05

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Abbreviations:

RL = Reporting limit  
n.d. = Not detected  
mg/kg = Milligram per kilogram  
ml/dm<sup>2</sup> = Millilitre per square decimetre  
< = Less than

Remark

- \*1 Single component with an amount below reporting limit was not considered by the calculation of the sum. In the case of all lanthanide substances europium, gadolinium, lanthanum and terbium were not detected, the result is stated n.d.

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**3.4 Fastness of Optical Brighteners#**

Test method: With reference to EN 648:2018 "Paper and board intended to come into contact with food –Determination of the fastness of fluorescent whitened paper and board."

Requirement: Resolution ResAP (2002) 1 on paper and board materials and articles intended to come into contact with foodstuffs / Policy Statement concerning Tissue Paper Kitchen Towels and Napkins version 1 – 22.09.2004.

Test No.:	1	
Material No.:	1	
<b>Parameter</b>	<b>Unit</b>	<b>Result</b>
Procedure	-	B
Fastness to distilled water	Grade	5
Fastness to 3% acetic acid	Grade	5
Fastness to alkaline salt solution	Grade	5
Fastness to vegetable oil	Grade	5

## Remark:

- \*1 According to Resolution AP (2002) 1 on Paper and board materials and articles intended to come into contact with foodstuffs the evaluation of grade 5 according to EN 648 shall be reached. That is no migration of optical brighteners to the foodstuff.

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**3.5 Colourfastness**

Test method: EN 646: 2018 "Paper and board intended to come into contact with foodstuffs – Determination of colourfastness of dyed paper and board".

Requirement: Resolution ResAP (2002) 1 on paper and board materials and articles intended to come into contact with foodstuffs / Policy Statement concerning Tissue Paper Kitchen Towels and Napkins version 1 – 22.09.2004.

Test No.:	1	
Material No.:	1	
<b>Parameter</b>	<b>Unit</b>	<b>Result</b>
Procedure	-	B
Colour fastness to distilled water	Grade	5
Colour fastness to 3% acetic acid	Grade	5
Colour fastness to alkaline salt solution	Grade	5
Colour fastness to vegetable oil	Grade	5

**Remark:**

- \*1 Requirement according to "Resolution AP (2002) 1 on Paper and board materials and articles intended to come into contact with foodstuffs": Paper and board used for all food contact applications should not transfer their constituents to foodstuffs which could endanger human health or bring about an unacceptable change in the composition of the foodstuffs or a deterioration in the organoleptic characteristics.

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**3.6 Determination of Transfer of Antimicrobial Constituents#**

Test method: DIN EN 1104:2018: "Paper and board intended to come into contact with foodstuffs - Determination of transfer of antimicrobial constituents"

Limit: Resolution ResAP (2002) 1 on paper and board materials and articles intended to come into contact with foodstuffs

Test No.:	1	
Sample No.:	1	
Parameter	Unit	Result
Aspergillus niger, ATCC 6275		
Growth inhibition zone	mm	< 2
Growth	-	+
Bacillus subtilis, ATCC 6633		
Growth inhibition zone	mm	< 2
Growth	-	+

## Abbreviations:

mm = Millimeter  
- = Not applicable  
< = Less than  
x = No growth  
+ = Growth  
++ = Strong growth

## Remark:

- \*1 According to "ResAP (2002) 1 on paper and board materials and articles intended to come into contact with foodstuffs" paper or board used for all food contact applications should not release substances which have an antimicrobial effect on food stuffs.
- \*2 An inhibition zone is proven if complete absence of germ growth in an area of at least 2 mm at the borders of the test specimens.

### 3.7 Extraction of Primary Aromatic Amines

Test method: Extraction according to EN 645:1994 / EN 647:1994.Determination by LC-MS/MS.

Limit: Policy Statement Concerning Paper And Board Materials And Articles Intended To Come Into Contact With Foodstuffs

Test No.:	1			
Sample No.:	1			
Method:	EN 647			
<b>Parameter</b>	<b>Unit</b>	<b>RL</b>	<b>Result</b>	<b>Limit</b>
Sum of Primary Aromatic Amines	mg/kg	0.01	n.d.	n.d.

#### Abbreviations:

mg/kg = milligram per kilogramm

RL = Reporting Limit

n.d. = Not detected

< = Less than

#### Remark

\*1 All primary aromatic amines as comprised in table 1 are considered within the screening.

Table 1: Screening List of Primary Aromatic Amines			
Parameter	CAS no.	Parameter	CAS no.
2,4,5-Trimethylaniline	137-17-7	2,4-Dimethylaniline	95-68-1
2,4-Diaminoanisole	615-05-4	2-ethoxyaniline	94-70-2
2-Naphthylamine	91-59-8	3-Amino-4-methoxybenzaniide	120-35-4
3,3'-Dichlorobenzidine	91-94-1	3-Amino-4-methylbenzamide	19406-86-1
4,4'-methylene-bis-(2-chloro-aniline)	101-14-4	4,4'-Methylenebis-(3-chloro-2,6-diethylaniline)	106246-33-7
4,4'-methylenedianiline	101-77-9	4-aminobenzamide	2835-68-9
4,4'-oxydianiline	101-80-4	4-chloro-2,5-dimethoxyaniline	6358-64-1
4,4'-thiodianiline	139-65-1	4-Ethoxyaniline	156-43-4
4-aminoazobenzene	60-09-3	Benzoguanamine	91-76-9
4-aminobiphenyl	92-67-1	Dimethyl-2-aminoterephthalate	5372-81-6
4-chloro-o-toluidine	95-69-2	2-Chloroaniline	95-51-2
o-anisidine	90-04-0	5-Chloro-2-methoxyaniline	95-03-4
Benzidine	92-87-5	2-Nitroaniline	88-74-4
4-chloroaniline	106-47-8	1,3-Diiminoisoindoline	3468-11-9
o-aminoazotoluene	97-56-3	2-Chloro-4-nitroaniline	121-87-9
p-cresidine	120-71-8	2-Methoxy-4-nitroaniline	97-52-9
4,4'-bi-o-toluidine	119-93-7	4-Chloro-3-methoxyaniline	13726-14-2

2,4-toluenediamine	95-80-7
o-Toluidine	95-53-4
3,3'-Dimethoxybenzidine	119-90-4
4,4'-Methylene-di-o-toluidine	838-88-0
m-Anisidine	536-90-3
3-Chloroaniline	108-42-9
o-phenylenediamine	95-54-5
p-phenylenediamine	106-50-3
m-phenylenediamine	108-45-2
2,6-toluenediamine	823-40-5
p-toluidine	106-49-0
m-toluidine	108-44-1

5-Amino-6-methyl-1,3-dihydro-2H-benzimidazol-2-one	67014-36-2
2-Aminonaphthalene-1-sulfonic acid	81-16-3
4-Aminotoluene-3-sulfonic acid	88-44-8
2,5-Dichloroaniline	95-82-9
2,4,5-Trichloroaniline	636-30-6
2,4-Dinitroaniline	97-02-09
Biphenyl-2-ylamine	90-41-5
2-Methyl-4-nitroaniline	99-52-5
1,5-naphthylenediamine	2243-62-1
2,6-Dimethylaniline	87-62-7
2-Methyl-5-nitroaniline	99-55-8
5-Chloro-2-methylaniline	95-79-4
Aniline	62-53-3

### 3.8 Specific Migration of Lead

Test method: The migratory behaviour was examined with reference to Commission Regulation (EU) No. 10/2011 and its amendments. Determination by ICP-MS.

Limit: With reference to Commission Regulation (EU) No 10/2011 and its amendments

The following food simulant and condition were applied:

Food simulant	Test duration / Temperature
Acetic acid 3 %	2 hour(s) / 70 °C

Test No.:	1			
Material No.:	1			
Migration ratio:	500 ml / 2.8 dm <sup>2</sup>			
Parameter	Unit	RL	Result	Limit
Lead	mg/kg	0.01	n.d.	n.d.

#### Abbreviations:

RL = Reporting limit

n.d. = Not detected

mg/kg = Milligram per kilogram

ml/dm<sup>2</sup> = Millilitre per square decimetre

< = Less than

# Indicates all tested items are sub-contracted to a laboratory which complies with the requirement of ISO/IEC 17025:2017.

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**4. Sample picture(s):**



**Sample No. 1**

- END -

