

TEST REPORT Job No./Report No TR2016929-RV1 Date:02 November 2021 Page 1 of 16
MET KAGITCILIK SAN VE TIC AS
AKÇABURGAZ MAH 1584 SOK NO:7 ESENYURT
TEL: 05347993427

To the attention of Cihan Üstündaş

The following sample(s) was (were) submitted and identified by/on behalf of the client as:

Sample No.	Sample Description
A	Cardboard laminated with pp (polypropylene), "800w /4dk"

Client's reference No. : TR 2016929-RV1
Manufacturer : MET KAĞITÇILIK SAN VE TİC A.Ş. / METPACK
Sample Receiving Date : 20 October 2021
Resubmit Date : 02 November 2021
Test Performing Period : 20 October 2021~27 October 2021

Overall Conclusion : **See Results**

Test Results : Please refer to the next page(s).

Performed Test Summary: Selected test(s) as requested by client against Client's performance standard.

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Test Parameters	Result
Physical tests	A
FCM - Overall Migration of Total Non-volatile Substance in Plastic Materials - Simulant A (Ethanol 10%)	M
FCM - Overall Migration of Total Non-volatile Substance in Plastic Materials - Simulant B (Acetic acid 3%)	M
FCM - Soluble Heavy Metals in Aqueous Test Simulants (3% Acetic Acid)	M
FCM - Bisphenol A (3% Acetic Acid)	M
FCM - Phthalates in 3% Acetic Acid	M
FCM - Sensory Analysis for Packaging Materials and Packages for Food Products	M
FCM - Overall Migration of Total Non-volatile Substance in Plastic Materials (95% Ethanol)	M
FCM - Overall Migration of Total Non-volatile Substance in Plastic Materials (Isooctane)	M
FCM - Specific Migration of Primary Aromatic Amines	M

Test Parameters	Result
Physical tests	A
Resistance to Microwave Heating	*

Remarks	M = Meets client's requirement
	F = Does not meet client's requirement
	I = Inconclusive
	* = No specified requirement
Notes:	Conclusions on meet/fail are based on the test result from the actual sampling of the received sample(s).
	Residual sample can be returned to client if requested.

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The test results relate to the tested items only.
Test reports without SGS seal and authorised signatures are invalid.

Issued in Istanbul
Signed for and on behalf of
SGS Supervise Gözetme Etüd Kontrol Servisleri A.Ş.

IN THIS REVISED-1 REPORT, TEST CONDITIONS OF RESISTANCE TO MICROWAVE HEATING TEST WAS ADDED AND SAMPLE DESCRIPTION WAS CHANGED BY THE REQUEST OF THE APPLICANT.

THIS REPORT SUPERSEDES OUR REPORT NO: 2016929 DATED 27.10.2021

Mert Kurtuluş
Customer Services Supervisor

Bora Şirinbilek
Hardline & CPCH Testing Services Manager



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TEST REPORT Job No./Report No TR2016929-RV1 Date:02 November 2021 Page 4 of 16**Component List / List of Materials for Chemical Test**

Sample No.	Sample Description	Material No.	Component	Material	Colour
A	Cardboard laminated with pp (polypropylene), "800w /4dk"	A1	Main	Paper	White

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TEST REPORT Job No./Report No TR2016929-RV1 Date:02 November 2021 Page 5 of 16
Testing as per Commission Regulation (EU) No 10/2011²

Plastic – Overall migration

Method: With reference to Commission Regulation (EU) No 10/2011 of 14 January 2011 Annex III and Annex V for selection of condition and EN 1186-1:2002 for selection of test methods (1st Migration); EN 1186-3:2002 aqueous food simulants by article filling

Simulant Used	Test Condition	Result (mg/dm ²)	Reporting Limit (mg/dm ²)	Permissible Limit (mg/dm ²)
		A1 1 st migration		
10% Ethanol (V/V) Aqueous Solution	2 hours at 70 °C	ND	3.0	10
Conclusion	--	PASS	--	--

Note : 1. mg/dm² = milligram per square decimeter
 2. °C = degree Celsius
 3. ND = Not Detected
 4. Permissible Limit is according to Commission Regulation (EU) No 10/2011 of 14 January 2011 with amendments.

Remark:

1. Analytical tolerance of aqueous simulants is 2mg/dm².
2. Test condition & simulant were specified by client.

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TEST REPORT Job No./Report No TR2016929-RV1 Date:02 November 2021 Page 6 of 16

Testing as per Commission Regulation (EU) No 10/2011²

Plastic – Overall migration

Method: With reference to Commission Regulation (EU) No 10/2011 of 14 January 2011 Annex III and Annex V for selection of condition and EN 1186-1:2002 for selection of test methods (1st Migration); EN 1186-3:2002 aqueous food simulants by article filling

Simulant Used	Test Condition	Result (mg/dm ²)	Reporting Limit (mg/dm ²)	Permissible Limit (mg/dm ²)
		A1 1 st migration		
3% Acetic Acid (W/V) Aqueous Solution	2 hours at 70 °C	ND	3.0	10
Conclusion	--	PASS	--	--

Note : 1. mg/dm² = milligram per square decimeter
 2. °C = degree Celsius
 3. ND = Not Detected
 4. Permissible Limit is according to Commission Regulation (EU) No 10/2011 of 14 January 2011 with amendments.

Remark:

1. Analytical tolerance of aqueous simulants is 2mg/dm².
2. Test condition & simulant were specified by client.

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TEST REPORT Job No./Report No TR2016929-RV1 Date:02 November 2021 Page 7 of 16
Testing as per Commission Regulation (EU) No 10/2011²

Plastic – Overall migration

Method: With reference to Commission Regulation (EU) No 10/2011 of 14 January 2011 Annex III and Annex V for selection of condition and EN 1186-1:2002 for selection of test methods (1st Migration); EN 1186-14:2002 substitute test.

Simulant Used	Test Condition	Result (mg/dm ²)	Reporting Limit (mg/dm ²)	Permissible Limit (mg/dm ²)
		A1 1 st migration		
95% Ethanol	2 hours at 70 °C	ND	3.0	10
Conclusion	--	PASS	--	--

Note : 1. mg/dm² = milligram per square decimeter
 2. °C = degree Celsius
 3. ND = Not Detected
 4. Permissible Limit is according to Commission Regulation (EU) No 10/2011 of 14 January 2011 with amendments.

Remark:

1. Analytical tolerance of aqueous simulants is 2mg/dm².
2. Test condition & simulant were specified by client.

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TEST REPORT Job No./Report No TR2016929-RV1 Date:02 November 2021 Page 8 of 16
Testing as per Commission Regulation (EU) No 10/2011²

Plastic – Overall migration

Method: With reference to Commission Regulation (EU) No 10/2011 of 14 January 2011 Annex III and Annex V for selection of condition and EN 1186-1:2002 for selection of test methods (1st Migration); EN 1186-14:2002 substitute test.

Simulant Used	Test Condition	Result (mg/dm ²)	Reporting Limit (mg/dm ²)	Permissible Limit (mg/dm ²)
		A1 1 st migration		
Isooctane	2 hours at 70 °C	ND	3.0	10
Conclusion	--	PASS	--	--

- Note :
1. mg/dm² = milligram per square decimeter
 2. °C = degree Celsius
 3. ND = Not Detected
 4. Permissible Limit is according to Commission Regulation (EU) No 10/2011 of 14 January 2011 with amendments.

Remark:

1. Analytical tolerance of aqueous simulants is 2mg/dm².
2. Test condition & simulant were specified by client.

TEST REPORT Job No./Report No TR2016929-RV1 Date:02 November 2021 Page 9 of 16
Article 3 of European Regulation No. 1935/2004

Sensory Examination – Odour and Taste Test

Method: With reference to DIN10955: 2004

Simulant Used	Test Item	Test Condition	Result [^]	Maximum Permissible Limit
			A1	
Water	Sensorial examination odour	70°C for 2 hours	0	3
	Sensorial examination taste		0	3
Conclusion			PASS	--

- Note:
- Intensity scale (rounded at 0.5):
 - 0 – no perceptible difference
 - 1 – just perceptible difference
 - 2 – slight difference
 - 3 – marked difference
 - 4 – strong difference
 - Permissible Limit is according to German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 & 31 with Amendments.
 - No of panelist: 6

Remark:

- * – Significant physical change of appearance on test media was observed.
- [^] -- Result referring to median for 6 panelist

Plastic – Specific Migration of Heavy Metals²

Method: With reference to EN 13130-1:2004 and SGS In House Method RSTS-CHEM-602-1. Analysis was performed by ICP-MS / ICP-OES.

Simulant Used: 3% acetic acid (w/v) in aqueous solution

Test Condition: 70°C for 2 hours (1st migration);

Test Item	Result (mg/kg)	Reporting Limit (mg/kg)	Permissible Limit (mg/kg)
	A1		
	1 st migration		
Aluminium	ND	0.1	1
Antimony	ND	0.01	0.04
Arsenic	ND	0.01	0.01
Barium	ND	0.25	1
Cadmium	ND	0.002	0.002
Chromium	ND	0.01	0.01
Cobalt	ND	0.01	0.05
Copper	ND	0.25	5
Iron	ND	5	48
Lead	ND	0.01	0.01
Lithium	ND	0.1	0.6
Manganese	ND	0.1	0.6
Mercury	ND	0.01	0.01
Nickel	ND	0.01	0.02
Zinc	ND	0.5	5
Europium	ND	0.025	0.05
Gadolinium	ND	0.025	
Lanthanum	ND	0.025	
Terbium	ND	0.025	
Conclusion	PASS	--	--

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- Note : 1. mg/kg = milligram per kilogram of foodstuff in contact with
2. °C = degree Celsius
3. ND = Not Detected
4. Permissible Limit is according to Commission Regulation (EU) No 10/2011 of 14 January 2011 with amendments.

Remark:

- 1.Test condition & simulant were specified by client.
- 2.The volume of simulant used is 0,1 L.
- 3.The ratio of surface area to volume ratio is 6 dm² per 1 kg of foodstuff in contact with

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TEST REPORT Job No./Report No TR2016929-RV1 Date:02 November 2021 Page 12 of 16
Commission Regulation (EU) No 10/2011²

Specific migration of Bisphenol A

Method: With reference to EN 13130-1:2004. Analysis was performed by HPLC-MS.
 Simulant Used: 3% acetic acid (w/v) in aqueous solution

Test Condition: 2 hours at 70 °C (1st migration);

Test Item	Result (mg/kg)	Reporting Limit (mg/kg)	Permissible Limit (mg/kg)
	A1		
	1 st migration		
Bisphenol A	ND	0.01	0.05
Conclusion	PASS	--	--

Note : 1. mg/kg = milligram per kilogram of foodstuff in contact with
 2. ND = Not Detected
 3. Permissible Limit is according to Commission Regulation (EU) No 10/2011 of 14 January 2011 with amendments.

Remark:

1. Test condition & simulant were specified by client.
2. The volume of simulant used is 0,35 L.
3. The ratio of surface area to volume ratio is 6 dm² per 1 kg of foodstuff in contact with.

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TEST REPORT Job No./Report No TR2016929-RV1 Date:02 November 2021 Page 13 of 16
Specific Migration of Phthalates²

Method: With reference to EN 13130-1:2004. Analysis was performed by GC-MS.

Simulant Used: 3% Acetic Acid

Test Condition: 2 hours at 70 °C (1st migration);

Test Item	Result (mg/kg)	Reporting Limit (mg/kg)	Permissible Limit (mg/kg)
	A1		
	1 st migration		
Dibutyl phthalate (DBP)	ND	0.05	0.3
Benzylbutyl phthalate (BBP)	ND	0.5	30
Bis-(2-ethylhexyl) phthalate (DEHP)	ND	0.25	1.5
Diisononyl phthalate + Diisodecyl phthalate (DINP + DIDP)	ND	1	9
Diallyl phthalate (DAP)	ND	0.01	0.01
Conclusion	PASS	--	--

Note:

1. mg/kg = milligram per kilogram of foodstuff in contact with
2. °C = degree Celsius
3. ND = Not Detected
4. Permissible Limit is according to Commission Regulation (EU) No 10/2011 of 14 January 2011 with amendments.

Remark:

1. Test condition & simulant were specified by client.
2. The volume of simulant used is 0,1 L.
3. The ratio of surface area to volume ratio is 6 dm² per 1 kg of foodstuff in contact with.

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TEST REPORT Job No./Report No TR2016929-RV1 Date:02 November 2021 Page 14 of 16
Plastic – Specific Migration of Primary Aromatic Amine²

Method: With reference to EN 13130-1:2004. Analysis was performed by UV-Vis Spectrophotometer.

Simulant Used: 3% acetic acid (w/v) in aqueous solution

Test Condition: 70°C for 2 hours (1st migration);

Test Item	Result (mg/kg)	Reporting Limit (mg/kg)	Permissible Limit (mg/kg)
	A1		
	1 st Migration		
Primary Aromatic Amine	ND	0.002	0.01
Conclusion	PASS	--	--

- Note :
1. mg/kg = milligram per kilogram of foodstuff in contact with
 2. °C = degree Celsius
 3. ND = Not Detected
 4. Permissible Limit is according to Commission Regulation (EU) 10/2011 of 14 January 2011

Remark:

1. Test condition & simulant were specified by client.
2. Test condition, simulant & reporting limit were specified by client.
3. The volume of simulant used is 0,1 L.
4. The ratio of surface area to volume ratio is 6 dm² per 1 kg of foodstuff in contact with

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Resistance to Microwave Heating
Test Method: SGS In House Test Method CTSL-SOP-COS-148NF

Test Conditions:

 Microwave output power P: 562.12 watts
 Short time :2min 13s
 Long time :14min 27s
 The formula for the short time calculation: $72000/P$
 The formula for long time calculation: $468000/P$

<u>Sample ID</u>	<u>Result</u>	<u>Conclusion</u>	<u>Requirement</u>
A	No deformation Short period temperature: 46.3 °C Long period temperature: 89.8 °C	See Results	No Requirement

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In this Test Report tests marked (1) are included in the IAS Accreditation Scope of this Laboratory.

TEST REPORT

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End of Test Report

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