

TEST REPORT

Applicant : Mid Ocean Hong Kong Ltd.

Address : 7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.

Sample description : MO8078 PP tumbler with silicone lid; MO6244 Double wall tumbler; MO6254 Lunch box with cutlery

Item no. : MO8078; MO6244; MO6254

Vendor code : 111034

Sample received date : 09-Aug-2024

FURTHER INFORMATION DATE : 27-Aug-2024

Turn around time : 09-Aug-2024 To 30-Aug-2024

REVISED DATE : 09-Sep-2024

The following test item(s) was/were performed on selected sample(s) and/or component(s) confirmed by applicant

TEST REQUESTED	TEST METHOD/REGULATION	RESULT
Phthalates Content	REACH Annex XVII, Entry 51 & 52	Pass
Polycyclic Aromatic Hydrocarbons (PAHs)	REACH Annex XVII, Entry 50	Pass
Total Cadmium Content	REACH Annex XVII, Entry 23	Pass
Total Lead Content	REACH Annex XVII, Entry 63	Pass
Banned AZO Dyes	REACH Annex XVII, Entry 43	Pass
Bisphenol A (BPA) Content	EPA 3550C:2007, EPA 8321B:2007	See Test Result
Overall Migration	(EU) No 10/2011 and its amendments	Pass
Overall Migration	Resolution ResAP (2004) 5	Pass
Peroxide Value	French Arrêté du 25 Novembre 1992	Pass
Volatile Organic Matter	French Arrêté du 25 Novembre 1992	Pass
Specific Migration of Organotin (as tin)	French Arrêté du 25 Novembre 1992	Pass
Specific Migration of Primary Aromatic Amines	(EU) No 10/2011 and its amendments	Pass
Specific Migration of Bisphenol A (BPA)	(EU) No 10/2011 and its amendments	Pass
Specific Migration of Heavy Metal	(EU) No 10/2011 and its amendments	Pass
Colour Fastness to Rubbing	EN ISO 105-X12:2016	A: See Test Result

Samples are obtained by express delivery, Results obtained refer only to samples, products or material received in Laboratory, as described in point related to sample description, and tested in conditions shown in present report. Eurofins MTS Consumer Product Testing (Shanghai) Co., Ltd ensures that this job has been performed according to our Quality System and complying contract and legal conditions. If you happen to have any comments, please do it by sending email to info.sh@cpt.eurofinscn.com and referring to this report number. Reproduction of this document is only valid if it is done completely and under the written permission of Eurofins MTS Consumer Product Testing (Shanghai) Co., Ltd. If you happen to have any complaints, please do it by sending email to info.sh@cpt.eurofinscn.com and referring to this report number.



TEST REQUESTED	TEST METHOD/REGULATION	RESULT
Specific Migration of Heavy Metals	Regulation (EC) No 1935/2004. Regulation (EU) No 10/2011 and its amendments (Including (EU) No 2020/1245 & (EU) No 2023/1442).	Pass

Note : This report cancels and supersedes report number EFW524080968-CG-01+Rev 1 issued on Sep 06th, 2024.
Modification description: as per client's request, revise reference sample photo(s) in the revised report.

Eurofins (Shanghai) contact information

Customer service: Winnie.Dong@cpt.eurofinscn.com\

Sales specialist: Lily.Li@cpt.eurofinscn.com\

***** FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S) *****

Signed for and on behalf of
Eurofins MTS Consumer Product Testing (Shanghai) Co., Ltd.

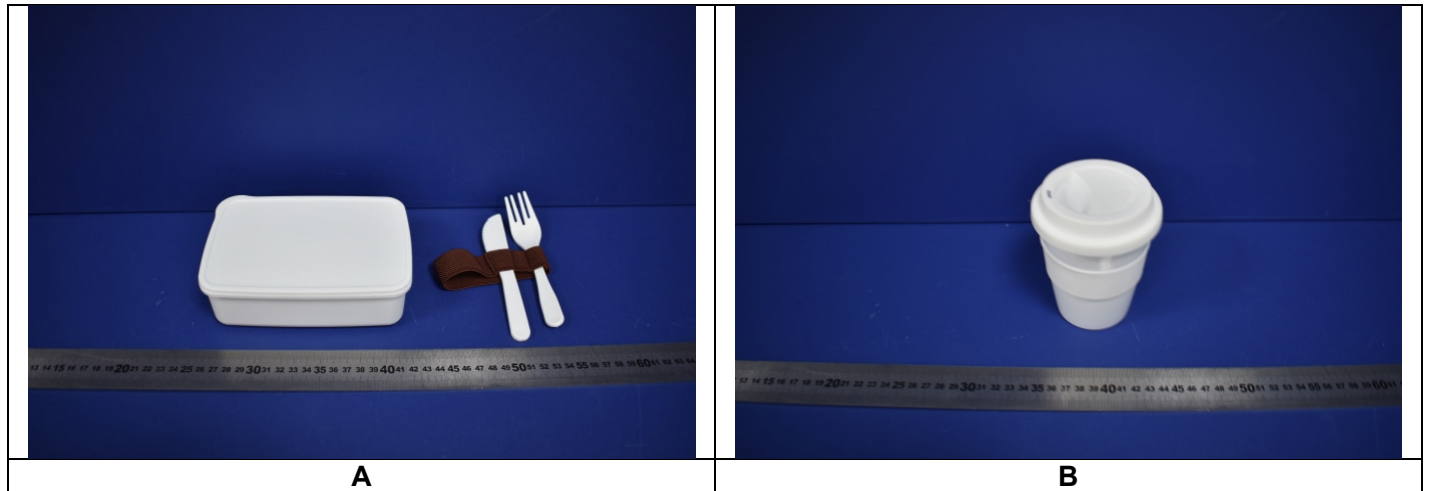


Vivian Gu
Lab Director SLTH



Samples are obtained by express delivery, Results obtained refer only to samples, products or material received in Laboratory, as described in point related to sample description, and tested in conditions shown in present report. Eurofins MTS Consumer Product Testing (Shanghai) Co., Ltd ensures that this job has been performed according to our Quality System and complying contract and legal conditions. If you happen to have any comments, please do it by sending email to info.sh@cpt.eurofinscn.com and referring to this report number. Reproduction of this document is only valid if it is done completely and under the written permission of Eurofins MTS Consumer Product Testing (Shanghai) Co., Ltd. If you happen to have any complaints, please do it by sending email to info.sh@cpt.eurofinscn.com and referring to this report number.

TEST SAMPLE PHOTO(S)



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TO BE CONTINUED

REFERENCE SAMPLE PHOTO(S)



The reference sample(s) has not been tested in current report, but according to customer's request, the picture has also been included. For sample tested in current report, please refer to "Test sample photo".

TO BE CONTINUED

COMPONENT LIST

Component No.	Component	Sample No.
1	Brown textile of brown elastic band	A
2	White plastic lunch box	A
3	White silicone cup lid	B
4	Semi-transparent silicone sealing ring	A
5	Black elastic rubber of brown elastic band	A

TO BE CONTINUED

TEST RESULT

Phthalates Content

Test Request: Phthalates content as specified in entry 51&52 of annex XVII of REACH Regulation (EC) No 1907/2006 and its amendment Commission Regulation (EU) 2018/2005.

Test Method: EPA 3550C:2007, EPA 8270E:2018, solvent extraction and quantification by GC-MS.

Test Item(s)	CAS No.	Unit	Limit	MDL	Result	
					2	3+4+5
Di-n-butyl phthalate (DBP)	84-74-2	%	-	0.005	ND	ND
Benzylbutyl phthalate (BBP)	85-68-7	%	-	0.005	ND	ND
Diethylhexyl phthalate (DEHP)	117-81-7	%	-	0.005	ND	ND
Di-iso-butyl phthalate (DIBP)	84-69-5	%	-	0.005	ND	ND
Sum of DEHP+DBP+BBP+DIBP	-	%	0.1	-	ND	ND
Di-n-octyl phthalate (DNOP)	117-84-0	%	-	0.005	ND	ND
Diisononyl phthalate (DINP)	28553-12-0	%	-	0.005	ND	ND
Diisodecyl phthalate (DIDP)	26761-40-0	%	-	0.005	ND	ND
Sum of DNOP, DINP, DIDP	-	%	0.1	-	ND	ND

Remarks:

As per client's request, only the appointed materials have been tested.

According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

MDL = method detection limit

ND = Not detected, less than MDL

"-"= Not Regulated

TO BE CONTINUED

TEST RESULT

Polycyclic Aromatic Hydrocarbons (PAHs)

Test Request: Polycyclic Aromatic Hydrocarbons (PAHs) content as specified in entry 50 of Annex XVII of REACH Regulation (EC) No 1907/2006 and its latest amendment.

Test Method: Solvent extraction and quantification by gas chromatography-mass selective detection (GC-MS) with respect to AfPS GS 2019:01 PAK.

Test Item(s)	CAS No.	Unit	Limit	MDL	Result	
					2	3+4+5
Benzo-(a)-anthracene	56-55-3	mg/kg	1	0.1	ND	ND
Chrysene	218-01-9	mg/kg	1	0.1	ND	ND
Benzo-(b)-fluoranthene	205-99-2	mg/kg	1	0.1	ND	ND
Benzo-(j)-fluoranthene	205-82-3	mg/kg	1	0.1	ND	ND
Benzo-(k)-fluoranthene	207-08-9	mg/kg	1	0.1	ND	ND
Benzo-(a)-pyrene	50-32-8	mg/kg	1	0.1	ND	ND
Dibenzo-(ah)-anthracene	53-70-3	mg/kg	1	0.1	ND	ND
Benzo(e)pyrene	192-97-2	mg/kg	1	0.1	ND	ND

Remarks:

As per client's request, only the appointed materials have been tested.

According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

Total Cadmium Content

Test Request: Total cadmium content as specified in Commission Regulation (EU) 2016/217 amending entry 23 of Annex XVII of REACH Regulation (EC) No 1907/2006.

Test Method: EPA 3050B:1996, EPA 3052:1996, EN 1122:2001 Method B, acid digestion method was used and total cadmium content was determined by ICP-OES.

Test Item(s)	Unit	Limit	MDL	Result		
				1	2	3+4+5
Cadmium (Cd)	mg/kg	100	5	ND	ND	ND

Remark:

As per client's request, only the appointed materials have been tested.

According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

TO BE CONTINUED

TEST RESULT

Total Lead Content

Test Request: Total lead content as specified in entry 63 of annex XVII of REACH Regulation (EC) No 1907/2006 and its amendment Regulation (EU) No 2015/628.

Test Method: EPA 3050B:1996, EPA 3051A:2007, EPA 3052:1996, acid digestion/ microwave digestion method was used, analysis was performed by ICP-OES.

Test Item(s)	Unit	Limit	MDL	Result		
				1	2	3+4+5
Lead (Pb)	mg/kg	500	10	ND	ND	ND

Remark:

As per client's request, only the appointed materials have been tested.

According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

TO BE CONTINUED

TEST RESULT

Banned AZO Dyes

Test Request: Banned AZO dyes as specified in entry 43 of annex XVII of REACH Regulation (EC) No 1907/2006.

Test Method: EN ISO 14362-1:2017, sampling procedure and sample preparation according to Annex E4.2 and Annex E4.3.

Test Item(s)	CAS No.	Unit	Limit	MDL	Result
					1
4-methyl-m-phenylenediamine	95-80-7	mg/kg	30	5	ND
2-Naphthylamine	91-59-8	mg/kg	30	5	ND
4,4'-methylenedi-o-toluidine	838-88-0	mg/kg	30	5	ND
Bis-(4-aminophenyl)methane	101-77-9	mg/kg	30	5	ND
4,4'-Oxydianiline	101-80-4	mg/kg	30	5	ND
4,4'-Thiodianiline	139-65-1	mg/kg	30	5	ND
Benzidine	92-87-5	mg/kg	30	5	ND
o-Toluidine	95-53-4	mg/kg	30	5	ND
5-Nitro-o-toluidine (Note 1)	99-55-8	mg/kg	30	5	ND
4-methoxy-m-phenylenediamine	615-05-4	mg/kg	30	5	ND
4,4'-Methylene-bis-(2-chloroaniline)	101-14-4	mg/kg	30	5	ND
o-Aminoazotoluene (Note 1)	97-56-3	mg/kg	30	5	ND
2,4,5-Trimethylaniline	137-17-7	mg/kg	30	5	ND
4-Aminobiphenyl	92-67-1	mg/kg	30	5	ND
o-Anisidine	90-04-0	mg/kg	30	5	ND
3,3'-Dichlorobenzidine	91-94-1	mg/kg	30	5	ND
4-Chloroaniline	106-47-8	mg/kg	30	5	ND
3,3'-Dimethoxybenzidine	119-90-4	mg/kg	30	5	ND
n.d.3,3'-Dimethybenzidine	119-93-7	mg/kg	30	5	ND
4-Amino-azobenzene (Note 2)	60-09-3	mg/kg	30	5	ND
2-Methoxy-5-methylaniline	120-71-8	mg/kg	30	5	ND
4-Chloro-2-methylaniline	95-69-2	mg/kg	30	5	ND

Remarks:

Note 1: The CAS-numbers 97-56-3 and 99-55-8 are further reduced to CAS-numbers 95-53-4 and 95-80-7.

Note 2: 4-Amino-azobenzene(CAS No.:60-09-3) is reduced to aniline and 1,4-phenylenediamine.

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

TO BE CONTINUED

TEST RESULT

Bisphenol A (BPA) Content

Test Request: Bisphenol A content as per client's request.

Test Method: With reference to EPA 3550C:2007, EPA 8321B:2007, analysis was performed by LC-MS.

Test Item(s)	CAS No.	Unit	MDL	Result		
				2	3	4
Bisphenol A	80-05-7	mg/kg	0.05	ND	ND	ND

Remarks:

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

Overall Migration

Test Request: To determine the Overall Migration for compliance with Commission Regulation (EU) No 10/2011 and its amendments relating to plastic materials and articles intended to come into contact with foodstuffs.

Test Method: According to appropriate method of EN1186-3:2022 method 1a, method 2, method 5 for evaporable simulants, EN 1186-2:2022 method 1 for fatty food simulants.

Simulant Used	Time	Temperature	Unit	Limit	Result		
					2		
					1 st	2 nd	3 rd
3% Acetic Acid	2h	70°C	mg/dm ²	10	<3.0	<3.0	<3.0
50% Ethanol	2h	70°C	mg/dm ²	10	<3.0	<3.0	<3.0
Oil	2h	70°C	mg/dm ²	10	<3.0	<3.0	<3.0

Remark:

mg/dm²= milligram per square decimeter

Analytical tolerance of evaporable simulants is 2 mg/dm²

Analytical tolerance of fatty food simulant (olive oil) is 3 mg/dm²

Test condition & simulant were specified by client.

TO BE CONTINUED

TEST RESULT

Overall Migration

Test Request: In accordance with Council of Europe Resolution ResAP (2004) 5.

Test Method: According to appropriate method of EN1186-3:2022 method 1a, method 2, method 5 for evaporable simulants, EN 1186-2:2022 method 1 for fatty food simulants.

Simulant Used	Time	Temperature	Unit	Limit	Result		
					3		
					1 st	2 nd	3 rd
3% Acetic Acid	2h	70°C	mg/dm ²	10	<3.0	<3.0	<3.0
50% Ethanol	2h	70°C	mg/dm ²	10	<3.0	<3.0	<3.0

Simulant Used	Time	Temperature	Unit	Limit	Result		
					4		
					1 st	2 nd	3 rd
3% Acetic Acid	2h	70°C	mg/dm ²	10	<3.0	<3.0	<3.0
50% Ethanol	2h	70°C	mg/dm ²	10	<3.0	<3.0	<3.0
Oil	2h	70°C	mg/dm ²	10	<3.0	<3.0	<3.0

Remark:

mg/dm²= milligram per square decimeter

Analytical tolerance of evaporable simulants is 2 mg/dm²

Analytical tolerance of fatty food simulant (olive oil) is 3 mg/dm²

Test condition & simulant were specified by client.

TO BE CONTINUED

TEST RESULT

Peroxide Value

Test Request: To determine the peroxide values for compliance with French Décret No. 2007-766 and its amendments, and French Arrêté du 25 Novembre 1992 for silicon materials. Test with reference to European pharmacopoeia 9.0-2.5.5.

Sample	Limit	Result
3	Absent	Absent
4	Absent	Absent

Volatile Organic Matter

Test Request: To determine the volatile organic matter for compliance with French Décret No. 2007-766 and its amendments, and French Arrêté du 25 Novembre 1992 for silicon materials.

Test Method: According to French Arrêté du 25 Novembre 1992, Annex III.

Test Item(s)	Unit	Limit	MDL	Result	
				3	4
Volatile organic compound	%	0.5	0.1	ND	0.14

Remark:

% = percentage of weight by weight

MDL = method detection limit

ND = Not detected, less than MDL

TO BE CONTINUED

TEST RESULT

Specific Migration of Organotin (as tin)

Test Request: To determine the specific migration of organotin (as tin) for compliance with French Decree No. 2007-766 and its amendments, and French Arrêté du 25 Novembre 1992 for silicon materials.

Test Method: With reference to EN 13130-1:2004 for test preparation method, analysis was performed by ICP-MS.

Simulant Used: 3% Acetic Acid

Test Condition: 70°C 2h

Test Item(s)	Unit	Limit	MDL	Result					
				3			4		
				1 st	2 nd	3 rd	1 st	2 nd	3 rd
Tin (Sn)	mg/kg	0.1	0.01	ND	ND	ND	ND	ND	ND

Remark:

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

Test condition & simulant were specified by client.

TO BE CONTINUED

TEST RESULT

Specific Migration of Primary Aromatic Amines

Test Request: Specific migration of primary aromatic amines as specified in Commission Regulation (EU) No 10/2011 and its amendments.

Test Method: With reference to EN 13130-1:2004 for sample preparation, analysis was performed by UV-VIS and LC-MS/MS.

Simulant Used: Acetic Acid 3%

Test Condition: 2h at 70°C

Test Item(s)	CAS No.	Unit	Limit	MDL	Result		
					2		
					1 st	2 nd	3 rd
1,3-phenylenediamine	108-45-2	mg/kg	0.002	0.002	ND	ND	ND
2,4,5-trimethylaniline	137-17-7	mg/kg	0.002	0.002	ND	ND	ND
2-methoxy-5-methylaniline	120-71-8	mg/kg	0.002	0.002	ND	ND	ND
2-naphthylamine	91-59-8	mg/kg	0.002	0.002	ND	ND	ND
3,3-dichlorobenzidine	91-94-1	mg/kg	0.002	0.002	ND	ND	ND
3,3-dimethoxybenzidine	119-90-4	mg/kg	0.002	0.002	ND	ND	ND
3,3-dimethylbenzidine	119-93-7	mg/kg	0.002	0.002	ND	ND	ND
4,4-methylene-bis-(2-chloro-aniline)	101-14-4	mg/kg	0.002	0.002	ND	ND	ND
4,4-methylenedianiline	101-77-9	mg/kg	0.002	0.002	ND	ND	ND
4,4-methylenendi-o-toluidine	838-88-0	mg/kg	0.002	0.002	ND	ND	ND
4,4-oxydianiline	101-80-4	mg/kg	0.002	0.002	ND	ND	ND
4,4-thiodianiline	139-65-1	mg/kg	0.002	0.002	ND	ND	ND
4-amino-azobenzene	60-09-3	mg/kg	0.002	0.002	ND	ND	ND
4-aminobiphenyl	92-67-1	mg/kg	0.002	0.002	ND	ND	ND
4-chloroaniline	106-47-8	mg/kg	0.002	0.002	ND	ND	ND
4-chloro-o-toluidine	95-69-2	mg/kg	0.002	0.002	ND	ND	ND
4-methoxy-m-phenylenediamine	615-05-4	mg/kg	0.002	0.002	ND	ND	ND
4-methyl-m-phenylenediamine	95-80-7	mg/kg	0.002	0.002	ND	ND	ND
5-nitro-o-toluidine	99-55-8	mg/kg	0.002	0.002	ND	ND	ND
benzidine	92-87-5	mg/kg	0.002	0.002	ND	ND	ND
o-aminoazotoluene	97-56-3	mg/kg	0.002	0.002	ND	ND	ND
o-anisidine	90-04-0	mg/kg	0.002	0.002	ND	ND	ND
o-toluidine	95-53-4	mg/kg	0.002	0.002	ND	ND	ND
Total of other Primary Aromatic Amines	-	mg/kg	0.01	0.01	ND	ND	ND

Remark:

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

Total other primary aromatic amines are 1,4-phenylenediamine (CAS No.: 106-50-3), 2,4-dimethylaniline (CAS No.: 95-68-1), 2,6-dimethylaniline (CAS No.: 87-62-7), aniline (CAS No.: 62-53-3).

TO BE CONTINUED

TEST RESULT

Specific Migration of Bisphenol A (BPA)

Test Request: Specific migration of BPA as specified in Commission Regulation (EU) No 10/2011 and its amendments.

Test Method: With reference to Regulation (EU) No 10/2011 and its amendments for selection of test condition, and EN 13130-1:2004 for test preparation method, analysis was performed by LC-MS/MS.

Simulant Used: Acetic Acid 3%

Test Condition: 2h at 70°C

Test Item(s)	CAS No.	Unit	Limit	MDL	Result					
					3			4		
					1 st	2 nd	3 rd	1 st	2 nd	3 rd
Bisphenol A	80-05-7	mg/kg	0.05	0.01	ND	ND	ND	ND	ND	ND

Remark:

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

Test condition & simulant were specified by client.

TO BE CONTINUED

TEST RESULT

Specific Migration of Heavy Metal

Test Request: Specific migration of heavy metal as specified in Commission Regulation (EU) No 10/2011 and its amendments.

Test Method: With reference to Regulation (EU) No 10/2011 and its amendments for selection of test condition, and EN 13130-1:2004 for test preparation method, analysis was performed by ICP-MS.

Simulant Used: 3% Acetic Acid

Test Condition: 2h at 70°C

Test Item(s)	Unit	Limit	MDL	Result		
				2		
				1 st	2 nd	3 rd
Barium	mg/kg	1	0.25	ND	ND	ND
Cobalt	mg/kg	0.05	0.01	ND	ND	ND
Copper	mg/kg	5	0.25	ND	ND	ND
Iron	mg/kg	48	0.25	ND	ND	ND
Lithium (Li)	mg/kg	0.6	0.5	ND	ND	ND
Manganese	mg/kg	0.6	0.05	ND	ND	ND
Zinc	mg/kg	5	0.5	ND	ND	ND
Aluminium	mg/kg	1	0.1	ND	ND	ND
Nickel	mg/kg	0.02	0.01	ND	ND	ND
Antimony	mg/kg	0.04	0.01	ND	ND	ND
Arsenic	mg/kg	ND	0.01	ND	ND	ND
Cadmium	mg/kg	ND	0.002	ND	ND	ND
Chromium	mg/kg	ND	0.01	ND	ND	ND
Europium	mg/kg	-	0.01	ND	ND	ND
Gadolinium	mg/kg	-	0.01	ND	ND	ND
Lanthanum	mg/kg	-	0.01	ND	ND	ND
Terbium	mg/kg	-	0.01	ND	ND	ND
Sum of lanthanide substances	mg/kg	0.05	-	ND	ND	ND
Lead	mg/kg	ND	0.01	ND	ND	ND
Mercury (Hg)	mg/kg	ND	0.01	ND	ND	ND

Remark:

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

Test condition & simulant were specified by client

TO BE CONTINUED

TEST RESULT

Colourfastness to Rubbing

EN ISO 105-X12:2016.

	(1)	Requirement:
Lengthwise Dry Colour Stain	4	-
Lengthwise Wet Colour Stain	4	-
Widthwise Dry Colour Stain	/	-
Widthwise Wet Colour Stain	/	-

Remark:

Grey Scale for Assessing Colour Change/Staining

Grade 5 negligible or no change or staining

Grade 4 slightly changed or stained

Grade 3 noticeably changed or stained

Grade 2 considerably changed or stained

Grade 1 much changed or stained

Specific Migration of Heavy Metals

Test method : The concentration of the following elements is examined by means of inductively coupled plasma mass spectroscopy.

Limit according to Regulation (EU) No 10/2011 and its amendments.

Test condition :

Food simulant	Test duration/temperature
3% Acetic acid	2 hours / 70°C

Testing Material No.		2			Detection limit	Limit
Parameter(*)	Unit	Test result				
		Trial I	Trial II	Trial III		
Lanthanum (La)	mg/kg	N.D.	N.D.	N.D.	0.01	-
Terbium (Tb)	mg/kg	N.D.	N.D.	N.D.	0.01	-
Lead (Pb)	mg/kg	N.D.	N.D.	N.D.	0.01	N.D.
Mercury (Hg)	mg/kg	N.D.	N.D.	N.D.	0.01	N.D.

Note: - 1 mg/kg = 1 ppm = 0.0001%

- °C = degree Celsius

- N.D. = Not Detected

-.*. The parameter was specified by applicant.

The test item(s) was/were subcontracted to Eurofins internal lab.

Other Information / Remark:

(1) Food contact area to food simulant (S/V in dm²/ L): Material No. 1 (6.5:1).

(2) The test condition was specified by applicant.

END OF THE REPORT