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**LABORATORY OF MATERIAL  
ENGINEERING AND ENVIRONMENT**



AB 910

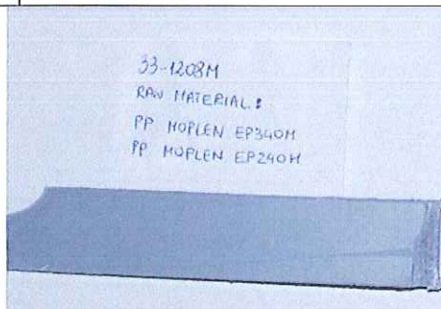
## TEST REPORT No. 218/DLS/2021

Testing two samples of plastic, delivered by Georg Utz Sp. z o.o. in the scope of  
global and specific migration of elements and bisphenol A

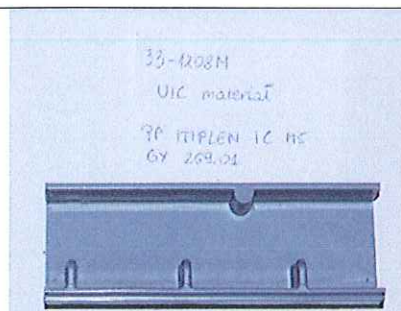
Orderer: Georg Utz Sp. z o.o.  
Nowowiejska 34  
55-080 Kąty Wrocławskie, Poland

Project No.: UP/DLS-28306/OR

Name of tested object	Sample of plastic
Orderer Markings	33-1208M RAW MATERIAL: PP MOPLIN EP340M, PP MOPLIN EP240H
Numbers of samples, according to R-DLS/7 procedure	218/21/P1



Name of tested object	Sample of plastic
Orderer Markings	33-1208M UIC MATERIAL, PP ITIPLIN IC M5, GY 269.01
Numbers of samples, according to R-DLS/7 procedure	218/21/P2



Date of the object delivery for testing:  
Date of beginning the tests / tests completion:  
Place of testing:

25.03.2021  
26.03.2021 / 07.05.2021  
Laboratory of Material Engineering and Environment



Sample number	Confirmation of conformity/non- conformity with the requirements	
Commission Regulation (EC) No. 10/2011 of 14 January 2011 on plastic mterials and articles intended to come into contact with food(OJ L 12, 15.01.2011, p 1-89 with further amendments)		
Overall migration cannot exceed 10 mg/dm <sup>2</sup>		
218/21/P1 218/21/P2	3% acetic acid water solution	+
	10% ethanol water solution	+
	Food substitute, which imitates fat - isooctane	-
Limits for specific migration of elements: Ba ≤1 mg/kg, Co ≤ 0.05 mg/kg, Cu ≤ 5 mg/kg, Fe ≤ 48 mg/kg, Li ≤ 0.6 mg/kg, Mn ≤ 0.6 mg/kg, Zn ≤ 5 mg/kg, Al ≤ 1 mg/kg, Ni ≤ 0.02 mg/kg		
218/21/P1 218/21/P2	3% acetic acid water solution	+
Limit for specific migration of bisphenol A ≤ 0.5 mg/kg		
218/21/P1 218/21/P2	3% acetic acid water solution	+
218/21/P1 218/21/P2	50% ethanol water solution	+

symbol: "+" – sample meets the requirements, "+ conditionally" – sample meets the requirements conditionally,  
"-" – sample does not meet the requirements, "- conditionally" – sample does not meet the requirements conditionally,

**NOTE:** Statement of test results conformity with the requirements is based on a confidence level of 95% for the expanded uncertainty of measurement results on which the decision of conformity is based.

Leader of testing team:

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Beata Grynkiewicz-Bylina, Ph.D. Eng.

Profesor at KOMAG

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Approved by

Kierownik Laboratorium

Inżynierii Materiałowej i Środowiska

Gliwice, 07.05.2021

*dr hab. inż. Beata Grynkiewicz-Bylina*  
/signature and stamp  
Profesor ITG KOMAG

TEST REPORT INCLUDES ONLY THE RESULTS, WHICH ARE RELATED TO THE TESTED OBJECT DELIVERED BY THE ORDERER  
KOMAG TAKES AN OBLIGATION TO KEEP IN SECRET ALL TEST RESULTS AND THE RESULTS WILL NOT BE PUBLISHED WITHOUT A PERMISSION OF  
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### Description of the samples

Samples of two plastics RAW MATERIAL PP MOPLIN EP340M, PP MOPLIN EP240H and UIC MATERIAL PP ITIPLIN IC M5, GY 269.01. Samples were taken and delivered for testing by the Orderer – Georg Utz Sp. z o.o. with headquarter at Nowowiejska 34, Kąty Wrocławskie, Poland.

### Scope and methods of testing

Item	Tested parameters	Testing method	Testing procedure and Standard
1.	Overall migration	Gravimetric method	PB-DLS/15, edition 8 <sup>th</sup> ; 2019 PN-EN 1186-9:2006 Standard PN-EN 1186-14:2005 Standard
2.	Specific migration of elements	Inductively coupled plasma mass spectrometry (ICP-MS) method	PB-DLS/26, edition 10 <sup>th</sup> ; 2021 PN-EN 13130-1:2006 Standard
3.	Specific migration of bisphenol A	High performance liquid chromatography with fluorescence detection method (HPLC-FLD)	PB-DLS/26, edition 10 <sup>th</sup> ; 2021 PN-EN 13130-1:2006 Standard

### Detailed testing conditions specified by the Orderer

Detailed testing conditions specified by the standard						
Item	Sample name	Test conditions				Standard/Regulation
		Testing method	Model liquid	Contact time	Temperature	
1.	218/21/P1 218/21/P2	Total immersion	3% acetic acid water solution	10 days	40 °C	Commission Regulation (EC) No. 10/2011 of 14 January 2011 PN-EN 1186-3:2005 Standard
		Total immersion	10% ethanol water solution	10 days	40 °C	
		Total immersion	Substitute of food simulant isooctane	2 days	20 °C	
Conditions for specific migration of elements						
2.	218/21/P1 218/21/P2	Total immersion	3% acetic acid water solution	10 days	40 °C	Commission Regulation (EC) No. 10/2011 of 14 January 2011 PN-EN 1186-3:2005 Standard
Conditions for specific migration of bisphenol A						
3.	218/21/P1 218/21/P2	Total immersion	3% acetic acid water solution	10 days	40 °C	Commission Regulation (EC) No. 10/2011 of 14 January 2011 PN-EN 1186-3:2005 Standard
			50% ethanol water solution			

### Results

Item	Sample name	Model liquid	Global migration M [mg/dm <sup>2</sup> ]	
			M	U
1.	218/21/P1	3% acetic acid water solution	<2.00	-
		10% ethanol water solution	3.12	±0.84
		Substitute of food simulant isooctane	20.55	±3.23



Item.	Sample name	Model liquid	Global migration M [mg/dm <sup>2</sup> ]	
			M	U
2	218/21/P2	3% acetic acid water solution	<2.00	-
		10% ethanol water solution	2.98	±0.78
		Substitute of food simulant isooctane	>100	-

Item.	Sample name	Model liquid	Specific migration of elements [mg/kg]							
			Ba	U	Co	U	Cu	U	Fe	U
1.	218/21/P1	3% acetic acid water solution	<0.1	-	<0.009	-	<0.1	-	<10	-
			Li	U	Mn	U	Zn	U	Al	U
			<0.1	-	<0.1	-	<0.1	-	<0.1	-
			Ni	U						
			0.009	-						
2.	218/21/P2	3% acetic acid water solution	Ba	U	Co	U	Cu	U	Fe	U
			<0.1	-	<0.009	-	<0.1	-	<10	-
			Li	U	Mn	U	Zn	U	Al	U
			<0.1	-	<0.1	-	<0.1	-	<0.1	-
			Ni	U						
			<0.009	-						

Item	Sample name	Model liquid	Specific migration of bisphenol A [mg/kg]	
			bisphenol A	U
1.	218/21/P1	50% ethanol water solution	<0.03	-
		3% acetic acid water solution	<0.03	-
2.	218/21/P2	50% ethanol water solution	<0.03	-
		3% acetic acid water solution	<0.03	-

symbol:

"-" in uncertainty "U" column – there is no uncertainty value as the test result is below/above bottom/upper limit of the measuring range

**Note:** measurements uncertainty U is an expanded uncertainty at confidence level 95% and coverage factor  $k = 2$ , according to the PO-DLS/07 general instruction.

The results and their uncertainty refer only to the tested sample and not to the product batch/substance/material the sample was taken from.

Rules for taking decisions on compliance/ not compliance with the requirements

According to ISO/IEC Guide 98-4:2012 "Uncertainty of measurement. Part 4: Role of measurement uncertainty in conformity assessment" and ILAC-G8:09/2019 guidelines.: "Guidelines on Decision Rules and Statements of Conformity":

- COMPLIANCE WITH THE REQUIREMENTS** is stated when the measurement result/test result plus/minus expanded uncertainty at confidence level 95% and coverage factor  $k = 2$ , is within the acceptance interval defined in regulations / standards by the accepted value/values. Risk of wrong acceptance is below 2.5%.
- CONDITIONAL COMPLIANCE WITH THE REQUIREMENTS** is stated when the measurement result/test result is within the acceptance interval defined in regulations / standards by the accepted value/values and expanded uncertainty at confidence level 95% and coverage factor  $k = 2$  exceeds this interval. Risk of wrong acceptance is up to 50%.
- NON-COMPLIANCE WITH THE REQUIREMENTS** is stated when the measurement result/test result plus/minus expanded uncertainty at confidence level 95% and coverage factor  $k = 2$ , is within the acceptance interval defined in regulations / standards by the accepted value/values. Risk of wrong rejection is below 2.5%.
- CONDITIONAL NON-COMPLIANCE WITH THE REQUIREMENTS** is stated when the measurement result/test result is beyond the acceptance interval defined in regulations / standards by the accepted value/values and the expanded uncertainty at confidence level 95% and coverage factor  $k = 2$  is within this interval. Risk of wrong rejection is up to 50%

Number of copies – 2.

Georg Utz Sp. z o.o. x 1

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