

**Test Report No.** 6015440

**Date :** 26-Sep-2024

**Page 1 of 7**

**Client : Excel Packaging Co.,Ltd.  
135,135/1-2 Moo 9 Soi Kratoomlom 9 Puthamonthon Sai 4 Road  
Kratoomlom,Sampran Nakornpathom 73220 Thailand**

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

Sample Name : PP (Sheet & Tray)  
Sample Description : PP  
Color : Natural

The following sample(s) was/were identified by SGS as:

SGS Sample No. : 6332923  
Sample Condition : Sample is contained in a plastic bag.  
Quantity Submitted : 1 bag  
Sample Receiving Date : 20-Sep-2024  
Testing Period : 20-Sep-2024 to 26-Sep-2024

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

**Signed for and on behalf of  
SGS (Thailand) Ltd.**

**Rutchuporn Mounksom  
Toys and Hardlines Laboratory Manager**



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5717153

**Test Report No.** 6015440

**Date :** 26-Sep-2024

**Page 2 of 7**

**Test Requested & Result Summary**

Test Requested : Please refer to the result summary (Test parameter(s) was/were selected by client).

**Result Summary:**

Test Requested	Conclusion
European Commission Regulation (EU) No 10/2011 and its amendment	--
a) Overall migration##	
3% Acetic Acid (W/V)	PASS
50% Ethanol (V/V)	PASS
Rectified Olive Oil	PASS
b) Specific Migration of Heavy Meta#	PASS

**Remark:**

1. Test results in this report are applicable for the item tested and reflects the tested sample as received.
2. # ; The decision rules based on simple acceptance which the probability of false accept may be as high as 50% in case the results is exactly on the tolerance limit.
3. ## ; The decision rules based on the requested specification or standard.

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5717153

Test Report No. 6015440

Date : 26-Sep-2024

Page 3 of 7

## TEST RESULTS

### European Commission Regulation (EU) No 10/2011 and its amendment

#### a) 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 method (1st migration);  
EN 1186-2:2022 Test methods for overall migration in vegetable oils  
EN 1186-3:2022 Test methods for overall migration in evaporable simulants

Simulant Used	Test Condition	Result (1) (mg/dm <sup>2</sup> )	Reporting Limit (mg/dm <sup>2</sup> )	Permissible Limit (mg/dm <sup>2</sup> )
3% Acetic Acid (W/V)	2 hours at 100 Degree C	ND	3.0	10
50% Ethanol (V/V)	2 hours at 100 Degree C	ND	3.0	10
Rectified Olive Oil***	1 hour at 121 Degree C	ND	3.0	10
Comment	--	PASS	--	--

#### Sample Description :

- Natural plastic sheet

#### Note :

- mg/dm<sup>2</sup> = milligram per square decimeter
- Degree C = degree Celsius
- ND = Not Detected
- Permissible Limit is according to Commission Regulation (EU) No 10/2011 of 14 January 2011 with amendments.

#### Remark:

- Analytical tolerance of evaporable simulants is 2mg/dm<sup>2</sup>.
- Analytical tolerance of olive oil simulant is 3mg/dm<sup>2</sup>.
- Test condition & simulant were specified by client.
- The ratio of surface area to volume is 10 dm<sup>2</sup> per 1 kg of foodstuff in contact with.
- The product is single-use as specified by client.
- The test item(s) marked \*\*\* on test report is/are analyzed at SGS (Thailand) Limited, address: 10, 10/1 - 4 and 12 Soi Rama III S. 59, Chong Nonsi, Yan Nawa, Bangkok.

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5717153

Test Report No. 6015440

Date : 26-Sep-2024

Page 4 of 7

**TEST RESULTS**

**b) Specific migration of heavy metal**

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

Ammonium was analyzed by UV-Vis Spectrophotometer.

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

Test Condition: 100 Degree C for 2 hours (1st Migration)

Test Item	Result (1) (mg/kg) (1 st migration)	Reporting Limit (mg/kg)	Permissible Limit (mg/kg)
Specific Migration of Aluminium***	ND	0.1	1
Specific Migration of Antimony***	ND	0.01	0.04
Specific Migration of Arsenic***	ND	0.01	ND
Specific Migration of Barium***	ND	0.25	1
Specific Migration of Cadmium***	ND	0.002	ND
Specific Migration of Chromium***	ND	0.01	ND
Specific Migration of Cobalt***	ND	0.01	0.05
Specific Migration of Copper***	ND	0.25	5
Specific Migration of Iron***	ND	5	48
Specific Migration of Lead***	ND	0.01	ND
Specific Migration of Lithium***	ND	0.1	0.6

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5717153

Test Report No. 6015440

Date : 26-Sep-2024

Page 5 of 7

**TEST RESULTS**

Test Item	Result (1) (mg/kg) (1 st migration)	Reporting Limit (mg/kg)	Permissible Limit (mg/kg)
Specific Migration of Manganese***	ND	0.1	0.6
Specific Migration of Mercury***	ND	0.01	ND
Specific Migration of Nickel***	ND	0.01	0.02
Specific Migration of Zinc***	ND	0.5	5
Specific Migration of Europium***	ND	0.025	-
Specific Migration of Gadolinium***	ND	0.025	-
Specific Migration of Lanthanum***	ND	0.025	-
Specific Migration of Terbium***	ND	0.025	-
Specific Migration of Europium + Gadolinium + Lanthanum + Terbium	ND	--	0.05
Comment	PASS	--	--

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5717153

**Test Report No.** 6015440

**Date :** 26-Sep-2024

**Page 6 of 7**

**TEST RESULTS**

Test Item	Result (1) (mg/kg) (1st migration)	Reporting Limit (mg/kg)
Specific Migration of Ammonium	ND	1
Specific Migration of Calcium***	ND	1
Specific Migration of Magnesium***	ND	1
Specific Migration of Potassium***	ND	1
Specific Migration of Sodium***	ND	1

**Sample Description:**

1. Natural plastic sheet

**Note :**

1. mg/kg = milligram per kilogram of foodstuff in contact with
2. Degree 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 ratio of surface area to volume is 6 dm<sup>2</sup> per 1 kg of foodstuff in contact with.
3. The product is single-use as specified by client.
4. The test item(s) marked \*\*\* on test report is/are analyzed at SGS (Thailand) Limited, address: 10, 10/1 - 4 and 12 Soi Rama III S. 59, Chong Nonsi, Yan Nawa, Bangkok.

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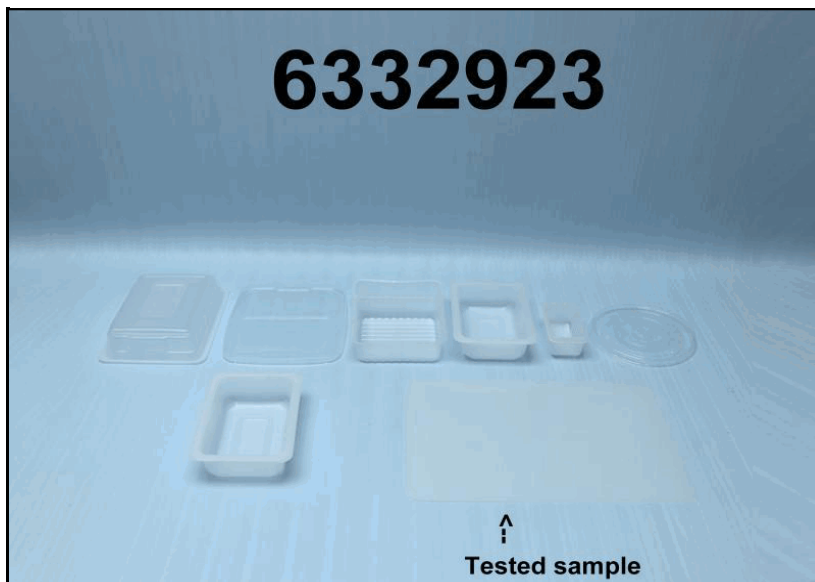
5717153

Test Report No. 6015440

Date : 26-Sep-2024

Page 7 of 7

SAMPLE/ATTACHMENT PICTURE



\*\*\*\*\* End of Report \*\*\*\*\*

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