

Test Report No. 5363607

Date : 12-Sep-2022

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**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. : 5595110
Sample Condition : Sample is contained in a plastic bag.
Quantity Submitted : 1 pack
Sample Receiving Date : 6-Sep-2022
Testing Period : 6-Sep-2022 to 12-Sep-2022

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

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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) Plastic - Overall migration##	
3% Acetic Acid (W/V) Aqueous Solution	PASS
50% Ethanol (V/V) Aqueous Solution	PASS
Rectified Olive Oil	PASS
b) Plastic - Specific Migration of Heavy Metal#	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.

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



**Rutchuporn Mungsom
Laboratory manager - Toy and Hard goods**

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TEST RESULTS

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

a) 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 method (1st migration);
EN 1186-3:2002 aqueous food simulants by total immersion method;
EN 1186-2:2002 olive oil by total immersion method.

Simulant Used	Test Condition	Result (1) (mg/dm ²)	Reporting Limit (mg/dm ²)	Permissible Limit (mg/dm ²)
3% Acetic Acid (W/V) Aqueous Solution	2 hours at 100 Degree C	ND	3.0	10
50% Ethanol (V/V) Aqueous Solution	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 :

1. Natural plastic sheet

Note :

1. mg/dm² = milligram per square decimeter
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 and its amendment

Remark :

1. Analytical tolerance of aqueous simulants is 2mg/dm² or 12mg/kg
2. Analytical tolerance of fatty food simulants is 3mg/dm² or 20mg/kg
3. Test condition & simulant were specified by client.
4. The ratio of surface area to volume is 10 dm² per 1 kg of foodstuff in contact with.
5. The product is single-use as specified by client.
6. 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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TEST RESULTS

b) Specific migration of heavy metal

Method: With reference to EN 13130-1:2004. Analysis was performed by ICP-MS / ICP-OES.
Simulant Used: 3% acetic acid (w/v) in aqueous solution
Test Condition: 100 Degree C for 2 hours (1st Migration)
Single-use article:

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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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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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 and its amendment

Remark:

1. Test condition & simulant were specified by client.
2. The ratio of surface area to volume is 6 dm² 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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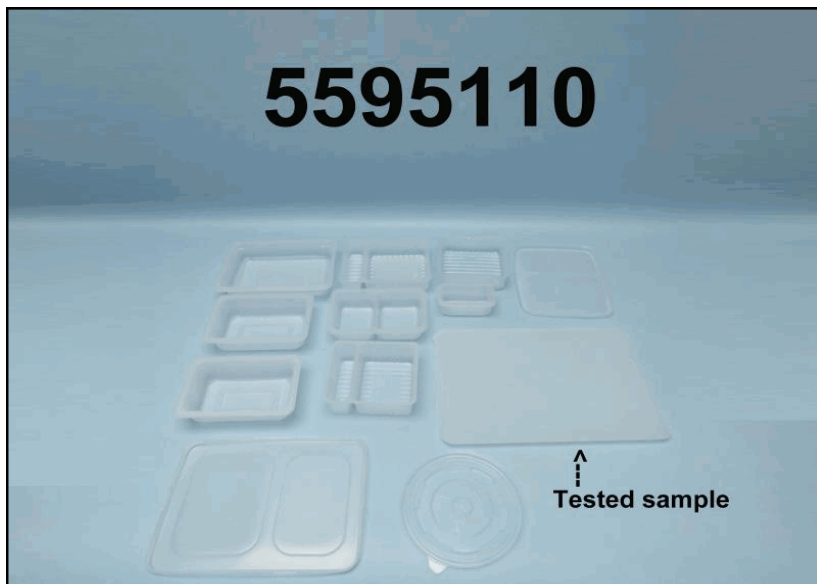
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SAMPLE/ATTACHMENT PICTURE



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

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