

Test Report No. 5054206

Date : 30-Sep-2021

Page 1 of 9

Client : Excel Superpack. Co.,Ltd.
79,79/1-2 Moo 12 Soi Pacharat-kratoomlom Puthamonthon 5 Rd.
Raikhing Sampran Nakornpathom 73210 Thailand

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

Sample Name : PET(Sheet & Tray)
Sample Description : PET
Color : Clear

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

SGS Sample No. : 5244749
Sample Condition : Sample is contained in a plastic bag.
Quantity Submitted : 1 pack
Sample Receiving Date : 9-Sep-2021
Testing Period : 9-Sep-2021 to 30-Sep-2021

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

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Test Report No. 5054206

Date : 30-Sep-2021

Page 2 of 9

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
(1) Commission Regulation (EU) No 10/2011 of 14 January 2011, hence Article 3 of European Regulation No. 1935/2004 and its amendment (EU) 2020/1245 Regulation	--
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 Meta#	PASS
c) Plastic - Specific Migration of Bisphenol A#	PASS
(2) Pathogenic microorganisms	See results

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) Limited



Rutchuporn Mounksom
Laboratory manager - Toy and Hardgood

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Test Report No. 5054206

Date : 30-Sep-2021

Page 3 of 9

TEST RESULTS

(1) European Commission Regulation (EU) No 10/2011 and its amendment (EU) 2020/1245 Regulation

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	10 days at 40 Degree C	ND	3.0	10
50% Ethanol (V/V) Aqueous Solution	10 days at 40 Degree C	ND	3.0	10
Rectified Olive Oil	10 days at 40 Degree C	ND	3.0	10
Comment	--	PASS	--	--

Sample Description :

1. Clear 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 (EU) 2020/1245 Regulation

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 ratio is 10 dm² per 1 kg of foodstuff in contact with.
5. The product is single-use as specified by client.

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4755919

Test Report No. 5054206

Date : 30-Sep-2021

Page 4 of 9
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) in aqueous solution

Test Condition: 40 Degree C for 10 days (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	0.01
Specific Migration of Barium	ND	0.25	1
Specific Migration of Cadmium	ND	0.002	0.002
Specific Migration of Chromium	ND	0.01	0.01
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	0.01
Specific Migration of Lithium	ND	0.1	0.6

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4755919

Test Report No. 5054206

Date : 30-Sep-2021

Page 5 of 9

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	0.01
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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4755919

Test Report No. 5054206

Date : 30-Sep-2021

Page 6 of 9

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. Clear 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 (EU) 2020/1245 Regulation.

Remark:

1. Test condition & simulant were specified by client.
2. The ratio of surface area to volume ratio is 6 dm² per 1 kg of foodstuff in contact with.
3. The product is single-use as specified by client.

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4755919

Test Report No. 5054206

Date : 30-Sep-2021

Page 7 of 9

TEST RESULTS

c) Specific Migration of Bisphenol A

Method: With reference to EN 13130-1:2004 and DD CEN/TS 13130-13:2005, Regulation EU No10/2011. Analysis was performed by HPLC-MS/MS.

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

Test Condition: 40 degree C for 10 days (1st Migration)

Test Item	Result (1) (mg/kg)	Reporting Limit (mg/kg)	Permissible Limit (mg/kg)
Specific Migration of Bisphenol A	ND	0.01	0.05**
Comment	PASS	--	--

Sample Description :

1. Clear plastic sheet

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 and its amendment (EU) 2020/1245 Regulation.

Remark:

1. ** = The limits of Bisphenol A according to Commission Regulation (EU) 2018/213 shall be applied from 6 September 2018.

2. Test condition & simulant were specified by client.

3. The ratio of surface area to volume ratio is 6 dm² per 1 kg of foodstuff in contact with.

4. The product is single-use as specified by client.

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4755919

Test Report No. 5054206

Date : 30-Sep-2021

Page 8 of 9

TEST RESULTS

(2) Pathogenic microorganisms

Test Items	Method	Results	Units
Total Plate Count	ISO 4833-1: 2013	Less than 1	CFU/piece

"Test(s) marked * on this report are not included in the NSC-ONSC accreditation scope"



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4755919

Test Report No. 5054206

Date : 30-Sep-2021

Page 9 of 9

SAMPLE/ATTACHMENT PICTURE



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

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