

**Test Report No.** 5485740

**Date :** 9-Feb-2023

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**Client : Prepack Thailand Co., Ltd.**  
**30/145,Moo1,**  
**Khok Kham, Muang Samutsakhon, Samutsakorn 74000 Thailand**

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

Sample Name : PET/LLDPE (S)  
Sample Description : Plastic bag  
Manufacturer/Vendor : PREPACK THAILAND CO., LTD.  
Country of Origin : Thailand

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

SGS Sample No. : 5731056  
Sample Condition : Sample is contained in a plastic bag.  
Quantity Submitted : 1 pack  
Sample Receiving Date : 23-Jan-2023  
Testing Period : 23-Jan-2023 to 9-Feb-2023

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
10% Ethanol (V/V) Aqueous Solution	PASS
20% Ethanol (V/V) Aqueous Solution	PASS
Rectified Olive Oil	PASS
MPPO For dry food	PASS
b) Plastic - Specific Migration of Heavy Metal#	PASS
c) Plastic - Specific Migration of Bisphenol A#	PASS
d) Plastic -Specific Migration of Phthalates#	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 1186-2:2002 Test methods for overall migration in vegetable oils  
EN 1186-3:2002 Test methods for overall migration in evaporable simulants  
EN1186-13 :2002 Method B - adsorption by modified polyphenylene oxide.

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)*	10 days at 40 Degree C	ND	3.0	10
10% Ethanol (V/V)*	10 days at 40 Degree C	ND	3.0	10
20% Ethanol (V/V)*	10 days at 40 Degree C	ND	3.0	10
Rectified Olive Oil**	10 days at 40 Degree C	ND	3.0	10
Poly (2,6-diphenyl-p-phenylene oxide) (MPPO)	10 days at 40 Degree C	ND	3.0	10
Comment	--	PASS	--	--

**Sample Description :**

(1) Clear plastic bag with multicolor printed (inside)

**Note :**

1. mg/dm<sup>2</sup> = 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 evaporable simulants is 2mg/dm<sup>2</sup>.
2. Analytical tolerance of olive oil simulant is 3mg/dm<sup>2</sup>.
3. Test condition & simulant were specified by client.
4. The ratio of surface area to volume is 20 dm<sup>2</sup> per 1 kg of foodstuff in contact with.
5. The product is single-use as specified by client.
6. Test(s) marked \* on this report are not included in the NSC-ONSC accreditation scope.
7. 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 but not included in the NSC-ONSC accreditation scope.

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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)  
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	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. Clear plastic bag with multicolor printed (inside)

**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 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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**TEST RESULTS**

**c) Specific Migration of Bisphenol A\*\*\***

Method: With reference to EN 13130-1:2004 and DD CENTS 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 bag with multicolor printed (inside)

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

**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 is 6 dm<sup>2</sup> per 1 kg of foodstuff in contact with.
4. The product is single-use as specified by client.
5. 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**

**d) Specific Migration of Phthalates\*\*\***

Method : Sample preparation with reference to EN 13130-1:2004; followed by analysis using Gas Chromatography - Mass Spectrometry (GC-MS).

Test condition : 3% acetic acid at 40 degree C for 10 days (1st migration)

Test Item	Result (1) (mg/kg)	Reporting Limit (mg/kg)	Permissible Limit (mg/kg)
Dibutyl phthalate (DBP)	ND	0.05	0.3
Benzylbutyl phthalate (BBP)	ND	0.5	30
Bis-(2-ethylhexyl) phthalate (DEHP)	ND	0.25	1.5
Diisononyl phthalate + Diisodecyl phthalate (DINP+DIDP)	ND	1	9
Comment	PASS	--	--

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**TEST RESULTS**

Test condition : 3% acetic acid in aqueous solution at 40 degree C for 10 days (1st migration)

Test Item	Result (mg/kg)	Reporting Limit (mg/kg)	Permissible Limit (mg/kg)
Diallyl phthalate (DAP)	ND	0.01	ND
Comment	PASS	--	--

**Sample Description:**

1. Clear plastic bag with multicolor printed (inside)

**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. Test condition, simulant & reporting limit were specified by client.
3. The ratio of surface area to volume is 6 dm<sup>2</sup> per 1 kg of foodstuff in contact with.
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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**SAMPLE/ATTACHMENT PICTURE**



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