

**Test Report No.** 5573123

**Date :** 19-May-2023

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**Client : Qingzhou Macro Secco Packaging Material Co.,Ltd.  
North of 309 National Road, South head of Xuda Road, Yidu Sub-district official,Qingzhou  
City, Shandong Provice China**

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

Sample Name : MPET For Trade Name: MS-101

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

SGS Sample No. : 5801237

Sample Condition : Sample is contained in a plastic bag.

Quantity Submitted : 1 pack

Sample Receiving Date : 27-Mar-2023

Testing Period : 27-Mar-2023 to 19-May-2023

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

### 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)	PASS
10% Ethanol (V/V)	PASS
Rectified Olive Oil	PASS
b) Plastic - 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.

**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 1186-2:2022 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)*	10 days at 40 Degree C	ND	3.0	10
10% 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
Comment	--	PASS	--	--

**Sample Description :**

1. Metallized / clear plastic film (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.  
Ammonium was analyzed by UV-Vis Spectrophotometer.  
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 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. Metallized / clear plastic film (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 & simulat 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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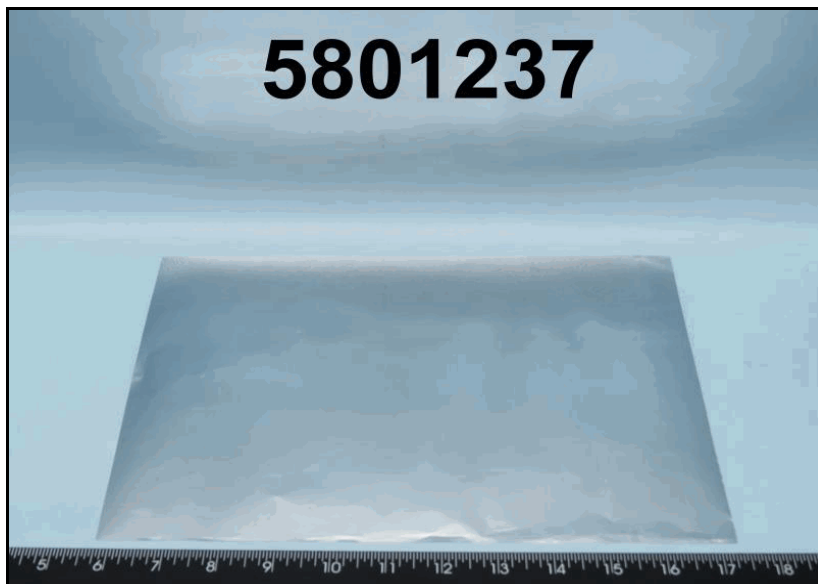
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SAMPLE/ATTACHMENT PICTURE



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

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