



Test Report

No. F690101/LF-CTSAYAA15-30408

Issued Date: 2015. 06. 30 Page 1 of 7

TK CHEMICAL CORP

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Korea

The following sample(s) was/were submitted and identified by/on behalf of the client as:-

SGS File No. : AYAA15-30408
Product Name : PET Bottle (Co-chip)
Item No./Part No. : N/A
Received Date : 2015. 06. 11
Test Period : 2015. 06. 11 to 2015. 06. 30
Test Result(s) : For further details, please refer to following page (s)

Result Summary

Test Requested	Conclusion
1. Commission Regulation (EU) No 10/2011	-
a) Plastic – Overall Migration	PASS
b) Plastic – Specific Migration of Heavy Metals	PASS
c) Plastic – Specific Migration of Terephthalic acid and Isophthalic acid	PASS
d) Plastic – Specific Migration of Ethyleneglycol	PASS
e) Plastic – Specific Migration of Antimony	PASS

SGS Korea Co., Ltd.

Jeff Jang / Chemical Lab manager

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Sample No. : AYAA15-30408
Sample Description : PET Bottle (Co-chip)
Item / Part No. : N/A

Test result(s) :

1. European Commission Regulation (EU) No 10/2011

a) Plastic – Overall migration

Method: With reference to EN 1186-1:2002 for selection of conditions and test methods;
EN 1186-3:2002 aqueous food simulants by total immersion method;

Simulant Used	Test Condition	Result (mg/dm ²)	Detection Limit (mg/dm ²)	Permissible (mg/dm ²)
3% Acetic Acid(W/V) Aqueous Solution	40 °C for 10 days	N.D	3.0	10
20% Ethanol(V/V) Aqueous Solution	40 °C for 10 days	N.D	3.0	10
Comment	--	PASS	--	--

Note : 1. mg/dm² = milligram per square decimeter
2. °C = degree Celsius
3. N.D = Not Detected
4. Permissible Limit is according to Commission Regulation (EU) No 10/2011 of January 2011 with amendments.

Remark:

1. Analytical tolerance of aqueous simulants is 1mg/dm² or 6mg/kg
2. Analytical tolerance of fatty food simulants is 3mg/dm² or 20mg/kg
3. Test condition & simulant were specified by client.

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Sample No. : AYAA15-30408
Sample Description : PET Bottle (Co-chip)
Item / Part No. : N/A

b) Plastic – Specific migration of Heavy metals

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: 40 °C for 10 days

Test Item	Result (mg/kg)	Reporting Limit (mg/kg)	Permissible (mg/kg)
Specific Migration of Barium	N.D	0.3	1
Specific Migration of Cobalt	N.D	0.01	0.05
Specific Migration of Copper	N.D	0.3	5
Specific Migration of Iron	N.D	0.3	48
Specific Migration of Lithium	N.D	0.5	0.6
Specific Migration of Manganese	N.D	0.3	0.6
Specific Migration of Zinc	N.D	0.5	25
Comment	PASS	--	--

- Note : 1. mg/kg = milligram per kilogram of foodstuff in contact with
2. °C = degree Celsius
3.N.D == Not Detected.
4.Permissible Limit is according to Commission Regulation (EU) No 10/2011 of January 2011 with amendments.

Remark : 1. Test condition & simulant were specified by client

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Sample No. : AYAA15-30408
Sample Description : PET Bottle (Co-chip)
Item / Part No. : N/A

c) Specific Migration of Terephthalic acid and Isophthalic acid

Method: With reference to DIN EN 13130-2. Analysis was performed by HPLC.

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

Test Condition: 40 °C for 10 days

Test Item	Result (mg/kg)	Reporting Limit (mg/kg)	Permissible Limit (mg/kg)
Specific migration of Terephthalic acid	N.D	2.0	7.5
Specific migration of Isophthalic acid	N.D	2.0	5
Comment	PASS	--	--

- Note:
1. mg/kg = milligram per kilogram of foodstuff in contact with
 2. °C = degree Celsius
 3. N.D = 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.

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Sample No. : AYAA15-30408
Sample Description : PET Bottle (Co-chip)
Item / Part No. : N/A

d) Specific Migration of Ethyleneglycol

Method: With reference to EN 13130-7. Analysis was performed by GC/MS.

Simulant Used: 95% Ethanol

Test Condition: 40 °C for 10 days

Test Item	Result (mg/kg)	Reporting Limit (mg/kg)	Permissible Limit (mg/kg)
Specific migration of Ethyleneglycol	N.D	10	30*
Specific migration of Diethyleneglycol	N.D	10	
Comment	PASS	--	--

- Note:
1. mg/kg = milligram per kilogram of foodstuff in contact with
 2. °C = degree Celsius
 3. N.D = Not Detected
 4. * = max.Σ (ethyleneglycol + diethyleneglycol) ≤30 mg/kg food stimulant.
 5. Permissible Limit is according to Commission Regulation (EU) No 10/2011 of 14 January 2011 with amendments.

Remark:

2. Test condition & simulant were specified by client.

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Sample No. : AYAA15-30408
Sample Description : PET Bottle (Co-chip)
Item / Part No. : N/A

e) Specific Migration of Antimony

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

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

Test Condition: 40 °C for 10 days

Test Item	Result (mg/kg)	Reporting Limit (mg/kg)	Permissible Limit (mg/kg)
Specific migration of Antimony	N.D	0.02	0.04
Comment	PASS	--	--

Note : 1. mg/kg = milligram per kilogram of foodstuff in contact with
2. °C = degree Celsius
3.N.D == Not Detected.
4.Permissible Limit is according to Commission Regulation (EU) No 10/2011 of January 2011 with amendments.

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Picture of Samples as Received:



*** End of Report ***

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