



Test Report

No. F690101/LF-CTSAYAA15-33288

Issued Date: 2015. 07. 16 Page 1 of 8

LOTTE CHEMICAL CORPORATION

115, Gajeongbuk-ro, Yuseong-gu
Daejeon
Korea

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

SGS File No. : AYAA15-33288
Product Name : LOTTE CHEMICAL PAPET ACE
Item No./Part No. : N/A
Received Date : 2015. 06. 26
Test Period : 2015. 06. 26 to 2015. 07. 16
Test Result(s) : For further details, please refer to following page (s)
Result Summary :

| Test Requested | Conclusion |
|---|------------|
| 1. Commission Regulation (EU) No 10/2011 and hence Article 3 of European Regulation No. 1935/2004. | - |
| 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 |
| 2. German Food, Articles of Daily Use and Feed Code of September 1, 2005(LFGB), Section 31 | |
| a) Sensorial examination odour and taste test | PASS |

SGS Korea Co., Ltd.

Jeff Jang / Chemical Lab manager

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Issued Date: 2015. 07. 16 Page 2 of 8

Sample No. : AYAA15-33288
Sample Description : LOTTE CHEMICAL PAPET ACE
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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No. F690101/LF-CTSAYAA15-33288

Issued Date: 2015. 07. 16 Page 3 of 8

Sample No. : AYAA15-33288
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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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Test Report

No. F690101/LF-CTSAYAA15-33288

Issued Date: 2015. 07. 16 Page 4 of 8

Sample No. : AYAA15-33288
Sample Description : LOTTE CHEMICAL PAPET ACE
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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Test Report

No. F690101/LF-CTSAYAA15-33288

Issued Date: 2015. 07. 16 Page 5 of 8

Sample No. : AYAA15-33288
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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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No. F690101/LF-CTSAYAA15-33288

Issued Date: 2015. 07. 16 Page 6 of 8

Sample No. : AYAA15-33288
Sample Description : LOTTE CHEMICAL PAPET ACE
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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.

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

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Test Report

No. F690101/LF-CTSAYAA15-33288

Issued Date: 2015. 07. 16 Page 7 of 8

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Item / Part No. : N/A

2. In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB) with its amendment, Section 31, and article 3 of EU Regulation (EC) No 1935/2004

a) Sensorial examination of odour and taste

Test Method: With reference to DIN10955: 2004

Migration condition: 40 °C for 10 days

Test Simulant: Water

The number of panelists: 6

Test Results :

| Test Simulant | Test Item | Result | Maximum Permissible Limit |
|---------------|-----------------------------|--------|---------------------------|
| Water | Sensorial examination odour | 0.5 | 2.5 |
| | Sensorial examination taste | 0.5 | 2.5 |
| Comment | | PASS | -- |

Note : 1. Intensity scale (rounded at 0.5):

- 0 – no perceptible difference
- 1 – just perceptible difference
- 2 – slight difference
- 3 – marked difference
- 4 – strong difference

2. Permissible Limit is according to LFGB with its amendment, Section 30 and 31, and Regulation (EC) No 1935/2004 of The European Parliament and of the Council of 27 October 2004.

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Picture of Samples as Received:



*** End of Report ***

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