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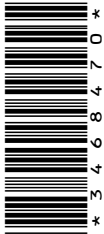
LOTTE CHEMICAL CORPORATION
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Consumer and Retail
Non Food

Taunusstein, 16/08/2017

Test-report no. 3468470
Test-report version < 1 >

Original Sample ID	Sample Description	Sample Receipt Date
170725346	EVA VC590	03/07/2017



General Information

SGS-Client's ID	:	10008109
SGS-Customer-Order	:	4216028
Ordering date	:	30/06/2017
Testing period	:	12/07/2017 – 03/08/2017
Order No.	:	AYAA17-35375
Testing scope	:	Test according to client's requirements

Assessment

Overall assessment	pass
The sample meets the requirements of LFGB and Regulation (EC) No. 1935/2004 in the tested items.	

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(Project Manager)


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Summary of results

Test	Result
Sensory test	pass
Overall migration	pass
Specific migration of metals according to Regulation (EU) No 10/2011	pass
Specific migration of acetic acid, vinyl ester (Ref. No: 38560, CAS No: 108-05-4)	pass

Note:

Conclusions on pass/fail are based on the test result from the actual sampling of the received sample(s).
Conclusions are based on the relevant requirements; measurement uncertainties are not taken into account. Only results above the relevant detection limit are taken into account for the calculation of sums.
Test was conducted on composite of random parts of the item as per client's request and the test result is the overall result.
The composite sampling method is based on the client's special request and could be a modification from the testing standard.
For 2-composite mix with results exceeding one half of the relevant requirements or 3-composite mix with results exceeding one third of the relevant requirements, the composite sample may have the possibility of one or more components that can lead to a failure result, it is recommended to test on individual basis.

Photo documentation



List of sample parts

Comp. no	Component-ID	Sample-Description		Original Sample ID
1	-	transparent plastic	EVA VC590	170725346

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Analytical results

Sensory test

Test Method

DIN 10955:2004-06

Simulant	water
Duration	10 days
Temperature	20 +/- 1 °C
Approach	6 dm ² /L

<u>Sample(s) /Subsample(s)</u>	<u>Unit</u>	<u>Result</u>
		1
		1st contact
Median Odour ^[1]		0
Median Taste ^[1]		0.5
Conclusion		Pass

Note:

Key:	0	=	no change
	1	=	very slight off odour / off-taste
	2	=	slight off- odour / off-taste
	3	=	distinct off- odour / off-taste
	4	=	strong off-odour/ off-taste

Requirement: With an assessment from 0 to 2.5 there is no, respectively a tolerable organoleptic impact existent in terms of Regulation (EC) No 1935/2004.

^[1]Median rounded at 0.5 grades

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Overall migration

Test Method

DIN EN 1186:2002

Simulant 3% acetic acid
Duration 10 days
Temperature 20 +/- 1 °C
Approach 6 dm²/L

<u>Sample(s) /Subsample(s)</u>	<u>Unit</u>	<u>Result</u>
		1
Overall migration	mg/dm ²	1st contact < 1
Conclusion		Pass

Test Method

DIN EN 1186:2002

Simulant 20% ethanol
Duration 10 days
Temperature 20 +/- 1 °C
Approach 6 dm²/L

<u>Sample(s) /Subsample(s)</u>	<u>Unit</u>	<u>Result</u>
		1
Overall migration	mg/dm ²	1st contact < 1
Conclusion		Pass

Note:

Requirement: max. 10 mg/dm² (Regulation (EU) No 10/2011)

analytical tolerance of the method (§ 64 LFGB B 80.30-3 (EG)):

2 mg/dm² for aqueous simulants
3 mg/dm² for olive oil and fat substitutes

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Specific migration of metals according to Regulation (EU) No 10/2011

Test Method

DIN-EN-ISO 11885 , after migration DIN 13130-1

Simulant	3% acetic acid
Duration	10 days
Temperature	20 +/- 1 °C
Approach	6 dm²/L

<u>Sample(s) /Subsample(s)</u>	<u>Unit</u>	<u>Result</u>
		1
		1st contact
Aluminium (Al)	mg/kg	< 0.1
Barium (Ba)	mg/kg	< 0.1
Cobalt (Co)	mg/kg	< 0.01
Iron (Fe)	mg/kg	< 1.0
Copper (Cu)	mg/kg	< 0.5
Lithium (Li)	mg/kg	< 0.1
Manganese (Mn)	mg/kg	< 0.1
Nickel (Ni)	mg/kg	< 0.01
Zinc (Zn)	mg/kg	< 1.0
Conclusion		Pass

Note:

Requirement:	Regulation (EU) No 10/2011	Aluminium	max. 1 mg/kg food simulant (valid from 14/09/2018)
		Barium:	max 1 mg/kg food simulant
		Cobalt:	max. 0.05 mg/kg food simulant
		Copper:	max. 5 mg/kg food simulant
		Iron:	max. 48 mg/kg food simulant
		Lithium:	max. 0.6 mg/kg food simulant
		Manganese:	max .0.6 mg/kg food simulant
		Nickel:	max. 0,02 mg/kg food simulant (valid from 19/05/2019)
		Zinc:	max. 25 mg/kg food simulant (max. 5 mg/kg food simulant from 14/09/2018)

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Specific migration of acetic acid, vinyl ester (Ref. No: 38560, CAS No: 108-05-4)

Test Method

SOP M1030, SPME HS-GC-MS , after migration DIN EN 13130-1

Simulant	3% acetic acid
Duration	10 days
Temperature	20 +/- 1 °C
Approach	6 dm ² /L

<u>Sample(s) /Subsample(s)</u>	<u>Unit</u>	<u>Result</u>
		1
Acetic acid, vinyl ester (108-05-4)	mg/kg	1st contact 2.2
Conclusion		Pass

Note:

Requirement: max. 12 mg/kg food simulant (Regulation (EU) No 10/2011)

*** End of test report ***

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