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Date  
January 19<sup>th</sup>, 2015

your ref.  
01.110.03

Our ref.  
392-2014-00301601/BJ1

## Test report – Migration

### Sample material

Identification	One sample to be tested for overall and specific migration
Sample receipt	December 5, 2014
Number / type	1 sample identified as: Lab no. 392-2014-00301601: 01.110.03
Analytical period	December 15 – January 16, 2015

### Applied methods

Method nor.	Parameter	Principle	Limit of detection	U <sub>m</sub> (%) <sup>(1)</sup>
EN 1186-2	Overall migration	Exposure to olive oil by total immersion. Gravimetric + GC/FID determination	2 mg/dm <sup>2</sup>	30%
EN 1186-3	Overall migration	Exposure to 3% acetic acid and 10% ethanol by total immersion. Gravimetric determination	1 mg/dm <sup>2</sup>	20%
EN 13130* EPA 3052m*	Metals	Migration simulant analysed by ICP/MS	0.0005 – 0.05 mg/kg	30%

The migration was performed in accordance with EN 1186 part 2: *Test methods for overall migration into olive oil by total immersion* and EN 1186 part 3: *Test methods for overall migration into aqueous food simulants by total immersion*.

#### Principle

**Olive oil:** The sample was exposed for 2 hours at 70 °C followed by 24 hours at 40 °C by total immersion. At the end of the test period, the sample was removed from the food simulant. The sample was weighed and extracted with pentane by means of Soxhlet extraction for 16 hours. The amount of extracted olive oil was determined by gaschromatography with flame ionisation detection (GC/FID). The loss of weight was adjusted the excessive oil extracted from the sample and the calculated loss equals the total migration.

**3% acetic acid and 10% ethanol:** The sample was exposed for 2 hours at 70 °C followed by 24 hours at 40 °C. At the end of the test period, the sample was removed from the food simulant. The simulant was then evaporated and the dry matter determined by weighing.

**Specific migration:** An aliquot of the food simulant is analysed for the specific compound as listed above.

The test was performed with triplicates.

(1)U<sub>m</sub> (%): The expanded uncertainty U<sub>m</sub> is equal to 2 x RSD%, see also [www.eurofins.dk](http://www.eurofins.dk). Keyword: Uncertainty

\* Not part of the accreditation

### Results

The sample **meets** the requirements in EU regulation No 10/2011/EC as amended by regulation No 321/2011/EC, No 1282/2011/EC, No 1183/2012/EC and No 202/2014/EC on plastic material and articles intended to come into contact with food for the above mentioned test conditions. Results are presented on the following page.

Eurofins Product Testing A/S



Brian Jensen  
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The test results relate only to the items tested.  
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## Analytical results

The determined overall migration from the sample to the simulant is given in the table below. The result is an average of the three determinations. As described in the standard EN 1186 all results are given in total mg/dm<sup>2</sup>.

Table 1: Overall migration.

Unit: mg/dm <sup>2</sup> / Sample id:	01.110.03				
	Single determinations			Average	OML value
3% acetic acid	< 1	< 1	< 1	< 1	<b>10</b>
10% ethanol	< 1	< 1	< 1	< 1	<b>10</b>
Olive oil	< 2	< 2	< 2	< 2	<b>10</b>

<: means less than

Table 2: Specific migration.

Unit: mg/kg / Sample id:	01.110.03			
	Cas. no.	Food simulant	Average	SML value
Barium*	7440-39-3	3% acetic acid	0.023	1
Cobalt*	7440-48-4	3% acetic acid	< 0.0005	0.05
Copper*	7440-50-8	3% acetic acid	0.0024	5
Iron*	7439-89-6	3% acetic acid	< 0.05	48
Lithium*	7439-93-2	3% acetic acid	< 0.005	0.6
Manganese*	7439-96-5	3% acetic acid	< 0.01	0.6
Zinc*	7440-66-6	3% acetic acid	0.016	25

<: means less than; \* Not part of the accreditation

### Conclusion:

The results for specific migration are well below the specific migration limit. The threshold value for overall migration is 10 mg/dm<sup>2</sup> and the results show that the product tested **complies** with the requirements in EU regulation No 10/2011/EC as amended by regulation No 321/2011/EC, No 1282/2011/EC, 1183/2012/EC and No 202/2014/EC on plastic material and articles intended to come into contact with food for the above mentioned test conditions.