

Tub-Ex ApS  
 Industrivej 10  
 DK-9830 Taars

Att.: Dorthe Nielsen

Eurofins Product Testing A/S  
 Smedeskovvej 38  
 DK-8464 Galten

Phone +45 70 22 42 76  
 Fax +45 70 22 42 75  
 Migration@eurofins.dk  
 www.eurofins.dk

Date  
 May 23<sup>rd</sup>, 2014

your ref.  
 Amilin 6

Our ref.  
 G24618\_Ver3/BJ1

## Test report – Migration

### Sample material

Identification	One sample to be tested for overall and specific migration
Sample receipt	December 3, 2013 and again May 5, 2014
Number / type	1 sample identified as: Lab no. G23618: Amilin 6
Analytical period	December 6 – January 30, March 20 – April 28, 2014 and May 5 – May 23 <sup>rd</sup> 2014

### Applied methods

Method nor.	Parameter	Principle	Limit of detection	U <sub>m</sub> (%) <sup>(1)</sup>
EN 1186-4	Overall migration	Exposure to olive oil by cell. Gravimetric + GC/FID determination	2 mg/dm <sup>2</sup>	30%
EN 1186-5	Overall migration	Exposure to 10% ethanol by cell. Gravimetric determination	1 mg/dm <sup>2</sup>	20%
EN 13130*	Caprolactam	Migration simulant analysed by GC/MS	0.5 mg/kg	20%

The migration was performed in accordance with EN 1186 part 4: *Test methods for overall migration into olive oil by cell* and EN 1186 part 5: *Test methods for overall migration into aqueous food simulants by cell*.

#### Principle

**Olive oil:** The sample was exposed for 10 days at 60 °C. At the end of the test period, the food simulant was removed from the sample. 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.

**10% ethanol:** The sample was exposed for 10 days at 60 °C. At the end of the test period, the food simulant was removed from the sample. 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 and No 1183/2012/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  
 MSc. Chemistry



John Hansen  
 MSc. Chemistry

The test results relate only to the items tested.  
 The report shall not be reproduced except in full without the written approval of the testing laboratory.

## 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: Simulant	Amilin 6				
	Single determinations			Average	OML value
10% ethanol	2.2	1.7	1.7	1.9	<b>10</b>
Olive oil	< 2	< 2	< 2	< 2	<b>10</b>

<: means less than

Table 2: Specific migration.

Unit: mg/kg / Sample id: Specific compound	Amilin 6			
	Cas. no.	Food simulant	Average	SML value
Caprolactam*	105-60-2	Olive oil	5.3	15

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

### Conclusion:

The results for specific migration of caprolactam is well below the SML value and the results for overall migration are well below the OML value, hence 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 and 1183/2012/EC on plastic material and articles intended to come into contact with food for the above mentioned test conditions.