Test report - Migration

Niebling Technische Bürsten GmbH
Industriestraße 12
91593 Burgbernheim
Germany

Sample material

Identification	One sample to be tested for overall and specific migration
Sample receipt	April 17, 2013
Number / type	1 sample identified as: Lab no. G22431: Box 1 – Black
Analytical period	April 17 – June 18, 2013

Applied methods

Method nor.	Parameter	Principle	Limit of detection	U_m (%)(1)
EN 1186-2	Overall migration	Exposure to olive oil by total immersion. Gravimetric + GC/FID determination	2 mg/dm^2	30%
EN 1186-3	Overall migration	Exposure to 3% acetic acid and 10% ethanol by total immersion. Gravimetric determination	1 mg/dm^2	20%
EN 1186-14	Preparation for specific migration	Exposure to isooctane by total immersion	-	-
EN 13130*	Methyl acrylate	Migration simulant analysed by Headspace GC/MS	0.02 mg/kg	20%
EN 13130*	DBP, DEHP	Migration simulant analysed by GC/MS	0.3 – 0.5 mg/kg	20%
EN 13130*	Substance A#	Migration simulant analysed by GC/MS	0.2 mg/kg	20%
EN 13130*	Substance B#	Migration simulant analysed by LC-MS/MS	0.2 mg/kg	20%
Calculation*	Zinc	Worst case calculation based on the results from overall migration	-	-

The migration was performed in accordance with relevant parts of EN 1186

Principle

Olive oil: The sample was exposed for 10 days 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 10 days 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.

Isooctane: The sample was exposed for 2 days at 20 °C. At the end of the test period, the sample was removed from the food simulant.

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_m (%): The expanded uncertainty U_m is equal to 2 x RSD%, see also www.eurofins.dk. Keyword: Uncertainty
* Not part of the accreditation
# Substances are known to Eurofins but protected by NDA between Eurofins PT and the FBK raw material supplier

Results

Results are presented on the following page

Analytical results

The determined overall migration from the sample to the simulant is given in the table show. The result is an average of the three determinations. As described in the standard EN 1186 all results are given in total mg/dm².

Table 1: Overall migration.

Unit: mg/dm² / Sample id: Simulant	Box 1 – Black				
	Single determinations			Average	OML value
3% acetic acid	< 1	< 1	< 1	< 1	**10**
10% ethanol	< 1	< 1	< 1	< 1	**10**
Olive oil	< 2	< 2	< 2	< 2	**10**

<: means less than

Table 2: Specific migration.

Unit: mg/kg / Sample id: Specific compound	Box 1 – Black			
	Cas. no.	Food simulant	Average	SML value
Irganox 3114*	27676-62-6	Isooctane	< 0.5	5
Substance A*	Confidential	Olive oil	< 0.2 (Pass)	Confidential
Substance B*	Confidential	Isooctane	< 0.2 (Pass)	Confidential

<: means less than; * Not part of the accreditation
Substances A and B are known to Eurofins but protected by NDA between Eurofins PT and the FBK raw material supplier

Conclusion:
The results for specific migration are well below the specific migration limit.
The threshold value for overall migration is 10 mg/dm² 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 and 1183/2012/EC on plastic material and articles intended to come into contact with food for the above mentioned test conditions.

Niebling Techn. Bürsten GmbH
Niebling
Technische Bürsten GmbH
Industriestraße 12 · 91593 Burgbernheim
Tel. 09843/9894-0 Fax 09843/9894-20
Herr Niebling
Geschäftsführer