



25 February 2008

**Sigg Switzerland AG**  
**Walzmühlenstrasse 60**  
**CH-8501 Frauenfeld**

Your Reference:  
14.01.2008 / AG

Our Reference:  
2008L00835

## Certificate

You appointed us in the letter dated 14<sup>th</sup> January 2008 to analyse and to assess Sigg bottles with respect to current food legislation.

### Product data:

Sample: Sigg bottles, inside coated  
Intended use: In accordance with your data the bottles of different sizes are used for aqueous, acidic and alcoholic filling goods

### Analytic

#### Overall migration

The global migration was analytically examined by us. For this the sample material was brought into contact with aqueous and nonaqueous solvents under test conditions which are suitable to simulate the influence of foodstuff. Test conditions were selected according Council Directive 85/572/EEC and Commission Directive 97/48/EC. Due to foreseen multiple use the overall migration was performed three times, whereas only the value of the third migration is reported. The bottles were filled with simulance, closed with the stopper and turned upside down.

#### Examination of the lacquer film

The coating film was analyzed for BADGE, BFDGE, NOGE and Bisphenol A and F after acetonitrile extraction.

#### Test on heavy metals

By using X-ray fluorescence several coloured lids and the stopper were analyzed for Cadmium and heavy metal.



**Results of the examinations**Overall migration:

Simulants	Test conditions (Time/Temperature)	Dry Residue of Migrates in mg/dm <sup>2</sup>
Water	3 * 24h 40 °C	2
3 % Acetic acid	3 * 24h 40 °C	6
15 % Ethanol	3 * 24h 40 °C	3

Examination of the lacquer film

## Acetonitrile extraction

Substance	Result µg/dm <sup>2</sup>	LoQ µg/dm <sup>2</sup>
BADGE (a)	n.d.	2
BADGE.HCl (b)	n.d.	2
BADGE.HCl.H <sub>2</sub> O (c)	n.d.	2
BADGE.2HCl (d)	n.d.	2
BADGE.H <sub>2</sub> O (e)	n.d.	2
BADGE.2H <sub>2</sub> O (f)	n.d.	2
BFDGE (g)	n.d.	2
BFDGE.2HCl (h)	n.d.	2
BFDGE.2H <sub>2</sub> O (i)	n.d.	2
Bisphenol A	n.d.	2
Bisphenol F	n.d.	2
NOGE	n.d.	2

\*LoQ = Limit of Quantification, n.d. = not detectable

Test on heavy metals

Probe	Cadmium
Lid green	< 50 mg/kg
Lid yellow	< 50 mg/kg
Lid red	< 50 mg/kg
Lid white	< 50 mg/kg
Stopper black	< 50 mg/kg

n.d. = not determined; Limit of Detection: Cadmium: 0.005% (50 mg/kg)





## Assessment

### Overall migration

Under the prescribed test conditions with aqueous and nonaqueous simulants there was no overall migration which exceeded the limit according to Council of Europe resolution ResAP(2004)1. Furthermore the overall migration values fulfils the requirements of the US FDA limits of the CFR 21, § 175.300.

### Examination of the lacquer film

The coating film does not contain detectable residues of BADGE, BFDGE, NOGE and Bisphenol A and F. The limits set in the Commission Regulation (EC) 1895/2005/EC will not be achieved or even exceeded.

### Heavy metals

No heavy metals according to the CH food contact legislation as well as to the CH chemical risk reduction regulation could be detected. Therefore, also the requirements of EN 14350-2 are fulfilled.

### General Assessment

Due to the evaluation based on the submitted documents and analytical tests the present product used as intended fulfils the requirements of the regulation (EC) 1935/2004 article 3. Under the normal and foreseeable use conditions the product specified above does thereafter not add components to food in quantities that are suitable to endanger the human health or to cause an untenable change of the composition. No phthalates were used according to the manufacturer's documents. Therefore the requirements of the directive 2005/84/EC are fulfilled.

This report exclusively refers to the analyzed samples. In the case of a change of the raw materials, the raw material composition of the product, the manufacturing process, the legal regulations or new toxicological realizations this evaluation loses its validity.

### References:

- Commission Directive (85/572/EEC) of 19 December 1985
- Commission Directive 97/48/EC of 29 July 1997
- Framework Resolution ResAP (2004) 1 on Coatings intended to come into contact with foodstuffs, adopted by the Committee of Ministers on 1<sup>st</sup> December 2004
- FDA 21 CFR Parts 170 to 199
- Commission Regulation (EC) No 1895/2005 of 18 November 2005
- CH Regulation on Food Contact of 23.11.2005, version 12.12.2006
- CH-Chemical Risk Reduction Regulation (ChemRRV) of 18.05.2005, version 01.05.2007
- Regulation (EC) No 1935/2004 of the European Parliament and of the Council of 27 October 2004
- Commission Directive 2005/84/EC of 14 December 2005
- DIN EN 14350-2:2004





Dietikon, 25 February 2008

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