



Stainless steel treated with SuperExpanite® as food contact material

Aim

To evaluate the migration properties of stainless steel (AISI 316) treated with SuperExpanite® (Expanite A/S, Industrivænget 34, 3400 Hillerød, Denmark) as food contact material.

Method

The worst-case use is assumed to be acidic food types at the exposure conditions 70 ° C for 2 h. These test conditions may also represent uses where short periods of heating up to 100 ° C occurs.

Total migration was measured by gravimetric methods using the food simulant 3 % acetic acid. Three consecutive extractions were performed and the 3rd extraction was analysed to represent application of the material for repeated use.

Three samples were analysed to account for variations.

Results

Table 1. Total migration measured by gravimetric analyses in 3 % acetic acid for 2 h in triplicate. Analyses were carried out on the third extraction.

| Sample | A | B | C | Mean |
|--------|--------------------|--------------------|--------------------|--------------------|
| Unit | mg/dm ² | mg/dm ² | mg/dm ² | mg/dm ² |
| Result | 2.1 | 3.2 | 1.8 | 2.4 |

Data from Report No. 37885, DTI, Chemistry & Microbiology, Feb. 2014.

No limits for the total migration of substances have been defined for metals in the EU legislation. The limit for total migration of substances for plastic materials is set to 10 mg/dm² (EC/10/2011).

Based on the total migration measured, stainless steel 316 treated with SuperExpanite® is found acceptable as food contact material under circumstances similar to or less extreme than the conditions under which the present test was conducted.

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