LGA QualiTest GmbH
Chemische Produktprüfung

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Zertifiziert nach DIN EN ISO 9001/14001

LGA

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Test report
Nr.: 567 1489

Oderer:	see consignee
Order Date:	25.11.2005
Scope:	Chemical test on a surface treatment agent: AKEMI ® Anti-Fleck Nano-Effekt
Samples Received:	06.12.2005
Testing Period:	03.01.2005 until 10.03.2006
Total number of Attatchments:	-

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Geschäftsführer:
Hans-Hermann Ueffing, Michael F. Jungnitsch
Steuer-Nr. 241/115/90768 Ust-IdNr. DE813835603

The LGA QualiTest GmbH received on the 25th of November 2005 a slab from the orderer, which was treated with the following agent:

AKEMI ® Anti-Fleck Nano-Effect

Untreated slabs were used for reference.
Additionally, 100 ml of the surface treatment were provided.
For the determination of the scope, the formulation, including the percentage declaration of the compounds as well as the safety data sheets were exhibited.

As ordered, the treated stones were also tested on suitability for food contact.

Test method

Examination of the stones with isooctane:

The treated and untreated slabs were migrated with isooctane as a fat simulate for 5 hours at 20°C.

Afterwards the migrate was used for the following determinations:

Determination of the global migration:
The evaporation residue was determined gravimetrically by evaporating the migrate and drying it at 105°C.

Determination of PAH
Extraction with n-hexane, GC-MSD.

Overview analysis:
Determination with GC-MSD.

Determination of organic flourine compounds:
The migrate was burned in a Wickbold apparatus and the obtained solution was determined by an ionsensitive electrode.

Examination of the stones with acetic acid.

The treated and untreated slabs were migrated with acetic acid for 24 hours at 40°C.

Afterwards the migrate was used for the following determinations:

Determination of the global migration:
The evaporation residue was determined gravimetrically by evaporating the migrate and drying it at 105°C.

Determination of organic flourine compounds:
The migrate was burned in a Wickbold apparatus and the obtained solution was determined by an ionsensitive electrode.

Examination of the surface treatment agent:

Determination of tinorganic compounds:
Extraction with methanol, derivatisation with Sodiumtetaethylborate, GC-MSD.

Determination of Benzene, Toluene, Xylene:
Determination with GC-FID, after dillution with n-pentane

Test results:

Examination of the slabs:

Parameter	Dimension	Result
Global migration	mg/dm^2	
Acetic acid		< 1
Isooctane		1,4
Organic flourine compounds:		
Acetic acid	mg/dm^2	< 0,3
Isooctane	mg/dm^2	< 0,3

Overview analysis :
The transition of substances was below the limit of quantitation.

Release of polycyclic aromatic hydrocarbons:

Parameter	Dimension	Result
Naphthalin	mg/dm^2	< 0,01
2-Methylnaphthalin	mg/dm^2	< 0,01
1-Methylnaphthalin	mg/dm^2	< 0,01
Acenaphthylen	mg/dm^2	< 0,01
Acenaphthen	mg/dm^2	< 0,01
Fluoren	mg/dm^2	< 0,01
Phenanthren	mg/dm^2	< 0,01
Anthracen	mg/dm^2	< 0,01
Fluoranthen	mg/dm^2	< 0,01
Pyren	mg/dm^2	< 0,01
Chrysen	mg/dm^2	< 0,01
Benzo(a)anthracen	mg/dm^2	< 0,01
Benzo(bk)fluoranthen	mg/dm^2	< 0,01

Benzo(a)pyren	mg/dm²	< 0,01
Dibenzo(ah)anthracen	mg/dm²	< 0,01
Indeno(cd)pyren	mg/dm²	< 0,01
Benzo(ghi)perylen	mg/dm²	< 0,01

Examination of the surface treatment agent:

Determination of tinorganic compounds:

Parameter	Dimension	Result
MBT	mg/kg	< 0,01
DBT	mg/kg	< 0,01
TBT	mg/kg	< 0,01
TTBT	mg/kg	< 0,01
MOT	mg/kg	< 0,01
DOT	mg/kg	< 0,01
Tricyclohexyltin	mg/kg	< 0,01

Determination of Benzene, Toluene, Xylene:

Parameter	Dimension	Result
Benzol	mg/kg	2,8
Toluol	mg/kg	12,5
m + p -Xylol	mg/kg	< 0,5
o-Xylol	mg/kg	< 0,5

Assessment

The examination of the sample should bring out, if the tested object is suitable for slabs that may have contact with food.

The test showed that the found value is far below the limit for coated food comodities.

The transition of organic fluorine compounds or polycyclic aromatic hydrocarbons could not be determined.

There were Benzene, Toluene and Xylene found in the surface treatment agent. They are very volatile compounds and, as long as there is enough time for airing, there will be no transition of toxic amounts. The overview analysis confirms these results, none of these compounds were detected.

There are no concerns in using the surface treatment agent for slabs that may have food contact, after an adequate time of airing.

Nürnberg, 25.05.07

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Chemical product testing

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Chemische Produktprüfung

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