SCHOMBURG

SCHOMBURG GmbH & Co. KG · Aquafinstraße 2–8 · D-32760 Detmold

Ihr Gesprächspartner
Im Haus:
Niels Theis
Head of Product Management
Im Außendienst:

Datum:
31.10.2016
Unser Zeichen:
NT / KD
Durchwahl:

Declaration of conformity
INDUFLOOR-IB3357 / ASODUR-B351

Dear Sir or Madam,

With this declaration of conformity, SCHOMBURG GmbH & Co. KG offers assurance that the formulation is identical between the products

INDUFLOOR-IB3357 / ASODUR-B351.

Their designated accreditation, test certificates and technical documentation can be interchanged.
Their product properties and application performance are identical.

Yours sincerely

SCHOMBURG GmbH & Co. KG

i.V. Dr. Werner Güth
Head of the technical chemical department

i.V. Niels Theis
Head of Product Management

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BIC: WELADE3LXXX

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448 449 00 (BLZ 476 400 51)
IBAN: DE65 4764 0051 0448 4499 00
BIC: COBADEFFXXX

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820 162 1600 (BLZ 472 601 21)
IBAN: DE34 4726 0121 8201 6216 00
BIC: DGPBDE3MXXX

USHD Nr.: DE 124 616 406

SCHOMBURG GmbH & Co. KG
Entwicklungs- u. Produktionsgesellschaft
Pers. haft. Gesellsch.:
SCHOMBURG Verwaltungs GmbH
Handelsregister Lemgo B 4538

Geschäftsführer:
Albert Schomburg
Ralph Schomburg
Alexander Weber

Vorsitzender des Beirates:
Albert Schomburg

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Declaration of conformity
INDUFLOOR-IB1270 / ASODUR-G1270

Dear Sir or Madam,

With this declaration of conformity, SCHOMBURG GmbH & Co. KG offers assurance that the formulation is identical between the products

INDUFLOOR-IB1270 / ASODUR-G1270.

Their designated accreditation, test certificates and technical documentation can be interchanged.
Their product properties and application performance are identical.

Yours sincerely

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Hygiene-Institut des Ruhrgebiets

Institut für Umwelthygiene und Toxikologie
Direktor: Prof. Dr. rer. nat. L. Dunemann

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Unser Zeichen: H-208269-11-Bg
Ansprechpartner: Dr. J. Begerow

Gelsenkirchen, den 21.09. 2011

Test Report

- Translation of test report H-207793-11-Bg dated 08.09.2011 -

Client:	SCHOMBURG GmbH & Co. KG, Aquafinstr. 2 – 8, 32760 Detmold
Date of order:	11.07.2011 (Sign: VH/G-S)
Receipt of samples:	12.08.2011
Test items:	Flat sheets made of fiber cement (70 mm x 70 mm x 11 mm) all-over coated with INDUFLOOR-IB 1270 (base coat) and INDUFLOOR-IB 3357 (final coating)
Production of test items:	by the client
Order:	Testing of the suitability for indirect food contact
Start of experimental testing:	15.08.2011
End of experimental testing:	05.09.2011

Träger des Instituts: Verein zur Bekämpfung der Volkskrankheiten im Ruhrkohlengebiet e.V., Gelsenkirchen, **Vereinsregister:** VR 519 Amtsgericht Gelsenkirchen
USt.-ID: DE125018356, **Vorstand:** Prof. Dr. Werner Schlake (Vorsitzender), Prof. Dr. Jürgen Kretschmann, Dr. Emanuel Grün, Volker Vohmann, Prof. Dr. Lothar Dunemann

1. Order

The Hygiene-Institut des Ruhrgebiets ((Ruhr District Institute of Hygiene) was ordered by SCHOMBURG GmbH & Co, to test an epoxy based floor surface coating consisting of INDUFLOOR-IB 1270 (base coat) and INDUFLOOR-IB 3357 (final coating) for its utilization in food areas.

The surface coating is not intended to come into direct food contact.

2. Basis of the evaluation

The test item is a coating system, which has in the case of a definition-appropriate and foreseeable use no direct contact to foodstuffs. The contact with foodstuffs occurs only on the air path. Thus in particular those substances have to be considered, which have at room temperature a sufficient vapour pressure to be released into indoor air.

Test chambers were used in order to determine the release of volatile organic compounds into indoor air and the affection of taste and smell of foodstuffs.

In order to test whether in case of an unintentional, not definition-appropriate use a migration of substances from the coating into foodstuffs would take place, the overall migration, the migration of bisphenol A, bisphenol F, and BADGE and BFDGE derivatives, and the residual content of epichlorohydrine were determined.

The German Food and Feed Act (Lebensmittel- und Futtermittelgesetzbuch, LFGB) and Regulation (EC) No. 1395/2004 were used as basis for evaluation.

The safety data sheet and the technical instruction sheet were handed out by the client or his suppliers.

3. Experimental testing

Prior to testing the test items were rinsed with distilled water and dried.

3.1 Release of selected toxicologically relevant volatile organic compounds (VOC)

A test item was placed for 3 days in a glass test chamber with a volume of 4 liter. An air reversal did not take place, which means that the test was performed under worst-case conditions. The VOC released into the test chamber air were adsorbed onto Tenax tubes using an air sampling pump and identified by GC-MS.

3.2 Release of formaldehyde

A test sheet was placed in a test chamber as already described unter 3.1. The formaldehyde released into the test chamber air was determined according to VDI method 3484 sheet 1 1979-01.

3.3 Determination of the residual content of epichlorohydrine

The determination was performed according to DIN CEN/TS 13130-20:2005.

3.4 Determination of the overall migration

The determination was performed according to methods 80.30-1 (EG) to 80.30-18 (EG) of the Official Collection of Methods in accordance with § 64 of the German food and Feed Act (LFGB using the food simulants for aqueous and fatty foodstuffs. The migration tests were carried out for 2 h at a contact temperature of 40 °C. Distilled water, 95 % by volume ethanol, iso-octane and sunflower oil served as food simulants.

According to Directive 82/711/EC iso-octane and 95 % ethanol can be used as alternative test media instead of food oil when the analysis of a migrant in the fatty food stimulant is not practicable.

In each case one test sheet was placed into 200 ml of food simulant.

For the material is intended to come into repeated contact with foodstuffs, the migration tests were carried out three times on a single sample. Its compliance was checked on the basis of the level of migration found in the third test.

The third migrate was also used to test for compliance with the specific migration limits.

3.5 Affection of odour and flavour of foodstuffs by indirect food contact

The sensory analyses were conducted according to DIN 10955 (Testing of packaging materials and packages for foodstuffs). Mineral water and coconut oil were used as test foodstuffs. The contact time was 2 h at 4 – 8 °C.

During the testing period the test chamber was closed to avoid an affection of the test foodstuffs by ambient air. At the same time worst-case conditions were simulated by this procedure.

3.6 Determination of the migration of bisphenol, bisphenol F, BADGE- and BFDGE-derivatives

The determination was carried out exemplary using the aqueous and fatty food simulants (distilled water and 95 % ethanol) following method 00.00-51 of the Official Collection of Methods in accordance with § 64 of the German food and Feed Act (LFGB) using high-performance liquid chromatography with fluorescence detection.

4. Results

4.1 1 Release of selected volatile organic compounds (VOC into indoor air

The test items gave off a weakly detectable odour.

The chamber tests were performed between August 16 and August 19, 2011 (72 h).

Parameter	Result ($\mu g/m^3$ chamber air)	Result ($\mu g/dm^2$ surface area)
Aromatic hydrocarbons		
Benzene	< 2	< 0.008
Toluene	40	0.124
Ethylbenzene	9	0.028
o-, m-, p-Xylene	22	0.068
Styrene	< 5	< 0.02
n-Propylbenzene	49	0.152
1,2,4-Trimethylbenzene	179	0.555
1,3,5-Trimethylbenzene	44	0.136
2-Ethyltoluene	41	0.127
Naphthalene	< 5	< 0.02
4-Phenylcyclohexene	< 5	< 0.02
Aliphatic hydrocarbons		
n-Hexane	< 5	< 0.02
n-Heptane	< 5	< 0.02
n-Octane	< 5	< 0.02
n-Nonane	< 5	< 0.02
n-Decane	< 5	< 0.02
n-Undecane	< 5	< 0.02
n-Dodecane	< 5	< 0.02
n-Tridecane	< 5	< 0.02
n-Tetradecane	< 5	< 0.02
n-Pentadecane	< 5	< 0.02
n-Hexadecane	< 5	< 0.02
2-Methylpentane	< 10	< 0.03
3-Methylpentane	< 5	< 0.02
1-Octene	< 5	< 0.02
1-Decene	< 5	< 0.02
2-Methyl-1-propene	< 5	< 0.02
Cycloalkanes		
Methylcyclopentane	< 5	< 0.02
Cyclohexane	< 5	< 0.02

Methylcyclohexane	< 5	< 0.02
Terpenes		
3-Carene	< 5	< 0.02
α-Pinene	< 5	< 0.02
β-Pinene	< 5	< 0.02
Limonene	< 5	< 0.02
Alcohols		
2-Propanol	< 10	< 0.03
1-Butanol	< 10	< 0.03
2-Ethyl-1-hexanol	< 10	0.03
Benzyl alcohol	4290	13.30
Glycols/Glycol ethers		
2-Methoxyethanol	< 5	< 0.02
2-Ethoxyethanol	< 5	< 0.02
2-Butoxyethanol	< 5	< 0.02
1-Methoxy-2-propanol	< 5	< 0.02
2-Butoxyethoxyethanol	< 5	< 0.02
2-Phenoxyethanol	< 5	< 0.02
Aldehyds		
Butanal (Butyraldehyd)	6	0.02
Pentanal	26	0.081
Hexanal	30	0.093
Octanal	Determination not possible	-
Nonanal	41	0.127
Decanal	< 5	< 0.02
Undecanal	< 5	< 0.02
Benzaldehyde	2440	7.56
Ketones		
Methyl ethyl ketone (2-Butanone)	35	0.109
Methyl sobutyl ketone	24	0.074
Cyclohexanone	< 5	< 0.02
Acetophenone	< 5	< 0.02
Halogenated hydrocarbons		

Trichloroethene	< 2	< 0.008
Tetrachloroethene	< 2	< 0.008
1,1,1-Trichloroethane	< 2	< 0.008
1,4-Dichlorbenzene	< 2	< 0.008
Esters		
Ethyl acetate	< 5	< 0.02
Butyl acetate	< 5	< 0.02
Isopropyl acetate	< 5	< 0.02
2-Ethoxyethyl acetate	< 5	< 0.02
Dimethyl phthalate	< 5	< 0.02
Texanol	< 5	< 0.02
Texanol isobutyrat (TXIB)	< 5	< 0.02
Furanes		
2-Pentylfuran	< 5	< 0.02
Tetrahydrofuran	< 5	< 0.02

Total volatile organic compounds (TVOC)

Parameter	Result
Total VOC (TVOC)	7270 µg/m^3 in test chamber air **without air reversal** (worst-case conditions) equivalent to 22.5 µg/dm^2 surface area

4.2 Release of formaldehyde

Parameter	Result (ppm in test chamber air)	Result (µg/dm^2 surface area)	Limit value (*)
Formaldehyde	0.02	0.49	0.1 ppm in indoor air

(*)Guide value of the Indoor Air Hygiene Commission of the German Umweltbundesamt (Federal Environment Agency)

4.3 Residual content of epichlorohydrine

	Result	Limit value (**)
Epichlorohydrine	< 0.1 mg/kg in the final product	< 1 mg/kg kg in the final product

(*) See Regulation(EC) No. 10/2011 and BedarfsgegenständeVO

4.4. Overall migration

Conditions of contact: 3 x 2 h at40 °C

	Wasser dest. mg/dm²	Ethanol 95 %ig (***) mg/dm²	Iso-Octan (***) mg/dm²	Sonnen-blumenöl mg/dm²	Grenzwert (**) mg/dm²
INDUFLOOR-IB 1270 (base coat) and INDUFLOOR-IB 3357 (final coating)	< 1	41.8	<1	7.4	10

(**) see Regulation (EC) No. 10/2011 and BedarfsgegenständeVO
(***) alternative test media instead of food oil

4.5. Affection of odour and flavour of foodstuffs by indirect food contact

Date of testing: 05.09.2011

	Mineral water	Coconut oil	Limit value (***)
Odour (2 h, 4 - 8 °C)	marginal affection (Scale 1)	marginal affection (Scale 1)	(Scale 2.5)
Flavour (2 h, 4-8 °C)	marginal affection (Scale 1)	marginal affection (Scale 1)	

(***) see § 31 LFGB und Article 3 Regulation (EC) No. 1935/2004

Scale (according to DIN 10955):

0 – no detectable affection of odour or flavour
1 – marginal affection of odour or flavour
2 – weak affection of odour or flavour
3 – clearly detectable affection of odour or flavour
4 – strong affection of odour or flavour

4.6 Migration of bisphenol, bisphenol F, BADGE- and BFDGE-derivatives

Parameter	dist. Water	95 % ethanol	Limit value (*)(***)
BFDGE	< 0.05 mg/kg FS	< 0.05 mg/kg FS	BFDGE may not be used except for containers > 10.000 l (****)
BFDGE-H_2O	< 0.05 mg/kg FS	< 0.05 mg/kg FS	
BFDGE-2H_2O	< 0.05 mg/kg FS	< 0.05 mg/kg FS	
BFDGE-HCl	< 0.05 mg//kg FS	< 0.05 mg//kg FS	
BFDGE-2HCl	< 0.05 mg//kg FS	< 0.05 mg//kg FS	
BFDGE- H_2O-HCl	< 0.05 mg//kg FS	< 0.05 mg//kg FS	
BADGE	< 0.05 mg//kg FS	< 0.05 mg//kg FS	Sum of BADGE, BADGE-H_2O, and BADGE-2 H_2O ≤ 9 mg/kg food or ≤ 1.5 mg/dm²
BADGE-H_2O	< 0.05 mg//kg FS	< 0.05 mg//kg FS	
BADGE-2H_2O	< 0.05 mg//kg FS	< 0.05 mg//kg FS	Sum of BADGE -HCl, BADGE-2 HCl and BADGE-H_2O-HCl ≤1 mg/kg food or ≤ 0.17 mg/dm²
BADGE-HCl	< 0.05 mg//kg FS	< 0.05 mg//kg FS	
BADGE-2HCl	< 0.05 mg//kg FS	< 0.05 mg//kg FS	
BADGE- H_2O-HCl	< 0.05 mg//kg FS	< 0.05 mg//kg FS	
Bisphenol A	< 0.05 mg//kg FS	< 0.05 mg//kg FS	Bisphenol A: SML = 0.6 mg/kg or 0.1 mg/dm² (*)
Bisphenol F	< 0,05 mg//kg FS	< 0.05 mg//kg FS	Bisphenol F ist not allowed to be used

< 0.05 mg/kg FS is under the applied test conditions equivalent to < 0.01 mg/dm².

(****) Regulation (EC) No. 1895/2005 (valid for containers < 10.000 l)
(*) Regulation (EC) Nr. 10/2011 and BedarfsgegenständeVO
FS = Food simulant

5. Expert assessment

Food contact materials within the meaning of § 2 (6) of the German Food and Feed Act (Lebensmittel- und Futtermittelgesetzbuch; LFGB) are materials, which are intended to come into contact with food or have an influence on food. Food contact materials are thus not only materials which come into direct contact with foodstuffs, but also materials, with have an effect on foodstuffs without direct contact. In this case the transfer of volatile substances occurs on the air path.

The presented epoxy based floor surface coating consisting of INDUFLOOR-IB 1270 (base coat) and INDUFLOOR-IB 3357 (final coating) has to be regarded as a food contact material in the meaning of § 2 LFGB, because it can release substances into indoor air which can go over to foodstuffs on the air path. An intentional direct contact of the coating to foodstuffs falls not in the definition-appropriate and foreseeable conditions of use and can be exluded.

A coating intended to be used in food-contact areas hat to comply with § 31 LFGB saying that it may not transfer their constituents to foodstuffs, except in quantities which are harmless to health and do not bring about a deterioration in the organoleptic characteristics. This is equivalent to the requirements layed down in Article 3 of Regulation (EC) No. 1935/2004.

According to our experimental testing we are of the opinion that the surface coating system consisting of INDUFLOOR-IB 1270 (base coat) and INDUFLOOR-IB 3357 (final coating) is meeting the requirements of the German Food and Feed Act (LFGB) and the Regulation (EC) No. 1935/2004 with the following restrictions:

1. The coating must not come into direct contact with food.
2. The coating is only suitable for its application in rooms with regular air-reversal.
3. The coating of the surfaces may occur only in breaks and not in the presence of foodstuffs.
4. Following application of the coating, good ventilation must be ensured and an adequate waiting period has to be maintained.

The restrictions of use listed under points 1. to 4. have to be specified on the labelling or in the directions of use to preclude an unintentional improper use.

The released total concentration of volatile organic compounds (TVOC) determined after a testing period of 3 days was 7270 µg/m^3 and 225 µg/dm^2 Out of the detected VOC benzyl alcohol and benzaldehyde were detected as main components. All other VOC were either not detectable or just released in low concentrations.

As the experimental testing was carried out in a closed chamber without air reversal, it can in our opinion be assumed, that in rooms with normal air reversal no food-hygienic critical concentrations of volatile organic compounds will occur.

Under the test conditions (2 h, 40 °C) the overall migration using distilled water, sunflower oil, and iso-octane was found to range below the limit value of 10 mg/dm^2. Using 95 % ethanol as food simulant the limit value was with 41.8 mg/dm^2 exceeded clearly.

For a direct contact with food does falls not in the definition-appropriate and foreseeable conditions of use, this results is of minor importance. However the results show that components of the coating are extracted by an alcoholic medium.

A intentional direct contact with foodstuffs has to be avoided, because the coating system was not tested for this application.

Under the used test conditions (indirect contact for 2 h) a sensory affection of the test foodstuffs was not or only marginally observed. As the testing was carried out in a closed test chamber without air reversal, it can be assumed, that in rooms with normal air reversal a deterioration in the organoleptic characteristics of foodstuffs is not anticipated.

A migration of bisphenol A, bisphenol F, BADGE-, and BFDGE derivatives was under the applied test conditions not detectable. The limit values layed down for bisphenol A and the BADGE derivates was adhered to.

Information

The validity of our test report assumes a coexisting quality of the test material and product composition and processing.

Our expert assessment is made on the premise that all base materials used in production have been declared in their entirety and that no further materials have been added to the product.

Under current statutory regulations, our assessment for the test sample is valid for five years from the date of product issue. However, validity becomes void should the formula or production process of the test sample be changed.

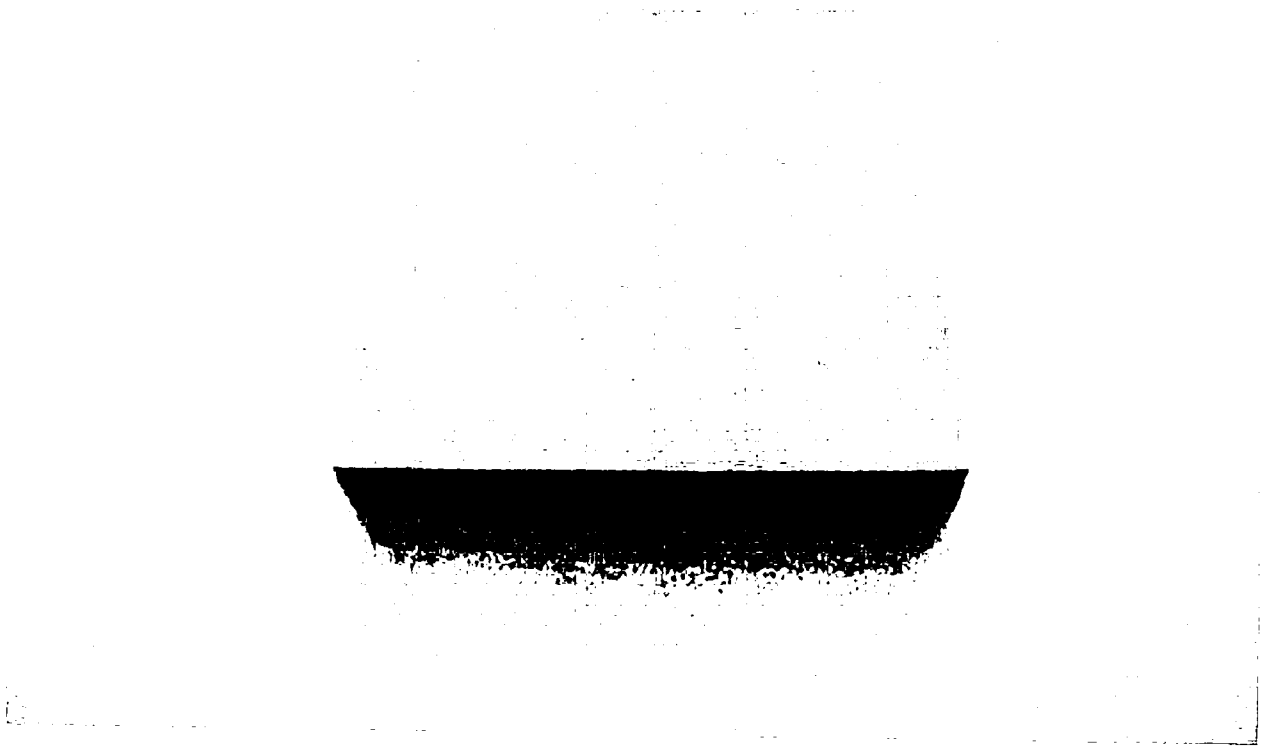
The certificate shall not be reproduced except in full, without written approval of the Institute.

For the Director

(Dr. Jutta Begerow)
Head of Department

Annex:

Figure 1:



Gewährleistung/Schadenersatz wegen Schlechterfüllung

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