Intertek Consumer Goods GmbH · Würzburger Straße 152 · 90766 Fürth · Germany

Lindén International AB
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Attn: Peter Cindric

Fürth, January 24th, 2014

Test report No. FUFDCP2013-2472

General note: Copying this test report partially is permitted only in agreement with the contracted lab. The tests results refer only to the tested item. This report consists of 6 page(s). Test methods marked with * are not listed in our accreditation document.

Sample description: **Silicone spatula with wire handle**
Colour of product: White
Material Description: Silicone
Batch no.: 20131029
Art. no. 2841200-03

Sample Entry: 04.11.2013 // Date of order: 09.01.2014
Testing period: 09.01. – 24.01.2014
Sampling through client
Head of analytical department: Sandra Havlicek
Testing order: on clients request

Following subsamples were tested:

1	Silicone part
2	Metal part

Test results:

1. Sensory testing

Method: § 64 LFGB L 00.90-6
Testing conditions: water $_{demin}$ (2h / 100°C)

Subsample	1	2
Appearance	Clear, colourless	Clear, colourless
Odour	Slight deviations (slightly sweet odour of silicone)	Very slight deviations
Taste	Slight deviations (slightly sweet taste of silicone)	Very slight deviations
Status	**passed**	**passed**

2. Physical and chemical testing

2.1. Migration of metals

Test method DIN EN ISO 13130-1 /DIN EN ISO 17294-2* + DIN EN ISO 11885 + DIN EN ISO 17852*
n.d. = not determinable
Testing conditions: 0.5% Citric acid (2h/ 100°C)
Filling volume: 240ml Envelope Volume: 625 cm³

Results after the 1st and 2nd cycle of migration in µg/kg (subsample 2):

Parameter	Result 1. + 2.Migration µg/kg	Limit of quantification	*SRL in µg/kg#*
Silver	n.d.	40	560
Aluminium	n.d.	2000	35000
Cobalt	n.d.	10	140
Chromium	n.d.	100	1750
Copper	n.d.	2000	28000
Iron	n.d.	2000	280000
Magnesium	n.d.	100	---
Manganese	n.d.	200	12600
Molybdenum	n.d.	40	840
Nickel	n.d.	40	980
Tin	n.d.	200	700000
Titanium	n.d.	100	---
Vanadium	n.d.	10	70
Zinc	n.d.	2000	35000

Arsenic	n.d.	2	14
Barium	n.d.	200	8400
Beryllium	n.d.	10	70
Cadmium	n.d.	2	35
Mercury	n.d.	2	21
Lithium	n.d.	20	336
Lead	n.d.	10	70
Antimony	n.d.	20	280
Thallium	n.d.	0.1	0.7

Results after the 3rd cycle of migration in µg/kg (subsample 2):

Parameter	Result 3.Migration µg/kg	Limit of quantification	*SRL in µg/kg*#
Silver	n.d.	20	80
Aluminium	n.d.	1000	5000
Cobalt	n.d.	5	20
Chromium	n.d.	50	250
Copper	n.d.	1000	4000
Iron	n.d.	1000	40000
Magnesium	n.d.	50	---
Manganese	n.d.	100	1800
Molybdenum	n.d.	20	120
Nickel	n.d.	20	140
Tin	n.d.	100	100000
Titanium	n.d.	50	---
Vanadium	n.d.	5	10
Zinc	n.d.	1000	5000

Arsenic	n.d.	1	2
Barium	n.d.	100	1200
Beryllium	n.d.	5	10
Cadmium	n.d.	1	5
Mercury	n.d.	1	3
Lithium	n.d.	10	48
Lead	n.d.	5	10
Antimony	n.d.	10	40
Thallium	n.d.	0.1	0.1

#Requirements acc. to « Technical Guide on Metals and alloys used in food contact materials, CoE(2013) »

Status: passed

2.2. Content of tin organic compounds in µg/kg

Method: DIN EN ISO 17353 mod. Limit of quantification: 10 µg/kg
n.d. = not determinable

	Compound	1
1	Monobutyltin (MBT)	n.d.
2	Dibutyltin (DBT)	n.d.
3	Tributyltin (TBT)	n.d.
4	Tetrabutyltin (TeBT)	n.d.
5	Mono-octyltin (MOT)	n.d.
6	Di-octyltin (DOT)	n.d.
7	Tri-cyclohexyltin (TCHT)	n.d.
8	Monomethyltin	n.d.
9	Dimethyltin	n.d.
10	Didodecyltin	n.d.

Status: passed

2.3. Total content of heavy metals

Method: RFA*

Sample	1
Cadmium mg/kg	< 30
Lead mg/kg	< 20
Status	**passed**

Cadmium: Requirement max. 100 mg/kg
Lead: Requirement max. 100 mg/kg

2.4. Peroxides

Method: BfR-Recommendations „Kunststoffe im Lebensmittelverkehr“, B II XV 10*

Sample	1
Peroxides	no positive reaction
Status:	**passed**

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USt-IdNr. DE169317871

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2.5. Polycyclic aromatic hydrocarbons acc. to US-EPA in mg/kg

Test method: ZEK 01.4-08
Limit of quantification: 0.10 mg/kg n.d. = not determinable
Category: 1

Result in mg/kg (Subsample 1)

1	Naphthalene	n.d.	10	Chrysene	n.d.
2	Acenaphthylene	n.d.	11	Benzo(b)fluoranthene +	n.d.
3	Acenaphthen	n.d.	12	Benzo(j)fluoranthene	n.d.
4	Fluorene	n.d.	13	Benzo(k)fluoranthene	n.d.
5	Phenanthrene	n.d.	14	Benzo(a)pyrene	n.d.
6	Anthracene	n.d.	15	Indeno(1,2,3-cd)pyrene	n.d.
7	Fluoranthene	n.d.	16	Dibenzo(a,h)anthracene	n.d.
8	Pyrene	n.d.	17	Benzo(ghi)perylene	n.d.
9	Benzo(a)anthracene	n.d.	18	Benzo(e)pyrene	n.d.
				sum	----

Status: passed

Assessment of the results acc. to ZEK 01.4-08:

Parameter	category 1	category 2	category 3
	Materials intended to be placed in the mouth by children or materials for toys for children < 36 months of age	Materials which do not apply to category 1 and which are intended for a skin contact of more than 30 sec. (prolonged skin contact)	Materials which do not apply in category 1 or 2 and which are intended for a skin contact up to 30 sec. (short-term skin contact)
Benzo[a]pyrene	**not detectable (< 0.2)[1)]**	**1**	**20**
sum 18 PAH (EPA) mg/kg	**not detectable (< 0.2)[1)]**	**10**	**200**

[1)] if the test results exceed the limits of category 1, but the results comply with the limits of category 2, the suitability for contact with the oral mucosa may be proven by an additional specific migration test of the PAH containing components according to the requirements of DIN EN 1186ff and § 64 LFGB 80.30. The migration results are to be evaluated according to criteria for food contact.

2.6. Extractable Components

Method: BfR-Recommendations „Kunststoffe im Lebensmittelverkehr“, B II XV 9*
Limit of quantification: 0.05% Inaccuracy of measurement: 0.01%

a) Test conditions: water demin (5h / 100°C reflux)

Sample	**1**
Extractables %	0.09
Status	**passed**

Requirement: max. 0.5%

b) Test conditions: Acetic acid 3% (5h / 100°C reflux)

Sample	**1**
Extractables %	< 0.05
Status	**passed**

Requirement: max. 0.5%

c) Test conditions: Ethanol 10% (5h / 100°C reflux)

Sample	**1**
Extractables %	0.05
Status	**passed**

Requirement: max. 0.5%

2.7. Volatile Organic Compounds (VOC)

Method: BfR-Recommendations „Kunststoffe im Lebensmittelverkehr“,B II XV 14*
Testing conditions: 2h / 100°C

Sample	
VOC (%)	0.5
Status	**passed**

Requirement max. 0.5%

SUMMARY:
Regarding the tested parameters the present sample fulfills the requirements of Regulation (EC) 1935/2004 and LFGB.

C. Dorsch

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