



Test Report

No. NGBHG1302565801

Date: 13 Jan 2014

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The following sample(s) was/were submitted and identified on behalf of the clients as : PAPER CUP

SGS Job No. : NBHG201307414 - NB

Item No. : HH-901

Style No. : 9OZ PAPER CUP

Date of Sample Received : 31 Dec 2013

Testing Period : 31 Dec 2013 - 13 Jan 2014

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Result Summary :

Test Requested	Conclusion
Overall migration	PASS
Sensorial examination odour and taste test	PASS
Specific Migration of Heavy Metal	PASS
Lead(Pb) and Cadmium(Cd)	PASS
Polynuclear aromatic hydrocarbons (PAHs)	PASS

Signed for and on behalf of  
SGS-CSTC Ltd.

Iris Xiao  
Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description	Material (claimed by the client)
SN1	NGB13-025658.001	Paper cup with transparent PE coating	PE COATING

Overall migration

Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments, European Commission Regulation (EU) No 10/2011 with amendments and BfR recommendations.  
For material: Plastic -Overall migration

Test Method : With reference to EN1186-1:2002 for selection of conditions and test method;  
EN1186-9:2002 aqueous food simulants by article filling method.

<u>Simulant Used</u>	<u>Time</u>	<u>Temperature</u>	<u>Max. Permissible Limit</u>	<u>Result of 001 Overall Migration</u>
3% Acetic Acid (W/V) Aqueous Solution	2.0hr(s)	40°C	10mg/dm <sup>2</sup>	<3.0mg/dm <sup>2</sup>
50% Ethanol (V/V) Aqueous Solution	2.0hr(s)	40°C	10mg/dm <sup>2</sup>	<3.0mg/dm <sup>2</sup>

Notes :

- (1) Analytical tolerance of aqueous simulants is 1 mg/dm<sup>2</sup>
- (2) Test condition & simulant were specified by client

Sensorial examination odour and taste test

Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments.  
Sensorial examination odour and taste test

Test Method : With reference to DIN 10955:2004.  
Test media: Distilled water;  
No.of panelist: 6

<u>Test Item(s)</u>	<u>Limit</u>	<u>001</u>
Temperature(°C)	-	40
Test time(hr)	-	2
Sensorial examination odour (Point scale)	2.5	0



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Test Item(s)	Limit	001
Sensorial examination taste (Point scale)	2.5	0

Notes :

- Scale evaluation:
- 0 – no perceptible difference
  - 1 – just perceptible difference
  - 2 – slight difference
  - 3 – marked difference
  - 4 – strong difference

**Specific Migration of Heavy Metal**

Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments, European Commission Regulation (EU) No 10/2011 with amendments and BfR recommendations.  
For material: Plastic - Specific migration of heavy metal

Test Method : Sample preparation with reference to EN13130-1:2004; analysis was performed by ICP-OES.

**Sample 001**

Simulant Used : 3% Acetic Acid (W/V) Aqueous Solution  
Test Condition : 40 °C 2.0 hr(s)

Test Item(s)	Max. Permissible Limit	Unit	MDL	Test result
Barium	1	mg/kg	0.25	ND
Cobalt	0.05	mg/kg	0.01	ND
Copper	5	mg/kg	0.25	ND
Iron	48	mg/kg	0.25	ND
Lithium	0.6	mg/kg	0.5	ND
Manganese	0.6	mg/kg	0.25	ND
Zinc	25	mg/kg	0.5	ND

Notes :

- (1) Test condition & simulant were specified by client.

**Lead(Pb) and Cadmium(Cd)**



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Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments, European Commission Regulation (EU) No 10/2011 with amendments and BfR recommendations.  
For material: Plastic - Lead(Pb) and cadmium (Cd)

Test Method : Total Lead and Cadmium: Acidic digestion, analysis was performed by ICP-OES.

Test Item(s)	Limit	Unit	MDL	001
Total Lead	Absent	mg/kg	2	ND
Total Cadmium	Absent	mg/kg	2	ND

### Polynuclear aromatic hydrocarbons (PAHs)

Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments, European Commission Regulation (EU) No 10/2011 with amendments and BfR recommendations.  
For material: Plastic – Polynuclear aromatic hydrocarbons(PAHs)

Test Method : With reference to ZEK 01.4-08, analysis was performed by GC-MS.

Test Item(s)	Limit	Unit	MDL	001
Sum of 18 PAH	Absent	mg/kg	-	ND
Naphthalene(NAP)	Absent	mg/kg	0.2	ND
Acenaphthylene(ANY)	Absent	mg/kg	0.2	ND
Acenaphthene(ANA)	Absent	mg/kg	0.2	ND
Fluorene(FLU)	Absent	mg/kg	0.2	ND
Phenanthrene(PHE)	Absent	mg/kg	0.2	ND
Anthracene(ANT)	Absent	mg/kg	0.2	ND
Fluoranthene(FLT)	Absent	mg/kg	0.2	ND
Pyrene(PYR)	Absent	mg/kg	0.2	ND
Benzo(a)anthracene(BaA)	Absent	mg/kg	0.2	ND
Chrysene(CHR)	Absent	mg/kg	0.2	ND
Benzo(b)fluoranthene(BbF) and Benzo(j)fluoranthene(BjF)	Absent	mg/kg	0.2	ND
Benzo(k)fluoranthene(BkF)	Absent	mg/kg	0.2	ND
Benzo(a)pyrene(BaP)	Absent	mg/kg	0.2	ND
Benzo(e)pyrene(BeP)	Absent	mg/kg	0.2	ND
Indeno(1,2,3-c,d)pyrene(IPY)	Absent	mg/kg	0.2	ND
Dibenzo(a,h)anthracene(DBA)	Absent	mg/kg	0.2	ND



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Test Item(s)	Limit	Unit	MDL	001
Benzo(g,h,i)perylene(BPE)	Absent	mg/kg	0.2	ND

ZEK 01.4-08: Restraining maximum values for products

Parameter	Category 1	Category 2	Category 3
	Material indented to be put in the mouth or material for toys with normal skin contact for children aged < 36 months	Materials those are not included in Category 1, with predictable contact with the skin longer than 30 s. (long-term skin contact).	Materials those are not included in Category 1 or 2, with predictable skin contact up to 30 s (short-term skin contact).
Benzo(a)pyrene (mg/kg)	<0.2**	1	20
Sum of 18 PAH (mg/kg)*	<0.2**	10	200

Notes:

- \* = Only PAH substances >0.2 mg/kg are taken into account while calculating the sum of PAHs
- \*\* = In case that the maximum values exceed the limits of category 1, but are within the limits of category 2, one may confirm the suitability of the tested material which is indented to be put in the mouth by additional specific migration tests of PAH components based on DIN EN 1186ff/EN13130 and §64 LFGB 80.30-1. The conclusion of the migration test results must be made based on food law criteria.

Remark:

- (1) mg/dm<sup>2</sup> = milligram per square decimeter
- (2) mg/kg = milligram per kilogram
- (3) °C = degree Celsius
- (4) hr = hour
- (5) < = less than
- (6) The migration results are based on the first migration
- (6) ND = Not detected(< MDL)
- (7) MDL = Method Detection Limit
- (8) The migration results are based on the first migration



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