

TEST REPORT

Reference No. : TRHZ1203504

Date : Apr. 27, 2012

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Client :

Address :

The following merchandise was (were) submitted and identified by the client as:

Name of Product : TRAVEL MUG
Test Model : FY-004(Customer NO. 531100)
Model May Cover : FY-004F(Customer NO. 531200), FY-014(Customer NO. 531000)
Main Material : PP, PS, SILICON,TPR
Sample Received : Mar. 15, 2012
Test Period : Mar. 23, 2012 – Apr. 01, 2012
Test Request : Please refer to next page(s).
Test Method : Please refer to next page(s).
Conclusion : When tested as specified, the test results of the submitted samples **comply with**
the permissible safety limit as specified in LFGB, Section 30 and 31.

THE RESULT(S) WAS COPIED FROM THE REPORT WHICH NO. WAS TRHZ1203502.

Issued by:



TÜV NORD (Hang Zhou)
Green Product Service Centre Manager

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TEST RESULTS**:

1) Sensorial examination odour and taste test

Test method: Robinson's test with reference to DIN 10955:1983 (2004)

Test condition: 70°C 2 hours

Test media: Distilled water

No. of panelist: 6

Test Items	Result**	Maximum Permissible Limit
Sensorial examination odour (Point scale)	0	2.5
Sensorial examination taste (Point scale)	0	2.5

Scale evaluation:

- 0: No perceptible odour
- 1: Odour just perceptible (still difficult to define)
- 2: Moderate odour
- 3: Moderately strong odour
- 4: Strong odour

2) Overall migration test

Test method: With reference to EN1186-1:2002 for selection of conditions and test methods;

EN1186-3:2002 aqueous food simulants by total immersion method;

EN1186-2:2002 olive oil by total immersion method;

Simulant Used	Test Condition	Overall Migration** (mg/dm ²)			Maximum Permissible Limit (mg/dm ²)
		1#	2#	3#	
Deionized Water	70°C 2 hours	<3.0	<3.0	<3.0	10
3% Acetic Acid (W/V) Aqueous Solution	70°C 2 hours	<3.0	5.6	3.8	10
50% Ethanol (V/V) Aqueous Solution	70°C 2 hours	<3.0	3.5	3.2	10
95% Ethanol (V/V) Aqueous Solution	70°C 2 hours	<3.0	8.2*	<3.0	10
Isooctane	70°C 2 hours	<3.0	8.0*	<3.0	10

Remark: *Reduction factor of 5 was applied to 95% Ethanol (V/V) Aqueous Solution and Isooctane.

***** To be continued *****

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3) Chromium, Vanadium and Zirconium content

Test method: Acid digestion, followed by analysis using Inductively Coupled Argon Plasma Spectrometer.

Test Items	Result** (mg/kg)		Maximum Permissible Limit (mg/kg)
	1#	3#	
Total Chromium	<5	<5	10
Total Vanadium	<20	<20	20
Total Zirconium	<20	<20	100

4) Soluble heavy metals

Test method: Sample preparation in 3% Acetic acid at 70°C for 2 hours, followed by analysis using Inductively Coupled Argon Plasma Spectrometer.

Test Item	Result** (mg/kg)		Maximum Permissible Limit (mg/kg)
	1#	3#	
Soluble Barium	<0.01	<0.01	1
Soluble Cobalt	<0.01	<0.01	0.05
Soluble Copper	<0.01	<0.01	5
Soluble Iron	<0.01	0.05	48
Soluble Lithium	0.03	0.03	0.6
Soluble Manganese	<0.01	<0.01	0.6
Soluble Zinc	<0.01	0.05	25

5) Specific migration test of aromatic amine

Test method: Sample preparation with reference to EN 1186-1, -3, -9:2002, followed by analysis with reference to DIN 55610:1986.

Test Items	Result** (mg/L)	Maximum Permissible Limit (mg/L)
	2#	
Specific migration of aromatic amine in 3% acetic acid at 70°C, 2hours	<0.02	0.02

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6) Nitrosamine and Nitrosatable test

Test method: Sample preparation with reference to EN 12868:1999, followed by analysis using GC-NPD.

Test Items	Result** (mg/kg)	Maximum Permissible Limit (mg/kg)
	2#	
Nitrosamines	N.D.	0.01
Nitrosatable substances	N.D.	0.1

- Note:** 1. Nitrosamines tested: N-nitrosodimethylamine (NDMA), N-nitrosodiethylamine (NDEA), N-nitrosodipropylamine (NDPA), N-nitrosodibutylamine (NDBA), N-nitrosopiperidine (NPIP), N-nitrosopyrrolidine (NPYR), N-nitrosomorpholine (NMOR), N-nitrosodibenzylamine (NDBZA), N-nitroso-N-methyl-N-phenylamine (NMPHA), N-nitroso-N-phenylamine (NEPHA) and N-nitrosodiisobutylamine (NDiBA)
2. Detection Limit = 0.01 mg/kg for N-nitrosamine; 0.1 mg/kg for nitrosatable substance arisen from N-nitrosamine.
3. The specified maximum permissible limits are quoted from 93/11/EC Directive.

7) Extractable formaldehyde

Test method: Sample preparation with reference to EN 1186-1, -9:2002, followed by analysis using UV-vis Spectrophotometer.

Test Items	Result** (mg/kg)	Maximum Permissible Limit (mg/kg)
	2#	
Extractable formaldehyde	<0.1	3

8) Organotin content (Monobutyltin, Dibutyltin, Tributyltin, Tetrabutyltin, Triphenyltin, Mono-octyltin, Di-octyltin)

Test method: Solvent extraction followed by analysis using Gas Chromatography Spectrometer

Test Items	Result** (mg/kg)		Maximum Permissible Limit (mg/kg)
	2#	4#	
a) Monobutyl tin (MBT)	Absent	Absent	Absent
b) Dibutyl tin (DBT)	Absent	Absent	Absent
c) Tetrabutyl (TBT)	Absent	Absent	Absent
d) Tetrabutyltin (TeBT)	Absent	Absent	Absent
e) Triphenyl tin (TPT)	Absent	Absent	Absent
f) Mono-octyl tin (MOT)	Absent	Absent	Absent
g) Dioctyl tin (DOT)	Absent	Absent	Absent

Note: Detection Limit is 1 mg/kg

***** To be continued *****

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9) Extractable component

Test method: With reference to 61st Communication on testing of plastics in Bundesgesundheitsbl 46 (2003) 362.

Simulant Used	Extractable Components**(%w/w)	Maximum Permissible Limit (%w/w)
	4#	
Deionized Water	0.11	0.5
3% Acetic Acid (W/V) Aqueous Solution	<0.1	0.5
10% Ethanol (V/V) Aqueous Solution	<0.1	0.5

10) Volatile organic matter

Test method: With reference to LFGB BfR Part B Part II Section XV, May 2003 and LFGB section 35 B80.30 1(EG).

Test condition: 200°C, 4 hours

Test Items	Result **(% w/w)	Maximum Permissible Limit (% w/w)
	4#	
Volatile organic matter (VOM)	0.4	0.5

11) Peroxide Value

Test method: With reference to European pharmacopoeia, 2005 Appendix X F. Peroxide Value method A

Test Items	Result**	Maximum Permissible Limit
	4#	
Peroxide Value	Absent	Absent

***** To be continued *****

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12) Pb, Cd

Test Method: With reference to EPA3052-1996& EPA 6010C-2007, Analysis was performed by ICP-AES.

Test Item	Unit	MDL	Test Results**			
			1#	2#	3#	4#
Pb	mg/kg	10	N.D.	N.D.	N.D.	N.D.
Cd	mg/kg	10	N.D.	N.D.	N.D.	N.D.

Note : 1) MDL = Method Detection Limit.
2) N.D. = Not detected, less than MDL.

Remark: **THE RESULTS WERE COPIED FROM THE REPORT WHICH NO. WAS TRHZ1203502.

Test Part Description: 1# Black PP plastic inside
2# Black TPR
3# Black PP plastic lid
4# Translucent silicon ring

***** To be continued *****

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PRODUCT PHOTOS



FY-110C (Customer NO. 539920)



FY-509 (Customer NO. 539955)



FY-004F (Customer NO. 531200)



FY-004 (Customer NO. 531100)



FY-014 (Customer NO. 531000)

***** To be continued *****

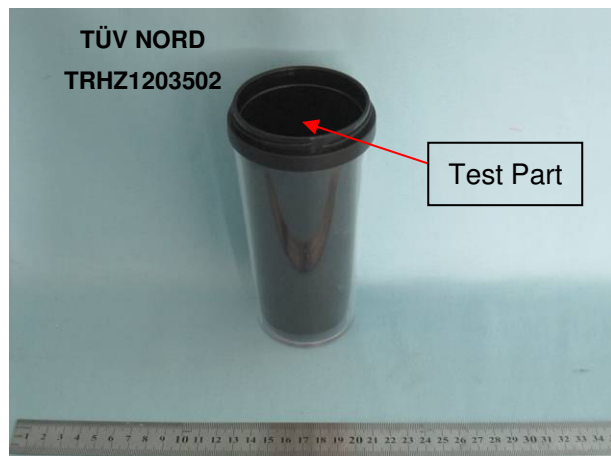
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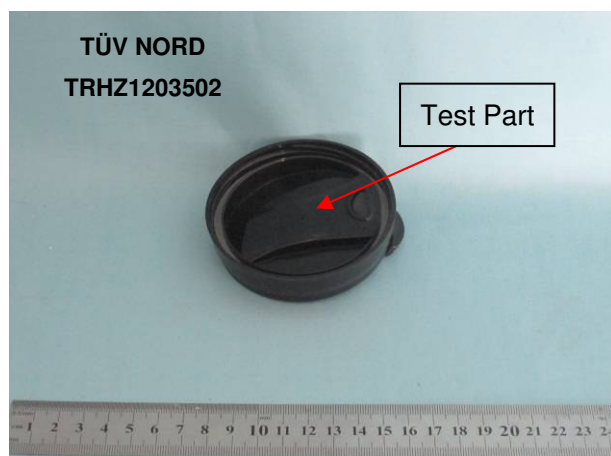
SAMPLE PHOTOS



1#



2#



3#



4#

***** END OF REPORT *****