

Applicant : SHANDONG WOKE ECO-TECH CO.,LTD
Address : Chengbei Industrial Park,Binzhou City, Shandong Province, China
Client No. : 0049A972
Manufacturer : SHANDONG WOKE ECO-TECH CO.,LTD
Address : Chengbei Industrial Park,Binzhou City, Shandong Province, China

Report on the submitted sample said to be

Sample Name : 160mm Knife、 Fork、 Spoon
Model No. : --
Sample Model : --
Sample Received Date : May. 21,2021
Sample Tested Date : May. 21-23, 2021
Material : 30% bamboo pulp + 70% sugarcane bagasse pulp;
Test Requested : For compliance with the German Food, Articles of Daily Use and Feed Code of September 1,2005(LFGB)Section 30 & 31,Regulation(EC) 1935/2004,Regulation(EU) No.10/2011 and its amending regulation and BfR recommendation:
1. Sensorial examination odour and taste test
2. Migration of colorant in water, 3% acetic acid, saliva
3. Specific migration for Formaldehyde
4. Specific migration for Bisphenol A migration
5. Extractable heavy metals (Lead, Cadmium)
6. Azo Dyes Content
7. Pentachlorophenol (PCP) content
8. Specific migration of phthalate(DEHP, DBP and DIBP)
9. Specific migration of Primary Aromatic Amines
Test Result(s) : Pass. (Please refer to next page)



Company No.07113834

Signed for and on behalf of
Beide (Shenzhen) Product Service Limited

Reported by

Signature / Shen xiao

Checked by

Signature / Austin zhong

Approved by

Signature / Martin wang

Signature / Martin wang

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Test Result(s):

Description of Specimen : 160mm Knife, Fork, Spoon

1. Sensorial examination odour and taste test

Test method: With reference to Robinson's test with reference to DIN10955:2004

Test Items	Result	Maximum Permissible limit
Sensorial examination odour (Point scale)	1.0	2.5
Sensorial examination taste (Point scale)	1.0	2.5

Note:

0=no discernible deviation

1=barely discernible deviation

2=weak deviation

3=clear deviation

4=strong deviation

2. Migration of colorant in water, 3% acetic acid, saliva

Test Method: To refer to LFGB section 30 (EN 646)

Test Items	Test condition	Result	Limit
Migration of colorant in water	90°C, 0.5h	No color release	Grade 5(No color release)
Migration of colorant in 3% acetic acid	120°C, 0.5h	No color release	Grade 5(No color release)
Migration of colorant in saliva	23°C, 10 min	No color release	Grade 5(No color release)

3. Specific migration for Formaldehyde

Test Method: With reference to BS EN647:1994&BS EN1541:2001, the analysis was performed by UV-VIS.

Test Items	Test Condition	Unit	Result	Limit
Specific migration for Formaldehyde	40°C, 24h 3% Acetic Acid	mg/dm ²	<0.2	1

Note: 1. mg/dm² = milligram per square decimeter

2. < = less than

4. Specific migration for Bisphenol A migration

Test Method: To refer to EN 13130-1:2004, the analysis was performed by LC-MS.

Analyte	Test Condition	Result(mg/kg)	MDL(mg/kg)	Limit(mg/kg)
Bisphenol A (BPA) migration	40°C, 24h 3% Acetic Acid	N.D.	0.01	0.05

Note:

1. mg/kg = milligram per kilogram= ppm.

2. MDL = Method Detection Limit

3. N.D. = Not Detected (< MDL)

5. Extractable heavy metals (Lead, Cadmium)

Test Method: With reference to BS EN 647:1994.

Test Item	Test Condition	Unit	Result	Limit
Extractable Lead	40°C, 24h 3% Acetic Acid	mg/kg	<0.01	0.01
Extractable Cadmium		mg/kg	<0.005	0.005

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Note:

1. mg/kg = milligram per kilogram= ppm.
2. < = less than

6. AZO Dyes content

Test Method: With reference to LFGB §64 BVL B 82.02-2:2013, analysis was performed by Gas Chromatograph-Mass Spectrometer (GC-MS).

Test Item	Unit	CAS No.	Results	MDL	Limit
1) 4-Aminobiphenyl	mg/kg	92-67-1	N.D.	5	Not Detected
2) Benzidine	mg/kg	92-87-5	N.D.	5	Not Detected
3) 4-Chloro-o-toluidine	mg/kg	95-69-2	N.D.	5	Not Detected
4) 2-Naphthylamine	mg/kg	91-59-8	N.D.	5	Not Detected
5) o-Aminoazotoluene	mg/kg	97-56-3	N.D.	5	Not Detected
6) p-Chloroaniline	mg/kg	106-47-8	N.D.	5	Not Detected
7) 2,4-Diaminoanisole	mg/kg	615-05-4	N.D.	5	Not Detected
8) 4,4'-Diaminodiphenylmethane	mg/kg	101-77-9	N.D.	5	Not Detected
9) 3,3'-Dichlorobenzidine	mg/kg	91-94-1	N.D.	5	Not Detected
10) 3,3'-Dimethoxybenzidine	mg/kg	119-90-4	N.D.	5	Not Detected
11) 3,3'-Dimethylbenzidine	mg/kg	119-93-7	N.D.	5	Not Detected
12) 3,3'-Dimethyl-4,4'-diaminodiphenylmethane	mg/kg	838-88-0	N.D.	5	Not Detected
13) p-Cresidine	mg/kg	120-71-8	N.D.	5	Not Detected
14) 4,4'-Methylene-bis-(2-Chloroaniline)	mg/kg	101-14-4	N.D.	5	Not Detected
15) 4,4'-Oxydianiline	mg/kg	101-80-4	N.D.	5	Not Detected
16) 4,4'-Thiodianiline	mg/kg	139-65-1	N.D.	5	Not Detected
17) o-Toluidine	mg/kg	95-53-4	N.D.	5	Not Detected
18) 2,4-Toluylenediamine	mg/kg	95-80-7	N.D.	5	Not Detected
19) 2,4,5-Trimethylaniline	mg/kg	137-17-7	N.D.	5	Not Detected
20) o-Anisidine	mg/kg	90-04-0	N.D.	5	Not Detected
21) 2-Amino-4-nitrotoluene	mg/kg	99-55-8	N.D.	5	Not Detected
22) 4-Aminoazobenzene	mg/kg	60-09-3	N.D.	5	Not Detected
23) 2,4-xylidine	mg/kg	95-68-1	N.D.	5	Not Detected
24) 2,6-xylidine	mg/kg	87-62-7	N.D.	5	Not Detected

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Note:

1. mg/kg = milligram per kilogram= ppm.
2. MDL = Method Detection Limit.
3. N.D. = Not Detected (< MDL).
4. Azo Dyes that are able to form 4-aminoazobenzene, generate under the condition of this method aniline and 1, 4-phenylenediamine, therefore, the method of LFGB §64 BVL B 82.02-9:2008 was employed to verify the 4-aminoazobenzene.

7. Pentachlorophenol (PCP) Content

Test Method: With reference to LFGB§64 BVL B 82.02.8-2001, analysis was performed by Gas Chromatograph-Mass Spectrometer (GC-MS).

Analyte	Unit	Result	MDL	Limit
Pentachlorophenol(PCP)	mg/kg	N.D.	0.05	0.15

Note:

1. mg/kg = milligram per kilogram = ppm
2. MDL = Method Detection Limit.
3. N.D. = Not Detected (< MDL).

8. Specific migration of phthalate(DEHP, DBP and DIBP)

Test Method: To refer to the EN 13130-1: 2004, the analysis was performed by GC-MS.

Analyte	Result (mg/kg)	Maximum Permissible limit(mg/kg)
Test condition	40°C, 24h 95% ethanol	
Bis (2-ethylhexyl) phthalate (DEHP)	<0.1	1.5
Dibutyl phthalate (DBP)	<0.1	0.3
Di-isobutyl phthalate (DIBP)	<0.1	0.3
Sum of(DBP+DIBP)	<0.1	0.3

Note: mg/kg = milligram per kilogram = ppm < = less than

9. Specific migration for Primary Aromatic Amines

Test Method: To refer to the EN 13130-1: 2004, the analysis was performed by LC-MS.

Analyte	Test condition	Unit	Result	Limit
Primary Aromatic Amines migration	40°C, 24h 3% Acetic Acid	mg/kg	<0.01	0.01

Note: 1. mg/kg = milligram per kilogram = ppm

2. < = less than

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Primary Aromatic Amines List:

No.	Name	No.	Name
1	4-aminodiphenyl	14	p-cresidine
2	Benzidine	15	4,4'-methylene-bis-(2-chloroaniline)
3	4-chloro-o-toluidine	16	4,4'-oxydianiline
4	2-naphthylamine	17	4,4'-thiodianiline
5	o-aminoazotoluene	18	o-toluidine
6	2-amino-4-nitrotoluene	19	2,4-diaminotoluene
7	p-chloroaniline	20	2,4,5-trimethylaniline
8	2,4-diaminoanisole	21	2-methoxyaniline
9	4,4'-diaminodiphenylmethane	22	4-aminoazobenzene
10	3,3'-dichlorobenzidine	23	2,4-Xylidine
11	3,3'-dimethoxybenzidine 24	24	2,6-Xylidine
12	3,3'-dimethylbenzidine	25	p-Phenylenediamine
13	3,3'-dimethyl-4,4'-diaminodiphenylmethane	26	Aniline

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Photo of the sample



*** End of report ***

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