

TEST REPORT

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Applicant : ZHEJIANG LINGRONG CRAFTS CO., LTD.
Address : NO.20 HUAFENG ROAD, HUANFENG VILLAGE, ANHUA TOWN,
ZHUJI CITY, ZHEJIANG PROVINCE, CHINA

Below information submitted by the applicant:

Product Name : Paper plate
Model : 7 inches (18cm)
Model may cover : 5 inches (12.7cm), 6 inches (15.2cm) , 8 inches (20cm),
9 inches (23cm), 10.5 inches (26.6cm), 11 inches (28cm) , 12 inches
(30.5 cm),
Reference info. : /
Manufacturer info. : /
Supplier info. : /
Buyer info. : /
Country of Destination : /
Country of Origin : China



Sample Received : 11.27, 2024
Test Period : 11.27, 2024 - 12.03, 2024
Test Requirement : Refer to next pages
Test Method : Refer to next pages
Test Result : Refer to next pages
Test Conclusion : Refer to next pages

Signed for and on behalf of
Jordan Wang, General Manager
BU Chemical Compliance
TUV THURINGEN (SHANGHAI) CO., LTD.
Location: Shanghai

TÜV THÜRINGEN CHINA

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RESULT SUMMARY

Food contact materials in accordance with General Requirement (Article 3) in EU Regulation No. 1935/2004, German Food, Articles of Daily Use and Feed Code of September 1 2005 (LFGB) Section 30 and 31, BfR recommendation, selected test items as below:

Test Items	Verdict
1. Special requirements for paper and paper products: <ul style="list-style-type: none"> - Organoleptic inertia - Extractable metals (Cadmium, Lead, Mercury, Chromium) - Specific migration of primary aromatic amine - Formaldehyde migration in aqueous extract - Photometric determination of glyoxal in paper - Transfer of antimicrobial constituents - Extraction of 1,3-dichloro-2-propanol and 3-monochloro-1,2-propanediol - Diisopropylnaphthaline/DIPN content - Mineral oil hydrocarbons (MOSH and MOAH) - colorfastness - Fastness of optical brighteners 	PASS

TESTS CARRIED BY:

LAB ID: TTSLCM001; ADD.: ROOM 501, BUILDING 29-1, NO.259, ROAD SHIBEI GAOXIN, CHONGCHUAN, NANTONG, JIANGSU, CHINA

SAMPLE DESCRIPTION

Sample description : 1#. Paper plate



TEST RESULTS

1. Special requirements for paper and paper board contact or intended to contact with foodstuffs

1.1. Organoleptic inertia

Test method: with reference to EN 1230-1, EN 1230-2

Test Items	Test Results	Permissible Limit
	Whole product	
Sensorial examination odor	0.5	2.5, max
Sensorial examination taste	0.5	2.5, max

Scale evaluation:

- 0 = No Discernible Deviation
- 1 = Barely Discernible Deviation
- 2 = Weak Deviation
- 3 = Clear Deviation
- 4 = Strong Deviation

1.2. Extractable metals (Cadmium, Lead, Mercury, Chromium)

Test method: with reference to EN 12497, EN 12498, analyzed by ICP-OES, ICP-MS

Test Parameter	Units	MDL	Test Results	Permissible Limit
			1#	
Extractable Lead	mg/dm ²	0.001	n.d.	≤0.003
Extractable Cadmium	mg/dm ²	0.001	n.d.	≤0.002
Extractable Chromium	mg/dm ²	0.002	n.d.	≤0.004
Extractable Mercury	mg/dm ²	0.001	n.d.	≤0.003

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1.3. Specific migration of primary aromatic amine

Test method: Sample preparation with reference to EN 647-1993, EN 17163-2019, analyzed by LCMS

Test Parameter	Units	MDL	Test Results			Permissible Limit
			1#, 1 st	1#, 2 nd	1#, 3 rd	
Test Media			3% acetic acid			---
Temperature, °C			70.0	70.0	70.0	---
Contact Time, hour			2.0	2.0	2.0	---
Specific migration of 4-aminobiphenyl / 4-biphenylamine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of o-anisidine / 2-methoxyaniline	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of Benzidine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 4-Chloro-aniline / p-chloroaniline	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 4-Chloro-o-toluidine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 4,4'-Diaminodiphenylether / 4,4'-oxydianiline	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 4,4'-Methylenedianiline / 4,4'-diamino-diphenylmethane	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 4,4-Methylenedi-o-toluidine /3,3'-dimethyl-4,4'-diaminodiphenylmethane	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 2-Methoxy-5-methylaniline / p-cresidine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 4-Methoxy-mphenylenediamine/ 2,4-diaminoanisole	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of o-Toluidine / 2-aminotoluene	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 2,4-Toluenediamine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 3,3-Dimethylbenzidine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 2,4,5-Trimethylaniline	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of m-Phenylenediamine / 1,3-Phenylenediamine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 2-naphthylamine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of o-aminoazotoluene/ 4-amino-2',3-dimethylazobenzene/ 4-otolylazo-o-toluidine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 5-nitro-o-toluidine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 3,3'-dichlorobenzidine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002

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Test Parameter	Units	MDL	Test Results			Permissible Limit
			1#, 1 st	1#, 2 nd	1#, 3 rd	
Specific migration of 3,3'-dimethoxybenzidine / odianisidine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 4,4'-methylene-bis-(2-chloroaniline) / 2,2'-dichloro-4,4'-methylene-dianiline	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 4,4'-thiodianiline	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 4-amino azobenzene	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of Aniline	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 2,4-dimethylaniline/2,4-xylydine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 2,6-dimethylaniline/ 2,6-xylydine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of m-phenylenediamine/ 1,3-phenylenediamine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of p-phenylenediamine/ 1,4-phenylenediamine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 2,6-toluenediamine	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of 1,5-diaminenaphthalene	mg/kg	0.002	n.d.	n.d.	n.d.	≤0.002
Specific migration of primary aromatic amine	mg/kg	0.01	n.d.	n.d.	n.d.	≤0.01
Comment(s)	---	---	PASS	PASS	PASS	---

1.4. Formaldehyde migration in aqueous extract

Test method: with reference to EN 1541-2001, analyzed by UV-Vis, HPLC

Test Parameter	Units	MDL	Test Results	Permissible Limit
			1#	
Formaldehyde migration	mg/kg	1.0	n.d.	≤15

1.5. Photometric determination of glyoxal in paper

Test method: with reference to EN 645:1993, analyzed by GCMS

Test Parameter	Units	MDL	Test Results	Permissible Limit
			1#	
Glyoxal	mg/dm ²	0.1	n.d.	≤1.5

1.6. Transfer of antimicrobial constituents

Test method: with reference to EN 1104-2018

Incubation Condition: 30°C for 3days

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Test Parameter	Units	MDL	Test Results	Permissible Limit
			1#	
Bacillus subtilis, ATCC 6633, inhibition zone	mm	---	0	No inhibition zone
Aspergillus Niger, ATCC 6275, inhibition zone	mm	---	0	No inhibition zone

1.7. Extraction of 1,3-dichloro-2-propanol and 3-monochloro-1,2-propanediol

Test method: with reference to EN 647:1993, analyzed by GCMS

Test Parameter	Units	MDL	Test Results	Permissible Limit
			1#	
Extractable 1,3-dichloro-2-propanol, DCP	µg/L	2.0	n.d.	≤2
Extractable 3-monochloro-1,2-propanediol, 3-MCPD	µg/L	2.0	n.d.	≤12

1.8. Diisopropylnaphthalene/DIPN content

Test method: with reference to EN 14719-2015, analyzed by GCMS

Test Parameter	Units	MDL	Test Results	Permissible Limit
			1#	
Diisopropylnaphthalene, DIPN content	mg/kg	1.0	n.d.	≤30

1.9. Mineral oil hydrocarbons (MOSH and MOAH)

Test method: with reference to EN 17517-2021, analyzed by HPLC-GC-FID

Test Parameter	Units	MDL	Test Results	Permissible Limit
			1#	
Mineral oil saturated hydrocarbons, MOSH C ₁₆ ~C ₂₀	mg/kg	0.5	n.d.	<2.0
Mineral oil saturated hydrocarbons, MOSH C ₂₀ ~C ₃₅	mg/kg	0.5	n.d.	<2.0
Mineral oil aromatic hydrocarbons MOAH, C ₁₆ ~C ₃₅	mg/kg	0.5	n.d.	<0.5

1.10. colorfastness

Test method: with reference to EN 646-2018

Test Parameter	Units	MDL	Test Results	Permissible Limit
			1#	
Color fastness in DI water	---	---	No	no
Color fastness in 3% acetic acid	---	---	No	no
Color fastness in rectified olive oil	---	---	No	no

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1.11. Fastness of optical brighteners

Test method: with reference to EN 648-2018

Test Parameter	Units	MDL	Test Results	Permissible Limit
			1#	
Fastness of fluorescent whitened paper and board	Grade	---	6	≥5

Note,

- % , percentage; mg, milligrams; g, grams; kg, kilograms
- mg/kg = milligrams per kilograms; mg/L = milligrams per litre
- 0.1% = 1000mg/kg = 1000mg/L
- < = less than; > = greater than
- MDL = method detection limit
- n.d. = not detected, < MDL
- n.a. = not applicable
- n.r. = not required
- EX = abbr. of Exempted

**** To be continued ****



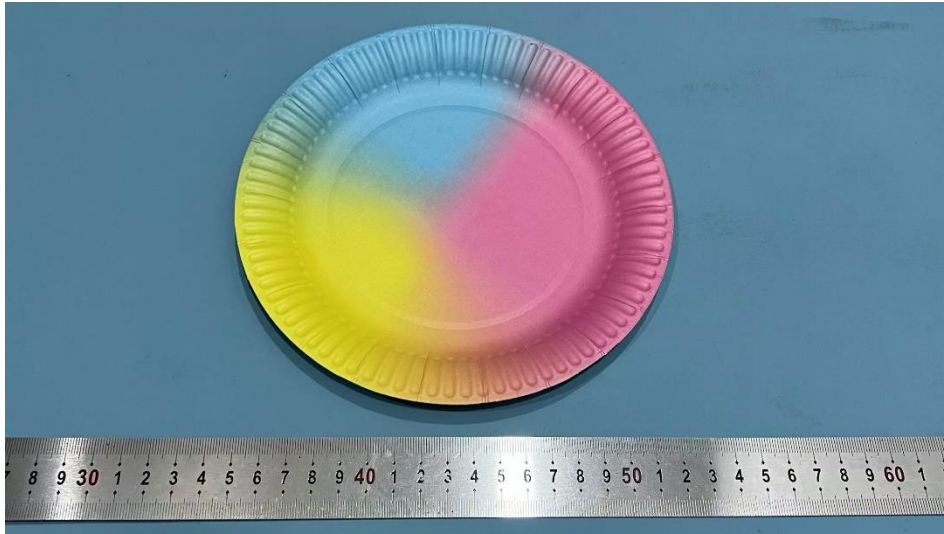
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SAMPLE IMAGE



Tested sample

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

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