

No. CANEC1819972603

Date: 19 Oct 2018

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DONGGUAN GLOBAL ECO TECH CO., LTD

B203-204, BUILDING B, CHANGPING SICENCE AND TECH PARK, XINNAN ROAD, , BANSHI VILLAGE, CHANGPING TOWN, DONGGUAN CITY, CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : fully biodegradable materials

SGS Job No. :	CP18-053340 - SZ
Model No. :	ССВМ
Date of Sample Received :	27 Sep 2018
Testing Period :	27 Sep 2018 - 19 Oct 2018
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
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 & 31 with amendments, European Commission Regulation (EU) No	FAIL
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 & 31 with amendments–Colour Release	PASS
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 & 31 with amendments–Sensorial examination odour and taste test	PASS
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 & 31 with amendments, European Commission Regulation (EU) No 10/2011 with amendments and BfR recommendation–Specific Migration of Heavy Metal	PASS
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 & 31 with amendments, European Commission Regulation (EU) No 10/2011 with amendments and BfR recommendation–Lead and Cadmium	PASS
Verification for label claim validity - Bisphenol A free by Total Content of Bisphenol A	PASS
Polycyclic Aromatic Hydrocarbons (PAHs)	PASS



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Signed for and on behalf of SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Ing Ron

Ivy Ren Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description	Material
			(claimed by the client)
SN1	CAN18-199726.001	Milk white plastic	PLA+PBAT

#### <u>German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 & 31 with</u> <u>amendments, European Commission Regulation (EU) No 10/2011 with amendments and BfR</u> <u>recommendation – Overall migration</u>

Test Method : With reference to Commission Regulation (EU) No 10/2011 of 14 January 2011 Annex III and Annex V for selection of condition and EN 1186-1:2002 for selection of test methods; or EN 1186-3:2002 aqueous food simulants by total immersion method; or EN 1186-14:2002 substitute test

Simulant Used	<u>Time</u>	Temperature	Max. Permissible	Result of 001	<u>Comment</u>
3% Acetic Acid (W/V) Aqueous Solution	240.0hr(s)	40°C	10mg/dm <sup>2</sup>	<3.0mg/dm <sup>2</sup>	PASS
10% Ethanol (V/V) Aqueous Solution	240.0hr(s)	40°C	10mg/dm <sup>2</sup>	4.1mg/dm <sup>2</sup>	PASS
95% Ethanol	240.0hr(s)	40°C	10mg/dm <sup>2</sup>	75.5mg/dm²#	FAIL
Isooctane	48.0hr(s)	20°C	10mg/dm <sup>2</sup>	<3.0mg/dm <sup>2</sup>	PASS

Notes :

mg/dm<sup>2</sup> = milligram per square decimeter
 mg/kg = milligram per kilogram of foodstuff in contact with
 °C = degree Celsius
 Analytical tolerance of aqueous simulants is 2mg/dm<sup>2</sup> or 12mg/kg

4. Analytical tolerance of fatty food simulants is 3mg/dm<sup>2</sup> or 20mg/kg

# German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 & 31 with amendments-Colour Release

Test Method : With reference to Kunststoffe im Lebensmittelverkehr, Part B II IX.

<u>Test Item(s)</u>	<u>Limit</u>	<u>001</u>
Visible Color Migration in 2% Acetic Acid (W/V)	*	Negative
Comment		PASS
Visible Color Migration in Coconut Oil	*	Negative



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<u>Test Item(s)</u>		<u>Limit</u>	<u>001</u>	
Comment			PASS	

Notes :

1.★ = No color release observed

2.Negative = No color release observed, Positive = Color release observed.

# German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 & 31 with amendments-Sensorial examination odour and taste test

Test Method :	With reference to DIN10955:2004, direct contact method.
	No.of panelist:6

<u>Limit</u>	<u>001</u>
-	Distilled water
-	40
-	240
2.5	0.0
2.5	0.0
	PASS
	<u>Limit</u> - - 2.5 2.5

#### Notes :

Intensity scale (rounded at 0.5):

- 0 no perceptible difference
- 1 just perceptible difference
- 2 slight difference
- 3 marked difference
- 4 strong difference

# German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 & 31 with amendments, European Commission Regulation (EU) No 10/2011 with amendments and BfR recommendation-Specific Migration of Heavy Metal

Test Method : With reference to Commission Regulation (EU) No 10/2011 of 14 January 2011 Annex III and Annex V for selection of condition and EN13130-1:2004 for selection of test method, analysis was performed by ICP-OES.

#### Sample 001

Simulant Used : 3% Acetic Acid (W/V) Aqueous Solution

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Test Condition : 40 °C 240.0 hr(s)



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<u>Test Item(s)</u>	<u>Max. Permissible</u>	<u>Unit</u>	<u>MDL</u>	<u>Test result</u>
	<u>Limit</u>			
Migration times	-	-	-	3rd
Area/Volume	-	dm²/kg	-	6.0
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	5	mg/kg	0.5	ND
Aluminum	1	mg/kg	0.1	ND
Nickel	0.02	mg/kg	0.01	ND
Comment				PASS

#### Notes :

1. mg/kg = milligram per kilogram of foodstuff in contact with

- 2. °C = degree Celsius
- 3. MDL=Method Detection Limit

4. ND = Not Detected(less than MDL)

5. The limits of aluminium and zinc according to Commission Regulation (EU) 2016/1416 shall be applied from 14 September 2018.

6. The limits of nickel according to Commission Regulation (EU) 2017/752 shall be applied from 19 May 2019.

# German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 & 31 with amendments, European Commission Regulation (EU) No 10/2011 with amendments and BfR recommendation–Lead and Cadmium

Test Method : Microwave digestion (GZTC CHEM-TOP-004-01), analysis was performed by ICP-OES.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Cadmium (Cd)	*	mg/kg	2	ND
Comment				PASS
Lead (Pb)	*	mg/kg	2	ND
Comment				PASS

Notes :

- 1. mg/kg = milligram per kilogram of sample
- 2. MDL=Method Detection Limit



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- 3. ND= Not Detected(less than MDL)
- 4. ★= Absent

#### Verification for label claim validity - Bisphenol A free by Total Content of Bisphenol A

Test Method :With reference to Part II Section D2 of Testing Methods for Foodstuffs, Implements,<br/>Containers and Packaging, Toys, Detergents, JETRO, Japan External Trade Organization,<br/>2009 (Dichloromethane extraction by ultrasonic bath). Analysis was performed by HPLC-MS

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Total content of Bisphenol A	mg/kg	0.1	ND
Comment			PASS

Notes :

- 1. mg/kg = milligram per kilogram
- 2. MDL=Method Detection Limit
- 3. ND= Not Detected(less than MDL)

#### Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method : With reference to AfPS GS 2014:01 PAK, analysis was performed by GC-MS.

Test Item(s)	<u>CAS NO.</u>	<u>Limit</u>	<u>Unit</u>	MDL	<u>001</u>
Sum of 18 PAHs	-	1.0	mg/kg	-	ND
Sum of 7 PAHs Acenaphthylene. Acenaphthene,	-	1.0	mg/kg	-	ND
Fluorene, Phenanthrene, Pyrene, Anthracene,					
Fluoranthene					
Naphthalene(NAP)	91-20-3	1.0	mg/kg	0.1	ND
Acenaphthylene(ANY)	208-96-8	-	mg/kg	0.1	ND
Acenaphthene(ANA)	83-32-9	-	mg/kg	0.1	ND
Fluorene(FLU)	86-73-7	-	mg/kg	0.1	ND
Phenanthrene(PHE)	85-01-8	-	mg/kg	0.1	ND
Anthracene(ANT)	120-12-7	-	mg/kg	0.1	ND
Fluoranthene(FLT)	206-44-0	-	mg/kg	0.1	ND
Pyrene(PYR)	129-00-0	-	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	56-55-3	0.2	mg/kg	0.1	ND
Chrysene(CHR)	218-01-9	0.2	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF)	205-99-2	0.2	mg/kg	0.1	ND
Benzo(j)fluoranthene(BjF)	205-82-3	0.2	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	207-08-9	0.2	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	50-32-8	0.2	mg/kg	0.1	ND



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Test Item(s)	<u>CAS NO.</u>	<u>Limit</u>	<u>Unit</u>	MDL	<u>001</u>
Benzo(e)pyrene(BeP)	192-97-2	0.2	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	193-39-5	0.2	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	53-70-3	0.2	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	191-24-2	0.2	mg/kg	0.1	ND
Comment					PASS

Notes :

- 1. mg/kg = milligram per kilogram of sample
- 2. MDL=Method Detection Limit
- 3. ND= Not Detected(less than MDL)

Remark:#= Exceeds the limit

Sample photo:



#### SGS authenticate the photo on original report only

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