

HAELSEN&LYON GMBH
PICKHUBEN 9, 20457 HAMBURG,GERMANY

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

SGS Job No. : CP18-001686 - SZ
Model No. : KE220H118
Client Ref. Info. : SQUARE TIN BOX WITH HINGED LID.
Buyer : XXXXXXXXXX
Lot No. : Po#1703006/EB64216
Manufacturer : DONGGUAN KEENPACK INDUSTRIAL LTD.
Country of Origin : CHINA
Country of Destination : GERMANY
Date of Sample Received : 10 Jan 2018
Testing Period : 10 Jan 2018 - 12 Feb 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, Council of Europe Resolution AP (2004) 1 and BfR recommendation – Overall migration	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–Colour Release	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 Polynuclear Aromatic Hydrocarbons (PAHs)	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 Bisphenol A	PASS
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 & 31 with amendments and European Commission Regulation 1895/2005/EC –Specific Migration of BADGE, BADGE Derivatives, BFDGE and NOGE	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 and Council of Europe Resolution CM/Res(2013)9–Extractable heavy metals	PASS

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

Alpher Qiu



Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description	Material (claimed by the client)
SN1	CAN18-007567.001	Transparent coated metal lid(inner)	Metal+coating
SN2	CAN18-007567.002	Transparent coated metal lid(inner)	Metal+coating

German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 & 31 with amendments, Council of Europe Resolution AP (2004) 1 and BfR recommendation – Overall migration

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 1186-9:2002 aqueous food simulants by article filling method; or EN 1186-14:2002 substitute test.

<u>Simulant Used</u>	<u>Time</u>	<u>Temperature</u>	<u>Max. Permissible Limit</u>	<u>Result of 001 Overall Migration</u>	<u>Comment</u>
10% Ethanol (V/V) Aqueous Solution	240.0hr(s)	40°C	10mg/dm ²	<3.0mg/dm ²	PASS
95% Ethanol	240.0hr(s)	40°C	10mg/dm ²	<3.0mg/dm ²	PASS
Isooctane	48.0hr(s)	20°C	10mg/dm ²	<3.0mg/dm ²	PASS

<u>Simulant Used</u>	<u>Time</u>	<u>Temperature</u>	<u>Max. Permissible Limit</u>	<u>Result of 002 Overall Migration</u>	<u>Comment</u>
10% Ethanol (V/V) Aqueous Solution	2.0 hr(s)	70°C	10mg/dm ²	<3.0mg/dm ²	PASS

Notes :

1. mg/dm² = milligram per square decimeter
mg/kg = milligram per kilogram of foodstuff in contact with
2. °C = degree Celsius
3. The test data is obtained by considering the articles intended for repeated use as per described in Commission Regulation (EU) No 10/2011 of 14 January 2011 Annex V. Report the 3rd extractive result.
4. Visible color migration in simulant 10% Ethanol.

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



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<u>Test Item(s)</u>	<u>Limit</u>	<u>00</u>
Test media	-	Sugar
Test Temperature (°C)	-	23
Test time (hr)	-	240
Sensorial examination odour (Point scale)	2.5	0.0
Sensorial examination taste (Point scale)	2.5	0.0
Comment		PASS

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–Colour Release

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

<u>Test Item(s)</u>	<u>Limit</u>	<u>00</u>
Visible Color Migration in 2% Acetic Acid (W/V)	★	Negative
Comment		PASS
Visible Color Migration in Coconut Oil	★	Negative
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, European Commission Regulation (EU) No 10/2011 with amendments and BfR recommendation–Specific Migration of Polynuclear Aromatic Hydrocarbons (PAHs)

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 GC-MS.

Sample 001



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Simulant Used : 95% Ethanol
 Test Condition: 40 °C 240.0 hr(s)

<u>Test Item(s)</u>	<u>Max. Permissible</u> <u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>Test result</u>
Migration times	-	-	-	1st
Area/Volume	-	dm ² /kg	-	6.0
Naphthalene(NAP)	★	mg/kg	0.01	ND
Acenaphthylene(ANY)	★	mg/kg	0.01	ND
Acenaphthene(ANA)	★	mg/kg	0.01	ND
Fluorene(FLU)	★	mg/kg	0.01	ND
Phenanthrene(PHE)	★	mg/kg	0.01	ND
Anthracene(ANT)	★	mg/kg	0.01	ND
Fluoranthene(FLT)	★	mg/kg	0.01	ND
Pyrene(PYR)	★	mg/kg	0.01	ND
Benzo(a)anthracene(BaA)	★	mg/kg	0.01	ND
Chrysene(CHR)	★	mg/kg	0.01	ND
Benzo(b)fluoranthene(BbF)	★	mg/kg	0.01	ND
Benzo(k)fluoranthene(BkF)	★	mg/kg	0.01	ND
Benzo(a)pyrene(BaP)	★	mg/kg	0.01	ND
Benzo(e)pyrene(BeP)	★	mg/kg	0.01	ND
Benzo(j)fluoranthene(BjF)	★	mg/kg	0.01	ND
Dibenzo(a,h)anthracene(DBA)	★	mg/kg	0.01	ND
Benzo(g,h,i)perylene(BPE)	★	mg/kg	0.01	ND
Indeno(1,2,3-c,d)pyrene (IPY)	★	mg/kg	0.01	ND
Comment				PASS

Sample 001

Simulant Used : Isooctane
 Test Condition: 20 °C 48.0 hr(s)

<u>Test Item(s)</u>	<u>Max. Permissible</u> <u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>Test result</u>
Migration times	-	-	-	1st
Area/Volume	-	dm ² /kg	-	6.0
Naphthalene(NAP)	★	mg/kg	0.01	ND
Acenaphthylene(ANY)	★	mg/kg	0.01	ND
Acenaphthene(ANA)	★	mg/kg	0.01	ND
Fluorene(FLU)	★	mg/kg	0.01	ND
Phenanthrene(PHE)	★	mg/kg	0.01	ND



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Anthracene(ANT)	★	mg/kg	0.01	ND
Fluoranthene(FLT)	★	mg/kg	0.01	ND
Pyrene(PYR)	★	mg/kg	0.01	ND
Benzo(a)anthracene(BaA)	★	mg/kg	0.01	ND
Chrysene(CHR)	★	mg/kg	0.01	ND
Benzo(b)fluoranthene(BbF)	★	mg/kg	0.01	ND
Benzo(k)fluoranthene(BkF)	★	mg/kg	0.01	ND
Benzo(a)pyrene(BaP)	★	mg/kg	0.01	ND
Benzo(e)pyrene(BeP)	★	mg/kg	0.01	ND
Benzo(j)fluoranthene(BjF)	★	mg/kg	0.01	ND
Dibenzo(a,h)anthracene(DBA)	★	mg/kg	0.01	ND
Benzo(g,h,i)perylene(BPE)	★	mg/kg	0.01	ND
Indeno(1,2,3-c,d)pyrene (IPY)	★	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. ★=Absent

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 Bisphenol A

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 HPLC-FLD&LC-MS.

Sample 001

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

Test Condition: 40 °C 240.0 hr(s)

<u>Test Item(s)</u>	<u>Max. Permissible Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>Test result</u>
Migration times	-	-	-	1st
Area/Volume	-	dm ² /kg	-	6.0
Specific migration of Bisphenol-A	0.6	mg/kg	0.2	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. Visible color migration in simulant

German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 & 31 with amendments and European Commission Regulation 1895/2005/EC –Specific Migration of BADGE, BADGE Derivatives, BFDGE and NOGE

Test Method : With reference to Commission Regulation (EU) No 10/2011 of 14 January 2011 Annex III and Annex V for selection of condition, EN 13130-1:2004 for selection of test method and EN 15136:2006. Analysis was performed by LC-MS.

Sample 001

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

Test Condition: 40 °C 240.0 hr(s)

<u>Test Item(s)</u>	<u>Max. Permissible Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>Test result</u>
Migration times	-	-	-	1st
Area/Volume	-	dm ² /kg	-	6.0
Bisphenol A bis(2,3-dihydroxypropyl) ether(BADGE.2H ₂ O)	-	mg/kg	0.2	ND
Bisphenol A diglycidyl ether (BADGE)	-	mg/kg	0.2	ND
Bisphenol A (2,3-dihydroxypropyl) glycidyl ether(BADGE.H ₂ O)	-	mg/kg	0.2	ND
Sum of (BADGE.2H ₂ O+ BADGE+ BADGE.H ₂ O)	9	mg/kg	-	ND
Bisphenol F diglycidyl ether (BFDGE)	★	mg/kg	0.2	ND
Bisphenol A bis(3-Chloro-2-hydroxypropyl) ether(BADGE.2HCl)	-	mg/kg	0.2	ND
Bisphenol A (3-chloro-2-hydroxypropyl) glycidyl ether(BADGE.HCl)	-	mg/kg	0.2	ND
Bisphenol A (3-choloro-2-hydroxypropyl)-(2,3-dihydroxypropyl) ether (BADGE.H ₂ O.HCl)	-	mg/kg	0.2	ND
Sum of (BADGE.2HCl+ BADGE.HCl+ BADGE.H ₂ O.HCl)	1	mg/kg	-	ND
Novolac glycidyl ether (NOGE)	★	mg/kg	0.2	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. ★ = Prohibited
6. Visible color migration in simulant

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 002

Simulant Used : 10% Ethanol (V/V) Aqueous Solution

Test Condition : 40 °C 6.0 hr(s)

<u>Test Item(s)</u>	<u>Max. Permissible Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>Test result</u>
Migration times	-	-	-	1st
Area/Volume	-	dm ² /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
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)

German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 & 31 with Amendments and Council of Europe Resolution CM/Res(2013)9–Extractable heavy metals



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Test Method : With reference to EN13130-1:2004 for selection of test method; analysis was performed by ICP-OES and ICP-MS.

Sample 002:

Simulant Used: Artificial tap water

Test Condition: 40 °C 6.0 hr(s)

The ratio of surface area to volume ratio was : 20 dm²/kg

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>1st Migration</u>
Aluminium(Al)	5	mg/kg	0.2	ND
Antimony(Sb)	0.04	mg/kg	0.02	ND
Chromium(Cr)	0.25	mg/kg	0.1	ND
Cobalt(Co)	0.02	mg/kg	0.01	ND
Copper(Cu)	4	mg/kg	0.1	ND
Iron(Fe)	40	mg/kg	0.25	ND
Manganese(Mn)	1.8	mg/kg	0.25	ND
Molybdenum(Mo)	0.12	mg/kg	0.02	ND
Nickel(Ni)	0.14	mg/kg	0.05	ND
Silver(Ag)	0.08	mg/kg	0.03	ND
Tin (Sn)	100	mg/kg	5	ND
Vanadium(V)	0.01	mg/kg	0.005	ND
Zinc(Zn)	5	mg/kg	1	ND
Arsenic(As)	0.002	mg/kg	0.001	ND
Barium(Ba)	1.2	mg/kg	0.25	ND
Beryllium(Be)	0.01	mg/kg	0.005	ND
Cadmium(Cd)	0.005	mg/kg	0.002	ND
Lead(Pb)	0.01	mg/kg	0.005	ND
Lithium(Li)	0.048	mg/kg	0.02	ND
Mercury(Hg)	0.003	mg/kg	0.002	ND
Thallium(Tl)	0.0001	mg/kg	0.0001	ND

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 (< MDL)
5. Acidic foodstuff is not considered for compliance.

Remark : Test condition & simulant were specified by client.



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