

Test Report

No. SHAEC1828200410

Date: 07 Jan 2019

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Xindao B.V.

Verrijn Stuartlaan 1d, 2288 EK Rijswijk, the Netherlands

The following sample(s) was/were submitted and identified on behalf of the clients as : Vacuum Tumbler with ceramic coating

SGS Job No. : SP18-041749 - SH
 Model No. : 62163
 Date of Sample Received : 19 Dec 2018
 Testing Period : 19 Dec 2018 - 03 Jan 2019
 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).



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Result Summary :

Test Requested	Conclusion
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments, European Commission Regulation (EU) No 10/2011 with amendments and BfR recommendation-Overall migration	PASS
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments and BfR recommendation-Extractable component	PASS
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments and BfR recommendation-Colour release	PASS
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments and BfR recommendation-Sensorial examination odour and taste test	PASS
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 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 and 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 and 31 with amendments, European Commission Regulation (EU) No 10/2011 with amendments and BfR recommendation-Lead(Pb) and cadmium(Cd)	PASS
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments and BfR recommendation-Volatile organic matter (VOM)	PASS
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments, European Commission Implementing Regulation (EU) 321/2011 amending Regulation (EU) 10/2011 of 14 January 2011 and BfR recommendations - Bisphenol A	PASS
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments, European Commission Regulation (EU) No 10/2011 with amendments and BfR recommendation-Polycyclic Aromatic Hydrocarbons (PAHs)	PASS
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments, Council of Europe Resolution CM/Res(2013)9 and BfR recommendation-Extractable heavy metals	PASS



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Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Dora Hu

Dora Hu
Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description	Material (claimed by the client)
SN1	SHA18-282004.005	Black solid sheet	PP
SN2	SHA18-282004.006	White soft solid	Silicone rubber
SN3	SHA18-282004.007	Black soft solid	Silicone rubber
SN4	SHA18-282004.008	Silvery metal with blue ceramic coating	Stainless Steel with ceramic coating

Remarks :

- (1) mg/dm² = milligram per square decimeter
- (2) mg/kg = milligram per kilogram
- (3) °C= degree Celsius
- (4) < = less than
- (5) MDL = Method Detection Limit
- (6) ND = Not Detected (< MDL)

German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments, European Commission Regulation (EU) No 10/2011 with amendments 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;
EN1186-3:2002 aqueous food simulants by total immersion method;

<u>Simulant Used</u>	<u>Time</u>	<u>Temperature</u>	<u>Max. Permissible Limit</u>	<u>Result of 005 Overall migration</u>	<u>Conclusion</u>
10% Ethanol (V/V) aqueous solution	2.0hr(s)	70°C	60mg/kg	<20mg/kg	PASS

<u>Simulant Used</u>	<u>Time</u>	<u>Temperature</u>	<u>Max. Permissible Limit</u>	<u>Result of 008 Overall migration</u>	<u>Conclusion</u>
10% Ethanol (V/V) aqueous solution	2.0hr(s)	70°C	10mg/dm ²	<3.0mg/dm ²	PASS

Notes :

- (1) Analytical tolerance of aqueous simulants is 2 mg/dm² or 12 mg/kg.
- (2) Test condition & simulant were specified by client.
- (3) The test data is obtained by considering the articles intended for repeated use as per described in



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Commission Regulation (EU) No 10/2011 of 14 January 2011 Annex V. Report the 3rd extractive result.

German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments and BfR recommendation-Extractable component

Test Method : With reference to 61st Mitteilung über die Untersuchung von Kunststoffen ,
Bundesgesundheitsbl 46 (2003) 362

<u>Simulant Used</u>	<u>Time</u>	<u>Temperature</u>	<u>Max. Permissible Limit</u>	<u>Result of 006 Extractives</u>	<u>Conclusion</u>
Deionized water	0.5hr(s)	100°C	0.5% (w/w)	<0.1% (w/w)	PASS
<u>Simulant Used</u>	<u>Time</u>	<u>Temperature</u>	<u>Max. Permissible Limit</u>	<u>Result of 007 Extractives</u>	<u>Conclusion</u>
Deionized water	0.5hr(s)	100°C	0.5% (w/w)	<0.1% (w/w)	PASS

Notes :

(1) Test condition & simulant were specified by client

German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments and BfR recommendation-Colour release

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

<u>Test Item(s)</u>	<u>Limit</u>	<u>005</u>	<u>007</u>
Colour release in 10% ethanol (V/V) aqueous solution	★	Negative	Negative
Conclusion		PASS	PASS

Notes :

(1) ★ = No colour release.

(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 and 31 with amendments and BfR recommendation-Sensorial examination odour and taste test

Test Method : With reference to DIN 10955:2004
Test media: Distilled water
No. of panelist: 6



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Test Item(s)	Limit	006	007	008
Test time (hr(s))	-	0.5	0.5	0.5
Temperature(°C)	-	100	100	100
Sensorial examination odour (Point scale)	2.5	0	0	0
Sensorial examination taste (Point scale)	2.5	0	0	0
Conclusion		PASS	PASS	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 and 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 EN 13130-1: 2004, analysis was performed by GC-MS.

Sample 008

Simulant Used : Deionized water

Test Condition : 100 °C 0.5 hr(s)

Test Item(s)	Max. Permissible Limit	Unit	MDL	Test result
Migration times	-	-	-	First
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



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Benzo(a)pyrene(BaP)	★	mg/kg	0.01	ND
Indeno(1,2,3-c,d)pyrene(IPY)	★	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
Benzo(j)fluoranthene	★	mg/kg	0.01	ND
Benzo(e)pyrene	★	mg/kg	0.01	ND

Conclusion

PASS

Notes :

- (1) ★= Absent
(2) Test condition & simulant were specified by client.

German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 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 EN13130-1:2004, analysis was performed by ICP-OES.

Sample 005

Simulant Used : 10% Ethanol (V/V) aqueous solution

Test Condition : 100 °C 0.5 hr(s)

Test Item(s)	Max. Permissible Limit	Unit	MDL	Test result
Migration times	-	-	-	Third
Area/volume	-	dm ² /kg	-	2.8
Aluminium(Al)	1	mg/kg	0.1	ND
Barium(Ba)	1	mg/kg	0.25	ND
Cobalt(Co)	0.05	mg/kg	0.01	ND
Copper(Cu)	5	mg/kg	0.25	ND
Iron(Fe)	48	mg/kg	0.25	ND
Lithium(Li)	0.6	mg/kg	0.5	ND
Manganese(Mn)	0.6	mg/kg	0.25	ND
Zinc(Zn)	5	mg/kg	0.5	ND
Nickel(Ni)	0.02	mg/kg	0.02	ND
Conclusion				PASS

Sample 008

Simulant Used : 10% Ethanol (V/V) aqueous solution

Test Condition : 100 °C 0.5 hr(s)



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<u>Test Item(s)</u>	<u>Max. Permissible Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>Test result</u>
Migration times	-	-	-	Third
Area/volume	-	dm ² /kg	-	6.0
Aluminium(Al)	1	mg/kg	0.1	ND
Barium(Ba)	1	mg/kg	0.25	ND
Cobalt(Co)	0.05	mg/kg	0.01	ND
Copper(Cu)	5	mg/kg	0.25	ND
Iron(Fe)	48	mg/kg	0.25	ND
Lithium(Li)	0.6	mg/kg	0.5	ND
Manganese(Mn)	0.6	mg/kg	0.25	ND
Zinc(Zn)	5	mg/kg	0.5	ND
Nickel(Ni)	0.02	mg/kg	0.02	ND
Conclusion				PASS

Notes :

(1) Test condition & stimulant were specified by client.

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

Test Method : Total Lead and Cadmium: Acidic digestion, analysis was performed by ICP-OES.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>005</u>	<u>006</u>	<u>007</u>
Total Lead	★	mg/kg	2	ND	ND	ND
Total Cadmium	★	mg/kg	2	ND	ND	ND
Conclusion				PASS	PASS	PASS

Notes :

(1) ★= Absent

German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments and BfR recommendation-Volatile organic matter (VOM)

Test Method : With reference to 61. Mitteilung über die Untersuchung von Kunststoffen, Bundesgesundheitsbl 46(2003)362



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Test Item(s)	Limit	Unit	MDL	006	007
Time	-	hr(s)	-	0.5	0.5
Temperature	-	°C	-	100	100
Volatile organic matter (VOM)	0.5	% (w/w)	0.10	ND	ND
Conclusion				PASS	PASS

Notes :

(1) %w/w =percentage of weight by weight

German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments, European Commission Implementing Regulation (EU) 321/2011 amending Regulation (EU) 10/2011 of 14 January 2011 and BfR recommendations - Bisphenol A

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

Test Item(s)	Limit	Unit	MDL	005	006	007
Bisphenol-A	★	mg/kg	0.1	ND	ND	ND
Conclusion				PASS	PASS	PASS

Notes :

(1) ★= Prohibited

German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31 with amendments, European Commission Regulation (EU) No 10/2011 with amendments and BfR recommendation-Polycyclic Aromatic Hydrocarbons (PAHs)

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

Test Item(s)	Limit	Unit	MDL	005
Sum of 18 PAHs	1	mg/kg	-	0.7
Sum of Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene	1	mg/kg	-	0.3
Naphthalene(NAP)	1	mg/kg	0.1	0.4
Acenaphthylene(ANY)	-	mg/kg	0.1	ND
Acenaphthene(ANA)	-	mg/kg	0.1	ND
Fluorene(FLU)	-	mg/kg	0.1	ND
Phenanthrene(PHE)	-	mg/kg	0.1	ND
Anthracene(ANT)	-	mg/kg	0.1	ND
Fluoranthene(FLT)	-	mg/kg	0.1	ND



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Test Item(s)	Limit	Unit	MDL	005
Pyrene(PYR)	-	mg/kg	0.1	0.3
Benzo(a)anthracene(BaA)	0.2	mg/kg	0.1	ND
Chrysene(CHR)	0.2	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF) and Benzo(j)fluoranthene(BjF)	0.2	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	0.2	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	0.2	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	0.2	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	0.2	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	0.2	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	0.2	mg/kg	0.1	ND

Conclusion

PASS

Test Item(s)	Limit	Unit	MDL	006
Sum of 18 PAHs	1	mg/kg	-	ND
Sum of Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene	1	mg/kg	-	ND
Naphthalene(NAP)	1	mg/kg	0.1	ND
Acenaphthylene(ANY)	-	mg/kg	0.1	ND
Acenaphthene(ANA)	-	mg/kg	0.1	ND
Fluorene(FLU)	-	mg/kg	0.1	ND
Phenanthrene(PHE)	-	mg/kg	0.1	ND
Anthracene(ANT)	-	mg/kg	0.1	ND
Fluoranthene(FLT)	-	mg/kg	0.1	ND
Pyrene(PYR)	-	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	0.2	mg/kg	0.1	ND
Chrysene(CHR)	0.2	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF) and Benzo(j)fluoranthene(BjF)	0.2	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	0.2	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	0.2	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	0.2	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	0.2	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	0.2	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	0.2	mg/kg	0.1	ND

Conclusion

PASS

Test Item(s)	Limit	Unit	MDL	007
Sum of 18 PAHs	1	mg/kg	-	ND
Sum of Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene	1	mg/kg	-	ND



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Test Item(s)	Limit	Unit	MDL	007
Naphthalene(NAP)	1	mg/kg	0.1	ND
Acenaphthylene(ANY)	-	mg/kg	0.1	ND
Acenaphthene(ANA)	-	mg/kg	0.1	ND
Fluorene(FLU)	-	mg/kg	0.1	ND
Phenanthrene(PHE)	-	mg/kg	0.1	ND
Anthracene(ANT)	-	mg/kg	0.1	ND
Fluoranthene(FLT)	-	mg/kg	0.1	ND
Pyrene(PYR)	-	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	0.2	mg/kg	0.1	ND
Chrysene(CHR)	0.2	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF) and Benzo(j)fluoranthene(BjF)	0.2	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	0.2	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	0.2	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	0.2	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	0.2	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	0.2	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	0.2	mg/kg	0.1	ND

Conclusion

PASS

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

Test Method : With reference to EN13130-1:2004, analysis was performed by by ICP-OES and ICP-MS.

Sample 008: PASS

Simulant Used : Artificial tap water

Test Condition : 100 °C 0.5 hr(s)

Area/Volume : 6.0 dm²/kg

Test Item(s)	Limit	Unit	MDL	1st + 2nd Migration
Aluminium(Al)	35	mg/kg	0.2	ND
Antimony(Sb)	0.28	mg/kg	0.02	ND
Chromium(Cr)	1.75	mg/kg	0.1	ND
Cobalt(Co)	0.14	mg/kg	0.01	ND
Copper(Cu)	28	mg/kg	0.1	ND
Iron(Fe)	280	mg/kg	0.25	ND
Manganese(Mn)	12.6	mg/kg	0.25	ND
Molybdenum(Mo)	0.84	mg/kg	0.02	ND
Nickel(Ni)	0.98	mg/kg	0.05	ND
Silver(Ag)	0.56	mg/kg	0.03	ND



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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>1st + 2nd Migration</u>
Tin (Sn)	700	mg/kg	5	ND
Vanadium(V)	0.07	mg/kg	0.005	ND
Zinc(Zn)	35	mg/kg	1	ND
Arsenic(As)	0.014	mg/kg	0.001	ND
Barium(Ba)	8.4	mg/kg	0.25	ND
Beryllium(Be)	0.07	mg/kg	0.005	ND
Cadmium(Cd)	0.035	mg/kg	0.002	ND
Lead(Pb)	0.07	mg/kg	0.005	ND
Lithium(Li)	0.336	mg/kg	0.02	ND
Mercury(Hg)	0.021	mg/kg	0.002	ND
Thallium(Tl)	0.0007	mg/kg	0.0001	ND
Magnesium(Mg)	-	mg/kg	5	ND
Titanium(Ti)	-	mg/kg	0.05	ND
<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>3rd 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
Magnesium(Mg)	-	mg/kg	5	ND
Titanium(Ti)	-	mg/kg	0.05	ND

Notes :

- (1) Test condition & simulant were specified by client.
- (2) Requirement for repeat use article: According to Council of Europe Resolution CM/Res(2013)9, the result from 3rd migration shall comply with the Specific Release Limit (SRL) and the sum of 1st and 2nd



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migration shall not exceed seven times of SRL for repeated use articles
(3) Acidic foodstuff is not considered for compliance.

Remark: The test results of sample 005-007 are taken from report SHA EC18268499.006,019,009.
The test results of sample 008 are taken from report SHA EC18282004.004.



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