



TEST REPORT

Reference No. : SZ2022060414-1R2E

Date : Jun. 27, 2022

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Client : Paul Stricker SA | Paul Stricker CZ s.r.o | Reda a.s.

Address : N.I. Murtede, It5 - 3060-372 Murtede – Portugal | Hviezdoslavova 55d, 627 00 Brno - Czech Republic

The following merchandise was (were) submitted and identified by the client as:

Name of Product : Aluminum sport bottle

Test Model : 94601

Model May Cover : 94623

Main Material: /

Supplier: /

Buyer: /

Produced to : Paul Stricker SA

Manufacturer: 9993 | 0031882

Sample Received : Jun. 10, 2022

Test Period : Jun. 10, 2022 - Jun. 17, 2022

Test Specification and Conclusion:

Please refer to next page

THIS REPORT IS TO SUPERSEDE TEST REPORT SZ2022060414-1R1E.

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SZ2022060414-1E

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Test Request		Conclusion
1.	Phthalate content according to EC Regulation 1907/2006, REACH Annex XVII (entry 51&52)	PASS
2.	Lead (Pb) content according to EC Regulation 1907/2006, REACH Annex XVII (entry 63)	PASS
3.	Cadmium (Cd) content according to EC Regulation 1907/2006, REACH Annex XVII (entry 23)	PASS
4.	Polycyclic Aromatic Hydrocarbons (PAHs) contents according to EC Regulation 1907/2006, (EU) No 1272/2013 Amending PAHs of REACH Annex XVII(entry 50)	PASS
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31, and Technical Guide on Metals and Alloys used in food contact materials and articles of the 1 st edition in 2013, General Requirement (Article 3) in EU Regulation No. 1935/2004		
5.	Sensorial examination odour and taste test for full article	PASS
6.	Extractable Heavy Metals for Metal	PASS
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30, EN 602:2004, General Requirement(Article 3) in EU Regulation No. 1935/2004		
7.	Composition analysis for Aluminium alloy	PASS
Council of Europe Resolution AP (2004) 1 and Commission Regulation (EU) No 10/2011 and its subsequent amendment Regulation EU No.1282/2011, 1183/2012, 202/2014 and Regulation (EU) 2016/1416, (EU) 2017/752, (EU) 2018/213, (EU) 2020/1245 on plastic materials and articles intended to come into contact with foodstuffs, General Requirement (Article 3) in EU Regulation No. 1935/2004		
8.	Overall Migration test for Polymer coating	PASS
9.	Soluble Heavy Metals for Polymer coating	PASS
10.	Specific Migration of Primary Aromatic Amine for Polymer coating	PASS
11.	Specific Migration of Bisphenol-A for Polymer coating	PASS
12.	Specific Migration of BADGE, BFDGE and NOGE for Polymer coating	PASS
Commission Regulation (EU) No 10/2011 and its subsequent amendment Regulation EU No.1282/2011, 1183/2012, 202/2014 and Regulation (EU) 2016/1416, (EU) 2017/752, (EU) 2018/213, (EU) 2020/1245 on plastic materials and articles intended to come into contact with foodstuffs, General Requirement(Article 3) in EU Regulation No. 1935/2004		
8.	Overall Migration test for PP	PASS
9.	Soluble Heavy Metals for PP	PASS
10.	Specific migration test of Primary Aromatic Amine content for PP	PASS
11.	Specific Migration of Bisphenol-A for PP	PASS
13.	Bisphenol-A (BPA) Content for PP	See Result
Council of Europe Resolution AP (2004) 5, General Requirement (Article 3) in EU Regulation No. 1935/2004		
8.	Overall migration test for Silicone rubber	PASS
11.	Specific Migration of Bisphenol-A for Silicone rubber	PASS
13.	Bisphenol-A (BPA) Content for Silicone rubber	See Result

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TEST RESULTS:

1. Phthalates Content

Test Method: With reference to EN 14372-2004, Analysis was performed by GC-MS.

(1-1) For plasticized materials (including toys and childcare articles)

Test Item(s)	Unit	MDL	Test Results			Limited Value*
			7# [▲]	8# [▲]	9# [▲]	
Dibutyl Phthalate((DBP)	%	0.005	0.025	0.022	N.D.	---
Benzylbutyl Phthalate(BBP)		0.005	N.D.	N.D.	N.D.	---
Di-(2-ethylhexyl)Phthalate(DEHP)		0.005	N.D.	N.D.	N.D.	---
Di-isobutyl phthalate (DIBP)		0.005	N.D.	N.D.	N.D.	---
Total (DBP+BBP+DEHP+DIBP)		---	0.025	0.022	< 0.020	< 0.1

(1-2) For toys and childcare articles that can be mouthed

Test Item(s)	Unit	MDL	Test Results			Limited Value*
			7# [▲]	8# [▲]	9# [▲]	
Di-iso-nonylphthalate(DINP)	%	0.005	N.D.	N.D.	N.D.	---
Di-n-octylphthalate(DNOP)		0.005	N.D.	N.D.	N.D.	---
Di-iso-decylphthalate(DIDP)		0.005	N.D.	N.D.	N.D.	---
Total (DINP+DNOP+DIDP)		---	< 0.015	< 0.015	< 0.015	< 0.1

Remark: *The Limited value is based on EC Regulation 1907/2006, REACH Annex XVII (entry 51&52).

2. Lead(Pb) Content

Test Method: With reference to EPA 3052-1996 & EPA 6010D-2018, Analysis was performed by ICP-AES.

Test Item	MDL (mg/kg)	Test Results (mg/kg)			Limited Value** (mg/kg)
		7# [▲]	8# [▲]	9# [▲]	
Lead(Pb)	10	N.D.	N.D.	N.D.	500

Remark: **The Limited value is based on EC Regulation 1907/2006, REACH Annex XVII (entry 63).

***** To be continued *****

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3. Cadmium (Cd) Content

Test Method: With reference to EN 1122- 2001 Method B, Analysis was performed by ICP-AES.

Test Item(s)	MDL (mg/kg)	Test Results (mg/kg)			Limited Value*** (mg/kg)
		7# [▲]	8# [▲]	9# [▲]	
Cadmium (Cd)	10	N.D.	N.D.	N.D.	1000

Remark: ***The Limited value is based on EC Regulation 1907/2006, REACH Annex XVII (entry 23).

4. PAHs Contents

Test Method: With reference to AfPS GS 2019:01 PAK, Analysis was performed by GC-MS.

Test Items	CAS No.	MDL (mg/kg)	Test Results (mg/kg)			Limited Value**** (mg/kg)	
			7# [▲]	8# [▲]	9# [▲]	Category I	Category II
Benzo[a]pyrene	50-32-8	0.1	N.D.	N.D.	N.D.	1	0.5
Benzo[e]pyrene	192-97-2	0.1	N.D.	N.D.	N.D.	1	0.5
Benzo[a]anthracene	56-55-3	0.1	N.D.	N.D.	N.D.	1	0.5
Chrysene	218-01-9	0.1	N.D.	N.D.	N.D.	1	0.5
Benzo[b]fluoranthene	205-99-2	0.1	N.D.	N.D.	N.D.	1	0.5
Benzo[j]fluoranthene	205-82-3	0.1	N.D.	N.D.	N.D.	1	0.5
Benzo[k]fluoranthene	207-08-9	0.1	N.D.	N.D.	N.D.	1	0.5
Dibenzo[a,h]anthracene	53-70-3	0.1	N.D.	N.D.	N.D.	1	0.5

Remark: ****The Limited value is based on (EU) No 1272/2013 Amending PAHS of REACH Annex XVII(entry 50).

LIMITS FOR PAH :

Parameter	Category I	Category II
PAHs	Such articles include amongst other: 1. Sport equipment such as bicycles, golf clubs, racquets 2. House-hold utensils, trolleys, walking frames 3. tools for domestic use 4. clothing, footwear, gloves and sportswear 5. watch-straps, wrist-bands, masks, head-bands	Toys, including activity toys, and childcare articles

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- Note :**
- 1) MDL = Method Detection Limit.
 - 2) N.D. = Not detected, less than MDL.
 - 3) “---” = Not Regulated.
 - 4) % = Percentage by weight.
 - 5) ▲ As the client required, the sample was tested in mixture.

5. Sensorial Examination Odour and Taste Test

Test Method: Sensory test with reference to DIN10955: 2004-06

Test procedure: 1. Wash the sample with distilled water and dry it at room temperature;

2. Total immersion by water and keep at 70°C for 2 hours;

3. Cool to room temperature;

4. Degust the taste and evaluate;

5. Test the Blank as the steps 1~4.

Test Items	Result	Maximum Permissible Limit
	1#	
Sensorial examination odour (Point scale)	0	2.5
Sensorial examination taste (Point scale)	0	2.5

Scale evaluation:

- 0: No perceptible odour and taste
- 1: Odour and taste just perceptible (still difficult to define)
- 2: Moderate odour and taste
- 3: Moderately strong odour and taste
- 4: Strong odour and taste

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6. Extractable Heavy Metals

Test Method: Sample prepared with reference to Technical Guide on Metals and Alloys used in food contact materials and articles of the 1st edition in 2013 and by ICP-OES & ICP-MS

Test condition: 70°C, 2 hours with Artificial tap water(prepare according DIN EN 16889:2016-10)

Test sample No and description: 2# Silver aluminum bottle epoxy coating inner wall

Extractable Elements	The 1 st Result (mg/kg)	The 2 nd Result (mg/kg)	The 1 st + 2 nd Result (mg/kg)	7*Limit (mg/kg)	The 3 rd Result (mg/kg)	Limit (mg/kg)
Silver (Ag)	N.D.	N.D.	N.D.	0.56	N.D.	0.08
Aluminium (Al)	0.02	0.04	0.06	35	0.02	5
Chromium (Cr)	N.D.	N.D.	N.D.	1.75	N.D.	0.250
Cobalt (Co)	N.D.	N.D.	N.D.	0.14	N.D.	0.02
Copper (Cu)	N.D.	N.D.	N.D.	28	N.D.	4
Iron (Fe)	N.D.	N.D.	N.D.	280	N.D.	40
Magnesium (Mg)	N.D.	N.D.	N.D.	---	N.D.	---
Manganese (Mn)	N.D.	N.D.	N.D.	12.6	N.D.	1.8
Molybdenum (Mo)	N.D.	N.D.	N.D.	0.84	N.D.	0.12
Nickel (Ni)	N.D.	N.D.	N.D.	0.98	N.D.	0.14
Tin (Sn)	N.D.	N.D.	N.D.	700	N.D.	100
Titanium (Ti)	N.D.	N.D.	N.D.	---	N.D.	---
Vanadium (V)	N.D.	N.D.	N.D.	0.07	N.D.	0.01
Zinc (Zn)	N.D.	N.D.	N.D.	35	N.D.	5
Antimony (Sb)	N.D.	N.D.	N.D.	0.28	N.D.	0.04
Arsenic (As)	N.D.	N.D.	N.D.	0.014	N.D.	0.002
Barium (Ba)	N.D.	N.D.	N.D.	8.4	N.D.	1.2
Beryllium (Be)	N.D.	N.D.	N.D.	0.07	N.D.	0.01
Cadmium (Cd)	N.D.	N.D.	N.D.	0.035	N.D.	0.005
Lead (Pb)	N.D.	N.D.	N.D.	0.07	N.D.	0.010
Lithium (Li)	N.D.	N.D.	N.D.	0.336	N.D.	0.048
Mercury (Hg)	N.D.	N.D.	N.D.	0.021	N.D.	0.003
Thallium (Tl)	N.D.	N.D.	N.D.	0.0007	N.D.	0.0001

***** To be continued *****

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Remark:

1. The following table is the MDL of the Extractable Heavy Metals testing

Extractable Elements	MDL(mg/kg)	Extractable Elements	MDL(mg/kg)	Extractable Elements	MDL(mg/kg)
Silver (Ag)	0.01	Molybdenum (Mo)	0.01	Barium (Ba)	0.01
Aluminium (Al)	0.01	Nickel (Ni)	0.01	Beryllium (Be)	0.01
Chromium (Cr)	0.01	Tin (Sn)	0.01	Cadmium (Cd)	0.001
Cobalt (Co)	0.01	Titanium (Ti)	0.01	Lead (Pb)	0.001
Copper (Cu)	0.01	Vanadium (V)	0.01	Lithium (Li)	0.01
Iron (Fe)	0.01	Zinc (Zn)	0.01	Mercury (Hg)	0.001
Magnesium (Mg)	0.01	Antimony (Sb)	0.01	Thallium (Tl)	0.0001
Manganese (Mn)	0.01	Arsenic (As)	0.001	---	---

2. MDL = Method Detection Limit.

3. N.D.= Not detected, less than MDL.

4. The submitted sample/component is a repeated use article. The migration test was carried out three times on the same article. The sum of the results of the first and second tests should not exceed seven times the limit (Result 1st test + Result 2nd test <7* limit) and the Result 3rd should not exceed the limit.

7. Composition Analysis

Test Method: Acid digestion, followed by analysis using Inductively Coupled Argon Plasma Spectrometer.

Test Items	Unit	Result	Maximum Permissible Limit for Aluminium Alloy
		3#	
1. Silicon content	%	0.06	13.5 maximum
2. iron content	%	0.12	2.0 maximum
3. Magnesium content	%	0.10	11.0 maximum
4. Manganese content	%	<0.005	4.0 maximum
5. Nickel content	%	<0.005	3.0 maximum
6. Copper content	%	<0.005	0.6 maximum
7. Chromium content	%	<0.005	0.35 maximum
8. Titanium content	%	0.02	0.3 maximum
9. Zinc content	%	0.01	0.25 maximum
10. Tin content	%	<0.005	0.05 maximum
11. Beryllium content	%	<0.005	0.05 maximum
12. Thallium content	%	<0.005	0.05 maximum
13. Zirconium content	%	<0.005	0.3 maximum
14. Aluminium content	%	99.63	--

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8. Overall Migration Test

Test Method: With reference to EN1186-1:2002 for selection of conditions and test methods;
EN1186-3:2002 aqueous food simulants by total immersion method;
EN1186-9:2002 aqueous food simulants by article filling method;

Surface area(dm²)/Volume(ml):

2# 1/147

4# 1/100

5# 1/100

6# 1/100

Simulants	Unit	Test Condition	Result			Maximum Permissible Limit	Conclusion [#]
			2#-1 st	2#-2 nd	2#-3 rd		
10% ethanol	mg/dm ²	2 hours at 70°C	<3.0	<3.0	<3.0	10	PASS
50% ethanol	mg/dm ²	2 hours at 70°C	<3.0	<3.0	<3.0	10	PASS

Simulants	Unit	Test Condition	Result			Maximum Permissible Limit	Conclusion [#]
			4#-1 st	4#-2 nd	4#-3 rd		
3% acetic acid	mg/dm ²	2 hours at 70°C	<3.0	<3.0	<3.0	10	PASS
10% ethanol	mg/dm ²	2 hours at 70°C	<3.0	<3.0	<3.0	10	PASS
50% ethanol	mg/dm ²	2 hours at 70°C	<3.0	<3.0	<3.0	10	PASS

Simulants	Unit	Test Condition	Result			Maximum Permissible Limit	Conclusion [#]
			5#-1 st	5#-2 nd	5#-3 rd		
3% acetic acid	mg/kg	2 hours at 70°C	<10	<10	<10	60	PASS
10% ethanol	mg/kg	2 hours at 70°C	<10	<10	<10	60	PASS
50% ethanol	mg/kg	2 hours at 70°C	<10	<10	<10	60	PASS

Simulants	Unit	Test Condition	Result			Maximum Permissible Limit	Conclusion [#]
			6#-1 st	6#-2 nd	6#-3 rd		
10% ethanol	mg/dm ²	2 hours at 70°C	<3.0	<3.0	<3.0	10	PASS
50% ethanol	mg/dm ²	2 hours at 70°C	9.03	<3.0	<3.0	10	PASS

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9. Soluble Heavy Metals

Test Method: Sample preparation in 10% ethanol at 70°C for 2 hours, followed by analysis using Inductively Coupled Argon Plasma Spectrometer.

Surface area(dm²)/Volume(ml):

2# 1/147

6# 1/167

Test Item	Unit	Result			Maximum Permissible Limit
		2#-1 st	2#-2 nd	2#-3 rd	
Soluble Aluminium	mg/kg	<0.1	<0.1	<0.1	1
Soluble Antimony	mg/kg	<0.01	<0.01	<0.01	0.04
Soluble Arsenic	mg/kg	<0.01	<0.01	<0.01	0.01
Soluble Barium	mg/kg	<0.1	<0.1	<0.1	1
Soluble Cadmium	mg/kg	<0.001	<0.001	<0.001	0.002
Soluble Chromium	mg/kg	<0.01	<0.01	<0.01	0.01
Soluble Cobalt	mg/kg	<0.01	<0.01	<0.01	0.05
Soluble Copper	mg/kg	<0.1	<0.1	<0.1	5
Soluble Iron	mg/kg	<5	<5	<5	48
Soluble Lead	mg/kg	<0.01	<0.01	<0.01	0.01
Soluble Lithium	mg/kg	<0.01	<0.01	<0.01	0.6
Soluble Manganese	mg/kg	<0.01	<0.01	<0.01	0.6
Soluble Mercury	mg/kg	<0.01	<0.01	<0.01	0.01
Soluble Nickel	mg/kg	<0.01	<0.01	<0.01	0.02
Soluble Zinc	mg/kg	<0.1	<0.1	<0.1	5
Soluble Tungsten	mg/kg	<0.01	<0.01	<0.01	0.05
Soluble Europium	mg/kg	<0.01	<0.01	<0.01	Sum≤0.05
Soluble Gadolinium	mg/kg	<0.01	<0.01	<0.01	
Soluble Lanthanum	mg/kg	<0.01	<0.01	<0.01	
Soluble Terbium	mg/kg	<0.01	<0.01	<0.01	
conclusion[#]	---	PASS			---

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Test Item	Unit	Result			Maximum Permissible Limit
		6#-1 st	6#-2 nd	6#-3 rd	
Soluble Aluminium	mg/kg	<0.1	<0.1	<0.1	1
Soluble Antimony	mg/kg	<0.01	<0.01	<0.01	0.04
Soluble Arsenic	mg/kg	<0.01	<0.01	<0.01	0.01
Soluble Barium	mg/kg	<0.1	<0.1	<0.1	1
Soluble Cadmium	mg/kg	<0.001	<0.001	<0.001	0.002
Soluble Chromium	mg/kg	<0.01	<0.01	<0.01	0.01
Soluble Cobalt	mg/kg	<0.01	<0.01	<0.01	0.05
Soluble Copper	mg/kg	<0.1	<0.1	<0.1	5
Soluble Iron	mg/kg	<5	<5	<5	48
Soluble Lead	mg/kg	<0.01	<0.01	<0.01	0.01
Soluble Lithium	mg/kg	<0.01	<0.01	<0.01	0.6
Soluble Manganese	mg/kg	<0.01	<0.01	<0.01	0.6
Soluble Mercury	mg/kg	<0.01	<0.01	<0.01	0.01
Soluble Nickel	mg/kg	<0.01	<0.01	<0.01	0.02
Soluble Zinc	mg/kg	<0.1	<0.1	<0.1	5
Soluble Tungsten	mg/kg	<0.01	<0.01	<0.01	0.05
Soluble Europium	mg/kg	<0.01	<0.01	<0.01	Sum≤0.05
Soluble Gadolinium	mg/kg	<0.01	<0.01	<0.01	
Soluble Lanthanum	mg/kg	<0.01	<0.01	<0.01	
Soluble Terbium	mg/kg	<0.01	<0.01	<0.01	
conclusion[#]	---	PASS			---

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Test Method: Sample preparation in 3% Acetic acid at 70°C for 2 hours, followed by analysis using Inductively Coupled Argon Plasma Spectrometer.

Surface area(dm²)/Volume(ml): 1/167

Test Item	Unit	Result			Maximum Permissible Limit
		4#-1 st	4#-2 nd	4#-3 rd	
Soluble Aluminium	mg/kg	<0.1	<0.1	<0.1	1
Soluble Antimony	mg/kg	<0.01	<0.01	<0.01	0.04
Soluble Arsenic	mg/kg	<0.01	<0.01	<0.01	0.01
Soluble Barium	mg/kg	<0.1	<0.1	<0.1	1
Soluble Cadmium	mg/kg	<0.001	<0.001	<0.001	0.002
Soluble Chromium	mg/kg	<0.01	<0.01	<0.01	0.01
Soluble Cobalt	mg/kg	<0.01	<0.01	<0.01	0.05
Soluble Copper	mg/kg	<0.1	<0.1	<0.1	5
Soluble Iron	mg/kg	<5	<5	<5	48
Soluble Lead	mg/kg	<0.01	<0.01	<0.01	0.01
Soluble Lithium	mg/kg	<0.01	<0.01	<0.01	0.6
Soluble Manganese	mg/kg	<0.01	<0.01	<0.01	0.6
Soluble Mercury	mg/kg	<0.01	<0.01	<0.01	0.01
Soluble Nickel	mg/kg	<0.01	<0.01	<0.01	0.02
Soluble Zinc	mg/kg	<0.1	<0.1	<0.1	5
Soluble Tungsten	mg/kg	<0.01	<0.01	<0.01	0.05
Soluble Europium	mg/kg	<0.01	<0.01	<0.01	Sum≤0.05
Soluble Gadolinium	mg/kg	<0.01	<0.01	<0.01	
Soluble Lanthanum	mg/kg	<0.01	<0.01	<0.01	
Soluble Terbium	mg/kg	<0.01	<0.01	<0.01	
conclusion[#]	---	PASS			---

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10. Specific Migration of Primary Aromatic Amine

Test Method: Sample preparation with reference to EN 13130-1: 2004 with selection of simulant and condition, followed by analysis by LC/MS/MS & UV.

Test Condition: 10% ethanol, 70°C for 2 hours,

Surface area(dm²)/Volume(ml):

2# 1/147

6# 1/167

Test Item(s)	Unit	Result			Maximum Permissible Limit
		2#-1 st	2#-2 nd	2#-3 rd	
4-Aminobiphenyl	mg/kg	<0.001	<0.001	<0.001	0.002
Benzidine	mg/kg	<0.001	<0.001	<0.001	0.002
4-Chloro-o-toluidine	mg/kg	<0.001	<0.001	<0.001	0.002
2-Naphthylamine	mg/kg	<0.001	<0.001	<0.001	0.002
O-Aminoazotoluene	mg/kg	<0.001	<0.001	<0.001	0.002
5-nitro-o-toluidine	mg/kg	<0.001	<0.001	<0.001	0.002
4-Chloroaniline	mg/kg	<0.001	<0.001	<0.001	0.002
4-methoxy-m-phenylenediamine	mg/kg	<0.001	<0.001	<0.001	0.002
4,4'-methylenedianiline	mg/kg	<0.001	<0.001	<0.001	0.002
3,3'-Dichlorobenzidine	mg/kg	<0.001	<0.001	<0.001	0.002
3,3'-Dimethoxybenzidine	mg/kg	<0.001	<0.001	<0.001	0.002
3,3'-Dimethylbenzidine	mg/kg	<0.001	<0.001	<0.001	0.002
4,4'-methylenedi-o-toluidine	mg/kg	<0.001	<0.001	<0.001	0.002
P-Cresidine	mg/kg	<0.001	<0.001	<0.001	0.002
4,4'-Methylene-bis-(2-Chloro-aniline)	mg/kg	<0.001	<0.001	<0.001	0.002
4,4'-oxydianiline	mg/kg	<0.001	<0.001	<0.001	0.002
4,4'-Thiodianiline	mg/kg	<0.001	<0.001	<0.001	0.002
O-Toluidine	mg/kg	<0.001	<0.001	<0.001	0.002
4-methyl-m-phenylenediamine	mg/kg	<0.001	<0.001	<0.001	0.002
2,4,5-Trimethylaniline	mg/kg	<0.001	<0.001	<0.001	0.002
4-Aminoazobenzene	mg/kg	<0.001	<0.001	<0.001	0.002
O-Anisidine	mg/kg	<0.001	<0.001	<0.001	0.002
Other Primary Aromatic Amine	mg/kg	<0.01	<0.01	<0.01	Sum≤0.01
conclusion[#]	---	PASS			---

***** To be continued *****

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Test Item(s)	Unit	Result			Maximum Permissible Limit
		6#-1 st	6#-2 nd	6#-3 rd	
4-Aminobiphenyl	mg/kg	<0.001	<0.001	<0.001	0.002
Benzidine	mg/kg	<0.001	<0.001	<0.001	0.002
4-Chloro-o-toluidine	mg/kg	<0.001	<0.001	<0.001	0.002
2-Naphthylamine	mg/kg	<0.001	<0.001	<0.001	0.002
O-Aminoazotoluene	mg/kg	<0.001	<0.001	<0.001	0.002
5-nitro-o-toluidine	mg/kg	<0.001	<0.001	<0.001	0.002
4-Chloroaniline	mg/kg	<0.001	<0.001	<0.001	0.002
4-methoxy-m-phenylenediamine	mg/kg	<0.001	<0.001	<0.001	0.002
4,4'-methylenedianiline	mg/kg	<0.001	<0.001	<0.001	0.002
3,3'-Dichlorobenzidine	mg/kg	<0.001	<0.001	<0.001	0.002
3,3'-Dimethoxybenzidine	mg/kg	<0.001	<0.001	<0.001	0.002
3,3'-Dimethylbenzidine	mg/kg	<0.001	<0.001	<0.001	0.002
4,4'-methylenedi-o-toluidine	mg/kg	<0.001	<0.001	<0.001	0.002
P-Cresidine	mg/kg	<0.001	<0.001	<0.001	0.002
4,4'-Methylene-bis-(2-Chloro-aniline)	mg/kg	<0.001	<0.001	<0.001	0.002
4,4'-oxydianiline	mg/kg	<0.001	<0.001	<0.001	0.002
4,4'-Thiodianiline	mg/kg	<0.001	<0.001	<0.001	0.002
O-Toluidine	mg/kg	<0.001	<0.001	<0.001	0.002
4-methyl-m-phenylenediamine	mg/kg	<0.001	<0.001	<0.001	0.002
2,4,5-Trimethylaniline	mg/kg	<0.001	<0.001	<0.001	0.002
4-Aminoazobenzene	mg/kg	<0.001	<0.001	<0.001	0.002
O-Anisidine	mg/kg	<0.001	<0.001	<0.001	0.002
Other Primary Aromatic Amine	mg/kg	<0.01	<0.01	<0.01	Sum≤0.01
conclusion[#]	---	PASS			---

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Test Condition: 3% Acetic acid, 70°C for 2 hours,

Surface area(dm²)/Volume(ml): 1/167

Test Item(s)	Unit	Result			Maximum Permissible Limit
		4#-1 st	4#-2 nd	4#-3 rd	
4-Aminobiphenyl	mg/kg	<0.001	<0.001	<0.001	0.002
Benzidine	mg/kg	<0.001	<0.001	<0.001	0.002
4-Chloro-o-toluidine	mg/kg	<0.001	<0.001	<0.001	0.002
2-Naphthylamine	mg/kg	<0.001	<0.001	<0.001	0.002
O-Aminoazotoluene	mg/kg	<0.001	<0.001	<0.001	0.002
5-nitro-o-toluidine	mg/kg	<0.001	<0.001	<0.001	0.002
4-Chloroaniline	mg/kg	<0.001	<0.001	<0.001	0.002
4-methoxy-m-phenylenediamine	mg/kg	<0.001	<0.001	<0.001	0.002
4,4'-methylenedianiline	mg/kg	<0.001	<0.001	<0.001	0.002
3,3'-Dichlorobenzidine	mg/kg	<0.001	<0.001	<0.001	0.002
3,3'-Dimethoxybenzidine	mg/kg	<0.001	<0.001	<0.001	0.002
3,3'-Dimethylbenzidine	mg/kg	<0.001	<0.001	<0.001	0.002
4,4'-methylenedi-o-toluidine	mg/kg	<0.001	<0.001	<0.001	0.002
P-Cresidine	mg/kg	<0.001	<0.001	<0.001	0.002
4,4'-Methylene-bis-(2-Chloro-aniline)	mg/kg	<0.001	<0.001	<0.001	0.002
4,4'-oxydianiline	mg/kg	<0.001	<0.001	<0.001	0.002
4,4'-Thiodianiline	mg/kg	<0.001	<0.001	<0.001	0.002
O-Toluidine	mg/kg	<0.001	<0.001	<0.001	0.002
4-methyl-m-phenylenediamine	mg/kg	<0.001	<0.001	<0.001	0.002
2,4,5-Trimethylaniline	mg/kg	<0.001	<0.001	<0.001	0.002
4-Aminoazobenzene	mg/kg	<0.001	<0.001	<0.001	0.002
O-Anisidine	mg/kg	<0.001	<0.001	<0.001	0.002
Other Primary Aromatic Amine	mg/kg	<0.01	<0.01	<0.01	Sum≤0.01
conclusion[#]	---	PASS			---

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11. Specific Migration of Bisphenol-A

Test Method: Sample preparation with reference to BS EN 13130-1:2004 with selection of simulants and condition, followed by analysis using High Performance Liquid Chromatography/ Mass Spectrometer (HPLC/MS).

Surface area(dm²)/Volume(ml):

2# 1/147

4# 1/167

5# 1/167

6# 1/167

Test Items	Unit	Result			Maximum Permissible Limit
		2#-1 st	2#-2 nd	2#-3 rd	
Specific migration of Bisphenol-A in 10% ethanol at 70°C, 2 hours	mg/kg	<0.01	<0.01	<0.01	0.05
conclusion[#]	---	PASS			---

Test Items	Unit	Result			Maximum Permissible Limit
		4#-1 st	4#-2 nd	4#-3 rd	
Specific migration of Bisphenol-A in 3% acetic acid at 70°C, 2 hours	mg/kg	<0.01	<0.01	<0.01	0.05
conclusion[#]	---	PASS			---

Test Items	Unit	Result			Maximum Permissible Limit
		5#-1 st	5#-2 nd	5#-3 rd	
Specific migration of Bisphenol-A in 3% acetic acid at 70°C, 2 hours	mg/kg	<0.01	<0.01	<0.01	0.05
conclusion[#]	---	PASS			---

Test Items	Unit	Result			Maximum Permissible Limit
		6#-1 st	6#-2 nd	6#-3 rd	
Specific migration of Bisphenol-A in 10% ethanol at 70°C, 2 hours	mg/kg	<0.01	<0.01	<0.01	0.05
conclusion[#]	---	PASS			---

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12. Specific Migration of BADGE, BFDGE and NOGE

Test Method: With reference to EN 15136:2006 for Bisphenol-A Diglycidyl Ether (BADGE) and some of its derivatives.

With reference to EN 15137:2006 for Bisphenol-F Diglycidyl Ether (BFDGE) and Novolac Glycidyl Ethers (NOGE).

Simulant used: 10% ethanol

Test condition: 70°C for 2 hours

Surface area(dm²)/Volume(ml): 1/147

Test Item	Unit	Result			Maximum Permissible Limit
		2#-1 st	2#-2 nd	2#-3 rd	
BADGE	mg/6dm ²	<0.06	<0.06	<0.06	Sum<9
BADGE.H ₂ O	mg/6dm ²	<0.06	<0.06	<0.06	
BADGE.2H ₂ O	mg/6dm ²	<0.06	<0.06	<0.06	
BADGE.HCl	mg/6dm ²	<0.06	<0.06	<0.06	Sum<1
BADGE.2HCl	mg/6dm ²	<0.06	<0.06	<0.06	
BADGE.H ₂ O.HCl	mg/6dm ²	<0.06	<0.06	<0.06	
BFDGE	mg/6dm ²	<0.06	<0.06	<0.06	Absent
NOGE	mg/6dm ²	<0.06	<0.06	<0.06	Absent
conclusion[#]	---	PASS			---

Remark: [#]According to Regulation (EU) No 10/2011 and its amendment (EU) 2020/1245, for repeated use materials and articles:

1) The applicable overall migration test shall be carried out three times on a single sample. The overall migration in the second test shall be lower than in the first test, and the overall migration in the third test shall be lower than in the second test. Compliance with the overall migration limit shall be verified on the basis of the level of the overall migration found in the third test.

2) Specific migration test(s) shall be carried out three times on a single sample. Compliance shall then be verified on the basis of the level of the migration found in the third test and on the basis of the stability of the material or article from the first to the third migration test. The stability of the material shall be considered insufficient if migration is observed above the level of detection in any of the three migration tests, and increases from the first migration test to the third migration test. In case of insufficient stability, compliance of the material shall not be established even in case the specific migration limit is not exceeded in any of the three tests. Irrespective of the above rules, a material or article shall never be considered to comply with the Regulation if in the first test a substance that is prohibited from migrating or from being released in detectable quantities.

***** To be continued *****

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13. Bisphenol-A (BPA) Content

Test Method: With reference to EPA3550C-2007, Analysis was performed by UPLC-MS-MS.

Test Item	Unit	MDL	Test Result	
			4#	5#
Bisphenol-A (BPA)	mg/kg	0.01	N.D.	N.D.

Test Part Description:

1# Aluminum sport bottle

3# Aluminum alloy substrate

5# Transparent silicone ring

7# Red coating+ pink coating+ orange coating

9# Gold coating+ silver coating+ grey coating

2# Silver aluminum bottle epoxy coating inner wall

4# Black PP inner lid

6# Red coating (outer)

8# Green coating+ blue coating+ lake blue coating

SAMPLE PHOTOS



1#



2#



3#



4#

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6#



7#



8#



9#

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



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GENERAL CONDITIONS OF SERVICES

STQ Testing Services Co.,Ltd. (hereinafter "STQ"), The testing or examining under the request of the customer should obey terms as follow, according to regulation of "Contract Law of the People's Republic of China" on processing and undertaking contract, our company have legal right of termination without any reason and have the right to accept or refuse testing or examining request:

1. STQ only acts for the person or body originating the instructions (the "Clients"). No other party is entitled to give instructions, particularly on the scope of testing or delivery of report or certificate, unless authorized by the Clients.
2. Sample recycling: when the testing or examining is finished, the customer should recycle the sample. Within 30 days after issuing of testing report, if the customer could not recycle the sample or send notification of sample recycling in written (for example, if the sample belongs to consumables, toxic drugs, dangerous goods and other items that are not suitable for long-term storage, such as semi-finished products and fragile samples such as liquids and powders, the retention period will be shortened to 7 days). After the retention period, STQ has the right to dispose of the sample arbitrarily without paying compensation or compensation to the customer and take no responsibility for the consequences that damages the customer's trade secrets and intellectual property rights due to the loss of the sample.
3. The delivery and return fee of the samples which need to do testing at STQ should be paid by the client. STQ will not bear the responsibility for the testing error that is caused by transporting, packaging and labelling.
4. The Clients shall always comply with the following before or during STQ providing its services:
 - a) provide sample(s) and relevant data, at the same time, guarantee the consistence of the sample(s)' name they declared with the sample(s) or the goods provided. Otherwise, STQ will not bear any relevant responsibilities;
 - b) giving timely instructions and adequate information to enable STQ to perform the services effectively;
 - c) supply, when requested by STQ, any equipment and personnel for the performance of the services;
 - d) take all necessary steps to eliminate or remedy any obstruction in the performance of the services;
 - e) inform STQ in advance of any hazards or dangers, actual or potential, associated with any order of samples or testing;
 - f) provide all necessary access for STQ's representative to enable the required services to be performed effectively;
 - g) ensure all essential steps are taken for safety of working conditions, sites and installations during the performance of services;
 - h) fully discharge all its liabilities under any contract like sales contract with a third party, whether or not a report or certificate has been issued by STQ, failing which STQ shall be under no obligation to the Clients.
5. Subject to STQ's accepting the Client's instructions, STQ will issue reports or certificates which reflect statements of opinion made with due care within the scope of instructions but STQ is not obliged to report upon any facts outside the instructions, if there were any dissidence about the report or certificate, the Client should provide the written declaration to STQ within 15 days after the date receiving the report or certificate, otherwise, STQ will not hear the case after the date limit.
6. STQ is irrevocably authorized by the Clients to deliver at its discretion the report or the certificate to any third party when instructed by the Clients or where it implicitly follows from circumstances, trade custom, usage or practice as determined by STQ.
7. A test report will be issued in confidence to the Clients and it will be strictly treated as such by STQ. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of STQ. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by STQ, to his customer, supplier or other persons directly concerned. STQ will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the report unless required by the relevant governmental authorities, laws or court orders.
8. Applicants wishing to use STQ's reports in court proceedings or arbitration shall inform STQ to that effect prior to submitting the sample for testing.
9. The report will refer only to the sample tested and will not apply to the bulk, unless the sampling has been carried out by STQ and is stated as such in the Report. Also, the report is only for reference.
10. Any documents containing engagements between the Clients and third parties like contracts of sale, letters of credit, bills of lading, etc. are regarded as information for STQ only and do not affect the scope of the services or the obligations accepted by STQ.
11. If the Clients do not specify the methods/standards to be applied, STQ will choose the appropriate ones and further information regarding the methods can be obtained by direct contact with STQ, for the in-house method, STQ will only provide the summary.
12. No liability shall be incurred by and no claim shall be made against STQ or its servants, agents, employees or independent contractors in respect of any loss or damage to any such materials, equipment and property occurring whilst at STQ or any work places in which the testing is carried out, or in the course of transit to or from STQ or the said work places, whether or not resulting from any acts, neglect or default on the part of any such servants, agents, employees or independent contractors of STQ.
13. STQ will not be liable, or accept responsibility for any loss or damage howsoever arising from the use of information contained in any of its reports or in any communication whatsoever about its said tests or investigations.
14. Except for term 11 and term 12, if the test sample is damaged due to the negligence of ZOTAC, the total compensation for loss and damage to the sample or loss to the customer shall not exceed twice of the test service fee.
15. In the event of STQ prevented by any cause outside STQ's control from performing any service for which an order has been given or an agreement made, the Clients shall pay to STQ:
 - a) the amount of all abortive expenditure actually made or incurred;
 - b) a proportion of the agreed fee or commission equal to the proportion (if any) of the service actually carried out by STQ, and STQ shall be relieved of all responsibility whatsoever for the partial or total non-performance of the required service.

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16. STQ shall be discharged from all liabilities for all claims for loss, damage or expense unless suit is brought within one calendar year after the date of the performance by STQ of the service relating to the claim or in the event of any alleged non-performance within one year of the date when such service should have been completed.
17. The Clients acknowledge that STQ does not, either by entering into a contract or by performing service, assume or undertake to discharge any duty of the Clients to any other persons. STQ is neither an insurer nor a guarantor and disclaims all liability in such capacity.
18. The Clients shall hold harmless and indemnify STQ and its officers, employees, agents or independent contractors against all claims made by any third party for loss, damage or expense of whatsoever nature including reasonable legal expenses relating to the performance or non-performance of any services to the extent that the aggregate of any such claims relating to any one service exceed the limits mentioned in Clause 13.
19. Any unauthorized alteration, forgery or falsification of the content or appearance of the report/certificate is unlawful and offenders may be prosecuted to the fullest extent of the law; in the event of improper use of the report, STQ reserves the right to withdraw it, and to adopt any other measures which may be appropriate.
20. Samples are deposited with and accepted by STQ on the basis that either they are insured by the Clients or the Clients assumes entire responsibility for loss through fire, theft, burglary or for damages arising in the course of analysis or handling, without recourse whatsoever to STQ or its servants, agent, employees or independent contractors.
21. If the requirements of the Clients require the analysis of samples by the Clients' or any third party's laboratory, STQ will only convey the result of the analysis without responsibility for its accuracy. If STQ is only able to witness an analysis by the Clients' or any third Party's laboratory STQ will only confirm that the correct sample has been analyzed without responsibility for the accuracy of any analysis or results.
22. In the event of any unforeseen additional time or costs being incurred in the course of carrying out any of its services, STQ shall be entitled to charge the Clients additional fees to reflect the additional time and costs incurred.
23. All rights (including but not limited to copyright) in any reports, certificates or other materials produced by STQ in the course of providing its services shall remain vested in STQ.
24. Unless otherwise agreed in written, payment should be arranged within 10 days after the invoice date or the debit note date. If the payment is overdue, the overdue penalty shall be calculated at 1‰ per day of the unpaid part till the actual payment date. All expenses, costs and losses incurred by STQ as a result of collecting or claiming the fees owed shall be borne by the customer, including but not limited to attorney fees, litigation fees, preservation fees, preservation guarantee fees, travel expenses, etc.
25. Test results may be transmitted by electronic means at the Client's request. However, it should be noted that electronic transmission cannot guarantee the information contained will not be lost, delayed or intercepted by third party. STQ is not liable for any disclosure, error or omission in the content of such messages as a result of electronic transmission.
26. If necessary, STQ may subcontract part of or all tests to competent subcontractors. If no objection is raised at the time of the Clients submitting the application, STQ shall assume the Client's approval.
27. This report/certificate does not relieve sellers/suppliers from their contractual responsibility with regards to the quality/quantity of this delivery nor does it prejudice the Client's right to claim towards sellers/suppliers for compensation for any apparent and/or hidden defects not detected during STQ's random inspection or testing or audit.
28. The testing data and result(s) in this report is(are) just for scientific research, education, internal quality control and product development etc.
29. STQ reserves the right to include Special Conditions in addition to the foregoing General Conditions if warranted by the particular circumstances of the required test or investigation [this clause is only effective when the other party has been informed].
30. The foregoing General Conditions shall in all respects be governed, construed, interpreted and operated in accordance with the relevant Chinese laws and regulations. Unless otherwise agreed, the arbitration shall take place in P. R. C
31. These General Condition have been drafted in Chinese and may be translated into other languages. In the event of any discrepancy, the Chinese version shall prevail.
32. In general sample will be stored for 30 days. But for liquid, powder, etc semi-product & fragile product, it will be stored only for 7 days.

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