

FLASHBAY ELECTRONICS  
Building 2, Jixun Industrial Park, Xinjiao, Dong'ao Village,  
Shatian Town, Huiyang

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# TEST REPORT

**Test Report No.** : **4300027.53** Version 1

**Project No.** : **4300027.00**

**Test Report Date** : **2023-03-29**

Job No. : 23-00229

Applicant : FLASHBAY ELECTRONICS

Building2, Jixun Industrial Park, Xinjiao, Dong'ao Village, Shatian Town,  
Huiyang

Product Name : Water Bottles

Model No. : Aqualok Metal/QLM

Test Requested : 1. Regulation (EC) No 1935/2004, Regulation (EU) 10/2011, EU  
2020/1245 and its amendments  
- Overall migration  
- Specific migration of heavy metals  
- Specific migration of primary aromatic amine  
2. Overall migration according to Council Europe Resolution AP (2004) 5  
on Silicones Used for Food Contact Applications  
3. Extractable heavy metals (23 elements) according to EU Technical  
Guide Council of Europe Resolution CM/Res (2013)9 on metals and  
alloys Used in Food Contact Materials and Articles

Test Method : Please refer to next pages


Sample Received : 2023-02-16

Testing Period : 2023-02-16 to 2023-03-28

Test Results

- following pages -

**Resume:**

No.	Parameter	Sample photos
		
1.	Overall migration (EU 10/2011 and EU 2020/1245)	PASS
2.	Specific migration of heavy metals (EU 10/2011 and EU 2020/1245)	PASS
3.	Specific migration of Primary Aromatic Amine (EU 10/2011 and EU 2020/1245)	PASS
4.	Overall migration (Resolution AP(2004) 5)	PASS
5.	Extractable heavy metals (23 elements) (Europe Resolution CM/Res(2013)9)	PASS

Guangzhou, March 29, 2023

Signed for and on behalf of

**DEKRA Testing and Certification (Shanghai) Ltd., Guangzhou branch**

Chemical & Mechanical



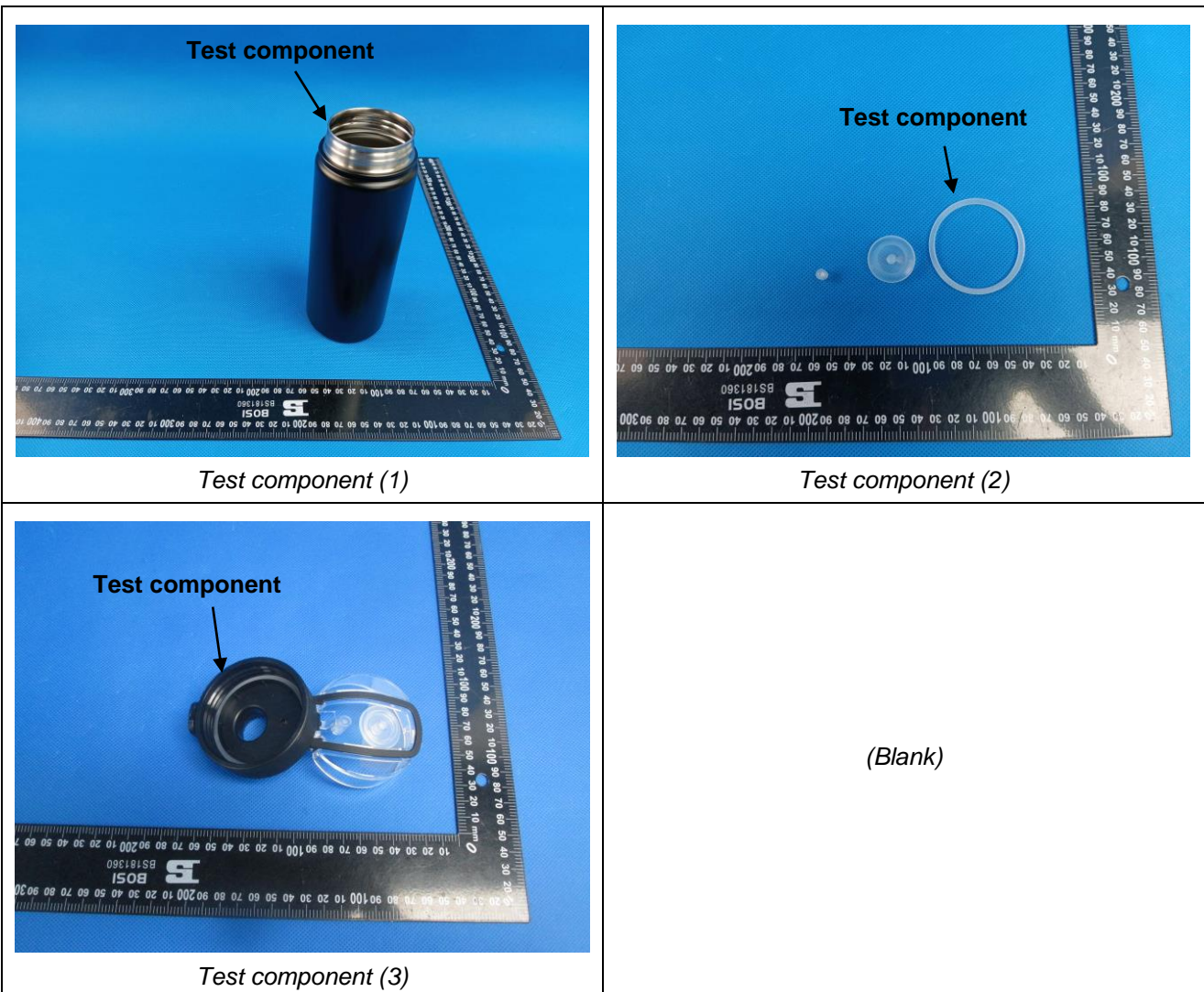

Devin Ai  
Laboratory Manager

Attention: Please note that every statement made in this report is only valid for the samples tested and reported herein. This report shall not be reproduced except in full, without the written approval of the testing laboratory.

**Sample Descriptions:**

No.	Description(s)	Material(s) (claimed by applicant)
(1)	Bottles	Stainless steel 304
(2)	Silicone seal ring / Nozzle seat / Vent seal	Silicone (Transparent)
(3)	Lid	PP (Black)

**Sample photos**



## TEST RESULTS

### 1. Regulation (EC) No 1935/2004, Regulation (EU) 10/2011, EU 2020/1245 and its amendments

#### Overall migration

With reference to (EU) No.10/2011 and its amendments, analysis by method EN 1186-3: 2022.

Parameter	Test Condition	Result (mg/dm <sup>2</sup> )			Limit (mg/dm <sup>2</sup> )
		(3)			
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	
Overall migration	20%(v/v) Ethanol, 70°C, 2 h	<3	<3	<3	10

Remark:

1. mg/dm<sup>2</sup> = milligram per square decimeter

#### Specific migration of heavy metals

With reference to (EU) No. 2020/1245 for selection of conditions and test method for specific migration. Analysis was performed by inductively coupled plasma optical emission spectrometer (ICP-OES) and inductively coupled plasma mass spectrometer (ICP-MS).

Parameter	Test Condition	Result (mg/kg)			MDL (mg/kg)	Limit (mg/kg)
		(3)				
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>		
Barium (Ba)	3%(w/v) Acetic acid, 40°C, 24h	N.D.	N.D.	N.D.	0.1	1
Cobalt (Co)		N.D.	N.D.	N.D.	0.05	0.05
Copper (Cu)		N.D.	N.D.	N.D.	0.5	5
Iron (Fe)		N.D.	N.D.	N.D.	1.0	48
Lithium (Li)		N.D.	N.D.	N.D.	0.1	0.6
Manganese (Mn)		N.D.	N.D.	N.D.	0.1	0.6
Zinc (Zn)		N.D.	N.D.	N.D.	0.5	5
Aluminum (Al)		N.D.	N.D.	N.D.	0.1	1
Nickel (Ni)		N.D.	N.D.	N.D.	0.02	0.02
Antimony (Sb)		N.D.	N.D.	N.D.	0.01	0.04
Arsenic (As)		N.D.	N.D.	N.D.	0.01	N.D.
Cadmium (Cd)		N.D.	N.D.	N.D.	0.002	N.D.
Chromium (Cr)		N.D.	N.D.	N.D.	0.01	N.D.
Lead (Pb)		N.D.	N.D.	N.D.	0.01	N.D.
Mercury (Hg)		N.D.	N.D.	N.D.	0.01	N.D.
Lanthanum (La)		N.D.	N.D.	N.D.	0.01	0.05

Parameter	Test Condition	Result (mg/kg)			MDL (mg/kg)	Limit (mg/kg)
		(3)				
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>		
Europium (Eu)		N.D.	N.D.	N.D.	0.01	
Gadolinium (Gd)		N.D.	N.D.	N.D.	0.01	
Terbium (Tb)		N.D.	N.D.	N.D.	0.01	
Tungsten (W)		N.D.	N.D.	N.D.	0.01	0.05

## Remark:

1. mg/kg = milligram per kilogram
2. N.D. = Not Detected (below MDL)
3. MDL = Method Detection Limit

**Specific migration of Primary Aromatic Amine (PAA)**

With reference to (EU) No. 2020/1245, analysis was performed by Liquid chromatography tandem mass spectrometry.

Parameter	Test Condition	Result (mg/kg)			MDL (mg/kg)	Limit (mg/kg)
		(3)				
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>		
4-Aminobiphenyl	3%(w/v) Acetic acid, 40°C, 24h	N.D.	N.D.	N.D.	0.002	N.D.
Benzidine		N.D.	N.D.	N.D.	0.002	N.D.
4-Chloro-o-Toluidine		N.D.	N.D.	N.D.	0.002	N.D.
2-Naphthylamine		N.D.	N.D.	N.D.	0.002	N.D.
o-Aminoazotoluene		N.D.	N.D.	N.D.	0.002	N.D.
5-Nitro-o-toluidine		N.D.	N.D.	N.D.	0.002	N.D.
4-Chloro-Aniline		N.D.	N.D.	N.D.	0.002	N.D.
4-Methoxy-m-phenylenediamine		N.D.	N.D.	N.D.	0.002	N.D.
4,4'-Methylenedianiline		N.D.	N.D.	N.D.	0.002	N.D.
3,3'-Dichlorobenzidine		N.D.	N.D.	N.D.	0.002	N.D.
3,3'-Dimethoxybenzidine		N.D.	N.D.	N.D.	0.002	N.D.
3,3'-Dimethylbenzidine		N.D.	N.D.	N.D.	0.002	N.D.
4,4-Methylenedi-o-toluidine		N.D.	N.D.	N.D.	0.002	N.D.
2-Methoxy-5-Methylaniline		N.D.	N.D.	N.D.	0.002	N.D.
4,4'-Methylene bis(2-chloroaniline)		N.D.	N.D.	N.D.	0.002	N.D.
4,4-Diaminodiphenylether		N.D.	N.D.	N.D.	0.002	N.D.
4,4'-Thioaniline		N.D.	N.D.	N.D.	0.002	N.D.
o-Toluidine	N.D.	N.D.	N.D.	0.002	N.D.	
2,4-Toluenediamine	N.D.	N.D.	N.D.	0.002	N.D.	

Parameter	Test Condition	Result (mg/kg)			MDL (mg/kg)	Limit (mg/kg)
		(3)				
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>		
2,4,5-Trimethylaniline		N.D.	N.D.	N.D.	0.002	N.D.
o-Anisidine		N.D.	N.D.	N.D.	0.002	N.D.
4-Aminoazobenzol		N.D.	N.D.	N.D.	0.002	N.D.
Other PAAs		N.D.	N.D.	N.D.	0.002	0.01

Remark:

1. mg/kg = milligram per kilogram
2. N.D. = Not Detected (below MDL)
3. MDL = Method Detection Limit
4. Those analyses were performed in DEKRA's partner lab.

## **2. Overall migration according to Council Europe Resolution AP (2004) 5 on Silicones Used for Food Contact Applications**

With reference to Resolution AP (2004) 5, analysis by method EN 1186-3: 2022.

Parameter	Test Condition	Result (mg/dm <sup>2</sup> )			Limit (mg/dm <sup>2</sup> )
		(2)			
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	
Overall migration	20%(v/v) Ethanol, 70°C, 2 h	<3	<3	<3	10

Remark:

1. mg/dm<sup>2</sup> = milligram per square decimeter

## **3. Extractable heavy metals (23 elements) according to EU Technical Guide Council of Europe Resolution CM/Res(2013)9 on metals and alloys Used in Food Contact Materials and Articles**

With reference to European Resolution CM/Res (2013)9 on metals and alloys used in food contact materials and articles. Analyzed by inductively coupled plasma optical emission spectrometer (ICP-OES) and inductively coupled plasma mass spectrometer (ICP-MS).

Parameter	Result(s) of 1 <sup>st</sup> + 2 <sup>nd</sup> Migration (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
	(1)		
Aluminium (Al)	N.D.	0.2	35
Barium (Ba)	N.D.	0.2	8.4
Chromium (Cr)	N.D.	0.1	1.75
Copper (Cu)	N.D.	0.2	28

Parameter	Result(s) of 1 <sup>st</sup> + 2 <sup>nd</sup> Migration (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
	(1)		
Iron (Fe)	N.D.	0.2	280
Manganese (Mn)	N.D.	0.2	12.6
Nickel (Ni)	N.D.	0.1	0.98
Molybdenum (Mo)	N.D.	0.1	0.84
Magnesium (Mg)	N.D.	0.2	--
Titanium (Ti)	N.D.	0.2	--
Tin (Sn)	N.D.	2	700
Zinc (Zn)	N.D.	0.2	35
Beryllium (Be)	N.D.	0.02	0.07
Antimony (Sb)	N.D.	0.02	0.28
Mercury (Hg)	N.D.	0.004	0.021
Lithium (Li)	N.D.	0.02	0.336
Cobalt (Co)	N.D.	0.02	0.14
Silver (Ag)	N.D.	0.02	0.56
Lead (Pb)	N.D.	0.02	0.07
Vanadium (V)	N.D.	0.02	0.07
Arsenic (As)	N.D.	0.004	0.014
Cadmium (Cd)	N.D.	0.004	0.035
Thallium (Tl)	N.D.	0.0002	0.0007

Parameter	Result(s) of 3 <sup>rd</sup> Migration (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
	(1)		
Aluminium (Al)	N.D.	0.1	5
Barium (Ba)	N.D.	0.1	1.2
Chromium (Cr)	N.D.	0.05	0.25
Copper (Cu)	N.D.	0.1	4
Iron (Fe)	N.D.	0.1	40
Manganese (Mn)	N.D.	0.1	1.8
Nickel (Ni)	N.D.	0.05	0.14
Molybdenum (Mo)	N.D.	0.05	0.12
Magnesium (Mg)	N.D.	0.1	--
Titanium (Ti)	N.D.	0.1	--
Tin (Sn)	N.D.	1	100
Zinc (Zn)	N.D.	0.1	5
Beryllium (Be)	N.D.	0.01	0.01
Antimony (Sb)	N.D.	0.01	0.04
Mercury (Hg)	N.D.	0.002	0.003
Lithium (Li)	N.D.	0.01	0.048
Cobalt (Co)	N.D.	0.01	0.02

Parameter	Result(s) of 3 <sup>rd</sup> Migration (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
	(1)		
Silver (Ag)	N.D.	0.01	0.08
Lead (Pb)	N.D.	0.01	0.01
Vanadium (V)	N.D.	0.01	0.01
Arsenic (As)	N.D.	0.002	0.002
Cadmium (Cd)	N.D.	0.002	0.005
Thallium (Tl)	N.D.	0.0001	0.0001

## Remark:

1. mg/kg = milligram per kilogram
2. N.D. = Not Detected (below MDL)
3. MDL = Method Detection Limit
4. The test condition was Artificial tap water at 40°C for 24 h.

---End of Report---