

TEST REPORT

Test Report # 19A-007776-1 Date of Report Issue: December 16, 2019
Date of Sample Received: December 10, 2019 Pages: Page 1 of 18

CLIENT INFORMATION:

Company: Mid Ocean Brands B.V.
Address: 7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong



SAMPLE INFORMATION:

Product Name: BADMINTON SET, WITH TWO PCS SHUTTLES
Style No.: - Labeled Age Grade: 3+
Order No. (PO No.): - Client Request Age Grade: 3 years+
Country of Origin: - Recommended Age Grade: -
Country of Distribution: Europe Tested Age Grade: 3 years+
Model No.: KC6373
Composition/Main Material: Iron, polyester, PE, PP
Buyer Name: Mid Ocean Brands B.V.
Supplier Name: 100396
Testing Period: 12/10/2019-12/16/2019

OVERALL RESULT:

PASS

Please refer to the following pages for test result summary and appropriate notes.

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Test(s) marked with 'φ' was subcontracted to external laboratory.

The test result(s) and conclusion(s) in this report relate only to the sample(s) as received and method /regulation section(s) tested as described herein.

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TEST RESULTS SUMMARY:

At the request of the client, the following tests were conducted:

CONCLUSION	TEST(S) CONDUCTED
PASS	EN 71-3: 2019 Safety of Toys, Migration of Certain Elements
PASS	Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 63 Lead in Paints and Surface Coatings
PASS	Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 63 Lead in Substrate Materials
PASS	Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 23 Cadmium in Paints and Surface Coatings
PASS	Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 23 Cadmium in Substrate Materials
PASS	Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 5 Benzene
PASS	Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 43 Azocolorants in Textiles
PASS	German Product Safety Act (ProdSG) Article 21 (1) No. 3, Polycyclic Aromatic Hydrocarbon (PAH)
PASS	Regulation (EC) No. 1907/2006 REACH Annex XVII as amended, Item 51 and 52 Phthalates – Mouthable (DBP, BBP, DEHP, DIBP, DnOP, DINP, DIDP)
PASS	Colour Fastness to Rubbing
PASS	EN71-1:2014+A1:2018 Safety of toys - Part 1: Mechanical and physical properties
PASS	EN71-2:2011+A1:2014 Safety of toys - Part 2: Flammability



DETAILED RESULTS:

EN 71-3: 2019 Safety of Toys, Migration of Certain Elements

Test Method: EN 71-3:2019

Analytical Method: Inductively Coupled Plasma-Mass Spectrometry

Category III: Scraped-off materials

Specimen No.	2	3	4	5	RL (mg/kg)	Soluble Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)		
Aluminum (Al)	2068	ND	ND	ND	50	70 000
Antimony (Sb)	ND	ND	ND	ND	10	560
Arsenic (As)	ND	ND	ND	ND	10	47
Barium (Ba)	ND	ND	ND	ND	50	18 750
Boron (B)	ND	ND	ND	ND	50	15 000
Cadmium (Cd)	ND	ND	ND	ND	5	17
Chromium III (Cr III)^	ND	ND	ND	ND	0.02	460
Chromium VI (Cr VI)^	ND	ND	ND	ND	0.02	0.053
Cobalt (Co)	ND	ND	ND	ND	10	130
Copper (Cu)	ND	ND	ND	ND	50	7 700
Lead (Pb)	ND	ND	ND	ND	10	23
Manganese (Mn)	ND	ND	ND	ND	50	15 000
Mercury (Hg)	ND	ND	ND	ND	10	94
Nickel (Ni)	ND	ND	ND	ND	50	930
Selenium (Se)	ND	ND	ND	ND	10	460
Strontium (Sr)	ND	ND	ND	ND	50	56 000
Tin (Sn)	ND	ND	ND	ND	1	180 000
Organic Tin^^	ND	ND	ND	ND	1	12
Zinc (Zn)	537	ND	65	ND	50	46 000
Conclusion	PASS	PASS	PASS	PASS		

Note:

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected. Result value is less than reporting limit (RL).

^Soluble Chromium is reported when the soluble chromium result below the chromium VI limit.

^^ Soluble Tin is reported when the result is below the adjusted soluble organic tin limit 1 mg/kg.



DETAILED RESULTS:

EN 71-3: 2019 Safety of Toys, Migration of Certain Elements

Test Method: EN 71-3:2019

Analytical Method: Inductively Coupled Plasma-Mass Spectrometry

Category III: Scraped-off materials

Specimen No.	7	8	9	---	RL (mg/kg)	Soluble Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)		
Aluminum (Al)	ND	ND	ND	---	50	70 000
Antimony (Sb)	ND	ND	ND	---	10	560
Arsenic (As)	ND	ND	ND	---	10	47
Barium (Ba)	ND	ND	ND	---	50	18 750
Boron (B)	ND	ND	ND	---	50	15 000
Cadmium (Cd)	ND	ND	ND	---	5	17
Chromium III (Cr III)^	ND	ND	ND	---	0.02	460
Chromium VI (Cr VI)^	ND	ND	ND	---	0.02	0.053
Cobalt (Co)	ND	ND	ND	---	10	130
Copper (Cu)	ND	ND	ND	---	50	7 700
Lead (Pb)	ND	ND	ND	---	10	23
Manganese (Mn)	ND	ND	ND	---	50	15 000
Mercury (Hg)	ND	ND	ND	---	10	94
Nickel (Ni)	ND	ND	ND	---	50	930
Selenium (Se)	ND	ND	ND	---	10	460
Strontium (Sr)	ND	ND	ND	---	50	56 000
Tin (Sn)	ND	ND	ND	---	1	180 000
Organic Tin^^	ND	ND	ND	---	1	12
Zinc (Zn)	ND	ND	ND	---	50	46 000
Conclusion	PASS	PASS	PASS	---		

Note:

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected. Result value is less than reporting limit (RL).

^Soluble Chromium is reported when the soluble chromium result below the chromium VI limit.

^^ Soluble Tin is reported when the result is below the adjusted soluble organic tin limit 1 mg/kg.



DETAILED RESULTS:

Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 63 Lead in Paints and Surface Coatings

Test Method: CPSC-CH-E1003-09.1

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	2	---	---	---	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	ND	---	---	---	---	500
Conclusion	PASS	---	---	---	---	

Note:

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 15 mg/kg)



DETAILED RESULTS:

Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 63 Lead in Substrate Materials

Test Method: CPSC-CH-E1001-08.3 (Metal) and/or CPSC-CH-E1002-08.3 (Non-Metal)
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1	3	4	5	6	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Specimen No.	7	8	9	10	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	ND	ND	ND	59	---	500
Conclusion	PASS	PASS	PASS	PASS	---	

Note:

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 15 mg/kg)



DETAILED RESULTS:

Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 23 Cadmium in Paints and Surface Coatings

Test Method: ASTM F963-17 Clause 8.3.1

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	2	---	---	---	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Cadmium (Cd)	ND	---	---	---	---	100
Conclusion	PASS	---	---	---	---	

Note:

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 15 mg/kg)



DETAILED RESULTS:

Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 23 Cadmium in Substrate Materials

Test Method: ASTM F963-17 Clause 8.3.1

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1	3	4	5	6	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Cadmium (Cd)	ND	ND	ND	ND	ND	100
Conclusion	PASS	PASS	PASS	PASS	PASS	

Specimen No.	7	8	9	10	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Cadmium (Cd)	ND	ND	ND	ND	---	100
Conclusion	PASS	PASS	PASS	PASS	---	

Note:

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 15mg/kg)



DETAILED RESULTS:

Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 5 Benzene

Test Method: In-House Method

Analytical Method: Headspace Gas Chromatography with Mass Spectrometry

Specimen No.	3	7	---	---	Limit (mg/kg)
Test Item CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Benzene 71-43-2	ND	ND	---	---	5
Conclusion	PASS	PASS	---	---	

Note:

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 1 mg/kg)



DETAILED RESULTS:

Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 43 Azocolorants in Textiles

Test Method: EN 14362-1:2012, EN 14362-3:2012
 Analytical Method: Gas Chromatography with Mass Spectrometry/ Liquid Chromatography-Mass Spectrometer (LC-MS)

Specimen No.		8	9	---	---	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
4-aminobiphenyl	92-67-1	ND	ND	---	---	30
Benzidine	92-87-5	ND	ND	---	---	30
4-chloro-o-toluidine	95-69-2	ND	ND	---	---	30
2-naphtylamine	91-59-8	ND	ND	---	---	30
2-Amino-4-Nitrotoluene	97-56-3	ND	ND	---	---	30
5-nitro-o-toluidine	99-55-8	ND	ND	---	---	30
4-chloroaniline	106-47-8	ND	ND	---	---	30
4 methoxy-m - phenylenediamine	615-05-4	ND	ND	---	---	30
4,4'-diaminodiphenyl methane	101-77-9	ND	ND	---	---	30
3,3'-dichlorobenzidine	91-94-1	ND	ND	---	---	30
3,3'-dimethoxybenzidine	119-90-4	ND	ND	---	---	30
3,3'-dimethylbenzidine	119-93-7	ND	ND	---	---	30
3,3'-dimethyl-4,4'-diaminodiphenyl methane	838-88-0	ND	ND	---	---	30
p-cresidine	120-71-8	ND	ND	---	---	30
4,4'-methylene-bis-(2-chloro-aniline)	101-14-4	ND	ND	---	---	30
4,4'-oxydianiline	101-80-4	ND	ND	---	---	30
4,4'-thiodianiline	139-65-1	ND	ND	---	---	30
o-toluidine	95-53-4	ND	ND	---	---	30
2,4-toluylenediamine	95-80-7	ND	ND	---	---	30
2,4,5-trimethylaniline	137-17-7	ND	ND	---	---	30
2-methoxyaniline	90-04-0	ND	ND	---	---	30
4-aminoazobenzene	60-09-3	ND	ND	---	---	30
Conclusion		PASS	PASS	---	---	



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Note:

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 5 mg/kg)

Remark:

In the case of levels per amine component less than or equal to 30 mg/kg, according to the analysis as carried out, azo colorants which can release one or more of certain listed amines by cleavage of their azo group/s were not detected in the commodity submitted.



DETAILED RESULTS:

German Product Safety Act (ProdSG) Article 21 (1) No. 3, Polycyclic Aromatic Hydrocarbon (PAH)

Test Method: AfPS GS 2014:01
 Analytical Method: Gas Chromatography with Mass Spectrometry

Category 2: Materials with foreseeable skin-contact of > 30 s (prolonged skin-contact) or short-term repetitive contact with the human skin for Toys

Specimen No.	3	---	---	---	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)
Benzo (a) pyrene	50-32-8	ND	---	---	0.2
Benzo (e) pyrene	192-97-2	ND	---	---	0.2
Benzo (a) anthracene	56-55-3	ND	---	---	0.2
Benzo (b) fluoranthene	205-99-2	ND	---	---	0.2
Benzo (j) fluoranthene	205-82-3	ND	---	---	0.2
Benzo (k) fluoranthene	207-08-9	ND	---	---	0.2
Chrysene	218-01-9	ND	---	---	0.2
Dibenzo (a, h) anthracene	53-70-3	ND	---	---	0.2
Benzo (g, h, i) perylene	191-24-2	ND	---	---	0.2
Indeno (1,2,3-cd) pyrene	193-39-5	ND	---	---	0.2
Acenaphthylene	208-96-8	ND	---	---	
Acenaphthene	83-32-9	ND	---	---	
Fluorene	86-73-7	ND	---	---	
Phenanthrene	85-01-8	ND	---	---	
Pyrene	129-00-0	ND	---	---	
Anthracene	120-12-7	ND	---	---	
Fluoranthene	206-44-0	ND	---	---	
Sum of Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene		ND	---	---	5
Naphthalene	91-20-3	ND	---	---	2
Sum of 18 PAH		ND	---	---	5
Conclusion		PASS	---	---	

Note:
 mg/kg = Milligrams per kilogram
 ND = Not detected (Reporting Limit = 0.2 mg/kg)



DETAILED RESULTS:

Regulation (EC) No. 1907/2006 REACH Annex XVII as amended, Item 51 and 52 Phthalates – Mouthable (DBP, BBP, DEHP, DIBP, DnOP, DINP, DIDP)

Test Method: CPSC-CH-C1001-09.4

Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		7	---	---	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	---	---	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	---	---	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	---	---	1000
Diisobutyl phthalate (DIBP)	84-69-5	ND	---	---	1000
Sum of DBP, BBP, DEHP, DIBP		ND	---	---	1000
Di-n-octyl phthalate (DnOP)	117-84-0	ND	---	---	
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	---	---	
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	---	---	
Sum of DnOP, DINP, DIDP		ND	---	---	1000
Conclusion		PASS	---	---	

Note:

mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)

LT = Less than

ND = Not detected (Reporting Limit = 150 mg/kg)



DETAILED RESULTS:

Colour Fastness to Rubbing

Test Method: ISO 105-X12: 2016, Size of rubbing finger: 16mm dia.

Specimen No.	9	---	---	---	---	Client's requirement
Items	Result (Grade)	Result (Grade)	Result (Grade)	Result (Grade)	Result (Grade)	
Dry staining	4-5	---	---	---	---	Min. 2-3
Wet staining	4-5	---	---	---	---	Min. 2-3
Conclusion	PASS	---	---	---	---	-

Remark: Grey Scale rating is based on the 5-step scale of 1 to 5, where 1 is bad and 5 is good.



DETAILED RESULTS:

EN 71-1:2014+A1:2018 Safety of toys - Part 1: Mechanical and physical properties

Clause	Test	Conclusion
4.1	Material cleanliness	PASS
4.7	Edges	PASS
4.8	Points and metallic wires	PASS
4.17	Projectile toys	PASS
6	Packaging	PASS
7	Warnings, markings and instructions for use	
7.1	General	PASS
7.2	Toys not intended for children under 36 months	PASS

EN71-2:2011+A1:2014 Safety of toys - Part 2: Flammability

Test	Observation	Conclusion
4.1 General	No visual signs of Cellulose Nitrate.	PASS



SPECIMEN DESCRIPTION:

Specimen No.	Specimen Description	Location
1	Black synthetic leather	Handle
2	Silvery/blue coating	Racket
3	White plastic	Racket net
4	White foam	Badminton base
5	White plastic	Main body of Badminton
6	Black plastic	Zipper teeth
7	Transparent plastic	Main body of bag
8	Black textile	Main body of bag
9	Black textile	Handle of bag
10	Black plastic	Semicircle buckle



SAMPLE PHOTO:



SAMPLE PHOTO:



-End Report-

