



中国认可
国际互认
检测
TESTING
CNAS L6478



TEST REPORT

Reference No. : WTF18F12134315A1C

Applicant : Mid Ocean Brands B.V.

Address : 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong

Manufacturer : 104438

Sample Name : Assorted puzzle game

Model No. : KC2938

Test Requested :
 1) Determination of Cadmium content in the submitted sample in accordance with REACH regulation Annex XVII Entries 23 (EC) No. 1907/2006 and the amendment No. 552/2009, No. 494/2011, No. 835/2012 and (EU) 2016/217
 2) Determination of specified Phthalates content according to Annex XVII Items 51 & 52 of the REACH Regulation (EC) No. 1907/2006 & Amendment No. 552/2009
 3) As requested by client, to determine the Diisobutyl phthalate (DIBP) content in the submitted samples
 4) Determination of specified Polycyclic Aromatic Hydrocarbons (PAHs) content in submitted sample in accordance with Entries 50 of Annex XVII of REACH Regulation (EC) No 1907/2006 and its amendment Regulation (EU) No 1272/2013.
 5) Determination of Benzene content in the submitted sample in accordance with Annex XVII Entries 5 of the REACH Regulation (EC) No. 1907/2006 and the Amendment (EU) No. 2015/1494

Test Method : Please refer to next page (s)

Test Conclusion : Please refer to next page (s)

Date of Receipt sample : 2018-12-28 & 2019-01-22

Date of Test : 2018-12-28 to 2019-01-24

Date of Issue : 2019-01-25

Test Result : Please refer to next page (s)

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of reporter and reviewer.

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**Test Result:****1) Cadmium (Cd)**

Test Method: With reference to IEC 62321-5:2013, the analysis was performed by ICP-OES.

Test Item	MDL (mg/kg)	Results (mg/kg)	
		No.1+No.2	No.3+No.4
Cadmium(Cd)	2	ND*	ND*
Conclusion	--	Pass	Pass

Test Item	MDL (mg/kg)	Results (mg/kg)	
		No.5+No.6	No.7+No.8+No.9
Cadmium(Cd)	2	ND*	ND*
Conclusion	--	Pass	Pass

Test Item	MDL (mg/kg)	Results (mg/kg)
		No.10+No.11
Cadmium(Cd)	2	ND*
Conclusion	--	Pass

Note:

- (1) mg/kg = milligram per kilogram
- (2) ND = Not Detected (lower than MDL)
- (3) MDL = Method Detection Limit
- (4) Limit of Cadmium according to REACH regulation Annex XVII Item 23 (EC) No. 1907/2006 and the amendment No. 552/2009, No. 494/2011 and No. 835/2012 and (EU) 2016/217.

Category	Limit (mg/kg)
Wet paint	100
Surface coating	1000
Plastic	100
Metal parts of jewellery and hair accessories	100

- (5) “*” = As per applicant's requirement, the testing was conducted based on mixed components, the test result is for reference only



2) Phthalates

Test Method: With reference to EN14372:2004, by Gas Chromatographic-Mass Spectrometric (GC-MS) analysis.

Test Items	BBP	DBP	DEHP	DIDP	DINP	DNOP	--
MDL (%)	0.005	0.005	0.005	0.01	0.01	0.005	--
Limit (%)	sum of three phthalates < 0.1			sum of three phthalates < 0.1			--
Specimen No.	Result (%)						Conclusion
No.1+No.2	ND*	ND*	ND*	ND*	ND*	ND*	Pass
No.3+No.4	ND*	ND*	0.008*	ND*	ND*	ND*	Pass
No.5+No.6	ND*	ND*	ND*	ND*	ND*	ND*	Pass
No.7+No.8+No.9	ND*	ND*	ND*	ND*	ND*	ND*	Pass
No.10+No.11	ND*	ND*	ND*	ND*	ND*	ND*	Pass

Note:

DBP= Dibutyl phthalate

BBP= Benzyl butyl phthalate

DEHP= Bis-(2-ethylhexyl)- phthalate

DINP= Di-isononyl phthalate

DNOP= Di-n-octyl phthalate

DIDP= Di-isodecyl phthalate

(1) % = percentage by weight

(2) ND = Not detected or Less than the method detection limit

(3) MDL=Method Detection Limit

(4) "<" = less than

(5) The above limit was quoted according to Annex XVII Items 51 & 52 of the REACH Regulation (EC) No. 1907/2006 & Amendment No. 552/2009(formerly known as Directive 2005/84/EC) for phthalate content in toys and child care articles.

(6) "*" = As per applicant's requirement, the testing was conducted based on mixed components, the test result is for reference only



3) Diisobutyl Phthalate(DIBP)

Test Method: With reference to EN14372:2004, by Gas Chromatographic-Mass Spectrometric (GC-MS) analysis.

Test Item(s)	MDL (mg/kg)	Results (mg/kg)	Client's Limit (mg/kg)
		No.1+No.2	
Diisobutyl phthalate (DIBP)	50	ND*	1000
Conclusion	--	Pass	--

Test Item(s)	MDL (mg/kg)	Results (mg/kg)	Client's Limit (mg/kg)
		No.3+No.4	
Diisobutyl phthalate (DIBP)	50	ND*	1000
Conclusion	--	Pass	--

Test Item(s)	MDL (mg/kg)	Results (mg/kg)	Client's Limit (mg/kg)
		No.5+No.6	
Diisobutyl phthalate (DIBP)	50	ND*	1000
Conclusion	--	Pass	--

Test Item(s)	MDL (mg/kg)	Results (mg/kg)	Client's Limit (mg/kg)
		No.7+No.8+No.9	
Diisobutyl phthalate (DIBP)	50	ND*	1000
Conclusion	--	Pass	--

Test Item(s)	MDL (mg/kg)	Results (mg/kg)	Client's Limit (mg/kg)
		No.10+No.11	
Diisobutyl phthalate (DIBP)	50	ND*	1000
Conclusion	--	Pass	--

Note:

- (1) mg/kg=milligram per kilogram=ppm
- (2) ND = Not detected or Less than the method detection limit
- (3) MDL=Method Detection Limit
- (4) "*" = As per applicant's requirement, the testing was conducted based on mixed components, the test result is for reference only



4) Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method: With reference to AFPS GS 2014:01 PAK method, analysis was performed by Gas Chromatographic Mass Spectrometry (GC-MS).

Test Items	Unit	Results		MDL	Limit
		No.1+No.2	No.3+No.4		
Benzo(a)anthracene (BaA)	mg/kg	ND*	ND*	0.2	0.5
Chrysene (CHR)	mg/kg	ND*	ND*	0.2	0.5
Benzo[b]fluoranthene (BbFA)	mg/kg	ND*	ND*	0.2	0.5
Benzo[k]fluoranthene (BkFA)	mg/kg	ND*	ND*	0.2	0.5
Benzo(a)pyrene (BaP)	mg/kg	ND*	ND*	0.2	0.5
Dibenzo[a,h]anthracene (DBA _h A)	mg/kg	ND*	ND*	0.2	0.5
Benzo[j]fluoranthene (BjFA)	mg/kg	ND*	ND*	0.2	0.5
Benzo[e]Pyrene (BeP)	mg/kg	ND*	ND*	0.2	0.5
Conclusion	--	Pass	Pass	--	--

Note:

- (1) ND = Not Detected or less than method detection limit
- (2) mg/kg=milligram per kilogram=ppm
- (3) MDL = Method Detection Limit
- (4) As per Entries 50 of Annex XVII of REACH Regulation (EC) No 1907/2006 and its amendment Regulation (EU) No 1272/2013, Articles shall not be placed on the market for supply to the general public, if any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use, contain more than 1 mg/kg (0,0001 % by weight of this component) of any of the listed PAHs.
- (5) As per Entries 50 of Annex XVII of REACH Regulation (EC) No 1907/2006 and its amendment Regulation (EU) No 1272/2013, Toys, including activity toys, and childcare articles, shall not be placed on the market, if any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use, contain more than 0,5 mg/kg (0,00005 % by weight of this component) of any of the listed PAHs.
- (6) "*" = As per applicant's requirement, the testing was conducted based on mixed components, the test result is for reference only



5) Benzene

Test Method: With reference to US EPA 3550C:2007& US EPA 8270D: 2014, analysis was performed by GC-MS

Test Item	MDL (mg/kg)	Results (mg/kg)		Limit (mg/kg)
		No.1+No.2	No.3+No.4	
Benzene*	1	ND [△]	ND [△]	5
Conclusion	--	Pass	Pass	--

Test Item	MDL (mg/kg)	Results (mg/kg)		Limit (mg/kg)
		No.5+No.6	No.7+No.8+No.9	
Benzene*	1	ND [△]	ND [△]	5
Conclusion	--	Pass	Pass	--

Test Item	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		No.10+No.11	
Benzene*	1	ND [△]	5
Conclusion	--	Pass	--

Note:

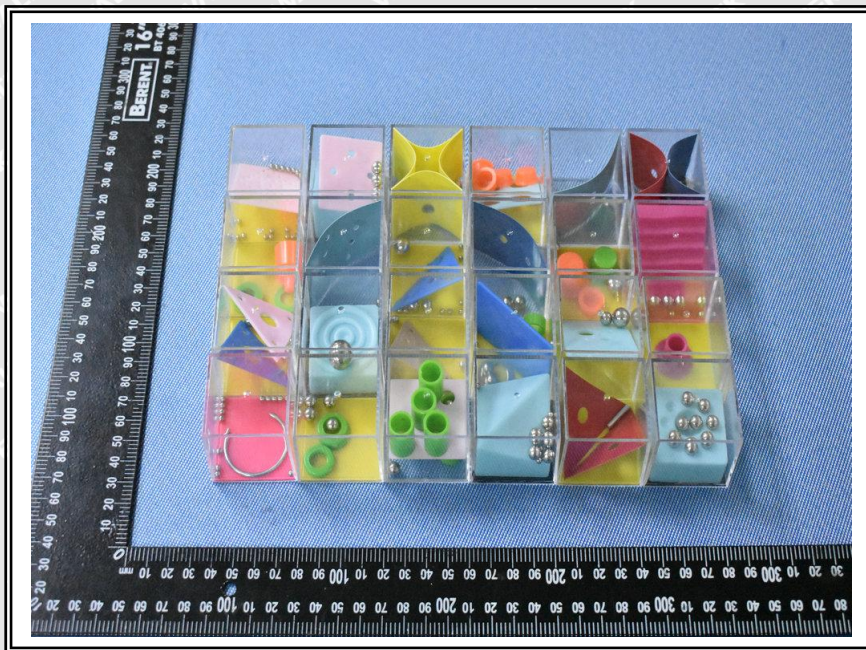
- (1) mg/kg = milligram per kilogram
- (2) ND = Not Detected (lower than MDL)
- (3) MDL = Method Detection Limit
- (4) As per Annex XVII Items 5 of the REACH Regulation (EC) No. 1907/2006 and the Amendment (EU) No. 2015/1494, benzene shall not be used in toys or parts of toys where the concentration of benzene in the free state is greater than 5 mg/kg (0,0005 %) of the weight of the toy or part of toy.
- (5) The testing item marked with '*' do not been accredited by CNAS
- (6) "△" = As per applicant's requirement, the testing was conducted based on mixed components, the test result is for reference only

Test Specimen Description:

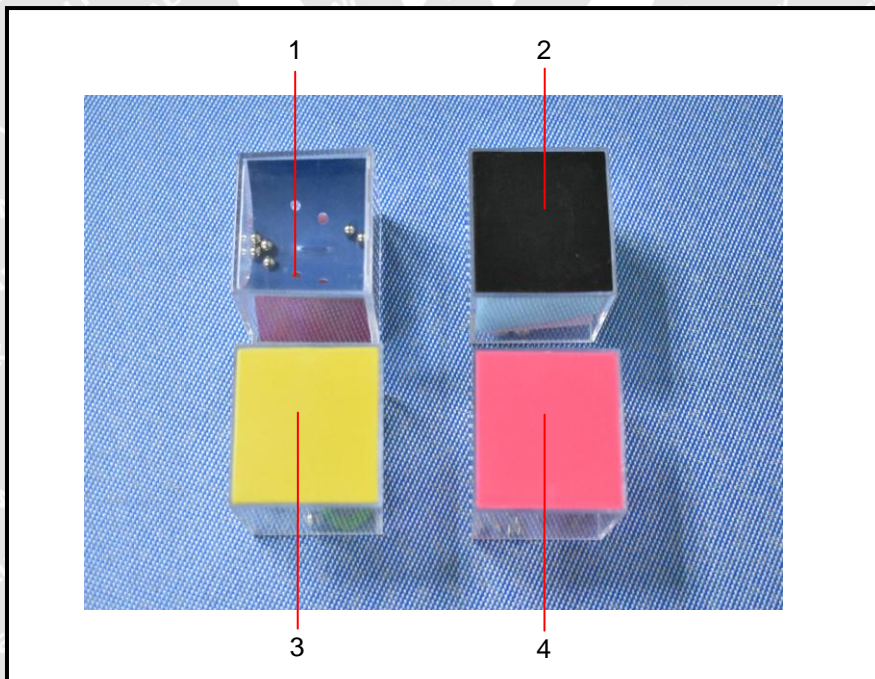
- No.1: Transparent plastic case
- No.2: Black plastic base
- No.3: Yellow plastic base
- No.4: Pink plastic base
- No.5: Green plastic block
- No.6: Orange plastic block
- No.7: Yellow plastic film
- No.8: Blue plastic film
- No.9: Red plastic film
- No.10: Light blue plastic film
- No.11: Light pink plastic film

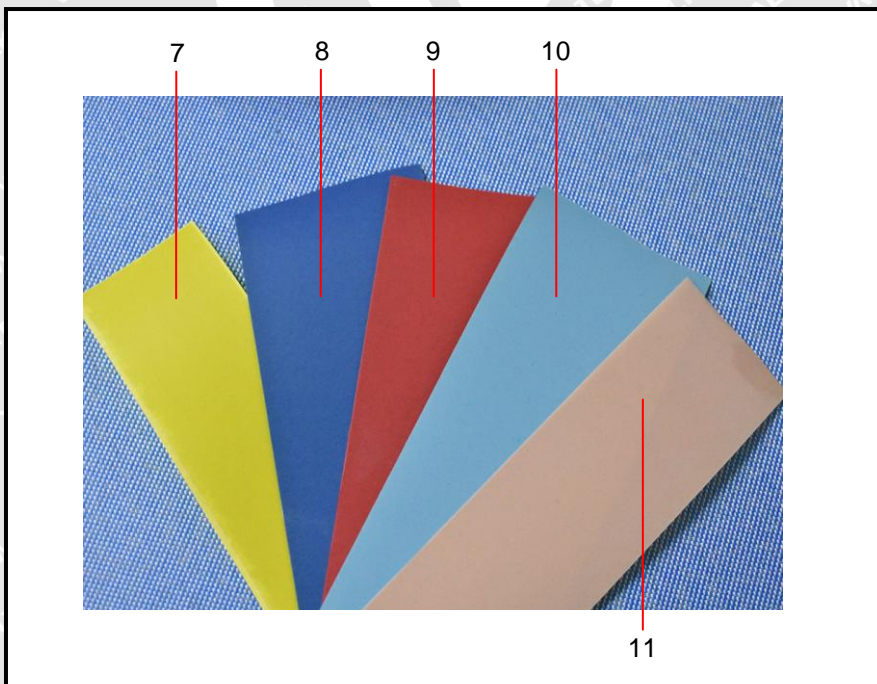
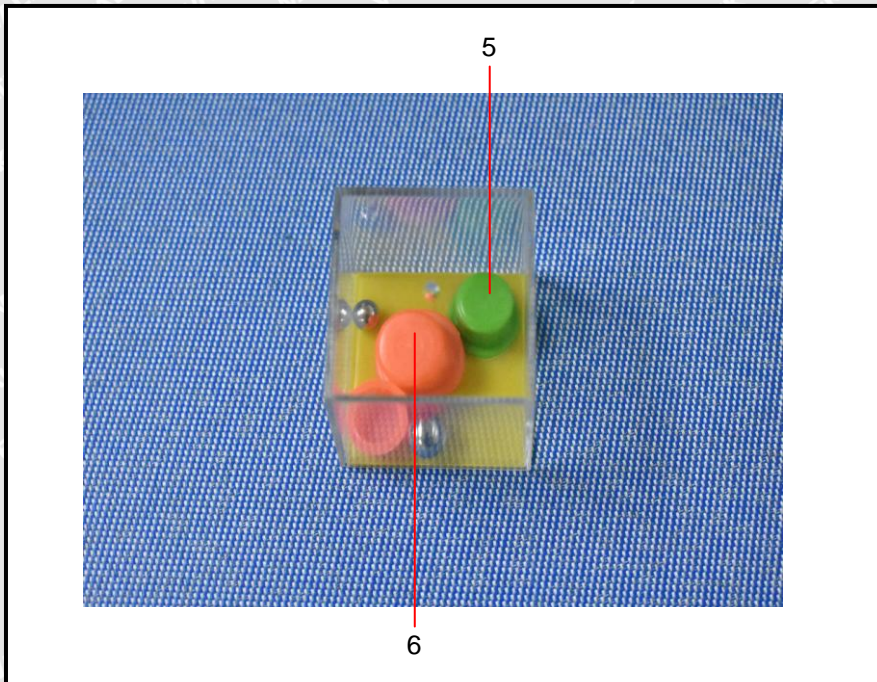


Sample photo:



Photograph of parts tested:





===== End of Report =====