

TEST REPORT

Date of Report: 3/27/2020

Project ID / Job Number: 234121743

Client: **Patrick Jarvis**
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Model Identification: **See Material List**

Item Description: Pigments

Number of Samples Submitted: 18

Additional Information: Client Number: 50006873, PO Number: 2594

Test Parameters: **Multiple Parameters**

Date Received: 2/18/2020

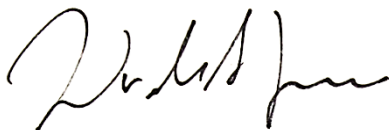
Testing Period: 3/13/2020 – 3/27/2020

Delivery Condition: *Apparent Good*

Testing Location: TÜV Rheinland of North America
2709 SE Otis Corley Dr, Suite 11
Bentonville, AR 72712 USA

Other Aspects: N/A

Test Report Compiled by:



William Tyree / Senior Chemist

Test Report Reviewed by:



Amy Yearry / Laboratory Manager

Test result is drawn according to the kind and extent of tests performed. This test report is not permitted to be duplicated in extracts without permission of the test facility. This test report does not entitle any safety mark on this or similar products.

Test Parameters:

Test Specification	Test Result
1. Total Lead Content in Surface Coatings – CPSIA	Pass
2. Total Heavy Metals in Surface Coatings – ASTM F963-16	Pass
3. Soluble Heavy Metals in Surface Coatings – ASTM F963-16	Pass
4. Total Phthalate Content – CPSIA	Pass

Test Results:

Material Breakdown List - Chemical Testing

Material No.	Material	Color
1	Pigment	Bright Yellow PC
2	Pigment	Violet PC
3	Pigment	Ultra Blue PC
4	Pigment	Green PC
5	Pigment	Blue PC
6	Pigment	Black PC
7	Pigment	Orange PC
8	Pigment	Extra White PC
9	Pigment	Magenta PC
10	Pigment	Flo Pink PC
11	Pigment	Flo Blue PC
12	Pigment	Maroon PC
13	Pigment	Flo Yellow PC
14	Pigment	Flo Red PC
15	Pigment	Flow Purple PC
16	Pigment	Yellow GS PC
17	Pigment	Yellow RS PC
18	Pigment	Red PC

RESULTS

1. TOTAL LEAD CONTENT IN SURFACE COATINGS:

The product shall comply with the Consumer Product Safety Act (CPSA) Regulations, 16 CFR 1303 and Consumer Product Safety Improvement Act (CPSIA). Surface coatings on toys and other articles intended for children shall not have total lead content in excess of 0.009 % (90 ppm).

Test method: The sample was analyzed by X-Ray Fluorescence Spectroscopy (XRF) according to ASTM F2853-10

Test No.	Material or Component	Lead Content (mg/kg)	Maximum Permissible Limit 90 mg/kg (Pass/Fail)
		MDL: 5 mg/kg	
1	1	<5 mg/kg	Pass
2	2	<5 mg/kg	Pass

Test No.	Material or Component	Lead Content (mg/kg)	Maximum Permissible Limit 90 mg/kg (Pass/Fail)
		MDL: 5 mg/kg	
3	3	9 mg/kg	Pass
4	4	<5 mg/kg	Pass
5	5	<5 mg/kg	Pass
6	6	<5 mg/kg	Pass
7	7	<5 mg/kg	Pass
8	8	<5 mg/kg	Pass
9	9	<5 mg/kg	Pass
10	10	<5 mg/kg	Pass
11	11	<5 mg/kg	Pass
12	12	<5 mg/kg	Pass
13	13	<5 mg/kg	Pass
14	14	<5 mg/kg	Pass
15	15	<5 mg/kg	Pass
16	16	<5 mg/kg	Pass
17	17	<5 mg/kg	Pass
18	18	<5 mg/kg	Pass

Abbreviation: MDL = Method Detection Limit mg/kg denotes milligram per kilogram (ppm)

2. TOTAL HEAVY METALS IN SURFACE COATINGS:

The product shall comply with the requirements for the content of soluble heavy metals in accessible surface coatings as defined in ASTM F963-08 and ASTM F963-16, Specification for Toy Safety. The material may be evaluated by analysis of total element content screening to preclude the need for soluble analysis.

Test method: The sample was analyzed by High Definition X-Ray Fluorescence Spectroscopy (HD-XRF) with reference to ASTM F2853-10 / ASTM F2617-08.

Test No.	Material No.	[mg/kg]							Pass/Fail
		Sb	As	Ba	Cd	Cr	Hg	Se	
		Maximum Permissible Limit							
		60	25	1000	75	60	60	500	
		MDL (mg/kg)							
		10	5	200	5	5	5	5	
1	2	<10	<5	<200	<5	<5	<5	<5	Pass
2	3	<10	<5	<200	<5	6	<5	<5	Pass
3	4	<10	<5	<200	<5	<5	<5	<5	Pass
4	5	<10	<5	<200	<5	<5	<5	<5	Pass
5	6	<10	<5	<200	<5	<5	<5	<5	Pass
6	7	<10	<5	<200	<5	<5	<5	<5	Pass
7	8	<10	<5	<665	<5	23	<5	<5	Pass
8	9	<10	<5	<200	<5	<5	<5	<5	Pass
9	10	<10	<5	<200	<5	<5	<5	<5	Pass

Test No.	Material No.	[mg/kg]							Pass/Fail
		Sb	As	Ba	Cd	Cr	Hg	Se	
		Maximum Permissible Limit							
		60	25	1000	75	60	60	500	
		MDL (mg/kg)							
		10	5	200	5	5	5	5	
10	11	<10	<5	<200	<5	<5	<5	<5	Pass
11	12	<10	<5	<200	<5	<5	<5	<5	Pass
12	13	<10	<5	<200	<5	<5	<5	<5	Pass
13	14	<10	<5	<200	<5	<5	<5	<5	Pass
14	15	<10	<5	<200	<5	<5	<5	<5	Pass
15	16	<10	<5	<200	<5	<5	<5	<5	Pass
16	17	<10	<5	<200	<5	<5	<5	<5	Pass

Note: mg/kg denotes milligram per kilogram (ppm) MDL = Method Detection Limit

3. SOLUBLE HEAVY METALS IN SURFACE COATINGS:

The product shall comply with the requirements for the content of soluble heavy metals in surface coatings as defined in ASTM F963-16, Toy Standard.

Test method: Samples were put in contact with dilute hydrochloric acid and analyzed by Inductively coupled plasma - Optical emission spectrophotometer according to ASTM F963-16, Sections 8.3.2 - 8.3.4

Test No.	Material No.	[mg/kg]							Pass/Fail
		Sb	As	Ba	Cd	Cr	Hg	Se	
		Maximum Permissible Limit							
		60	25	1000	75	60	60	500	
		MDL (mg/kg)							
		2.5	2.5	2.5	2.5	2.5	2.5	2.5	
1	1	<2.5	<2.5	26.7	<2.5	<2.5	<2.5	<2.5	Pass
2	18	<2.5	<2.5	49	<2.5	<2.5	<2.5	<2.5	Pass

Note: mg/kg denotes milligram per kilogram (ppm) MDL = Method Detection Limit

4. TOTAL PHTHALATE CONTENT IN SUBSTRATES:

The CPSC prohibits children's toys and child care articles from containing concentrations of more than 0.1 percent of five phthalate chemicals, specifically diisononyl phthalate (DINP), diisobutyl phthalate (DIBP), di-n-pentyl phthalate (DPENP), di-n-hexyl phthalate (DHEXP), and dicyclohexyl phthalate (DCHP). Three phthalate chemicals, specifically di-(2-ethylhexyl) phthalate (DEHP), dibutyl phthalate (DBP), and benzyl butyl phthalate (BBP), under the CPSIA remains in full force and effect.

Test method: The sample was analyzed by organic solvent extraction and GCMS according to CPSC-CH-C1001-09.4

Test No.	Material	MDL: 0.005%								Maximum Permissible Limit 0.100 % (Pass/Fail)
		DiBP (%)	DBP (%)	DPENP (%)	DnHP (%)	BBP (%)	DEHP (%)	DCHP (%)	DINP (%)	
1	1,2,3	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	Pass
2	4,5,6	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	Pass

Test No.	Material	MDL: 0.005%								Maximum Permissible Limit 0.100 % (Pass/Fail)
		DiBP (%)	DBP (%)	DPENP (%)	DnHP (%)	BBP (%)	DEHP (%)	DCHP (%)	DINP (%)	
3	7,8,9	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	Pass
4	10,11,12	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	Pass
5	13,14,15	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	Pass
6	16,17,18	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	<0.005%	Pass

Abbreviation: MDL = Method Detection Limit
BBP = Benzyl butyl phthalate
DEHP = Di-(2-ethylhexyl) phthalate
DIBP = Diisobutyl phthalate
DCHP = Dicyclohexyl phthalate

DBP = Dibutyl phthalate
DPENP = Di-n-pentyl phthalate
DINP = Diisononyl phthalate
DHEXP/DnHP = Di-n-hexyl phthalate

Sample Photos:







Test Article(s)

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