

TEST REPORT

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The results relate only to the item tested.

Number: BKKH19014744

Applicant: PLAN CREATIONS CO., LTD.
8 MOO 8, TRANG-PALIAN RD.,
YANTAKAO, TRANG, THAILAND 92140
ATTN: K.NARONG, K.SUPAPORN

Issued Date: Dec 16, 2019

Sample description:

Quantity of sample:	One (1) set
Sample description:	Wooden toy
Date sample received:	November 01, 2019
Date Information received:	December 02, 2019

Client Information:

One (1) set of submitted sample said to be SEA LIFE PUZZLE

Item Name:	SEA LIFE PUZZLE
Item Number:	4643



Test conducted:

As requested by the applicant, for details please refer to attached page(s)

To be continued

For and on behalf of :
Intertek Testing Services (Thailand) Ltd.,
Hardlines Laboratory


Ladtaka Wongwiboonporn
Laboratory Manager
Hardlines Department

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Conclusion:

<u>Tested samples</u>	<u>Standard</u>	<u>Result</u>
Submitted sample	U.S. ASTM F963-17 for Physical and mechanical tests	Pass
	U.S. ASTM F963-17 for Flammability test of materials other than textile materials	Pass
	U.S. ASTM F963-17 for Heavy elements Test	Pass
	<u>Standard - U.S. CFR title 16</u> (CPSC regulations) Part 1303 total Lead content	Pass
	<u>Standard</u> U.S. Consumer product safety improvement Act 2008(H.R. 4040) Title I, Section 101 For total lead content in surface coating	Pass
	U.S. Consumer product safety improvement Act 2008(H.R. 4040) Title I, Section 101 For total lead content in non-surface coating material (substrate)	Pass
	US 16 CFR Part 1307 for Prohibition of Children's Toys and Child Care Articles Containing Specified Phthalates	Pass
	Phthalate Content Requirement base on the California Proposition 65	Pass
	Illinois Lead Poisoning Prevention Act 410 ILCS 45 section 6 (public act 095-1019)	Pass



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Remark:

The chemical test results was not conducted on the below components of samples. Applicant claimed the components were tested on our previous test report.

<u>Components</u>	<u>Report No.</u>	<u>Date</u>
<u>ASTM F963-17: Heavy metal</u>		
WHITE COATING ON WOOD	BKKH19007793S1	Jul 15, 2019
PINK SAWDUST	BKKH19010258	Aug 19, 2019
BLACK SAWDUST	BKKH19009832	Aug 15, 2019
BLUE SAWDUST	BKKH19008027S1	Jul 18, 2019
SAWDUST WOOD	BKKH19015542	Nov 20, 2019
<u>Lead in surface coating</u>		
WHITE COATING ON WOOD	BKKH19007793S1	Jul 15, 2019
<u>Lead in substrate</u>		
PINK SAWDUST	BKKH19010258	Aug 19, 2019
BLACK SAWDUST	BKKH19009832	Aug 15, 2019
BLUE SAWDUST	BKKH19008027S1	Jul 18, 2019
SAWDUST WOOD	BKKH19015542	Nov 20, 2019
<u>Phthalate content</u>		
WHITE COATING ON WOOD	BKKH19007793S1	Jul 15, 2019
PINK SAWDUST	BKKH19010258	Aug 19, 2019
BLACK SAWDUST	BKKH19009832	Aug 15, 2019
BLUE SAWDUST	BKKH19008027S1	Jul 18, 2019
SAWDUST WOOD	BKKH19015542	Nov 20, 2019



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Test conducted:

1 Physical And Mechanical Tests

Test Standard : ASTM Standard Consumer Safety Specification for Toy Safety F963-17.

Applicant's specified testing age : For age over 18 months.

The submitted samples were undergone the use and abuse tests in accordance with the Federal Hazardous Substances Act (FHSA), Title 16, Code of Federal Regulations : -

Test	FHSA	Parameter
Drop test	Section 1500.52(b)	4 x 3.0 ft
Torque test	Section 1500.53(e)	4 in-lbf
Tension test	Section 1500.53(f)	15 lbf
Compression test	Section 1500.53(g)	30 lbf

Clause	Testing items	Assessment
4.1	Material quality	P
4.5	Sound-producing toys	NA
4.6.1	Toys intended for children under 36 months (small objects)	P
4.6.2 [▲]	Mouth-actuated toys	NA
4.6.3	Toys and games for 36 months to 72 months (small part warning)	NA
4.7	Accessible edges	P
4.8	Projections	NA
4.9	Accessible points	P
4.10	Wires or rods	NA
4.11	Nails and fasteners	NA
4.12	Plastic film	NA
4.13	Folding mechanisms and hinges	NA
4.14	Cords, straps and elastics	NA
4.15	Stability and over-load requirements	NA
4.16	Confined spaces	NA
4.17	Wheels, tires and axles	NA
4.18	Holes, clearance, and accessibility of mechanisms	NA
4.19	Simulated protective devices	NA
4.20(4.20.1 [▲])	Pacifiers	NA
4.21	Projectile toys	NA
4.22	Teethers and teething toys	NA

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Test conducted:

Clause	Testing items	Assessment
4.23	Rattles	NA
4.24	Squeeze toys	NA
4.25 (4.25.10, 4.25.11 [▲])	Battery-operated toys	NA
4.26	Toys intended to be attached to a crib or playpen	NA
4.27	Stuffed and beanbag-type toys	NA
4.28	Stroller and carriage toys	NA
4.29	Art materials	NA
4.30	Toy gun marking	NA
4.31	Balloons	NA
4.32	Certain toys with nearly spherical ends	NA
4.33	Marbles	NA
4.34	Balls	NA
4.35	Pompoms	NA
4.36	Hemispheric-shaped objects	NA
4.37 [▲]	Yoyo elastic tether toys	NA
4.38	Magnets	NA
4.39	Jaw entrapment in handles and steering wheels	NA
4.40	Expanding materials	NA
4.41	Toy chests	NA
5	Labelling requirement	P #
6	Instructional literature	P
7	Producer's markings - name of producer (toy and package) - address (package)	Yes Yes

Remark : P = Pass NA = Not applicable

▲ = Tested items are not included in the TISI Accreditation

= Only artwork of packaging was provided for review.

The submitted samples were undergone the tests in accordance with clause 8.5 through clause 8.17 and 8.19 through 8.26 on normal use, abuse and specific tests for different types of toys whichever is applicable.

Testing period : November 01, 2019 to December 09, 2019



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Test conducted:

2 Flammability Test

Test Standard : Clause 4.2 of the ASTM Standard Consumer Safety Specification for Toy Safety F963-17.

Results : Did not ignite

Testing period : November 01, 2019 to November 13, 2019



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Test conducted:

Heavy Elements Analysis

As per clause 4.3.5.2(2)(b) of the ASTM Standard Consumer Safety Specification on Toy Safety F963-17, acid extraction method was used and heavy elements migration content were determined by ICP-OES analysis.

	(2)	(3)	Result mg/kg (4)	(5)	LOD mg/kg	LOQ mg/kg	Limit mg/kg
Sol. Barium (Ba)	<5	<5	<5	<5	1	5	1000
Sol. Lead (Pb)	ND	ND	ND	<5	1	5	90
Sol. Cadmium (Cd)	ND	ND	ND	ND	1	5	75
Sol. Antimony (Sb)	ND	ND	ND	ND	2	5	60
Sol. Selenium (Se)	ND	ND	ND	ND	1	5	500
Sol. Chromium (Cr)	ND	ND	ND	ND	2	5	60
Sol. Mercury (Hg)	ND	ND	ND	ND	1	5	60
Sol. Arsenic (As)	ND	ND	ND	ND	2	5	25

Remark:

Sol. = Soluble
 mg/kg = Milligram per kilogram based on weight of sample; = ppm = Parts per million
 LOD = Limit of Detection
 LOQ = Limit of Quantitation
 ND = Not detected (Less than LOD)
 < = Less than

Tested components:

(2) = PINK SAWDUST	Refer	BKKH19010258
(3) = BLACK SAWDUST	Refer	BKKH19009832
(4) = BLUE SAWDUST	Refer	BKKH19008027S1
(5) = SAWDUST WOOD	Refer	BKKH19015542

Note: The results of soluble toxic elements were adjusted by subtracting the analytical correction factor.



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Test conducted:

Total Lead (Pb) Content

As per clause 4.3.5.2(2)(a) of the ASTM Standard Consumer Safety Specification on Toy Safety F963-17, test method CPSC-CH-E1001-08.3:2012, CPSC-CH-E1002-08.3:2012 were used and total Lead content was determined by ICP-OES analysis.

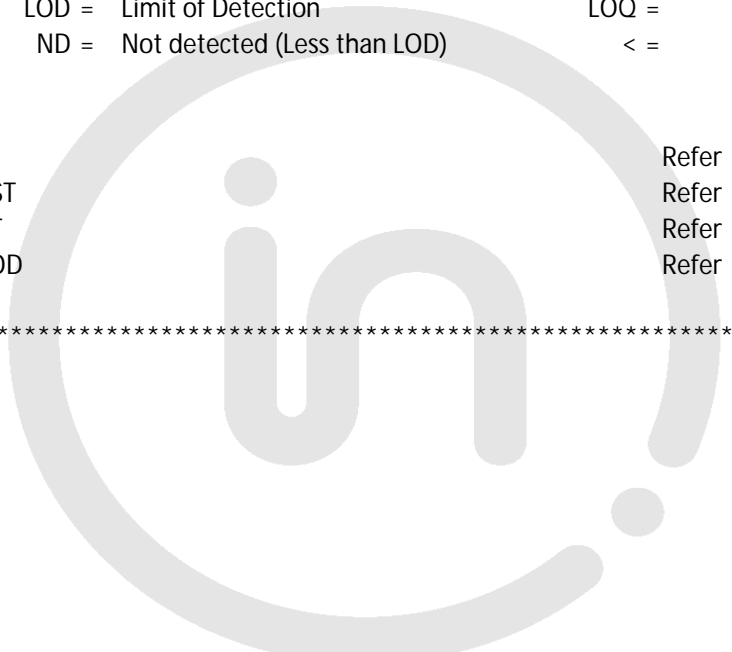
(II) Non-surface coating

<u>Tested Component</u>	<u>Result</u> mg/kg	<u>LOD</u> (mg/kg)	<u>LOQ</u> (mg/kg)	<u>Limit</u> (mg/kg)
(2)	<13	1	13	100
(3)	ND	1	13	100
(4)	<13	1	13	100
(5)	<13	1	13	100

Remark: mg/kg = Milligram per kilogram based on weight of sample; ppm = Parts per million
LOD = Limit of Detection LOQ = Limit of Quantitation
ND = Not detected (Less than LOD) < = Less than

Tested components:

- (2) = PINK SAWDUST Refer BKKH19010258
- (3) = BLACK SAWDUST Refer BKKH19009832
- (4) = BLUE SAWDUST Refer BKKH19008027S1
- (5) = SAWDUST WOOD Refer BKKH19015542





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Test conducted:

4 Total Lead (Pb) content[▲]

As per U.S. Code of Federal Regulations title 16 Part 1303. Acid digestion method was used and total Lead content was determined by Inductively Couple Plasma Optical Emission Spectrometry.

<u>Tested component</u> (1)	<u>Result %</u>	<u>LOD %</u>	<u>LOQ %</u>	<u>Limit %</u>
	ND	0.0002	0.0013	0.0090

Remark: % = percentage
LOD = Limit of Detection
ND = Not detected (Less than LOD)
▲ = Tested items are not included in the TISI Accreditation
LOQ = Limit of Quantitation

Tested components:

(1) = WHITE COATING ON WOOD Refer BKKH19007793S1

5 Total lead (Pb) content in surface coating

As per U.S. Consumer Product Safety Improvement Act of 2008 (H.R. 4040), Title I, Section 101 for children's products containing Lead, CPSC-CH-E1003-09.1:2011 method was used and total Lead content was determined by Inductively Couple Plasma Optical Emission Spectrometry.

<u>Tested component</u> (1)	<u>Result mg/kg</u>	<u>LOD mg/kg</u>	<u>LOQ mg/kg</u>	<u>Limit mg/kg</u>
	ND	2	13	90

Remark: mg/kg = Milligram per kilogram based on weight of sample; = ppm = Parts per million
LOD = Limit of Detection
ND = Not detected (Less than LOD)
LOQ = Limit of Quantitation

Tested components:

(1) = WHITE COATING ON WOOD Refer BKKH19007793S1



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Number: BKKH19014744

Test conducted:

7 Phthalate content

As per CPSC-CH-C1001-09.3:2010 and U.S. Consumer Product Safety Improvement Act 2008 (H.R. 4040), Title I, Section 108 requirement on Phthalates, solvent extraction method was used and Phthalate content was determined by Gas Chromatographic-Mass Spectrometric (GC-MS) analysis.

	<u>Result</u>					<u>LOD</u>	<u>LOQ</u>	<u>(16CFR1307)</u>	<u>NPR</u>
	(1)	(2)	(3)	(4)	(5)	(%, w/w)	(%, w/w)	Limit (%, w/w)	(%, w/w)
Dibutyl Phthalate (DBP)	ND	ND	ND	ND	ND	0.0015	0.0030	0.1	0.1
Di(2-ethylhexyl) phthalate (DEHP)	ND	ND	ND	ND	ND	0.0015	0.0030	0.1	0.1
Benzyl butyl Phthalate (BBP)	ND	ND	ND	ND	ND	0.0015	0.0030	0.1	0.1
Di-iso-nonyl Phthalate (DINP)	ND	ND	ND	ND	ND	0.0015	0.0090	0.1	0.1
Di-n-octyl Phthalate (DNOP)	ND	ND	ND	ND	ND	0.0015	0.0030	--	--
Di-iso-decyl Phthalate (DIDP)	ND	ND	ND	ND	ND	0.0015	0.0090	--	--
Di-isobutyl phthalate (DIBP) ▲	ND	ND	ND	ND	ND	0.0015	0.0030	0.1	0.1
Di-n-pentyl phthalate (DPENP) ▲	ND	ND	ND	ND	ND	0.0015	0.0030	0.1	0.1
Di-n-hexyl phthalate (DHEXP) ▲	ND	ND	ND	ND	ND	0.0015	0.0030	0.1	0.1
Di-cyclohexyl phthalate (DCHP) ▲	ND	ND	ND	ND	ND	0.0015	0.0030	0.1	0.1
Diisooctyl phthalate (DIOP) ▲	ND	ND	ND	ND	ND	0.0015	0.0090	--	--

Remark : The above limit was quoted according to US 16 CFR Part 1307 for Prohibition of Children's Toys and Child Care Articles Containing Specified Phthalates except the Phthalate no.5-6,11 was conducted as per applicant requested only.

- NPR = Notice of proposed rulemaking
- %, w/w = Percentage weight by weight
- LOD = Limit of Detection
- LOQ = Limit of Quantitation
- ND = Not detected (Less than LOD)
- ▲ = Tested items are not included in the TISI Accreditation

Tested components:

(1) = WHITE COATING ON WOOD	Refer	BKKH19007793S1
(2) = PINK SAWDUST	Refer	BKKH19010258
(3) = BLACK SAWDUST	Refer	BKKH19009832
(4) = BLUE SAWDUST	Refer	BKKH19008027S1
(5) = SAWDUST WOOD	Refer	BKKH19015542



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Test conducted:

8 Phthalate content test[▲]

By solvent extraction and Gas Chromatographic-Mass Spectrometric (GC-MS) analysis.

	<u>Result</u>					<u>LOD</u>	<u>LOQ</u>	<u>Limit</u>
	<u>(%, w/w)</u>					<u>(%, w/w)</u>	<u>(%, w/w)</u>	<u>(%, w/w)</u>
	(1)	(2)	(3)	(4)	(5)			
Dibutyl Phthalate (DBP)	ND	ND	ND	ND	ND	0.0015	0.0030	0.1
Di(2-ethylhexyl) phthalate (DEHP)	ND	ND	ND	ND	ND	0.0015	0.0030	0.1
Benzyl butyl Phthalate (BBP)	ND	ND	ND	ND	ND	0.0015	0.0030	0.1
Di-iso-nonyl Phthalate (DINP)	ND	ND	ND	ND	ND	0.0015	0.0090	0.1
Diocetyl Phthalate (DNOP)	ND	ND	ND	ND	ND	0.0015	0.0030	0.1
Di-iso-decyl Phthalate (DIDP)	ND	ND	ND	ND	ND	0.0015	0.0090	0.1
Di-n-hexyl Phthalate (DnHP)	ND	ND	ND	ND	ND	0.0015	0.0030	0.1

Remark : % , w/w = Percentage weight by weight

LOD = Limit of Detection

LOQ = Limit of Quantitation

ND = Not detected (Less than LOD)

▲ = Tested items are not included in the TISI Accreditation

Note : The above limit was quoted according to the California Proposition 65

Tested components:

(1) = WHITE COATING ON WOOD	Refer	BKKH19007793S1
(2) = PINK SAWDUST	Refer	BKKH19010258
(3) = BLACK SAWDUST	Refer	BKKH19009832
(4) = BLUE SAWDUST	Refer	BKKH19008027S1
(5) = SAWDUST WOOD	Refer	BKKH19015542



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Number: BKKH19014744

Test conducted:

9 Total Lead (Pb) Content[▲]

As per Illinois Lead poisoning prevention act 410 ILCS 45 section 6 (public act 095-1019), acid digestion method was used and total Lead content was determined by Inductively Couple Plasma Optical Emission Spectrometry.

I Surface coating material

<u>Tested component</u>	<u>Result</u>	<u>LOD</u>	<u>LOQ</u>	<u>Limit</u>
(1)	mg/kg	mg/kg	mg/kg	mg/kg
(1)	ND	2	13	90

Remark:

mg/kg = Milligram per kilogram based on weight of sample; = ppm = Parts per million
 LOD = Limit of Detection
 LOQ = Limit of Quantitation
 ND = Not detected (Less than LOD)
 ▲ = Tested items are not included in the TISI Accreditation

Requirement:

According to Illinois Lead poisoning prevention act 410 ILCS 45 section 6 (public act 095-019), appropriate warning statement is required when the Lead content of the submitted sample is more than 40 ppm but less than 90 ppm for surface coatings and less than 100 ppm for substrates by total weight or a lower standard for Lead content as may be established by federal or state law or regulation.

Tested components:

(1) = WHITE COATING ON WOOD

Refer BKKH19007793S1



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Test conducted:

II Non-surface coating material (substrate)

<u>Tested component</u>	<u>Result</u> <u>mg/kg</u>	<u>LOD</u> <u>mg/kg</u>	<u>LOQ</u> <u>mg/kg</u>	<u>Limit</u> <u>mg/kg</u>
(2)	<13	1	13	100
(3)	ND	1	13	100
(4)	<13	1	13	100
(5)	<13	1	13	100

Remark: < = Less than
mg/kg = Milligram per kilogram based on weight of sample; = ppm = Parts per million
LOD = Limit of Detection
LOQ = Limit of Quantitation
ND = Not detected (Less than LOD)

Requirement: According to Illinois Lead poisoning prevention act 410 ILCS 45 section 6 (public act 095-019), appropriate warning statement is required when the Lead content of the submitted sample is more than 40 ppm but less than 90 ppm for surface coatings and less than 100 ppm for substrates by total weight or a lower standard for Lead content as may be established by federal or state law or regulation.

Tested components:

(2) = PINK SAWDUST	Refer	BKKH19010258
(3) = BLACK SAWDUST	Refer	BKKH19009832
(4) = BLUE SAWDUST	Refer	BKKH19008027S1
(5) = SAWDUST WOOD	Refer	BKKH19015542

Note: LOD and LOQ value in this test report were effective since October, 2014

*****END*****/KS/NK

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