TEST REPORT

NSC-TISI-TIS 17025
TESTING 0417

Number: BKKH18009489

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

Date: Dec 03, 2018

Sample description:

Quantity of sample:	One (1) set
Sample description:	Wooden toy
Date sample received:	July 20, 2018
Date information received:	December 03, 2018

Client Information:

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

Item Name:	MARINE PUZZLE
Item Number:	5688

BKKH18009489

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Test conducted:

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

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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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TEST REPORT

Number: BKKH18009489

Conclusion:

Tested samples	Standard	Result
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 F963-16 for Heavy elements Test	Pass
	Standard - U.S. CFR title 16 (CPSC regulations) Part 1303 total Lead content	Pass
	Standard 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
	U.S. Consumer product safety improvement Act 2008(H.R. 4040) Title I, Section 108 Requirement on 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

Remark: As requested by the applicant, the test was conducted only on components listed in this report. Other components were not tested.

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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.

Components	Report No.	Date
ASTM F963-16: Heavy metal		
BROWN COATING ON SAWDUST	BKKH18013957	Oct 22, 2018
YELLOW COATING ON SAWDUST	BKKH18013957	Oct 22, 2018
GREEN COATING ON SAWDUST	BKKH18013957	Oct 22, 2018
WHITE COATING ON SAWDUST	BKKH18013957	Oct 22, 2018
PURPLE COATING ON SAWDUST	BKKH18013957	Oct 22, 2018
YELLOW-CREAM COATING ON SAWDUST	BKKH18013956	Oct 31, 2018
DARK GREEN SAWDUST	BKKH18001625	Feb 12, 2018
BLUE SAWDUST	BKKH18001625	Feb 12, 2018
BLUE SAWDUST (320C)	BKKH18001625	Feb 12, 2018
YELLOW SAWDUST	BKKH18004950	May 02, 2018
RED SAWDUST	BKKH17015017	Dec 12, 2017
Lead in surface coating		
BROWN COATING ON SAWDUST	BKKH18013957	Oct 22, 2018
YELLOW COATING ON SAWDUST	BKKH18013957	Oct 22, 2018
GREEN COATING ON SAWDUST	BKKH18013957	Oct 22, 2018
WHITE COATING ON SAWDUST	BKKH18013957	Oct 22, 2018
PURPLE COATING ON SAWDUST	BKKH18013957	Oct 22, 2018
YELLOW-CREAM COATING ON SAWDUST	BKKH18013956	Oct 31, 2018
Lead in substrate		
DARK GREEN SAWDUST	BKKH18001625	Feb 12, 2018
BLUE SAWDUST	BKKH18001625	Feb 12, 2018
BLUE SAWDUST (320C)	BKKH18001625	Feb 12, 2018
YELLOW SAWDUST	BKKH18004950	May 02, 2018
RED SAWDUST	BKKH17015017	Dec 12, 2017
Phthalate content		
DARK GREEN SAWDUST	BKKH18001625	Feb 12, 2018
BLUE SAWDUST	BKKH18001625	Feb 12, 2018
BLUE SAWDUST (320C)	BKKH18001625	Feb 12, 2018
YELLOW SAWDUST	BKKH18004950	May 02, 2018
BROWN COATING ON SAWDUST	BKKH18013957	Oct 22, 2018
YELLOW COATING ON SAWDUST	BKKH18013957	Oct 22, 2018
GREEN COATING ON SAWDUST	BKKH18013957	Oct 22, 2018
WHITE COATING ON SAWDUST	BKKH18013957	Oct 22, 2018
PURPLE COATING ON SAWDUST	BKKH18013957	Oct 22, 2018
RED SAWDUST	BKKH17015017	Dec 12, 2017
YELLOW-CREAM COATING ON SAWDUST	BKKH18013956	Oct 31, 2018

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Test conducted:

1 Physical And Mechanical Tests▲

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

Age group for testing : For age over 12 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 1500.51(b)	10 x 4.5 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	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	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

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 : July 20, 2018 to August 13, 2018

2 Flammability Test▲

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

Results : Did not ignite

▲ = Tested items are not included in the TISI Accreditation

Testing period : July 20, 2018 to August 13, 2018

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Test conducted:

3 Heavy Elements Analysis

As per clause 4.3.5.1(2) of the ASTM Standard Consumer Safety Specification on Toy Safety F963-16, acid extraction method was used and heavy elements migration content were determined by ICP-OES analysis.

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

(1) =	BROWN COATING ON SAWDUST	Refer	BKKH18013957
(2) =	YELLOW COATING ON SAWDUST	Refer	BKKH18013957
(3) =	GREEN COATING ON SAWDUST	Refer	BKKH18013957
(4) =	WHITE COATING ON SAWDUST	Refer	BKKH18013957
(5) =	PURPLE COATING ON SAWDUST	Refer	BKKH18013957

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

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Test conducted:

Heavy Elements Analysis

As per clause 4.3.5.1(2) of the ASTM Standard Consumer Safety Specification on Toy Safety F963-16, acid extraction method was used and heavy elements migration content were determined by ICP-OES analysis.

		Result mg/kg	LOD mg/kg	LOQ mg/kg	Limit mg/kg
	(6)				
Sol. Barium (Ba)	<5		1	5	1000
Sol. Lead (Pb)	ND		1	5	90
Sol. Cadmium (Cd)	ND		1	5	75
Sol. Antimony (Sb)	ND		2	5	60
Sol. Selenium (Se)	ND		1	5	500
Sol. Chromium (Cr)	ND		2	5	60
Sol. Mercury (Hg)	ND		1	5	60
Sol. Arsenic (As)	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:
(6) = YELLOW-CREAM COATING ON SAWDUST Refer BKKH18013956

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

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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 F963-16, acid extraction method was used and heavy elements migration content were determined by ICP-OES analysis.

	Result mg/kg					LOD mg/kg	LOQ mg/kg	Limit mg/kg
	(7)	(8)	(9)	(10)	(11)			
Sol. Barium (Ba)	<5	<5	<5	<5	ND	1	5	1000
Sol. Lead (Pb)	ND	ND	ND	<5	ND	1	5	90
Sol. Cadmium (Cd)	ND	ND	ND	ND	ND	1	5	75
Sol. Antimony (Sb)	ND	ND	ND	ND	ND	2	5	60
Sol. Selenium (Se)	ND	ND	ND	ND	ND	1	5	500
Sol. Chromium (Cr)	ND	ND	ND	ND	ND	2	5	60
Sol. Mercury (Hg)	ND	ND	ND	ND	ND	1	5	60
Sol. Arsenic (As)	ND	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:

(7) =	DARK GREEN SAWDUST	Refer	BKKH18001625
(8) =	BLUE SAWDUST	Refer	BKKH18001625
(9) =	BLUE SAWDUST (320C)	Refer	BKKH18001625
(10) =	YELLOW SAWDUST	Refer	BKKH18004950
(11) =	RED SAWDUST	Refer	BKKH17015017

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 4.3.5.1(1) of the ASTM Standard Consumer Safety Specification on Toy Safety F963-16, test method CPSC-CH-E1003-09.1:2011 was used and total Lead content was determined by ICP-OES analysis.

(I) Surface coating

Tested Component	Result mg/kg	LOD (mg/kg)	LOQ (mg/kg)	Limit (mg/kg)
(1)	ND	2	13	90
(2)	ND	2	13	90
(3)	ND	2	13	90
(4)	ND	2	13	90
(5)	ND	2	13	90
(6)	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)
< = Less than

Tested components:

(1) =	BROWN COATING ON SAWDUST	Refer	BKKH18013957
(2) =	YELLOW COATING ON SAWDUST	Refer	BKKH18013957
(3) =	GREEN COATING ON SAWDUST	Refer	BKKH18013957
(4) =	WHITE COATING ON SAWDUST	Refer	BKKH18013957
(5) =	PURPLE COATING ON SAWDUST	Refer	BKKH18013957
(6) =	YELLOW-CREAM COATING ON SAWDUST	Refer	BKKH18013956

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TEST REPORT

Number: BKKH18009489

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 F963-11 and F963-16, 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

Tested Component	Result mg/kg	LOD (mg/kg)	LOQ (mg/kg)	Limit (mg/kg)
(7)	<13	1	13	100
(8)	<13	1	13	100
(9)	<13	1	13	100
(10)	ND	1	13	100
(11)	ND	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:

(7) =	DARK GREEN SAWDUST	Refer	BKKH18001625
(8) =	BLUE SAWDUST	Refer	BKKH18001625
(9) =	BLUE SAWDUST (320C)	Refer	BKKH18001625
(10) =	YELLOW SAWDUST	Refer	BKKH18004950
(11) =	RED SAWDUST	Refer	BKKH17015017

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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.

Tested component	Result %	LOD %	LOQ %	Limit %
(1)	ND	0.0002	0.0013	0.0090
(2)	ND	0.0002	0.0013	0.0090
(3)	ND	0.0002	0.0013	0.0090
(4)	ND	0.0002	0.0013	0.0090
(5)	ND	0.0002	0.0013	0.0090
(6)	ND	0.0002	0.0013	0.0090

Remark: % = percentage < = Less than
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) =	BROWN COATING ON SAWDUST	Refer	BKKH18013957
(2) =	YELLOW COATING ON SAWDUST	Refer	BKKH18013957
(3) =	GREEN COATING ON SAWDUST	Refer	BKKH18013957
(4) =	WHITE COATING ON SAWDUST	Refer	BKKH18013957
(5) =	PURPLE COATING ON SAWDUST	Refer	BKKH18013957
(6) =	YELLOW-CREAM COATING ON SAWDUST	Refer	BKKH18013956

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Test conducted:

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.

Tested component	Result mg/kg	LOD mg/kg	LOQ mg/kg	Limit mg/kg
(1)	ND	2	13	90
(2)	ND	2	13	90
(3)	ND	2	13	90
(4)	ND	2	13	90
(5)	ND	2	13	90
(6)	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) < = Less than

Tested components:

(1) =	BROWN COATING ON SAWDUST	Refer	BKKH18013957
(2) =	YELLOW COATING ON SAWDUST	Refer	BKKH18013957
(3) =	GREEN COATING ON SAWDUST	Refer	BKKH18013957
(4) =	WHITE COATING ON SAWDUST	Refer	BKKH18013957
(5) =	PURPLE COATING ON SAWDUST	Refer	BKKH18013957
(6) =	YELLOW-CREAM COATING ON SAWDUST	Refer	BKKH18013956

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Test conducted:

6 Total lead (Pb) content in substrate material- non-metal children's product

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-E1002-08.3:2012 method was used and total lead content was determined by Inductively Couple Plasma Optical Emission Spectrometry.

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

(1) =	DARK GREEN SAWDUST	Refer	BKKH18001625
(2) =	BLUE SAWDUST	Refer	BKKH18001625
(3) =	BLUE SAWDUST (320C)	Refer	BKKH18001625
(4) =	YELLOW SAWDUST	Refer	BKKH18004950
(5) =	RED SAWDUST	Refer	BKKH17015017

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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.

	Result (%, w/w)					LOD (%, w/w)	LOQ (%, w/w)	Limit (%, w/w)	NPR (%, w/w)
	(1)	(2)	(3)	(4)	(5)				
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	0.1	--
Di-iso-decyl Phthalate (DIDP)	ND	ND	ND	ND	ND	0.0015	0.0090	0.1	--
Di-isobutyl phthalate (DIBP)▲	ND	ND	ND	ND	ND	0.0015	0.0090	--	0.1
Di-n-pentyl phthalate (DPENP)▲	ND	ND	ND	ND	ND	0.0015	0.0090	--	0.1
Di-n-hexyl phthalate (DHEXP)▲	ND	ND	ND	ND	ND	0.0015	0.0090	--	0.1
Di-cyclohexyl phthalate (DCHP)▲	ND	ND	ND	ND	ND	0.0015	0.0090	--	0.1
Diisooctyl phthalate (DIOP)▲	ND	ND	ND	ND	ND	0.0015	0.0090	--	--

Remark : The above limit was quoted according to US Consumer Product Safety Improvement Act 2008 for prohibition on sale of certain products containing specified phthalates.
The Phthalate no.7-11 are not included in US Consumer Product Safety Improvement Act 2008 and 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) =	DARK GREEN SAWDUST	Refer	BKKH18001625
(2) =	BLUE SAWDUST	Refer	BKKH18001625
(3) =	BLUE SAWDUST (320C)	Refer	BKKH18001625
(4) =	YELLOW SAWDUST	Refer	BKKH18004950
(5) =	BROWN COATING ON SAWDUST	Refer	BKKH18013957

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Test conducted:

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.

	Result (%, w/w)					LOD (%, w/w)	LOQ (%, w/w)	Limit (%, w/w)	NPR (%, w/w)
	(6)	(7)	(8)	(9)	(10)				
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	0.1	--
Di-iso-decyl Phthalate (DIDP)	ND	ND	ND	ND	ND	0.0015	0.0090	0.1	--
Di-isobutyl phthalate (DIBP)▲	ND	ND	ND	ND	ND	0.0015	0.0090	--	0.1
Di-n-pentyl phthalate (DPENP)▲	ND	ND	ND	ND	ND	0.0015	0.0090	--	0.1
Di-n-hexyl phthalate (DHEXP)▲	ND	ND	ND	ND	ND	0.0015	0.0090	--	0.1
Di-cyclohexyl phthalate (DCHP)▲	ND	ND	ND	ND	ND	0.0015	0.0090	--	0.1
Diisooctyl phthalate (DIOP)▲	ND	ND	ND	ND	ND	0.0015	0.0090	--	--

Remark : The above limit was quoted according to US Consumer Product Safety Improvement Act 2008 for prohibition on sale of certain products containing specified phthalates.
The Phthalate no.7-11 are not included in US Consumer Product Safety Improvement Act 2008 and 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:

(6) =	YELLOW COATING ON SAWDUST	Refer	BKKH18013957
(7) =	GREEN COATING ON SAWDUST	Refer	BKKH18013957
(8) =	WHITE COATING ON SAWDUST	Refer	BKKH18013957
(9) =	PURPLE COATING ON SAWDUST	Refer	BKKH18013957
(10) =	RED SAWDUST	Refer	BKKH17015017

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Test conducted:

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.

		Result (%, w/w)	LOD (%, w/w)	LOQ (%, w/w)	Limit (%, w/w)	NPR (%, w/w)
	(11)					
Dibutyl Phthalate (DBP)	ND		0.0015	0.0030	0.1	0.1
Di(2-ethylhexyl) phthalate (DEHP)	ND		0.0015	0.0030	0.1	0.1
Benzyl butyl Phthalate (BBP)	ND		0.0015	0.0030	0.1	0.1
Di-iso-nonyl Phthalate (DINP)	ND		0.0015	0.0090	0.1	0.1
Di-n-octyl Phthalate (DNOP)	ND		0.0015	0.0030	0.1	--
Di-iso-decyl Phthalate (DIDP)	ND		0.0015	0.0090	0.1	--
Di-isobutyl phthalate (DIBP)▲	ND		0.0015	0.0090	--	0.1
Di-n-pentyl phthalate (DPENP)▲	ND		0.0015	0.0090	--	0.1
Di-n-hexyl phthalate (DHEXP)▲	ND		0.0015	0.0090	--	0.1
Di-cyclohexyl phthalate (DCHP)▲	ND		0.0015	0.0090	--	0.1
Diisooctyl phthalate (DIOP)▲	ND		0.0015	0.0090	--	--

Remark : The above limit was quoted according to US Consumer Product Safety Improvement Act 2008 for prohibition on sale of certain products containing specified phthalates.
The Phthalate no.7-11 are not included in US Consumer Product Safety Improvement Act 2008 and 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:

(11) = YELLOW-CREAM COATING ON SAWDUST Refer BKKH18013956

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Test conducted:

8 Phthalate content test▲

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

	Result (%, w/w)					LOD (%, w/w)	LOQ (%, w/w)	Limit (%, w/w)
	(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
Dioctyl 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) =	DARK GREEN SAWDUST	Refer	BKKH18001625
(2) =	BLUE SAWDUST	Refer	BKKH18001625
(3) =	BLUE SAWDUST (320C)	Refer	BKKH18001625
(4) =	YELLOW SAWDUST	Refer	BKKH18004950
(5) =	BROWN COATING ON SAWDUST	Refer	BKKH18013957

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TEST REPORT

Number: BKKH18009489

Test conducted:

Phthalate content test▲

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

	Result (%, w/w)					LOD (%, w/w)	LOQ (%, w/w)	Limit (%, w/w)
	(6)	(7)	(8)	(9)	(10)			
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
Dioctyl 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:

(6) =	YELLOW COATING ON SAWDUST	Refer	BKKH18013957
(7) =	GREEN COATING ON SAWDUST	Refer	BKKH18013957
(8) =	WHITE COATING ON SAWDUST	Refer	BKKH18013957
(9) =	PURPLE COATING ON SAWDUST	Refer	BKKH18013957
(10) =	RED SAWDUST	Refer	BKKH17015017

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Test conducted:

Phthalate content test▲

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

		Result (%, w/w)	LOD (%, w/w)	LOQ (%, w/w)	Limit (%, w/w)
	(11)				
Dibutyl Phthalate (DBP)	ND		0.0015	0.0030	0.1
Di(2-ethylhexyl) phthalate (DEHP)	ND		0.0015	0.0030	0.1
Benzyl butyl Phthalate (BBP)	ND		0.0015	0.0030	0.1
Di-iso-nonyl Phthalate (DINP)	ND		0.0015	0.0090	0.1
Dioctyl Phthalate (DNOP)	ND		0.0015	0.0030	0.1
Di-iso-decyl Phthalate (DIDP)	ND		0.0015	0.0090	0.1
Di-n-hexyl Phthalate (DnHP)	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:

(11) = YELLOW-CREAM COATING ON SAWDUST Refer BKKH18013956

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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

Tested component	Result mg/kg	LOD mg/kg	LOQ mg/kg	Limit mg/kg
(1)	ND	2	13	90
(2)	ND	2	13	90
(3)	ND	2	13	90
(4)	ND	2	13	90
(5)	ND	2	13	90
(6)	ND	2	13	90

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)
▲ = 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)	=	BROWN COATING ON SAWDUST	Refer	BKKH18013957
(2)	=	YELLOW COATING ON SAWDUST	Refer	BKKH18013957
(3)	=	GREEN COATING ON SAWDUST	Refer	BKKH18013957
(4)	=	WHITE COATING ON SAWDUST	Refer	BKKH18013957
(5)	=	PURPLE COATING ON SAWDUST	Refer	BKKH18013957
(6)	=	YELLOW-CREAM COATING ON SAWDUST	Refer	BKKH18013956

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Test conducted:

II Non-surface coating material (substrate)

Tested component	Result mg/kg	LOD mg/kg	LOQ mg/kg	Limit mg/kg
(7)	<13	1	13	100
(8)	<13	1	13	100
(9)	<13	1	13	100
(10)	ND	1	13	100
(11)	ND	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:

(7)	=	DARK GREEN SAWDUST	Refer	BKKH18001625
(8)	=	BLUE SAWDUST	Refer	BKKH18001625
(9)	=	BLUE SAWDUST (320C)	Refer	BKKH18001625
(10)	=	YELLOW SAWDUST	Refer	BKKH18004950
(11)	=	RED SAWDUST	Refer	BKKH17015017

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

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

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