

TEST REPORT

Applicant: KYOTO NAKAI SHOJI CO., LTD.
117 KANZE-CHO OMIYA-ST
IMADEGAWA AGARU KAMIKYO-KU
KYOTO 602-8441 JAPAN

Number: HKGH0238813703

Date: Dec 13, 2018

Attn: MR. MASAYOSHI YAMADA

Submitted sample said to be : **HOT STAMPING FOIL**
Series Name : **A23, A33, AP, SAM, WP**
Country of Origin : **Japan**

For and on behalf of :
Intertek Testing Services HK Ltd.



Angel Y.F. Cheung
Vice President



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Conclusion:

The submitted sample was tested under the following requirements requested by the applicant, subject to the information stated in the remark and attached page(s) for details :

<u>Requirement</u>	<u>Result</u>
(1) EN71-3 : 2013 + A1:2014 - Migration of certain elements	Pass
EN71-3 : 2013 + A3:2018 - Migration of certain elements	Pass
(2) REACH Regulation (EC) no. 1907/2006, Annex XVII Items 51 & 52 & amendment no. 552/2009 - Phthalates content	Pass
(3) REACH Regulation (EC) No. 1907/2006 ,Annex XVII Items 51 & 52 & amendment No. 552/2009 - Phthalates content	Pass
Spin Master's requirement - Phthalates content	Pass
(4) REACH Regulation (EC) No.1907/2006 , Annex XVII Item 23 & amendment No. 2016/217 - Cadmium content requirement	Pass
(5) RoHS Directive (2011/65/EU) - Chemical test	Pass
(6) 94/62/EC and amendment 2013/2/EU & Directive (EU) 2015/720 Directive (packaging waste) - Toxic elements test	Pass
(7) REACH Regulation (EC) no. 1907/2006, Annex XVII Item 61 & Amendment No. 412/2012 - Dimethylfumarate content requirement	Pass
(8) REACH Regulation (EC) no. 1907/2006 & amendment (EU) no. 1272/2013 Annex XVII Item 50 - Polycyclic aromatic hydrocarbons content	Pass



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<u>Requirement</u>	<u>Result</u>
(9) Free formaldehyde content	See details enclosed
(10) SVHC Screening Test	Pass
(11) AS/NZS ISO 8124-3:2003 (Australian Trade Practice Act 1974 with Consumer Protection Notice no. 1, 2009 - Consumer Product Safety Standard for Lead and certain elements in children's toys.) - Toxic elements test	Pass
Australian Customs Notice no. 2007/46 - amendments to the Customs (Prohibited Imports) Regulations 1956 Schedule 2 Item 2 - Toxic elements test	Pass
AS/NZS 8124-3:2012/Amdt 1:2016 - Toxic elements test	Pass
(12) Perfluorooctane Sulfonates (PFOS) and Perfluorooctanoic Acid (PFOA) Content	See details enclosed



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(1) 19 Toxic Element Migration Test

Test Method : Acid extraction method was used and toxic elements content were determined by Inductively Coupled Argon Plasma Spectrometry and/or Ion Chromatography- Inductively Coupled Plasma-Mass Spectrometry and/or Gas Chromatographic - Mass Spectrometry

Category (III): Scraped-off toy material:

	Result (mg/kg)		Limit (mg/kg)
	(1)	(2)	
Soluble Aluminium (Al)	2200	460	70000
Soluble Antimony (Sb)	<10	<10	560
Soluble Arsenic (As)	<10	<10	47
Soluble Barium (Ba)	<10	<10	18750
Soluble Boron (B)	<50	<50	15000
Soluble Cadmium (Cd)	<5	<5	17
Soluble Chromium (III) (Cr III) ++	<10	<10	460
Soluble Chromium (VI) (Cr VI) ++	<0.025	<0.025	0.2
Soluble Cobalt (Co)	<10	<10	130
Soluble Copper (Cu)	<10	<10	7700
Soluble Lead (Pb)	<10	<10	23
Soluble Manganese (Mn)	<10	<10	15000
Soluble Mercury (Hg)	<10	<10	94
Soluble Nickel (Ni)	<10	<10	930
Soluble Selenium (Se)	<10	<10	460
Soluble Strontium (Sr)	<100	<100	56000
Soluble Tin (Sn)	<4	<4	180000
Soluble Organic tin ++	<2.0	<2.0	12
Soluble Zinc (Zn)	400	<100	46000



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mg/kg = milligram per kilogram

++ : Unless the test results were marked with "^" or "Δ", Chromium (III) & Chromium (VI) and Organic tin contents were not directly determined and were derived from migration results of total chromium and tin respectively.

Organic tin test result was expressed as tributyl tin.

The new chromium (VI) migration limit (0.053 mg/kg) for Category (III) was quoted from directive (EU) Directive 2018/725 amending 2009/48/EC effective from 18 November 2019.

Tested Components:

- (1) Silver color coating on plastic film (hot stamping foil).
- (2) Transparent plastic film excluding silver color coating (hot stamping foil).

Date sample received : Dec 04, 2018

Test Period : Dec 04, 2018 to Dec 07, 2018



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(2) Phthalate Content Test

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

Six Phthalate content:

Compound	Result (% w/w)		Limit (% w/w)
	(1)	(2)	
Dibutyl phthalate (DBP)	<0.01	<0.01	--
Diethyl hexyl phthalate (DEHP)	<0.01	<0.01	--
Benzyl butyl phthalate (BBP)	<0.01	<0.01	--
Sum of DBP,DEHP & BBP	<0.01	<0.01	0.1
Diisononyl phthalate (DINP)	<0.01	<0.01	--
Di-n-octyl phthalate (DnOP)	<0.01	<0.01	--
Diisodecyl phthalate (DIDP)	<0.01	<0.01	--
Sum of DINP,DnOP & DIDP	<0.01	<0.01	0.1

The above limit was quoted according to Annex XVII Items 51 & 52 of the REACH Regulation (EC) no. 1907/2006 & amendment no. 552/2009 for phthalate content in toys and childcare articles.

Tested Components:

- (1) Silver color coating on plastic film (hot stamping foil).
- (2) Transparent plastic film excluding silver color coating (hot stamping foil).

Date sample received : Dec 04, 2018

Test Period : Dec 04, 2018 to Dec 07, 2018



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(3) Phthalate Content Test

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

(A) EEC regulated phthalates:

Compound	Result (% w/w)		Limit (% w/w)
	(1)	(2)	
Dibutyl phthalate (DBP)	<0.01	<0.01	--
Diethyl hexyl phthalate (DEHP)	<0.01	<0.01	--
Benzyl butyl phthalate (BBP)	<0.01	<0.01	--
Sum of DBP, DEHP & BBP	<0.01	<0.01	0.1
Diisononyl phthalate (DINP)	<0.01	<0.01	--
Di-n-octyl phthalate (DnOP)	<0.01	<0.01	--
Diisodecyl phthalate (DIDP)	<0.01	<0.01	--
Sum of DINP, DnOP & DIDP	<0.01	<0.01	0.1



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(B) Other phthalates:

Compound	Result (% w/w)		Limit (% w/w)
	(1)	(2)	
Dimethyl phthalate (DMP)	<0.01	<0.01	0.05
Diethyl phthalate (DEP)	<0.01	<0.01	0.05
Di-n-pentyl phthalate (DPP) / (DPENP)	<0.01	<0.01	0.05
Diisopentylphthalate (DIPP)	<0.01	<0.01	0.05
N-pentyl-isopentylphthalate (PIPP)	<0.01	<0.01	0.05
Dinonyl phthalate (DNP)	<0.01	<0.01	0.05
Dicyclohexyl phthalate (DCHP)	<0.01	<0.01	0.05
Di-propyl phthalate (DPRP)	<0.01	<0.01	0.05
Diisobutyl phthalate (DIBP)	<0.01	<0.01	0.05
Di-n-hexyl phthalate (DnHP) / (DHEXP)	<0.01	<0.01	0.05
Diisooctyl phthalate (DIOP)	<0.01	<0.01	0.05
Bis (2-methoxyethyl) phthalate (BMEP)	<0.01	<0.01	0.05
1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	<0.01	<0.01	0.05
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	<0.01	<0.01	0.05
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	<0.01	<0.01	0.05
Di-C7-11-alkyl (branched and linear) phthalate (DHNUP)	<0.01	<0.01	0.05
1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate (EC No. 201-559-5)	<0.01	<0.01	0.05
Dibenzyl phthalate (DBZP)	<0.01	<0.01	0.05
Diheptyl phthalate (DHEPP)	<0.01	<0.01	0.05
Diallyl phthalate (DAP)	<0.01	<0.01	0.05
Diundecyl phthalate (DUP)	<0.01	<0.01	0.05



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The above limit was quoted according to Annex XVII Items 51 & 52 of the REACH Regulation (EC) No. 1907/2006 & amendment No. 552/2009 for phthalate content in toys and children articles.

Tested Components:

- (1) Silver color coating on plastic film (hot stamping foil).
- (2) Transparent plastic film excluding silver color coating (hot stamping foil).

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Test Period : Dec 04, 2018 to Dec 07, 2018

(4) Cadmium (Cd) Content

Test Method : Acid digestion method was used and total Cadmium content was determined by Inductively Coupled Argon Plasma Spectrometry.

Tested Component	Result in %, w/w	Limit in %, w/w
(1)	ND	0.1
(2)	ND	0.01

ND : Not detected (< 0.0005%)

Tested Components:

- (1) Silver color coating on plastic film (hot stamping foil).
- (2) Transparent plastic film excluding silver color coating (hot stamping foil).

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(5) RoHS Chemical Test

(A) Result :

Polymer material:

	Result
	(1)
Cadmium (Cd) Content (mg/kg)	ND
Lead (Pb) Content (mg/kg)	ND
Mercury (Hg) Content (mg/kg)	ND
Chromium (VI) Content (mg/kg) (For Non-metal)	ND
Chromium (VI) Result (By boiling water extraction on metal) (µg/cm ²)	--
Monobromobiphenyl (MonoBB) (mg/kg)	ND
Dibromobiphenyl (DiBB) (mg/kg)	ND
Tribromobiphenyl (TriBB) (mg/kg)	ND
Tetrabromobiphenyl (TetraBB) (mg/kg)	ND
Pentabromobiphenyl (PentaBB) (mg/kg)	ND
Hexabromobiphenyl (HexaBB) (mg/kg)	ND
Heptabromobiphenyl (HeptaBB) (mg/kg)	ND
Octabromobiphenyl (OctaBB) (mg/kg)	ND
Nonabromobiphenyl (NonaBB) (mg/kg)	ND
Decabromobiphenyl (DecaBB) (mg/kg)	ND
Sum of Polybrominated Biphenyls (PBBs) (mg/kg)	ND
Monobromodiphenyl Ether (MonoBDE) (mg/kg)	ND
Dibromodiphenyl Ether (DiBDE) (mg/kg)	ND
Tribromodiphenyl Ether (TriBDE)	ND



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	Result
(mg/kg)	(1)
Tetrabromodiphenyl Ether (TetraBDE) (mg/kg)	ND
Pentabromodiphenyl Ether (PentaBDE) (mg/kg)	ND
Hexabromodiphenyl Ether (HexaBDE) (mg/kg)	ND
Heptabromodiphenyl Ether (HeptaBDE) (mg/kg)	ND
Octabromodiphenyl Ether (OctaBDE) (mg/kg)	ND
Nonabromodiphenyl Ether (NonaBDE) (mg/kg)	ND
Decabromodiphenyl Ether (DecaBDE) (mg/kg)	ND
Sum of Polybrominated Diphenyl Ethers (PBDEs) (mg/kg)	ND

mg/kg = milligram per kilogram

ND = Not detected

NA = Not applicable



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(B) RoHS requirements

Restricted substances	Limits
Cadmium (Cd)	0.01% (100 ppm)
Lead (Pb)	0.1% (1000 ppm)
Mercury (Hg)	0.1% (1000 ppm)
Chromium (VI) (Cr ⁶⁺)	0.1% (1000 ppm)
Polybrominated biphenyls (PBBs)	0.1% (1000 ppm)
Polybrominated diphenyl ethers (PBDEs)	0.1% (1000 ppm)

The above limits were quoted from Annex II of 2011/65/EU.

(C) Test Methods

Testing Item	Testing Method	Reporting Limit
Cadmium (Cd) Content	With reference to IEC 62321-5 edition 1.0 : 2013, by acid digestion and determined by ICP-OES	10 mg/kg
Lead (Pb) Content	With reference to IEC 62321-5 edition 1.0 : 2013, by acid digestion and determined by ICP-OES	10 mg/kg
Mercury (Hg) Content	With reference to IEC 62321-4 edition 1.0 : 2013, by acid digestion and determined by ICP-OES	10 mg/kg
Chromium (VI) (Cr ⁶⁺) Content (For Non-Metal)	With reference to IEC 62321 edition 1.0 : 2008, by alkaline digestion and determined by UV-VIS spectrophotometer	1 mg/kg
Chromium (VI) (Cr ⁶⁺) Content (For Leather)	With reference to EN ISO17075: 2007, by phosphate butter extraction and determined by UV-VIS spectrophotometer	1 mg/kg
Chromium (VI) (Cr ⁶⁺) Content (For Metal)	With reference to IEC 62321-7-1 : 2015, by boiling water extraction and determined by UV-VIS spectrophotometer	0.1 µg/cm ²
Polybrominated Biphenyls (PBBs) & Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321-6 : 2015, by solvent extraction and determined by GC/MS.	20 mg/kg



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The explanation of Chromium (VI) (Cr⁶⁺) analysis result (For Metal)

Colorimetric result	Qualitative result	Explanation
< 0.10 µg/cm ²	Negative	The result of sample is negative for Cr (VI). The sample coating is considered a non-Cr(VI) based coating.
≥ 0.10 µg/cm ² and ≤ 0.13 µg/cm ²	Inconclusive	The result of sample is considered to be inconclusive. If addition samples are available, recommend to add trials and get the average result for the final determination.
> 0.13 µg/cm ²	Positive	The result of sample is positive for Cr(VI). The sample coating is considered to contain Cr(VI).A result expresses as positive, while not an actual value, which indicates a visual observation was used.

Tested Component:

- (1) Transparent plastic film with silver color coating (hot stamping foil).

Date sample received : Dec 04, 2018

Test Period : Dec 04, 2018 to Dec 10, 2018



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(6) Toxic Elements Analysis

Test Method : 94/62/EC and amendment 2013/2/EU & Directive (EU) 2015/720 Directive on packaging and packaging waste, acid digestion method was used and toxic elements contents were determined by Inductively Coupled Argon Plasma Spectrometry, and Hexavalent Chromium content was determined by UV-Visible Spectrophotometry.

	Result (ppm)	Limit
	(1)	(ppm)
Total Lead (Pb)	<5	--
Total Cadmium (Cd)	<5	--
Total Mercury (Hg)	<5	--
Chromium VI (Cr (VI))	<1	--
Sum of Lead, Cadmium, Mercury and Chromium Cr (VI)	<16	100

ppm = parts per million = mg/kg

Tested Component:

(1) Transparent plastic film with silver color coating (hot stamping foil).

Date sample received : Dec 04, 2018

Test Period : Dec 04, 2018 to Dec 07, 2018



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(7) Dimethylfumarate Content

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

Tested Component	Result in ppm	Limit in ppm
(1)	<0.05	0.1

Detection Limit = 0.05ppm

ppm = parts per million = mg/kg

Tested Component:

(1) Transparent plastic film with silver color coating (hot stamping foil).

Date sample received : Dec 04, 2018

Test Period : Dec 04, 2018 to Dec 12, 2018



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(8) Polycyclic Aromatic Hydrocarbons (PAH) Content

Test Method : Solvent extraction and determined by Gas Chromatographic - Mass Spectrometry (GC/MS).

Compound	Result (ppm)	Limit (ppm)
	(1)	
Benzo(a)pyrene	<0.20	1
Benzo(e)pyrene	<0.20	1
Benzo(a)anthracene	<0.20	1
Chrysene	<0.20	1
Benzo(b)fluoranthene	<0.20	1
Benzo(j)fluoranthene	<0.20	1
Benzo(k)fluoranthene	<0.20	1
Dibenzo(a,h)anthracene	<0.20	1

The above limit was quoted according to Annex XVII Items 50 of the REACH Regulation (EC) no. 1907/2006 & amendment (EU) no. 1272/2013 for polycyclic aromatic hydrocarbons (PAH).

ppm = parts per million = mg/kg

Tested Component:

(1) Transparent plastic film with silver color coating (hot stamping foil).

Date sample received : Dec 04, 2018

Test Period : Dec 04, 2018 to Dec 08, 2018



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(9) Free Formaldehyde Content

Test Standard : ISO 14184-1, by Spectrometric Analysis.

Tested Component	Result in ppm
(1)	<5

ppm = parts per million = mg/kg

Tested Component:

(1) Transparent plastic film with silver color coating (hot stamping foil).

Date sample received : Dec 04, 2018

Test Period : Dec 04, 2018 to Dec 07, 2018



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(10) SVHC Screening Test

Test Method : By a combination of X-Ray Fluorescence Spectroscopy, Inductively Coupled Argon Plasma Spectrometry, Gas Chromatographic - Mass Spectrometry and Liquid Chromatographic - Mass Spectrometry techniques.

No.	Chemical Substances	EC No.	CAS No.	Result %(w/w)
1	Anthracene	204-371-1	120-12-7	<0.02
2	4,4'-Diaminodiphenylmethane	202-974-4	101-77-9	<0.02
3	Dibutyl phthalate/ DBP	201-557-4	84-74-2	<0.02
4	Cobalt dichloride Δ	231-589-4	7646-79-9	<0.02
5	Diarsenic pentaoxide Δ	215-116-9	1303-28-2	<0.02
6	Diarsenic trioxide Δ	215-481-4	1327-53-3	<0.02
7	Sodium dichromate Δ	234-190-3	7789-12-0, 10588-01-9	<0.02
8	5-Tert-butyl-2,4,6-trinitro-m-xylene/ Musk xylene	201-329-4	81-15-2	<0.02
9	Bis (2-ethylhexyl) phthalate/ DEHP	204-211-0	117-81-7	<0.02
10	Hexabromocyclododecane/ HBCDD and all major diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD)	247-148-4 and 221-695-9	25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8)	<0.02
11	Short chain chlorinated paraffin (C10-C13)	287-476-5	85535-84-8	<0.02
12	Bis (tributyltin) oxide Δ	200-268-0	56-35-9	<0.02
13	Lead hydrogen arsenate Δ	232-064-2	7784-40-9	<0.02
14	Triethyl arsenate Δ	427-700-2	15606-95-8	<0.02
15	Benzyl butyl phthalate/ BBP	201-622-7	85-68-7	<0.02
16	Anthracene oil	292-602-7	90640-80-5	<0.02
17	Anthracene oil, anthracene paste, distr. lights	295-278-5	91995-17-4	<0.02
18	Anthracene oil, anthracene paste, anthracene fraction	295-275-9	91995-15-2	<0.02
19	Anthracene oil, anthracene-low	292-604-8	90640-82-7	<0.02
20	Anthracene oil, anthracene paste	292-603-2	90640-81-6	<0.02
21	Diisobutyl phthalate/ DIBP	201-553-2	84-69-5	<0.02
22	2,4-Dinitrotoluene	204-450-0	121-14-2	<0.02
23	Lead chromate Δ	231-846-0	7758-97-6	<0.02
24	Lead chromate molybdate sulfate red/ C.I. pigment red 104 Δ	235-759-9	12656-85-8	<0.02
25	Lead sulfochromate yellow/ C.I. pigment yellow 34 Δ	215-693-7	1344-37-2	<0.02
26	Coal tar pitch, high temperature	266-028-2	65996-93-2	<0.02
27	Tris(2-chloroethyl)phosphate/ TCEP	204-118-5	115-96-8	<0.02
28	Aluminosilicate, refractory ceramic fibres Δ	--	Index number 650-017-00-8	<0.02
29	Zirconia aluminosilicate, refractory ceramic fibres Δ	--	Index number 650-017-00-8	<0.02
30	Acrylamide	201-173-7	79-06-1	<0.02
31	Trichloroethylene	201-167-4	79-01-6	<0.02
32	Boric acid Δ	233-139-2/ 234-343-4	10043-35-3, 11113-50-1	<0.02
33	Disodium tetraborate, anhydrous Δ	215-540-4	1330-43-4, 1303-96-4,	<0.02



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No.	Chemical Substances	EC No.	CAS No.	Result %(w/w)
			12179-04-3	
34	Tetraboron disodium heptaoxide, hydrate Δ	235-541-3	12267-73-1	<0.02
35	Sodium chromate Δ	231-889-5	7775-11-3	<0.02
36	Potassium chromate Δ	232-140-5	7789-00-6	<0.02
37	Ammonium dichromate Δ	232-143-1	7789-09-5	<0.02
38	Potassium dichromate Δ	231-906-6	7778-50-9	<0.02
39	2-Ethoxyethanol	203-804-1	110-80-5	<0.02
40	2-Methoxyethanol	203-713-7	109-86-4	<0.02
41	Cobalt (II) diacetate Δ	200-755-8	71-48-7	<0.02
42	Cobalt (II) carbonate Δ	208-169-4	513-79-1	<0.02
43	Cobalt (II) dinitrate Δ	233-402-1	10141-05-6	<0.02
44	Cobalt (II) sulphate Δ	233-334-2	10124-43-3	<0.02
45	Chromium trioxide Δ	215-607-8	1333-82-0	<0.02
46	Acids generated from chromium trioxide and their oligomers Δ : Chromic acid Dichromic acid Oligomers of chromic acid and dichromic acid	231-801-5 236-881-5	7738-94-5 13530-68-2	<0.02
47	1-Methyl-2-pyrrolidone	212-828-1	872-50-4	<0.02
48	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich/ DIHP	276-158-1	71888-89-6	<0.02
49	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters/ DHNUP	271-084-6	68515-42-4	<0.02
50	1,2,3-Trichloropropane	202-486-1	96-18-4	<0.02
51	2-Ethoxyethyl acetate/ 2-EEA	203-839-2	111-15-9	<0.02
52	Hydrazine	206-114-9	7803-57-8, 302-01-2	<0.02
53	Strontium chromate Δ	232-142-6	7789-06-2	<0.02
54	Lead styphnate Δ	239-290-0	15245-44-0	<0.02
55	Lead diazide, Lead azide Δ	236-542-1	13424-46-9	<0.02
56	Lead dipicrate Δ	229-335-2	6477-64-1	<0.02
57	Phenolphthalein	201-004-7	77-09-8	<0.02
58	2,2'-Dichloro-4,4'-methylenedianiline	202-918-9	101-14-4	<0.02
59	N,N-dimethylacetamide	204-826-4	127-19-5	<0.02
60	Trilead diarsenate Δ	222-979-5	3687-31-8	<0.02
61	Calcium arsenate Δ	231-904-5	7778-44-1	<0.02
62	Arsenic acid Δ	231-901-9	7778-39-4	<0.02
63	Bis(2-methoxyethyl) ether	203-924-4	111-96-6	<0.02
64	1,2-Dichloroethane	203-458-1	107-06-2	<0.02
65	4-(1,1,3,3-Tetramethylbutyl)phenol/ 4-tert-octyl phenol	205-426-2	140-66-9	<0.02
66	2-Methoxyaniline/ o-Anisidine	201-963-1	90-04-0	<0.02
67	Bis(2-methoxyethyl) phthalate	204-212-6	117-82-8	<0.02
68	Formaldehyde, oligomeric reaction products with aniline/ technical MDA	500-036-1	25214-70-4	<0.02
69	Pentazine chromate octahydroxide Δ	256-418-0	49663-84-5	<0.02
70	Potassium hydroxyoctaoxodizincatedichromate Δ	234-329-8	11103-86-9	<0.02
71	Dichromium tris(chromate) Δ	246-356-2	24613-89-6	<0.02
72	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride/ C.I. Basic Violet 3 (with ≥0.1% of Michler's ketone or Michler's	208-953-6	548-62-9	<0.02



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No.	Chemical Substances	EC No.	CAS No.	Result %(w/w)
	base)			
73	1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione/ β -TGIC	423-400-0	59653-74-6	<0.02
74	1,2-bis(2-methoxyethoxy)ethane/ TEGDME; triglyme	203-977-3	112-49-2	<0.02
75	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol (with $\geq 0.1\%$ of Michler's ketone or Michler's base)	209-218-2	561-41-1	<0.02
76	Lead(II) bis(methanesulfonate) Δ	401-750-5	17570-76-2	<0.02
77	1,2-Dimethoxyethane/ Ethylene glycol dimethyl ether, EGDME	203-794-9	110-71-4	<0.02
78	Diboron trioxide Δ	215-125-8	1303-86-2	<0.02
79	α, α -Bis[4-(dimethylamino)phenyl]-4(phenylamino)naphthalene-1-methanol/ C.I. Solvent Blue 4 (with $\geq 0.1\%$ of Michler's ketone or Michler's base)	229-851-8	6786-83-0	<0.02
80	1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione/ TGIC	219-514-3	2451-62-9	<0.02
81	4,4'-bis(dimethylamino)benzophenone/ Michler's ketone	202-027-5	90-94-8	<0.02
82	N,N,N',N'-tetramethyl-4,4'-methylenedianiline/ Michler's base	202-959-2	101-61-1	<0.02
83	Formamide	200-842-0	75-12-7	<0.02
84	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride/ C.I. Basic Blue 26 (with $\geq 0.1\%$ of Michler's ketone or Michler's base)	219-943-6	2580-56-5	<0.02
85	Bis(pentabromophenyl) ether/ Decabromodiphenyl ether, DecaBDE	214-604-9	1163-19-5	<0.02
86	Pentacosafuorotridecanoic acid	276-745-2	72629-94-8	<0.02
87	Tricosafuorododecanoic acid	206-203-2	307-55-1	<0.02
88	Henicosafuoroundecanoic acid	218-165-4	2058-94-8	<0.02
89	Heptacosafuorotetradecanoic acid	206-803-4	376-06-7	<0.02
90	Diazene-1,2-dicarboxamide/ C,C'-azodi(formamide)	204-650-8	123-77-3	<0.02
91	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	201-604-9, 236-086-3, 238-009-9	85-42-7, 13149-00-3, 14166-21-3	<0.02
92	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	247-094-1, 243-072-0, 256-356-4, 260-566-1	25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9	<0.02
93	4-Nonylphenol, branched and linear	--	--	<0.02
94	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	--	--	<0.02
95	Methoxyacetic acid	210-894-6	625-45-6	<0.02
96	N,N-dimethylformamide	200-679-5	68-12-2	<0.02
97	Dibutyltin dichloride/ DBTC Δ	211-670-0	683-18-1	<0.02
98	Lead monoxide/ Lead oxide Δ	215-267-0	1317-36-8	<0.02
99	Orange lead/ Lead tetroxide Δ	215-235-6	1314-41-6	<0.02
100	Lead bis(tetrafluoroborate) Δ	237-486-0	13814-96-5	<0.02
101	Trilead bis(carbonate)dihydroxide Δ	215-290-6	1319-46-6	<0.02
102	Lead titanium trioxide Δ	235-038-9	12060-00-3	<0.02



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No.	Chemical Substances	EC No.	CAS No.	Result %(w/w)
103	Lead titanium zirconium oxide Δ	235-727-4	12626-81-2	<0.02
104	Silicic acid, lead salt Δ	234-363-3	11120-22-2	<0.02
105	Silicic acid, barium salt, lead-dopedΔ	272-271-5	68784-75-8	<0.02
106	1-Bromopropane/ n-Propyl bromide	203-445-0	106-94-5	<0.02
107	Methyloxirane / Propylene oxide	200-879-2	75-56-9	<0.02
108	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	284-032-2	84777-06-0	<0.02
109	Diisopentylphthalate/ DIPP	210-088-4	605-50-5	<0.02
110	N-pentyl-isopentylphthalate	--	776297-69-9	<0.02
111	1,2-Diethoxyethane	211-076-1	629-14-1	<0.02
112	Acetic acid, lead salt, basic Δ	257-175-3	51404-69-4	<0.02
113	Lead oxide sulfate Δ	234-853-7	12036-76-9	<0.02
114	[Phthalato(2-)]dioxotrilead Δ	273-688-5	69011-06-9	<0.02
115	Dioxobis(stearato)trilead Δ	235-702-8	12578-12-0	<0.02
116	Fatty acids, C16-18, lead salts Δ	292-966-7	91031-62-8	<0.02
117	Lead cyanamidate Δ	244-073-9	20837-86-9	<0.02
118	Lead dinitrate Δ	233-245-9	10099-74-8	<0.02
119	Pentalead tetraoxide sulphate Δ	235-067-7	12065-90-6	<0.02
120	Pyrochlore, antimony lead yellow Δ	232-382-1	8012-00-8	<0.02
121	Sulfurous acid, lead salt, dibasic Δ	263-467-1	62229-08-7	<0.02
122	Tetraethyllead Δ	201-075-4	78-00-2	<0.02
123	Tetralead trioxide sulphate Δ	235-380-9	12202-17-4	<0.02
124	Trilead dioxide phosphonate Δ	235-252-2	12141-20-7	<0.02
125	Furan	203-727-3	110-00-9	<0.02
126	Diethyl sulphate	200-589-6	64-67-5	<0.02
127	Dimethyl sulphate	201-058-1	77-78-1	<0.02
128	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	421-150-7	143860-04-2	<0.02
129	Dinoseb/ 6-sec-butyl-2,4-dinitrophenol	201-861-7	88-85-7	<0.02
130	4,4'-Methylenedi-o-toluidine	212-658-8	838-88-0	<0.02
131	4,4'-Oxydianiline and its salts	202-977-0	101-80-4	<0.02
132	4-Aminoazobenzene	200-453-6	60-09-3	<0.02
133	4-Methyl-m-phenylenediamine/ Toluene-2,4-diamine	202-453-1	95-80-7	<0.02
134	6-Methoxy-m-toluidine/ p-Cresidine	204-419-1	120-71-8	<0.02
135	Biphenyl-4-ylamine	202-177-1	92-67-1	<0.02
136	o-Aminoazotoluene	202-591-2	97-56-3	<0.02
137	o-Toluidine	202-429-0	95-53-4	<0.02
138	N-methylacetamide	201-182-6	79-16-3	<0.02
139	Ammonium pentadecafluorooctanoate/ APFO	223-320-4	3825-26-1	<0.02
140	Pentadecafluorooctanoic acid/ PFOA	206-397-9	335-67-1	<0.02
141	Dipentyl phthalate/ DPP	205-017-9	131-18-0	<0.02
142	Cadmium Δ	231-152-8	7440-43-9	<0.02
143	4-Nonylphenol, branched and linear, ethoxylated/ NPEO	--	--	<0.02
144	Cadmium oxide Δ	215-146-2	1306-19-0	<0.02
145	Cadmium sulphide Δ	215-147-8	1306-23-6	<0.02
146	Dihexyl phthalate	201-559-5	84-75-3	<0.02
147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate)/ C.I. Direct Red 28	209-358-4	573-58-0	<0.02
148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo] -5-	217-710-3	1937-37-7	<0.02



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No.	Chemical Substances	EC No.	CAS No.	Result %(w/w)
	hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate/ C.I. Direct Black 38			
149	Imidazolidine-2-thione/ 2-imidazoline-2-thiol	202-506-9	96-45-7	<0.02
150	Lead di(acetate) Δ	206-104-4	301-04-2	<0.02
151	Trixylyl phosphate	246-677-8	25155-23-1	<0.02
152	Sodium peroxometaborate Δ	231-556-4	7632-04-4	<0.02
153	Cadmium chloride Δ	233-296-7	10108-64-2	<0.02
154	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	271-093-5	68515-50-4	<0.02
155	Sodium perborate; perboric acid, sodium salt Δ	239-172-9; 234-390-0	--	<0.02
156	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	247-384-8	25973-55-1	<0.02
157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	223-346-6	3846-71-7	<0.02
158	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE) Δ	239-622-4	15571-58-1	<0.02
159	Cadmium fluoride Δ	232-222-0	7790-79-6	<0.02
160	Cadmium sulphate Δ	233-331-6	10124-36-4; 31119-53-6	<0.02
161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE) Δ	--	-	<0.02
162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate (EC No. 201-559-5)	271-094-0; 272-013-1	68515-51-5; 68648-93-1	<0.02
163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	--	--	<0.02
164	1,3-propanesultone	214-317-9	1120-71-4	<0.02
165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	223-383-8	3864-99-1	<0.02
166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	253-037-1	36437-37	<0.02
167	Nitrobenzene	202-716-0	98-95-3	<0.02
168	Perfluorononan-1-oic acid (2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-heptafluorononanoic acid and its sodium and ammonium salts)	206-801-3	375-95-1; 21049-39-8; 4149-60-4	<0.02
169	Benzo[def]chrysene (Benzo[a]pyrene)	200-028-5	50-32-8	<0.02
170	4,4'-isopropylidenediphenol (bisphenol A)	201-245-8	80-05-7	<0.02
171	4-Heptylphenol, branched and linear	--	--	<0.02
172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	206-400-3	335-76-2	<0.02
173	p-(1,1-dimethylpropyl)phenol	201-280-9	80-46-6	<0.02
174	Perfluorohexane-1-sulphonic acid and its salt (PFHxS)	--	--	<0.02



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No.	Chemical Substances	EC No.	CAS No.	Result %(w/w)
175	Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	--	--	<0.02
176	Benz[a]anthracene	200-280-6	56-55-3, 1718-53-2	<0.02
177	Cadmium nitrate Δ	233-710-6	10022-68-1, 10325-94-7	<0.02
178	Cadmium carbonate Δ	208-168-9	513-78-0	<0.02
179	Cadmium hydroxide Δ	244-168-5	21041-95-2	<0.02
180	Chrysene	205-923-4	218-01-9, 1719-03-5	<0.02
181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear	--	--	<0.02
182	Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride) (TMA)	209-008-0	552-30-7	<0.02
183	Dicyclohexyl phthalate (DCHP)	201-545-9	84-61-7	<0.02
184	Terphenyl, hydrogenated	262-967-7	61788-32-7	<0.02
185	Octamethylcyclotetrasiloxane (D4)	209-136-7	556-67-2	<0.02
186	Decamethylcyclopentasiloxane (D5)	208-764-9	541-02-6	<0.02
187	Dodecamethylcyclohexasiloxane (D6)	208-762-8	540-97-6	<0.02
188	Ethylenediamine (EDA)	203-468-6	107-15-3	<0.02
189	Benzo[ghi]perylene	205-883-8	191-24-2	<0.02
190	Disodium octaborate Δ	234-541-0	12008-41-2	<0.02
191	Lead Δ	231-100-4	7439-92-1	<0.02



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Remark : SVHC = Substance of Very High Concern
Δ = Determination was based on elemental analysis.

The chemical substances listed in table above are the SVHC included in candidate list promulgated by European Chemicals Agency (ECHA) before and on June 27, 2018 which are defined in Article 57 of REACH Regulation (EC1907/2006).

REACH requirement : As per Article 33(1) of the REACH Regulation (EC1907/2006), recipients of product must be provided with information of safe use if any of the tested substances (SVHC) exceeded 0.1%(w/w). A product meets the requirement of Article 33(1) by default when no SVHC exceeds 0.1%(w/w).

Tested component :

(1) Transparent plastic film with silver color coating (hot stamping foil).

Date sample received : Dec 04, 2018

Testing period : Dec 04, 2018 to Dec 13, 2018



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(11) Toxic Elements Analysis

Test Method : Acid extraction method was used and toxic elements content were determined by Inductively Coupled Argon Plasma Spectrometry.

Materials other than modelling clay:

	Result (mg/kg)		Limit (mg/kg)
	(1)	(2)	
Soluble Barium (Ba)	<5	<5	1000
Soluble Lead (Pb)	<5	<5	90
Soluble Cadmium (Cd)	<5	<5	75
Soluble Antimony (Sb)	<5	<5	60
Soluble Selenium (Se)	<5	<5	500
Soluble Chromium (Cr)	<5	<5	60
Soluble Mercury (Hg)	<5	<5	60
Soluble Arsenic (As)	<2.5	<2.5	25

mg/kg = milligram per kilogram

Tested Components:

- (1) Silver color coating on plastic film (hot stamping foil).
- (2) Transparent plastic film excluding silver color coating (hot stamping foil).

Date sample received : Dec 04, 2018

Test Period : Dec 04, 2018 to Dec 07, 2018



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(12) Perfluorooctane Sulfonates (PFOS) and Perfluorooctanoic Acid (PFOA) Content

Test method: CEN/TS 15968, by solvent extraction and followed by Liquid Chromatographic - Mass Spectrometric (LC-MS) analysis.

Compounds	Result in ppm
	(1)
Perfluorooctanesulfonic acid and its derivatives (PFOS)^	<1
Perfluorooctane acid (PFOA)	<1

Remark : ppm = parts per million = mg/kg
Detection limit = 1 ppm

^ = The reported value was calculated by summation of the values of Perfluorooctanesulfonic acid, Perfluorooctanesulfonamide, N-Methyl-Perfluorooctanesulfonamide, N-Ethyl-Perfluorooctanesulfonamide, N-Methyl-Perfluorooctanesulfonamidoethanol and N-Ethyl-Perfluorooctanesulfonamidoethanol.

As requested by the applicant, test was conducted on components listed in this report.

Tested component :

(1) Transparent plastic film with silver color coating (hot stamping foil) .

Date sample received : Dec 04, 2018

Testing period : Dec 04, 2018 to Dec 12, 2018

End of report

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