

TEST REPORT

Applicant: SUNNYLIFE GROUP PTY LTD
B1 85 DUNNING AVENUE
ROSEBERY
NSW 2018
AUSTRALIA

Number: HKGH0303002202

Date: Jul 31, 2023

Attn: NOLIA CHIU

Sample and Information provided by customer :

Item Name	:	Omber Lucite Chess & Checkers
Quantity	:	6 sets
Labelled Age Group	:	6+ years
Packaging Provided	:	Yes
Supplier	:	Sky creation
Country of Origin	:	China

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



Cindy I.K. Chan
Vice President



TEST REPORT

Number : HKGH0303002202

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) EN 71-1:2014 + A1:2018 - Mechanical and physical properties	Pass
(2) EN 71-2:2020 - Flammability Test	Pass
(3) EN 71-3 : 2019 + A1 : 2021 - Migration of certain elements	Pass
(4) REACH Regulation (EC) no. 1907/2006, Annex XVII Items 51 & 52, amendment no. 552/2009 & 2018/2005 - Phthalates content	Pass
(5) Regulation (EC) No. 1907/2006 on REACH Annex XVII as amended by Commission Regulation (EU) No. 835/2012 and Commission Regulation (EU) 2016/217 - Cadmium content requirement	Pass
(6) REACH Regulation (EC) No.1907/2006 , Annex XVII Item 63 & Commission regulation (EU) 2015/628 - Lead content requirement	Not Applicable
(7) REACH Regulation (EC) no. 1907/2006 & amendment (EU) no. 1272/2013 Annex XVII Item 50 - Polycyclic aromatic hydrocarbons content	Pass
(8) REACH Regulation (EC) No. 1907/2006, Annex XVII item 20 & amendment (EU) No. 276/2010 - Organotin content requirement	Pass
(9) BS EN 71-1:2014 + A1:2018 - Mechanical and physical properties	Pass
(10) BS EN 71-2:2020 - Flammability Test	Pass
(11) BS EN71-3:2019 and Directive (EU) 2019/1922 amending 2009/48/EC effective from 20 May 2021 - Migration of certain elements	Pass



TEST REPORT

Number : HKGH0303002202

<u>Requirement</u>	<u>Result</u>
(12) REACH Regulation (EC) no. 1907/2006, Annex XVII, Item 51 & 52 & amendment no. 552/2009 & 2018/2005 & The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019 No. 758) as amended - Phthalates content	Pass
(13) Cadmium Content Requirement in Annex XVII Entry 23 of the REACH Regulation (EC) No 1907/2006 and Amendment (EC) No 552/2009, (EU) No 494/2011, (EU) No 835/2012 and (EU) 2016/217 & The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019 No. 758) - Cadmium content requirement	Pass
(14) REACH Regulation (EC) No.1907/2006 , Annex XVII Item 63 & Commission regulation (EU) 2015/628 & The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019 No. 758) - Lead content requirement	Not Applicable
(15) REACH Regulation (EC) no. 1907/2006 & amendment no. 1272/2013, Annex XVII, Item 50 & The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019 No. 758) as amended - Polycyclic aromatic hydrocarbons content	Pass
(16) REACH Regulation (EC) No. 1907/2006, Annex XVII, Item 20 & amendment no. 276/2010 & The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019 No. 758) as amended - Organotin content requirement	Pass

Decision Rule(s):

When a statement of conformity to a specification or standard is provided on test report, the decision rule shall be applied. For details, please refer to Intertek's "Decision Rule Document" and is available on Intertek's website. <https://intertekhk.qrd.by/decision-rule-doc>.

If decision rule already inhered in the requested specification or standard, Intertek's "Decision Rule Document" is not applicable and indication of "∞" was shown as above table.



TEST REPORT

Number : HKGH0303002202

(1) Mechanical and Physical Test

Test Standard : European Standard on Safety of toys EN 71-1:2014 + A1:2018

Age group for testing : For Ages Over 6 Years

Clause	Requirement	Assessment
4	General requirements	
4.1	Material cleanliness	P
4.2	Assembly	NA
4.3	Flexible plastic sheeting	NA
4.4	Toy bags	NA
4.5	Glass	NA
4.6	Expanding Materials	NA
4.7	Edges	P
4.8	Points and Metallic wires	P
4.9	Protruding parts	NA
4.10	Parts moving against each other	NA
4.11	Mouth actuated toys and other toys intended to be put into mouth	NA
4.12	Balloons	NA
4.13	Cords of toy kites and other flying toys	NA
4.14	Enclosures	NA
4.15	Toys intended to bear the mass of a child	NA
4.16	Heavy immobile toys	NA
4.17	Projectiles	NA
4.18	Aquatic toys and inflatable toys	NA
4.19	Percussion caps specifically designed for use in toys and toys using percussion caps	NA
4.20	Acoustics	NA
4.21	Toys containing non -electrical heat source	NA
4.22	Small balls	NA
4.23	Magnets	NA
4.24	Yo-yo balls	NA
4.25	Toys attached to food	NA
4.26	Toy Disguise Costumes	NA
4.27	Flying toys	NA
5	Toys intended for children under 36 months	
5.1	General requirements for toys intended for children under 36 months	NA
5.2	Soft-filled toys and soft-filled parts of a toy	NA
5.3	Plastic sheeting	NA
5.4	Cords, chains and electrical cables in toys	NA
5.5	Liquid filled toys	NA
5.6	Speed limitation of electrically driven ride-on toys	NA
5.7	Glass and porcelain	NA
5.8	Shape and size of certain toys	NA
5.9	Toys comprising monofilament fibres	NA
5.10	Small balls	NA
5.11	Play figures	NA
5.12	Hemispheric-shaped toys	NA



TEST REPORT

Number : HKGH0303002202

Clause	Requirement	Assessment
5.13	Suction cups	NA
5.14	Straps intended to be worn fully or partially around the neck	NA
5.15	Sledges with cords for pulling (7.24)	NA
6	Packaging	NA
7	Warnings, markings and instructions for use	
7.1	General	P
7.2	Toys not intended for children under 36 months	P
7.3	Latex balloons	NA
7.4	Aquatic toys	NA
7.5	Functional toys	NA
7.6	Hazardous sharp functional edges and points	NA
7.7	Projectile Toys	NA
7.8	Imitation protective masks and helmets	NA
7.9	Toy kites	NA
7.10	Roller skates, inline skates, skateboards and certain other ride-on toys	NA
7.11	Toys intended to be attached to or strung across a cradle, cot, or perambulator	NA
7.12	Liquid-filled teethingers	NA
7.13	Percussion caps specifically designed for use in toys	NA
7.14	Acoustics	NA
7.15	Toy bicycles	NA
7.16	Toys intended to bear the mass of a child	NA
7.17	Toys comprising monofilament fibres	NA
7.18	Toy scooters	NA
7.19	Rocking horses and similar toys	NA
7.20	Magnetic / electrical experimental sets	NA
7.21	Toys with electrical cables exceeding 300 mm in length	NA
7.22	Toys with cords or chains intended for children of 18 months and over but under 36 months	NA
7.23	Toys intended to be attached to a cradle, cot or perambulator	NA
7.24	Sledges with cords for pulling	NA
7.25	Flying toys	NA
7.26	Improvised projectiles	NA

Abbreviation : P = Pass NA = Not Applicable



TEST REPORT

Number : HKGH0303002202

Below are additional information according to the Toy Safety Directive 2009/48/EC requirement. These information also appears as a note within the EN71 but are not standard requirements and not accredited:

Marking

The manufacturer's and importer's name, registered trade name or registered trade mark, the address and type, batch, serial or model number or other element allowing their identification shall be indicated on the product itself. In addition, toys or packagings shall also bear the CE-marking. After checking, it was found that

	Toy	Packaging
Manufacturer's name	Present	Present
Manufacturer's address	Absent	Present
EU Importer's name	Present	Present
EU Importer's address	Absent	Present
Product identification code	Absent	Present
CE-marking	Not in correct format	Present

Date sample received : Jun 30, 2023

Test Period : Jun 30, 2023 to Jul 07, 2023



TEST REPORT

Number : HKGH0303002202

(2) Flammability Test

Test Standard : European Standard on Safety of Toys EN 71-2:2020

Clause	Requirement	Assessment
4.1	General requirements	P
4.2	Toys to be worn on the head	NA
4.3	Toy disguise costumes and toys intended to be worn by a child in play	NA
4.4	Toys intended to be entered by a child	NA
4.5	Soft filled toys	NA

Abbreviation : P = Pass NA = Not Applicable

Date sample received : Jun 30, 2023

Test Period : Jun 30, 2023 to Jul 07, 2023



TEST REPORT

Number : HKGH0303002202

(3) 19 Toxic Element Migration Test

Test Method : EN 71-3 : 2019 + A1 : 2021. Acid extraction method was used and toxic elements content were determined by Inductively Coupled Argon Plasma Spectrometry and 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)	(4)	
Soluble Aluminium (Al)	<300	<300	<300	28130
Soluble Antimony (Sb)	<10	<10	<10	560
Soluble Arsenic (As)	<10	<10	<10	47
Soluble Barium (Ba)	<10	<10	<10	18750
Soluble Boron (B)	<50	<50	<50	15000
Soluble Cadmium (Cd)	<5	<5	<5	17
Soluble Chromium (III) (Cr III)	<10	<10	<10	460
Soluble Chromium (VI) (Cr VI)	<0.025	<0.025	<0.025	0.053
Soluble Cobalt (Co)	<10	<10	<10	130
Soluble Copper (Cu)	<10	<10	<10	7700
Soluble Lead (Pb)	<10	<10	<10	23
Soluble Manganese (Mn)	<10	<10	<10	15000
Soluble Mercury (Hg)	<10	<10	<10	94
Soluble Nickel (Ni)	<10	<10	<10	930
Soluble Selenium (Se)	<10	<10	<10	460
Soluble Strontium (Sr)	<100	<100	<100	56000
Soluble Tin (Sn)	<10	<10	<10	180000
Soluble Organic tin ++	<5.0	<5.0	<5.0	12
Soluble Zinc (Zn)	<100	<100	<100	46000



TEST REPORT

Number : HKGH0303002202

	Result (mg/kg)			Limit (mg/kg)
	(5)	(6)	(7)	
Soluble Aluminium (Al)	<300	<300	<300	28130
Soluble Antimony (Sb)	<10	<10	<10	560
Soluble Arsenic (As)	<10	<10	<10	47
Soluble Barium (Ba)	<10	<10	<10	18750
Soluble Boron (B)	<50	<50	<50	15000
Soluble Cadmium (Cd)	<5	<5	<5	17
Soluble Chromium (III) (Cr III)	<10	<10	<10	460
Soluble Chromium (VI) (Cr VI)	<0.025	<0.025	<0.025	0.053
Soluble Cobalt (Co)	<10	<10	<10	130
Soluble Copper (Cu)	<10	<10	<10	7700
Soluble Lead (Pb)	<10	<10	<10	23
Soluble Manganese (Mn)	<10	<10	<10	15000
Soluble Mercury (Hg)	<10	<10	<10	94
Soluble Nickel (Ni)	<10	<10	<10	930
Soluble Selenium (Se)	<10	<10	<10	460
Soluble Strontium (Sr)	<100	<100	<100	56000
Soluble Tin (Sn)	<10	<10	<10	180000
Soluble Organic tin ++	<5.0	<5.0	<5.0	12
Soluble Zinc (Zn)	<100	<100	<100	46000



TEST REPORT

Number : HKGH0303002202

mg/kg = milligram per kilogram

++ : Unless the test result was marked with "Δ", Organic tin content was not directly determined and was derived from migration result of total tin.

Organic tin test result was expressed as tributyl tin.

Chromium (III) value was calculated as difference between migration results of total Chromium and Chromium (VI) .

@ : Since the sample weight of the component was less than 10 mg, soluble heavy metal analysis was not applicable.

Tested Components:

- (1) Pink coating on plastic (chess, checkers).
- (2) Deep green coating on plastic (chess, checkers).
- (3) @ Dull white coating on plastic (brand name of game board).
- (4) Coatings on plastic (game board).
- (5) Transparent plastic excluding coatings (game board, chess, checkers).
- (6) Translucent white plastic (corners of board).
- (7) Transparent plastic label with inaccessible white printing (sticker).

Date sample received : Jun 30, 2023

Test Period : Jun 30, 2023 to Jul 19, 2023



Page 10 of 28



TEST REPORT

Number : HKGH0303002202

(4) Phthalate Content Test

Test Method : ISO 8124-6 : 2018 method A with internal standard calibration, by Gas Chromatographic-Mass Spectrometric (GC-MS) analysis.

Seven Phthalates content:

Compound	Result (% w/w)		Limit (% w/w)
	(1)	(2/3/4)	
Dibutyl phthalate (DBP)	0.0400	<0.0100	--
Diethyl hexyl phthalate (DEHP)	0.0300	<0.0100	--
Benzyl butyl phthalate (BBP)	<0.0100	<0.0100	--
Diisobutyl phthalate (DIBP)	<0.0100	<0.0100	--
Sum of DBP, DEHP, BBP & DIBP	0.0700	<0.0100	0.1
Diisononyl phthalate (DINP)	<0.0100	<0.0100	--
Di-n-octyl phthalate (DnOP)	<0.0100	<0.0100	--
Diisodecyl phthalate (DIDP)	<0.0100	<0.0100	--
Sum of DINP, DnOP & DIDP	<0.0100	<0.0100	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 taking into account the (EU) regulation 2018/2005 modifying entry 51 for which the DIBP shall not be placed on the market after 7 July 2020 in toys or childcare articles, individually or in any combination with the first three phthalates which already exist in the entry 51, in a concentration equal to or greater than 0,1 % by weight of the plasticised material.

Tested Components:

- (1) Coatings on sample (game board, chess, checkers).
- (2) Transparent plastic excluding coatings (game board, chess, checkers).
- (3) Translucent white plastic (corners of board).
- (4) Transparent plastic label with inaccessible white printing (sticker).

Date sample received : Jun 30, 2023

Test Period : Jun 30, 2023 to Jul 18, 2023



Page 11 of 28



TEST REPORT

Number : HKGH0303002202

(5) Cadmium (Cd) Content

Test Method : In House method TC008.TP. 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
(1/2/3)	ND	0.1
(4)	ND	0.1
(5/6/7)	ND	0.01

ND : Not detected (< 0.0005%)

The above limit was quoted according to Regulation (EC) No. 1907/2006 on REACH Annex XVII as amended by Commission Regulation (EU) No. 835/2012 and Commission Regulation (EU) 2016/217

Tested Components:

- (1) Pink coating on plastic (chess, checkers).
- (2) Deep green coating on plastic (chess, checkers).
- (3) Dull white coating on plastic (brand name of game board).
- (4) Coatings on plastic (game board).
- (5) Transparent plastic excluding coatings (game board, chess, checkers).
- (6) Translucent white plastic (corners of board).
- (7) Transparent plastic label with inaccessible white printing (sticker).

Date sample received : Jun 30, 2023

Test Period : Jun 30, 2023 to Jul 19, 2023



Page 12 of 28



TEST REPORT

Number : HKGH0303002202

(6) Lead (Pb) Content

Test Method : Lead content requirement in Commission regulation (EU) 2015/628 amending Annex XVII item 63 of the REACH regulation (EC) No. 1907/2006, acid digestion was used and total Lead content was determined by inductively coupled argon plasma spectrometry.

Assessment : Not Applicable

Date sample received : Jun 30, 2023
Test Period : Jun 30, 2023 to Jul 19, 2023



Page 13 of 28



TEST REPORT

Number : HKGH0303002202

(7) Polycyclic Aromatic Hydrocarbons (PAH) Content

Test Method : The document AfPS GS 2019:01 PAK issued by the Federal Institute for Occupational Safety and Health, solvent extraction and determined by Gas Chromatographic - Mass Spectrometry (GC/MS).

Compound	Result (ppm)			Limit (ppm)
	(1/2)	(3)	(4/5)	
Benzo(a)pyrene	<0.20	<0.20	<0.20	0.5
Benzo(e)pyrene	<0.20	<0.20	<0.20	0.5
Benzo(a)anthracene	<0.20	<0.20	<0.20	0.5
Chrysene	<0.20	<0.20	<0.20	0.5
Benzo(b)fluoranthene	<0.20	<0.20	<0.20	0.5
Benzo(j)fluoranthene	<0.20	<0.20	<0.20	0.5
Benzo(k)fluoranthene	<0.20	<0.20	<0.20	0.5
Dibenzo(a,h)anthracene	<0.20	<0.20	<0.20	0.5

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 Components:

- (1) Pink coating on plastic (chess, checkers).
- (2) Deep green coating on plastic (chess, checkers).
- (3) Coatings on plastic (game board).
- (4) Transparent plastic excluding coatings (game board, chess, checkers).
- (5) Translucent white plastic (corners of board).

Date sample received : Jun 30, 2023

Test Period : Jun 30, 2023 to Jul 20, 2023



TEST REPORT

Number : HKGH0303002202

(8) Organotin Content

Test Method : By solvent extraction, followed by Gas Chromatography Mass Spectrometric (GC/MS) analysis.

Compound	Result (% w/w)		Limit (% w/w)
	(1)	(2/3/4)	
Tri-substituted Organotin [^]	<0.005	<0.005	0.1
Dibutyltin (DBT)	<0.005	<0.005	0.1
Dioctyltin (DOT)	<0.005	<0.005	0.1

The above limit was quoted according to Annex XVII Item 20 of the REACH Regulation (EC) no. 1907/2006 & amendment (EU) No. 276/2010 (formerly known as Decision 2009/425/EC) for organotin content.

[^] = The reported value was calculated by summation of the values of Tri-butyltin, Tri-phenyltin, Tri-methyltin, Tri-octyltin, Tri-cyclohexyltin

Detection limit = 0.005% (w/w) of tin

Tested Components:

- (1) Coatings on sample (game board, chess, checkers).
- (2) Transparent plastic excluding coatings (game board, chess, checkers).
- (3) Translucent white plastic (corners of board).
- (4) Transparent plastic label with inaccessible white printing (sticker).

Date sample received : Jun 30, 2023

Test Period : Jun 30, 2023 to Jul 20, 2023



TEST REPORT

Number : HKGH0303002202

(9) Physical and Mechanical Tests

Test Standard : Safety of toys BS EN 71-1:2014 + A1:2018

Age group for testing : For Ages Over 6 Years

Clause	Requirement	Assessment
4	General requirements	
4.1	Material cleanliness	P
4.2	Assembly	NA
4.3	Flexible plastic sheeting	NA
4.4	Toy bags	NA
4.5	Glass	NA
4.6	Expanding Materials	NA
4.7	Edges	P
4.8	Points and Metallic wires	P
4.9	Protruding parts	NA
4.10	Parts moving against each other	NA
4.11	Mouth actuated toys and other toys intended to be put into mouth	NA
4.12	Balloons	NA
4.13	Cords of toy kites and other flying toys	NA
4.14	Enclosures	NA
4.15	Toys intended to bear the mass of a child	NA
4.16	Heavy immobile toys	NA
4.17	Projectiles	NA
4.18	Aquatic toys and inflatable toys	NA
4.19	Percussion caps specifically designed for use in toys and toys using percussion caps	NA
4.20	Acoustics	NA
4.21	Toys containing non -electrical heat source	NA
4.22	Small balls	NA
4.23	Magnets	NA
4.24	Yo-yo balls	NA
4.25	Toys attached to food	NA
4.26	Toy Disguise Costumes	NA
4.27	Flying toys	NA
5	Toys intended for children under 36 months	
5.1	General requirements for toys intended for children under 36 months	NA
5.2	Soft-filled toys and soft-filled parts of a toy	NA



TEST REPORT

Number : HKGH0303002202

Clause	Requirement	Assessment
5.3	Plastic sheeting	NA
5.4	Cords, chains and electrical cables in toys	NA
5.5	Liquid filled toys	NA
5.6	Speed limitation of electrically driven ride-on toys	NA
5.7	Glass and porcelain	NA
5.8	Shape and size of certain toys	NA
5.9	Toys comprising monofilament fibres	NA
5.10	Small balls	NA
5.11	Play figures	NA
5.12	Hemispheric-shaped toys	NA
5.13	Suction cups	NA
5.14	Straps intended to be worn fully or partially around the neck	NA
5.15	Sledges with cords for pulling (7.24)	NA
6	Packaging	NA
7	Warnings, markings and instructions for use	
7.1	General	P
7.2	Toys not intended for children under 36 months	P
7.3	Latex balloons	NA
7.4	Aquatic toys	NA
7.5	Functional toys	NA
7.6	Hazardous sharp functional edges and points	NA
7.7	Projectile Toys	NA
7.8	Imitation protective masks and helmets	NA
7.9	Toy kites	NA
7.10	Roller skates, inline skates, skateboards and certain other ride-on toys	NA
7.11	Toys intended to be attached to or strung across a cradle, cot, or perambulator	NA
7.12	Liquid-filled teethingers	NA
7.13	Percussion caps specifically designed for use in toys	NA
7.14	Acoustics	NA
7.15	Toy bicycles	NA
7.16	Toys intended to bear the mass of a child	NA
7.17	Toys comprising monofilament fibres	NA
7.18	Toy scooters	NA
7.19	Rocking horses and similar toys	NA
7.20	Magnetic / electrical experimental sets	NA
7.21	Toys with electrical cables exceeding 300 mm in length	NA
7.22	Toys with cords or chains intended for children of 18 months and over but under 36 months	NA
7.23	Toys intended to be attached to a cradle, cot or perambulator	NA
7.24	Sledges with cords for pulling	NA



TEST REPORT

Number : HKGH0303002202

Clause	Requirement	Assessment
7.25	Flying toys	NA
7.26	Improvised projectiles	NA

Abbreviation : P = Pass NA = Not Applicable

Below is additional information checking according to the UK Toy (Safety) Regulations requirement. These information also appears as a note within BS EN71 but the checking is not within accreditation scope.

Marking

The manufacturer's and importer's name, registered trade name or registered trademark, the address and type, batch, serial or model number or other element allowing their identification shall be indicated on the product itself.

After checking, it was found that

	Toy	Packaging
Name of authorised representative in Great Britain	Absent	Present
Address of authorised representative in Great Britain	Absent	Present
Product identification code	Absent	Present

With reference to the guidance of using UKCA marking from 1 January 2021 by the Department for Business, Energy and Industrial Strategy published on 1 September 2020, toys or packagings shall also bear the UKCA marking.

After checking, it was found that

	Toy	Packaging
UKCA marking	Not in correct format	Present

Date sample received : Jun 30, 2023
Test Period : Jun 30, 2023 to Jul 07, 2023



TEST REPORT

Number : HKGH0303002202

(10) Flammability Test

Test Standard : Standard on Safety of Toys BS EN 71-2:2020

Clause	Requirement	Assessment
4.1	General requirements	P
4.2	Toys to be worn on the head	NA
4.3	Toy disguise costumes and toys intended to be worn by a child in play	NA
4.4	Toys intended to be entered by a child	NA
4.5	Soft filled toys	NA

Abbreviation : P = Pass NA = Not Applicable

Date sample received : Jun 30, 2023

Test Period : Jun 30, 2023 to Jul 07, 2023



TEST REPORT

Number : HKGH0303002202

(11) 19 Toxic Element Migration Test

Test Method : BS EN71-3:2019. Acid extraction method was used and toxic elements content were determined by Inductively Coupled Argon Plasma Spectrometry and 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)	(4)	
Soluble Aluminium (Al)	<300	<300	<300	70000 / 28130^
Soluble Antimony (Sb)	<10	<10	<10	560
Soluble Arsenic (As)	<10	<10	<10	47
Soluble Barium (Ba)	<10	<10	<10	18750
Soluble Boron (B)	<50	<50	<50	15000
Soluble Cadmium (Cd)	<5	<5	<5	17
Soluble Chromium (III) (Cr III)	<10	<10	<10	460
Soluble Chromium (VI) (Cr VI)	<0.025	<0.025	<0.025	0.053
Soluble Cobalt (Co)	<10	<10	<10	130
Soluble Copper (Cu)	<10	<10	<10	7700
Soluble Lead (Pb)	<10	<10	<10	23
Soluble Manganese (Mn)	<10	<10	<10	15000
Soluble Mercury (Hg)	<10	<10	<10	94
Soluble Nickel (Ni)	<10	<10	<10	930
Soluble Selenium (Se)	<10	<10	<10	460
Soluble Strontium (Sr)	<100	<100	<100	56000
Soluble Tin (Sn)	<10	<10	<10	180000
Soluble Organic tin ++	<2.0	<2.0	<2.0	12
Soluble Zinc (Zn)	<100	<100	<100	46000



TEST REPORT

Number : HKGH0303002202

	Result (mg/kg)			Limit (mg/kg)
	(5)	(6)	(7)	
Soluble Aluminium (Al)	<300	<300	<300	70000 / 28130^
Soluble Antimony (Sb)	<10	<10	<10	560
Soluble Arsenic (As)	<10	<10	<10	47
Soluble Barium (Ba)	<10	<10	<10	18750
Soluble Boron (B)	<50	<50	<50	15000
Soluble Cadmium (Cd)	<5	<5	<5	17
Soluble Chromium (III) (Cr III)	<10	<10	<10	460
Soluble Chromium (VI) (Cr VI)	<0.025	<0.025	<0.025	0.053
Soluble Cobalt (Co)	<10	<10	<10	130
Soluble Copper (Cu)	<10	<10	<10	7700
Soluble Lead (Pb)	<10	<10	<10	23
Soluble Manganese (Mn)	<10	<10	<10	15000
Soluble Mercury (Hg)	<10	<10	<10	94
Soluble Nickel (Ni)	<10	<10	<10	930
Soluble Selenium (Se)	<10	<10	<10	460
Soluble Strontium (Sr)	<100	<100	<100	56000
Soluble Tin (Sn)	<10	<10	<10	180000
Soluble Organic tin ++	<2.0	<2.0	<2.0	12
Soluble Zinc (Zn)	<100	<100	<100	46000



TEST REPORT

Number : HKGH0303002202

mg/kg = milligram per kilogram

++ : Unless the test result was marked with "Δ", Organic tin content was not directly determined and was derived from migration result of total tin.

Organic tin test result was expressed as tributyl tin.

Chromium (III) value was calculated as difference between migration results of total Chromium and Chromium (VI) .

^ : The new aluminium migration limit [2250mg/kg for Category (I), 560mg/kg for category (II) and 28130mg/kg for Category (III)] was quoted from directive (EU) 2019/1922 amending 2009/48/EC effective from 20 May 2021.

@ : Since the sample weight of the component was less than 10 mg, soluble heavy metal analysis was not applicable.

Tested Components:

- (1) Pink coating on plastic (chess, checkers).
- (2) Deep green coating on plastic (chess, checkers).
- (3) @ Dull white coating on plastic (brand name of game board).
- (4) Coatings on plastic (game board).
- (5) Transparent plastic excluding coatings (game board, chess, checkers).
- (6) Translucent white plastic (corners of board).
- (7) Transparent plastic label with inaccessible white printing (sticker).

Date sample received : Jun 30, 2023

Test Period : Jun 30, 2023 to Jul 19, 2023



Page 22 of 28



TEST REPORT

Number : HKGH0303002202

(12) Phthalate Content Test

Test Method : ISO 8124-6 : 2018 method A with internal standard calibration, by Gas Chromatographic-Mass Spectrometric (GC-MS) analysis.

Seven Phthalates content:

Compound	Result (% w/w)		Limit (% w/w)
	(1)	(2/3/4)	
Dibutyl phthalate (DBP)	0.0400	<0.0100	--
Diethyl hexyl phthalate (DEHP)	0.0300	<0.0100	--
Benzyl butyl phthalate (BBP)	<0.0100	<0.0100	--
Diisobutyl phthalate (DIBP)	<0.0100	<0.0100	--
Sum of DBP, DEHP, BBP & DIBP	0.0700	<0.0100	0.1
Diisononyl phthalate (DINP)	<0.0100	<0.0100	--
Di-n-octyl phthalate (DnOP)	<0.0100	<0.0100	--
Diisodecyl phthalate (DIDP)	<0.0100	<0.0100	--
Sum of DINP, DnOP & DIDP	<0.0100	<0.0100	0.1

The above limit was quoted according to REACH Regulation (EC) no. 1907/2006, Annex XVII, Item 51 & 52 & amendment no. 552/2009 & 2018/2005 & The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019 No. 758) as amended.

Tested Components:

- (1) Coatings on sample (game board, chess, checkers).
- (2) Transparent plastic excluding coatings (game board, chess, checkers).
- (3) Translucent white plastic (corners of board).
- (4) Transparent plastic label with inaccessible white printing (sticker).

Date sample received : Jun 30, 2023

Test Period : Jun 30, 2023 to Jul 18, 2023



Page 23 of 28



TEST REPORT

Number : HKGH0303002202

(13) Cadmium (Cd) Content

Test Method : In House method TC008.TP. 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
(1/2/3)	ND	0.1
(4)	ND	0.1
(5/6/7)	ND	0.01

ND : Not detected (< 0.0005%)

The above limit was quoted according to Annex XVII Entry 23 of the REACH Regulation (EC) No 1907/2006 and Amendment (EC) No 552/2009, (EU) No 494/2011, (EU) No 835/2012 and (EU) 2016/217 & The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019 No. 758)

Tested Components:

- (1) Pink coating on plastic (chess, checkers).
- (2) Deep green coating on plastic (chess, checkers).
- (3) Dull white coating on plastic (brand name of game board).
- (4) Coatings on plastic (game board).
- (5) Transparent plastic excluding coatings (game board, chess, checkers).
- (6) Translucent white plastic (corners of board).
- (7) Transparent plastic label with inaccessible white printing (sticker).

Date sample received : Jun 30, 2023

Test Period : Jun 30, 2023 to Jul 19, 2023



TEST REPORT

Number : HKGH0303002202

(14) Lead (Pb) Content

Test Method : Lead content requirement in Commission regulation (EU) 2015/628 amending Annex XVII item 63 of the REACH regulation (EC) No. 1907/2006, acid digestion was used and total Lead content was determined by inductively coupled argon plasma spectrometry.

Assessment : Not Applicable

Date sample received : Jun 30, 2023
Test Period : Jun 30, 2023 to Jul 19, 2023



Page 25 of 28



TEST REPORT

Number : HKGH0303002202

(15) Polycyclic Aromatic Hydrocarbons (PAH) Content

Test Method : The document AfPS GS 2019:01 PAK issued by the Federal Institute for Occupational Safety and Health, solvent extraction and determined by Gas Chromatographic - Mass Spectrometry (GC/MS).

Compound	Result (ppm)			Limit (ppm)
	(1/2)	(3)	(4/5)	
Benzo(a)pyrene	<0.20	<0.20	<0.20	0.5
Benzo(e)pyrene	<0.20	<0.20	<0.20	0.5
Benzo(a)anthracene	<0.20	<0.20	<0.20	0.5
Chrysene	<0.20	<0.20	<0.20	0.5
Benzo(b)fluoranthene	<0.20	<0.20	<0.20	0.5
Benzo(j)fluoranthene	<0.20	<0.20	<0.20	0.5
Benzo(k)fluoranthene	<0.20	<0.20	<0.20	0.5
Dibenzo(a,h)anthracene	<0.20	<0.20	<0.20	0.5

The above limit was quoted according to REACH Regulation (EC) no. 1907/2006 & amendment no. 1272/2013, Annex XVII, Item 50 & The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019 No. 758) as amended for polycyclic aromatic hydrocarbons (PAH).

ppm = parts per million = mg/kg

Tested Components:

- (1) Pink coating on plastic (chess, checkers).
- (2) Deep green coating on plastic (chess, checkers).
- (3) Coatings on plastic (game board).
- (4) Transparent plastic excluding coatings (game board, chess, checkers).
- (5) Translucent white plastic (corners of board).

Date sample received : Jun 30, 2023

Test Period : Jun 30, 2023 to Jul 20, 2023



Page 26 of 28



TEST REPORT

Number : HKGH0303002202

(16) Organotin Content

Test Method : By solvent extraction, followed by Gas Chromatography Mass Spectrometric (GC/MS) analysis.

Compound	Result (% w/w)		Limit (% w/w)
	(1)	(2/3/4)	
Tri-substituted Organotin [^]	<0.005	<0.005	0.1
Dibutyltin (DBT)	<0.005	<0.005	0.1
Dioctyltin (DOT)	<0.005	<0.005	0.1

The above limit was quoted according to REACH Regulation (EC) No. 1907/2006, Annex XVII, Item 20 & amendment no. 276/2010 & The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019 No. 758) as amended for organotin content.

[^] = The reported value was calculated by summation of the values of Tri-butyltin, Tri-phenyltin, Tri-methyltin, Tri-octyltin, Tri-cyclohexyltin

Detection limit = 0.005% (w/w) of tin

Tested Components:

- (1) Coatings on sample (game board, chess, checkers).
- (2) Transparent plastic excluding coatings (game board, chess, checkers).
- (3) Translucent white plastic (corners of board).
- (4) Transparent plastic label with inaccessible white printing (sticker).

Date sample received : Jun 30, 2023

Test Period : Jun 30, 2023 to Jul 20, 2023



TEST REPORT

Number : HKGH0303002202



End of report

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to and subject to our standard Terms and Conditions which can be obtained at our website: <http://www.intertek.com/terms/>. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Intertek is responsible for all the information provided in the reports, except when information is provided by the Client or when the Client requires the item to be tested acknowledging a deviation from specified conditions that can affect the validity of results.

The observations and test results in this report are relevant to the sample(s) tested and submitted by client. The report is not intended to be a recommendation for any particular course of action, you are responsible for acting as you see fit on the basis of the report results. This report does not discharge or release you from your legal obligations and duties to any other person. Only the Client is authorized to permit copying or distribution of this report and the report shall not be reproduced except in full. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

