



TEST REPORT

REPORT NO. : A20121352
DATE : Apr.19,2013

CLIENT:
ABILITY INTERNATIONAL ENTERPRISE LTD.
Unit 1905-06,
19/F, Enterprise Square Three,
39 Wang Chiu Road, Kowloon Bay,
Kowloon, Hong Kong

Attn. : Yanny Fong

SAMPLE DESCRIPTION:
Submitted six (6) pieces of Orbit Ball, nine (9) pieces of Flashing Orbit Ball, one (1) pack of Material and four (4) pieces of Packaging samples.\*\*\*

Buyer Name : Toysmith
Supplier/Vendor/Manufacturer : AURIENT INTERNATIONAL CORP.
Style / Item no : 2690 (2690F), 2691
Country of Origin : China
Exported To : USA
Labeled Age Grade : N/A
Date(s) of samples received : April 05, 2013 (p.m.)

TEST METHOD & RESULTS: Please refer to next page(s)

CONCLUSION: Please refer to page two (2).

For and on behalf of
UL VS Hong Kong Limited

Kevin Chan - Department Manager
(Toys Testing)
/dh

\*\*\*\*\* End of Page 1 of 45 \*\*\*\*\*
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### CONCLUSION:

ASTM F963-11 / 16 CFR 1500 & 1501 Physical and Mechanical Requirements	PASS
ASTM F963-11 / 16 CFR 1500.3 (c) (6) (vi) Flammability Requirements	PASS
ASTM F963-11 section 4.3.5.1 (1) Total Lead Content Requirements	NOT APPLICABLE#
ASTM F963-11 section 4.3.5.2 (2)(a) Total Lead Content Requirements	PASS
ASTM F963-11 section 4.3.5.1 (2) Soluble Migrated Elements Requirements	NOT APPLICABLE#
ASTM F963-11 section 4.3.5.2 (2)(b) Soluble Migrated Elements Requirements	PASS
Canada Toys Regulations SOR/2011-17 (Test Method Refer to Health Canada Product Safety Reference Manual Book 5 - Laboratory Policies and Procedures Part 5: Test Method Section) Physical and Mechanical Tests	PASS
Canada Toys Regulations SOR/2011-17 Clause 21 Flammability Test	PASS
Canada Toys Regulations SOR/2011-17 Toxicological Hazards Heavy Metal Content Requirements	NOT APPLICABLE#
EN71-1:2011 Mechanical and Physical Properties	PASS
EN71-2:2011 Flammability Requirements	PASS
EN71-3:1994+A1:2000 & AC:2002 Migration of Certain Elements	PASS
EN 62115:2005 Electric Toys – Safety	PASS
Laser Power Measurement as per IEC60825-1:1993+A1:1997+A2:2001 including Corrigendum 1:2002 / EN60825-1:1994+A2:2001+A1:2002	REPORT AS IS
Client's Specification with reference to U.S. Public Law 104-142, (H.R. 2024), May 13, 1996 Heavy Metals in Batteries	PASS
Client's Specification with reference to 2009/48/EC Heavy Metal Content Test	PASS
94/62/EC Heavy Metals Requirements on Packaging and Packaging Waste	PASS
2006/66/EC Heavy Metals in Batteries	PASS
Total Cadmium Content as per Restriction of Cadmium according to Regulation (EC) No. 1907/2006 on REACH Annex XVII Item No 23 as amended by Commission Regulation (EC) No. 552/2009 and Commission Regulation (EU) No. 494/2011	PASS
2002/96/EC (WEEE) - BS EN 50419:2006 and Marking of Electrical and Electronic Equipment in Accordance with Article 11(2) of Directive	PASS
2006/66/EC with reference to the Dimensional Rules of BS EN 61429:1997 Clause 3.2.2 and 3.2.3 Marking on Batteries and Accumulators in Accordance with Article 21(3), (4), (5) of Directive	PASS
NERC (Formerly Organization: CSG) Model Legislation – Toxics in Packaging Clearinghouse (TPCH), Last Revised July 2012	PASS
Total Lead Content in Paint or Surface Coating as per the U.S. Public Law 110 - 314, Consumer Product Safety Improvement Act of 2008, Title I, Section 101(f) & 16 CFR 1303	NOT APPLICABLE#
Total Lead Content in Substrate Materials as per the U.S. Public Law 110 – 314, Consumer Product Safety Improvement Act of 2008, Title I, Section 101(a)(2)	PASS
Total Lead Content in Substrate Materials as per Client's Specification with reference to California Proposition 65	PASS
Total Lead Content as per the Consumer Products Containing Lead (Contact with Mouth) Regulations (SOR/2010-273)	PASS
Total Phthalate Test as per Restriction of Phthalates according to Regulation (EC) No. 1907/2006 on REACH Annex XVII Item No 51/52 as amended by Commission Regulation (EC) No. 552/2009 & Client's Specification	PASS
Total Phthalate Test as per the U.S. Public Law 110 – 314, Consumer Product Safety Improvement Act of 2008 Title I, Section 108 & California Proposition 65	PASS
Total Phthalate Test as per Canada Phthalates Regulations (SOR/2010-298) & Client's Specification	PASS
Tracking Label Evaluation	REPORT AS IS
EN 55014-1: 2006 + A1: 2009 + A2: 2011 and EN 55014-2: 1997 + A1: 2001 + A2: 2008 ^	PASS
2011/65/EU - Restriction of Hazardous Substances (RoHS)	PASS
– Screening Test Method of Elements Using Energy-Dispersive X-Ray Fluorescence Spectroscopy	
– Chemical Method of Brominated Flame Retardants (PBB & PBDE)	

# Tests are not performed as there is no coating can be scraped off from the submitted test sample.

^ TEST WAS PERFORMED BY SUBCONTRACTOR

**REMARK: THE RESULTS RELATE ONLY TO THE SAMPLES TESTED.**

\*\*\*\*\* End of Page 2 of 45 \*\*\*\*\*

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## TEST RESULTS:

### 1.1 PHYSICAL AND MECHANICAL TESTS OF THE MOST STRINGENT REQUIREMENTS OF THE FOLLOWING STANDARDS:

#### A) ASTM F963-11

#### B) 16 CFR

The following clauses are identified to be applicable:

Applicant Specified Age Grading for testing: All ages  
Sample size: 2 piece(s) × 2 style(s)

<u>ASTM</u>	<u>16 CFR</u>	<u>Test Items</u>	<u>Assessment</u>
4.6.1	1501	Toys Intended for Children Under 3 Years – Small Objects	Pass
4.7	1500.49	Accessible Edges	Pass
4.9	1500.48	Accessible Points	Pass
4.25		Battery-Operated Toys	Pass
4.34		Balls	Pass
5		Labeling Requirements	Pass
7		Producer’s Markings	Pass
	1500.121	Labeling requirements, prominence, placement, and conspicuousness	Pass

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## TEST RESULTS:

### 1.2 PHYSICAL AND MECHANICAL TESTS TO CANADA TOYS REGULATIONS SOR/2011-17 (TEST METHOD REFER TO HEALTH CANADA PRODUCT SAFETY REFERENCE MANUAL BOOK 5 – LABORATORY POLICIES AND PROCEDURES PART 5: TEST METHOD SECTION)

The following clauses are identified to be applicable:

Applicant Specified Age Grading for testing: All ages  
Sample size: 1 piece(s) × 2 style(s)

<u>Clause</u>	<u>Test Item (Test Method)</u>	<u>Assessment</u>
3	Official languages	Pass
7	Small parts (M00.1*, M01.1*)	Pass
10	Plastic edges (M00.2*, M00.3*, M01.1*)	Pass

#### \*Remarks:

- M00.1 Method M00.1 Small components (2011-12-02)
- M00.2 Method M00.2 Sharp edges (2011-12-02)
- M00.3 Method M00.3 Sharp points (2011-12-05)
- M01.1 Method M01.1 Reasonably foreseeable use - toys (2011-12-05)
- M01.2 Test procedures to determine mechanical hazards of toys – reasonable foreseeable use of dolls and soft toys (2010-04-30)
- M03 Test method for flexible film bags (2009-12-01)
- M04 Test method to determine the noise level of the toys (2011-09-22)
- M05 Test method for rattles (2010-10-12)

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## TEST RESULTS:

### 1.3 PHYSICAL AND MECHANICAL TESTS OF THE MOST STRINGENT REQUIREMENTS OF THE FOLLOWING STANDARDS:

#### A) EN71-1:2011

Applicant Specified Age Grading for testing: All ages  
Sample size: 1 piece(s) × 2 style(s)

<u>Clause</u>	<u>Test Items</u>	<u>Assessment</u>
4.1	Material cleanliness	Pass
4.2	Assembly	Not Applicable
4.3	Flexible plastic sheeting	Not Applicable
4.4	Toy bags	Not Applicable
4.5	Glass	Not Applicable
4.6	Expanding materials	Not Applicable
4.7	Edges	Pass
4.8	Points and metallic wires	Pass
4.9	Protruding parts	Not Applicable
4.10.1	Folding and sliding mechanisms	Not Applicable
4.10.2	Driving mechanisms	Not Applicable
4.10.3	Hinges	Not Applicable
4.10.4	Springs	Not Applicable
4.11	Mouth-actuated toys and other toys intended to be put in the mouth	Not Applicable
4.12	Balloons	Not Applicable
4.13	Cords of toys kites and other flying toys	Not Applicable
4.14.1	Toys which a child can enter	Not Applicable
4.14.2	Masks and helmets	Not Applicable
4.15	Toys intended to bear the mass of a child	Not Applicable

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4.16	Heavy immobile toys	Not Applicable
4.17	Projectiles	Not Applicable
4.18	Aquatic toys and inflatable toys	Not Applicable
4.19	Percussion caps specifically designed for use in toys and toy using percussion caps	Not Applicable
4.20	Acoustics	Not Applicable
4.21	Toys containing a non-electrical heat source	Not Applicable
4.22	Small balls	Not Applicable
4.23	Magnets	Not Applicable
4.24	Yo-yo balls	Not Applicable
4.25	Toys attached to food	Not Applicable
5.1	General Requirements – Toys intended for children under 36 months	Pass
5.2	Soft-filled toys and soft-filled parts of a toy	Not Applicable
5.3	Plastic sheeting	Not Applicable
5.4	Cords, chains and electrical cables in toys	Not Applicable
5.5	Liquid-filled toys	Not Applicable
5.6	Speed limitation of electrically driven ride-on toys	Not Applicable
5.7	Glass and porcelain	Not Applicable
5.8	Shape and size of certain toys	Not Applicable
5.9	Toys comprising monofilament fibers	Not Applicable
5.10	Small balls	Pass
5.11	Play figures	Not Applicable
5.12	Hemispheric-shaped toys	Not Applicable
5.13	Suction cups	Not Applicable
5.14	Straps intended to be worn fully or partially around the neck	Not Applicable

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## TEST RESULTS:

6	Packaging	Not Applicable
7.1	General – Warnings, markings and instructions for use	Pass
7.2	Warning on toys not intended for children under 36 months	Not Applicable
7.5	Warnings on functional toys and their packaging	Not Applicable

### Remarks:

Address of manufacturer or his authorized representatives or importer should be located in EU community.

The attention of the applicant was drawn to the need for the item to be labeled with the name and address of the importer in EEC on the toy or on its packaging together with a CE-Marking as specified in corresponding directive. If this information was not fixed to the toy itself, it should be accompanied by a notice in advising the purchaser to retain it.

### 1.4 FLAMMABILITY TEST TO ASTM F963-11 Annex A5 / 16 CFR 1500.44 defined under 16 CFR 1500.3 section (c) (6) (vi)

Sample size: 1 piece(s) × 2 style(s)

Requirement: Burning rate should not exceed 0.1 inch per second along the major axis.

Results: The burn rate of sample(s) were less than 0.1 inch per second.

### 1.5 FLAMMABILITY TEST (CELLULOSE NITRATE) TO CANADA TOYS REGULATIONS SOR/2011-17

The following clauses are identified to be applicable:

Applicant Specified Age Grading for testing: All ages

Sample size: 1 piece(s) × 2 style(s)

<u>Clause</u>	<u>Test Item</u>	<u>Assessment</u>
21	Celluloid or cellulose nitrate	Pass

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## TEST RESULTS:

### 1.6 FLAMMABILITY TEST TO EN 71-2:2011 CLAUSE 4.1 GENERAL REQUIREMENT (CELLULOSE NITRATE)

Requirement: Celluloid (cellulose nitrate), except when used in varnish, paint or glue, or in balls of the type used for table tennis or similar games, and materials with the same behavior in fire as celluloid shall not be present in toys.  
Results: The submitted sample(s) complied with this requirement.

### 1.7 TRACKING LABEL EVALUATION

Producer marking on toy: Not Found  
Tracking code on toy: Not Found  
Producer marking on packaging: TOYSMITH  
Tracking code on packaging: 03/13/120

### 1.8 MARKING OF ELECTRICAL AND ELECTRONIC EQUIPMENT IN ACCORDANCE WITH ARTICLE 11(2) OF DIRECTIVE 2002/96/EC (WEEE) - BS EN 50419:2006 CLAUSE 4.2

Sample size: 1 piece(s) x 2 style(s)  
Result: The design of marking met the requirement.

### 1.9 MARKING ON BATTERIES AND ACCUMULATORS IN ACCORDANCE WITH ARTICLE 21(3), (4), (5) OF DIRECTIVE 2006/66/EC WITH REFERENCE TO THE DIMENSIONAL RULES OF BS EN 61429:1997 CLAUSE 3.2.2 AND 3.2.3

Sample size: 1 piece(s) x 2 style(s)  
Result: The design of marking met the requirement.

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### TEST RESULTS:

#### 1.10 EXAMINATION AND TEST FOR COMPLIANCE WITH APPROPRIATE TESTS OF EN 62115:2005+ A11:2012

##### SUMMARY OF TESTING RESULTS

<u>Clause</u>	<u>Test Items</u>	<u>Assessment</u>
1	Scope	--
2	Normative references	--
3	Definitions	--
4	General requirement	--
5	General conditions for the tests	--
6	Criteria for reduced testing	--
7	Marking and instructions	Pass
8	Power input	Not Applicable
9	Heating and abnormal operation	Pass
10	Electrical strength at operating temperature	Pass
11	Moisture resistance	Pass
12	Electric strength at room temperature	Pass
13	Mechanical strength	Pass
14	Construction	Pass
15	Protection of cords and wires	Pass
16	Components	Pass <sup>1</sup>
17	Screws and connections	Pass
18	Clearances and creepage distances	Pass
19	Resistance to heat and fire	Pass
20	Radiation, toxicity and similar hazards	Report As Is <sup>2</sup>
Annex A	Experimental sets	Not Applicable
Annex E	Toys incorporating lasers and light-emitting diodes	Pass
Annex ZB	Toys with protective electronic circuit	Not Applicable

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### Details:

1. Only clause 16.2 was assessed in Clause 16. Manufacturer had to ensure other components, if available, including switch, automatic controls, transformer, etc. specified in Clause 16.1 and 16.3 were in compliance with the safety requirements of the relevant standard and met the national deviation requirement of the importing countries.
2. This section only covered the essential safety requirements concerning electrical properties on the safety of toys and in order to comply with EN62115, electrical toys also have to comply with EN71 and Class 1 Classification in accordance with EN60825-1 for the lasers and light emitting diodes (LEDs).

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### 1.11 LASER POWER MEASUREMENT AS PER IEC60825-1:1993+A1:1997+A2:2001 including Corrigendum 1:2002 / EN60825-1:1994+A2:2001+A1:2002

#### Test Condition:

The measurement was carried out using the setup which according to IEC60825-1 / EN60825-1.

Temperature : 23°C  
Relative Humidity : 55% RH  
Description : End Product

#### Test Data:

Test Item	:	Blue LED	Red LED
Time Base	:	100 seconds	100 seconds
Angular Subtense, $\alpha$	:	1.5mrad < $\alpha$ and $\alpha$ < 100mrad	1.5mrad < $\alpha$ and $\alpha$ < 100mrad

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## TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

**TEST RESULTS:**

**Accessible emission limits**

Wavelength (nm)		Class1, 1M ( $t = 100s$ )	Class 2, 2M ( $t \geq 0.25s$ )	Class 3R ( $0.25s \leq t \leq 100s$ )
400 to 600		<input checked="" type="checkbox"/> $3.9 \times 10^{-3} C_3 J$ (Photochemical limit)		
400 to 700	$t > T_2$	<input type="checkbox"/> $\alpha \leq 1.5mrad$ : $3.9 \times 10^{-4} W$ <input checked="" type="checkbox"/> $\alpha > 1.5mrad$ : $7 \times 10^{-4} C_6 T_2^{-0.25} W$	<input type="checkbox"/> $C_6 10^{-3} W$	<input type="checkbox"/> $5 \times 10^{-3} C_6 W$
	$t \leq T_2$	<input type="checkbox"/> $7 \times 10^{-4} t^{0.75} C_6 J$		
700 to 1050	$t > T_2$	<input type="checkbox"/> $\alpha \leq 1.5mrad$ : $3.9 \times 10^{-4} C_4 C_7 W$ <input type="checkbox"/> $\alpha > 1.5mrad$ : $7 \times 10^{-4} C_4 C_6 C_7 T_2^{-0.25} W$	---	<input type="checkbox"/> $\alpha \leq 1.5mrad$ : $2 \times 10^{-3} C_4 C_7 W$
	$t \leq T_2$	<input type="checkbox"/> $7 \times 10^{-4} t^{0.75} C_4 C_6 C_7 J$		

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

<b>Normal Operation (Continuous wave)</b>	:	<b><u>Class 1 (See below test data)</u></b>	
Tested Item	:	Blue LED	Red LED
Model no. of LED	:	Not provided by Client	Not provided by Client
Measured wave length (nm)	:	453nm	632nm
Measured radiant power for RPH ( $\mu$ W)	:	0.715mJ	---
Measured radiant power for RTH ( $\mu$ W)	:	682.9 $\mu$ W	77.54 $\mu$ W
Calculated accessible emission limit for Class 1 - RPH ( $\mu$ W)	:	3.9mJ	---
Calculated accessible emission limit for Class 1 - RTH (mW)	:	3.638mW	3.638mW

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

<b>Abnormal Operation</b>	:	<b><u>Not Applicable</u></b>
Tested Item	:	---
Model no. of LED	:	---
Measured wave length (nm)	:	---
Measured radiant power for RPH (μW)	:	---
Measured radiant power for RTH (μW)	:	---
Calculated accessible emission limit for Class 1 - RPH (μW)	:	---
Calculated accessible emission limit for Class 1 - RTH (mW)	:	---

## Conclusion:

The end product under consideration is classified as Class 1 (in normal operation).

Date(s) of test(s) conducted: April 10, 2013

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### 2. CHEMICAL TESTS:

Key to sample(s):

- Sample 1 = Pink plastic (ball)
- Sample 2 = Yellow plastic (ball)
- Sample 3 = Purple plastic (ball)
- Sample 4 = Blue plastic (ball)
- Sample 5 = Orange plastic (ball)
- Sample 6 = Green plastic (ball)
- Sample 7 = Clear plastic (inner ball)
- Sample 8 = Clear plastic sheet (wrapper) (inaccessible) + Clear LED (inaccessible)
- Sample 9 = Brown/ green/ white PCB board (inaccessible)
- Sample 10 = Multi color paper board (box) + Multi color paper card (hangtag)
- Sample 11 = White plastic (fastener)

#### 2.1 SOLUBLE MIGRATED ELEMENTS : ASTM F963-11 Section 4.3.5.2 (2)(b) & 8.3.5.4 for samples 1 to 7

Results:

Elements	Antimony	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium
Limits	< 60	< 25	< 1000	< 75	< 60	< 90	< 60	< 500
Sample 1	<6.0	<2.5	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Sample 2	<6.0	<2.5	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Sample 3	<6.0	<2.5	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Sample 4	<6.0	<2.5	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Sample 5	<6.0	<2.5	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Sample 6	<6.0	<2.5	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Sample 7	<6.0	<2.5	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0

All concentrations expressed in milligrams per kilogram and unadjusted unless otherwise stated  
"<" means "less than"

#### Remark:

1. Method for determination of each soluble element present
  - a) Antimony, Arsenic, Barium, Cadmium, Chromium, Lead, Mercury and Selenium are determined by Inductively Coupled Plasma Spectroscopy.

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### 2.2 TOTAL LEAD CONTENT IN SUBSTRATE MATERIALS :

Method : CPSC-CH-E1002-08.1 Section II A (samples 1 to 7)

Criteria : The submitted sample(s) must not exceed the Total Lead Limits of 100 milligrams per kilogram for substrate materials as stated in the U.S. Public Law 110 - 314, Consumer Product Safety Improvement Act of 2008, Title I, Section 101(a)(2) & ASTM F963-11 Section 4.3.5.2 (2)(a)

Results :

	<u>Sample 1</u>	<u>Sample 2</u>	<u>Sample 3</u>	<u>Sample 4</u>
Total Lead	<10.0	<10.0	<10.0	<10.0
	<u>Sample 5</u>	<u>Sample 6</u>	<u>Sample 7</u>	
Total Lead	<10.0	<10.0	<10.0	

All concentrations expressed in milligrams per kilogram  
"<" means "less than"

### 2.3 TOTAL LEAD CONTENT IN SUBSTRATE MATERIALS :

Method : CPSC-CH-E1002-08.1 Section II A (samples 1 to 7)

Criteria : The submitted sample(s) must not exceed the Total Lead Limits of 200 milligrams per kilogram for substrate materials as per Client's specification with reference to California Proposition 65

Results :

	<u>Sample 1</u>	<u>Sample 2</u>	<u>Sample 3</u>	<u>Sample 4</u>
Total Lead	<10.0	<10.0	<10.0	<10.0
	<u>Sample 5</u>	<u>Sample 6</u>	<u>Sample 7</u>	
Total Lead	<10.0	<10.0	<10.0	

All concentrations expressed in milligrams per kilogram  
"<" means "less than"

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### 2.4 TOTAL LEAD CONTENT : IN-HOUSE METHOD WITH REFERENCE TO SLIHT004

Criteria : Accessible part(s) of the following items shall not have total lead content greater than 90 milligrams per kilogram as per Canada Consumer Products Containing Lead (Contact with Mouth) Regulations (SOR/2010-273):

- (a) products, other than kitchen utensils, that are brought into contact with the user's mouth in the course of normal use;
- (b) products intended for use in play or learning by children under three years of age.

Results :

	<u>Sample 1</u>	<u>Sample 2</u>	<u>Sample 3</u>	<u>Sample 4</u>
Total Lead	<10.0	<10.0	<10.0	<10.0
	<u>Sample 5</u>	<u>Sample 6</u>	<u>Sample 7</u>	
Total Lead	<10.0	<10.0	<10.0	

All concentrations expressed in milligrams per kilogram  
"<" means "less than"

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### 2.5 MIGRATION OF CERTAIN ELEMENTS : EN71-3 : 1994 with Amendments A1: 2000 & AC: 2002 Section 8.2 for samples 1 to 7

Results:

Elements	Antimony	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium
Limits	< 60	< 25	< 1000	< 75	< 60	< 90	< 60	< 500
Sample 1	<6.0	<2.5	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Sample 2	<6.0	<2.5	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Sample 3	<6.0	<2.5	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Sample 4	<6.0	<2.5	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Sample 5	<6.0	<2.5	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Sample 6	<6.0	<2.5	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Sample 7	<6.0	<2.5	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0

All concentrations expressed in milligrams per kilogram and unadjusted unless otherwise stated

"<" means "less than"

### Remark:

1. Method for determination of each soluble element present
  - a) Antimony, Arsenic, Barium, Cadmium, Chromium, Lead, Mercury and Selenium are determined by Inductively Coupled Plasma Spectroscopy.

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### 2.6 HEAVY METAL CONTENT TEST : Client's Specification with reference to 2009/48/EC

Results:

Elements	<u>Limits</u>				
	<u>Category III</u> <u>(Scraped-off material)</u>	<u>Sample 1</u>	<u>Sample 2</u>	<u>Sample 3</u>	<u>Sample 4</u>
Aluminum	70,000	<1.0	<1.0	<1.0	<1.0
Antimony	560	<1.0	<1.0	<1.0	<1.0
Arsenic	47	<0.5	<0.5	<0.5	<0.5
Barium	56,000	1.5	<1.0	2.0	<1.0
Boron	15,000	<1.0	<1.0	<1.0	<1.0
Cadmium	17	<0.10	<0.10	<0.10	<0.10
Chromium <sup>(2)</sup>	---	0.040	0.015	0.020	0.020
	460 (Chromium III)	---	---	---	---
	0.2 (Chromium VI)	---	---	---	---
Cobalt	130	<1.0	<1.0	<1.0	<1.0
Copper	7,700	<1.0	<1.0	<1.0	<1.0
Lead	160	<1.0	<1.0	<1.0	<1.0
Manganese	15,000	<1.0	<1.0	<1.0	<1.0
Mercury	94	<1.0	<1.0	<1.0	<1.0
Nickel	930	<1.0	<1.0	<1.0	<1.0
Selenium	460	<1.0	<1.0	<1.0	<1.0
Strontium	56,000	<1.0	<1.0	<1.0	<1.0
Tin	180,000	<0.05	<0.05	<0.05	<0.05
Organic Tin	12	<0.2	<0.2	<0.2	<0.2
Zinc	46,000	<1.0	<1.0	<1.0	<1.0

All concentrations expressed in milligrams per kilogram and unadjusted unless otherwise stated  
"<" means "less than"

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### 2.6 HEAVY METAL CONTENT TEST : Client's Specification with reference to 2009/48/EC

Results:

Elements	<u>Limits</u>			
	<u>Category III</u> <u>(Scraped-off material)</u>	<u>Sample 5</u>	<u>Sample 6</u>	<u>Sample 7</u>
Aluminum	70,000	<1.0	<1.0	<1.0
Antimony	560	<1.0	<1.0	<1.0
Arsenic	47	<0.5	<0.5	<0.5
Barium	56,000	1.0	<1.0	<1.0
Boron	15,000	<1.0	<1.0	<1.0
Cadmium	17	<0.10	<0.10	<0.10
Chromium <sup>(2)</sup>	---	0.015	0.015	0.015
	460 (Chromium III)	---	---	---
	0.2 (Chromium VI)	---	---	---
Cobalt	130	<1.0	<1.0	<1.0
Copper	7,700	<1.0	<1.0	<1.0
Lead	160	<1.0	<1.0	<1.0
Manganese	15,000	<1.0	<1.0	<1.0
Mercury	94	<1.0	<1.0	<1.0
Nickel	930	<1.0	<1.0	<1.0
Selenium	460	<1.0	<1.0	<1.0
Strontium	56,000	<1.0	<1.0	<1.0
Tin	180,000	<0.05	<0.05	<0.05
Organic Tin	12	<0.2	<0.2	<0.2
Zinc	46,000	<1.0	2.0	<1.0

All concentrations expressed in milligrams per kilogram and unadjusted unless otherwise stated  
"<" means "less than"

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## TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

### TEST RESULTS:

#### Remark:

1. Soluble migrated elements are determined by ICP-MS (Induced Couple Plasma Mass Spectrometry)
2. If the chromium content of the tested sample does not exceed the limits of chromium III and/or chromium VI, it is deemed to comply on the respective migration requirements of chromium III and/or chromium VI under 2009/48/EC. Otherwise, the compliance on the migration requirements of the individual chromium III and/or chromium VI should be confirmed by further speciation techniques.  
# : The chromium VI content is determined by LC-ICP-MS
3. If the Organic Tin content of the tested sample projected by the tin content does not exceed the limit of organotin, it is deemed to comply on the respective migration requirement of Organic Tin under 2009/48/EC. Otherwise, the compliance on the migration requirement of Organic Tin is confirmed by GCMS analysis with derivatisation.

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### 2.7 TOTAL CADMIUM CONTENT: RESTRICTION OF CADMIUM ACCORDING TO REGULATION (EC) NO. 1907/2006 ON REACH ANNEX XVII ITEM NO 23 AS AMENDED BY COMMISSION REGULATION (EC) NO. 552/2009 AND COMMISSION REGULATION (EU) NO. 494/2011 & IN-HOUSE METHOD WITH REFERENCE TO SLIHT004

Results:

Element	Total Cadmium
Limit	< 100 (< 1000) <sup>a</sup>
Sample 1	<10.0
Sample 2	<10.0
Sample 3	<10.0
Sample 4	<10.0
Sample 5	<10.0
Sample 6	<10.0
Sample 7	<10.0
Sample 8	<3.0
Sample 9	<3.0

All concentrations expressed in milligrams per kilogram  
"<" means "less than"

<sup>a</sup>Limit for paints and paints on painted articles

- Remark : 1. The limit is not applicable to composite sample.  
2. Composite tests were performed.

\*\*\*\*\* End of Page 22 of 45 \*\*\*\*\*

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### 2.8 NERC (FORMERLY ORGANIZATION: CSG) MODEL LEGISLATION - TOXICS IN PACKAGING CLEARINGHOUSE (TPCH), LAST REVISED JULY 2012 AND IN-HOUSE METHOD WITH REFERENCE TO SLIHT004

Results:

Elements	Total Cadmium	Hexavalent Chromium	Total Lead	Total Mercury	Pb + Cd + Hg + Cr(VI)
Limits					< 100
Sample 10	<3.0	<5.7	<10.0	<10.0	<28.7
Sample 11	<3.0	<3.0	<10.0	<10.0	<26.0

All concentrations expressed in milligrams per kilogram)  
"<" means "less than"

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### 2.9 HEAVY METALS REQUIREMENTS ON PACKAGING AND PACKAGING WASTE: 94/62/EC, ARTICLE 11 & IN-HOUSE METHOD WITH REFERENCE TO SLIHT004

Requirement : The sum of concentration levels of lead, cadmium, mercury and hexavalent chromium present in packaging or packaging components shall not exceed 100 milligrams per kilogram by weight.

Results : Multi color paper board (box) + Multi color paper card (hangtag)  
Sum of concentration level of lead, cadmium, mercury and hexavalent chromium is less than 28.7 milligrams per kilogram.

White plastic (fastener)  
Sum of concentration level of lead, cadmium, mercury and hexavalent chromium is less than 26.0 milligrams per kilogram.

### 2.10 HEAVY METALS IN BATTERIES: IN-HOUSE METHOD WITH REFERENCE TO SLIHT002

Criteria : The submitted samples must meet the Total Mercury Limit of 5ppm as per client's specification

Results :

<u>Samples</u>	<u>Average Mercury content (ppm)</u>
Silver button cell LR 1130	<0.5

"<" means "less than"

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

**2.11 HEAVY METALS IN BATTERIES ACCORDING TO 2006/66/EC, ARTICLES 4 & 21 AND SUBSEQUENT AMENDMENTS : IN-HOUSE METHOD WITH REFERENCE TO SLIHT002**

Results :

	Limits of 2006/66/EC and subsequent amendments	<u>Silver button cell LR 1130</u>
Total Cadmium	<0.002% (<20 ppm)	<0.0002% (<2 ppm)
Total Lead	<0.004% (<40 ppm)	<0.0004% (< 4 ppm)
Total Mercury	<0.0005%* (<5 ppm)	<0.00005% (< 0.5 ppm)

\*Button cells and batteries composed of button cells with a mercury content of no more than 2 % by weight shall be exempted.

“<” means “less than”  
“ppm” means “parts per million”

### Remark:

1. Marking must be included indications as to the following points
  - a) Separate collection,
  - b) Where appropriate, recycling,
  - c) The heavy metal content with chemical symbol of Pb, Cd and Hg if the battery/accumulator contains more than 0.004% lead, 0.002% cadmium and 0.0005%\* mercury.

\*\*\*\*\* End of Page 25 of 45 \*\*\*\*\*

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### 2.12 TOTAL PHTHALATE TEST : The U.S. Public Law 110 - 314, Consumer Product Safety Improvement Act of 2008, Title I, Section 108 & California Proposition 65

Test Method : CPSC-CH-C1001-09.3 (Composite test)  
Requirement : DEHP, DBP, BBP or DNHP content shall not individually be more than 0.1% by weight in any children's toys and child care articles.

DINP, DIDP or DNOP content shall not individually be more than 0.1% by weight in any children's toys that can be placed in a child's mouth and child care articles.

Results :

<u>Plasticisers</u>	<u>Pink plastic (ball) + Yellow plastic (ball) + Purple plastic (ball)</u>	<u>Blue plastic (ball) + Orange plastic (ball)</u>
DBP	<0.015%	<0.015%
BBP	<0.015%	<0.015%
DEHP	<0.015%	<0.015%
DNOP	<0.015%	<0.015%
DINP	<0.015%	<0.015%
DIDP	<0.015%	<0.015%
DNHP	<0.015%	<0.015%

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### 2.12 TOTAL PHTHALATE TEST : The U.S. Public Law 110 - 314, Consumer Product Safety Improvement Act of 2008, Title I, Section 108 & California Proposition 65

Test Method : CPSC-CH-C1001-09.3 (Composite test)  
Requirement : DEHP, DBP, BBP or DNHP content shall not individually be more than 0.1% by weight in any children's toys and child care articles.  
DINP, DIDP or DNOP content shall not individually be more than 0.1% by weight in any children's toys that can be placed in a child's mouth and child care articles.

Results :

Plasticisers Green plastic (ball) + Clear plastic (inner ball)

DBP	<0.015%
BBP	<0.015%
DEHP	<0.015%
DNOP	<0.015%
DINP	<0.015%
DIDP	<0.015%
DNHP	<0.015%

Key : DBP = Di-butyl phthalate  
BBP = Butyl-benzyl phthalate  
DEHP = Di-(2-ethyl-hexyl) phthalate  
DNOP = Di-n-octyl phthalate  
DINP = Di-iso-nonyl phthalate  
DIDP = Di-iso-decyl phthalate  
DNHP = Di-n-hexyl phthalate  
< = Less than

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### 2.13 TOTAL PHTHALATE TEST : Canada Phthalates Regulations (SOR/2010-298) & Client's Specification

Test Method : CPSC-CH-C1001-09.3 (Composite test)  
Requirement : The vinyl in a toy or child care article must contain not more than 1 000 mg/kg (0.1%) of Di-(2-ethylhexyl) phthalate (DEHP), Di-butyl phthalate (DBP) or Benzyl butyl phthalate (BBP).

The vinyl in any part of a toy or child care article that can, in a reasonably foreseeable manner, be placed in the mouth of a child under four years of age must contain not more than 1 000 mg/kg (0.1%) of Di-iso-nonyl phthalate (DINP), Di-iso-decyl phthalate (DIDP) or Di-n-octyl phthalate (DNOP)

Di-n-hexyl phthalate (DNHP) content shall not be more than 1000 mg/kg (0.1%) as per Client's specification.

Results :

<u>Plasticisers</u>	<u>Pink plastic (ball) + Yellow plastic (ball) + Purple plastic (ball)</u>	<u>Blue plastic (ball) + Orange plastic (ball)</u>
DBP	<0.015%	<0.015%
BBP	<0.015%	<0.015%
DEHP	<0.015%	<0.015%
DNOP	<0.015%	<0.015%
DINP	<0.015%	<0.015%
DIDP	<0.015%	<0.015%
DNHP	<0.015%	<0.015%

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### 2.13 TOTAL PHTHALATE TEST : Canada Phthalates Regulations (SOR/2010-298) & Client's Specification

Test Method : CPSC-CH-C1001-09.3 (Composite test)  
Requirement : The vinyl in a toy or child care article must contain not more than 1 000 mg/kg (0.1%) of Di-(2-ethylhexyl) phthalate (DEHP), Di-butyl phthalate (DBP) or Benzyl butyl phthalate (BBP).

The vinyl in any part of a toy or child care article that can, in a reasonably foreseeable manner, be placed in the mouth of a child under four years of age must contain not more than 1 000 mg/kg (0.1%) of Di-iso-nonyl phthalate (DINP), Di-iso-decyl phthalate (DIDP) or Di-n-octyl phthalate (DNOP)

Di-n-hexyl phthalate (DNHP) content shall not be more than 1000 mg/kg (0.1%) as per Client's specification.

Results :

Plasticisers : Green plastic (ball) + Clear plastic (inner ball)

DBP	<0.015%
BBP	<0.015%
DEHP	<0.015%
DNOP	<0.015%
DINP	<0.015%
DIDP	<0.015%
DNHP	<0.015%

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### 2.13 TOTAL PHTHALATE TEST : Canada Phthalates Regulations (SOR/2010-298) & Client's Specification

Key	:	DBP	= Di-butyl phthalate
		BBP	= Butyl-benzyl phthalate
		DEHP	= Di-(2-ethyl-hexyl) phthalate
		DNOP	= Di-n-octyl phthalate
		DINP	= Di-iso-nonyl phthalate
		DIDP	= Di-iso-decyl phthalate
		DNHP	= Di-n-hexyl phthalate
		<	= Less than

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### 2.14 TOTAL PHTHALATE TEST : RESTRICTION OF PHTHALATES ACCORDING TO REGULATION (EC) NO. 1907/2006 ON REACH ANNEX XVII ITEM NO 51/52 AS AMENDED BY COMMISSION REGULATION (EC) NO. 552/2009 & Client's Specification

Test Method : THF extraction followed by GC-MSD analysis (Composite test).

Requirement : DEHP, DBP, BBP & DNHP content shall not be more than 0.1% by weight in toys and children article.

DINP, DIDP & DNOP content shall not be more than 0.1% by weight in toys and children article which can be placed in the mouth by children.

Results :

<u>Plasticisers</u>	<u>Pink plastic (ball) + Yellow plastic (ball) + Purple plastic (ball)</u>	<u>Blue plastic (ball) + Orange plastic (ball)</u>
DBP	<0.015%	<0.015%
BBP	<0.015%	<0.015%
DEHP	<0.015%	<0.015%
DNOP	<0.015%	<0.015%
DINP	<0.015%	<0.015%
DIDP	<0.015%	<0.015%
DNHP	<0.015%	<0.015%

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### 2.14 TOTAL PHTHALATE TEST : RESTRICTION OF PHTHALATES ACCORDING TO REGULATION (EC) NO. 1907/2006 ON REACH ANNEX XVII ITEM NO 51/52 AS AMENDED BY COMMISSION REGULATION (EC) NO. 552/2009 & Client's Specification

Test Method : THF extraction followed by GC-MSD analysis (Composite test).

Requirement : DEHP, DBP, BBP & DNHP content shall not be more than 0.1% by weight in toys and children article.

DINP, DIDP & DNOP content shall not be more than 0.1% by weight in toys and children article which can be placed in the mouth by children.

Results :

Plasticisers Green plastic (ball) + Clear plastic (inner ball)

DBP	<0.015%
BBP	<0.015%
DEHP	<0.015%
DNOP	<0.015%
DINP	<0.015%
DIDP	<0.015%
DNHP	<0.015%

Key :

- DBP = Di-butyl phthalate
- BBP = Butyl-benzyl phthalate
- DEHP = Di-(2-ethyl-hexyl) phthalate
- DNOP = Di-n-octyl phthalate
- DINP = Di-iso-nonyl phthalate
- DIDP = Di-iso-decyl phthalate
- DNHP = Di-n-hexyl phthalate
- < = Less than

Date(s) of test(s) conducted : April 5 – 15, 2013

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

**3.0 EN 55014-1: 2006 + A1: 2009 + A2: 2011 and EN 55014-2: 1997 + A1: 2001 + A2: 2008**

### Test and results of emission measurement according to EN 55014-1 – EMC

#### Measurement of radiated disturbance (30MHz – 1GHz) according to EN55014-1

##### General information about the test:

Instruments:		
Description	Manufacturer	Model number
Bilog Antenna	Schaffner	CBL6112B
EMI Test Receiver	Rohde & Schwarz	ESCI
Coaxial Cable (10m)	Schaffner	RG213/U
Coaxial Cable (3m)	Suhner	RG214/U

##### Environmental conditions:

Parameter	Recorded value	
Ambient temperature:	25	° C
Relative humidity:	70	%

\*\*\*\*\* \* End of Page 33 of 45 \* \*\*\*\*\*

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## Test Results

### Information concerning the test:

**Description:** The Quasi-peak measurements were performed on the test site at 3m test distance from the antenna to the test sample with the sample operating continuously. Distance factors had been used to normalize the measured data for determining compliance.

**Protocol:** Light on

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBµV/m)	Normalised reading at 10m (dBµV/m)	Limit at 10m (dBµV/m)	Margin (dB)
47.330	H	27.9	17.4	30.0	- 12.6
79.685	H	24.5	14.0	30.0	- 16.0
113.146	H	30.5	20.0	30.0	- 10.0
121.369	H	30.7	20.2	30.0	- 9.8
150.048	H	29.8	19.3	30.0	- 10.7
153.771	H	29.0	18.5	30.0	- 11.5
183.684	H	28.7	18.2	30.0	- 11.8

Remark: All other readings in the frequency range mentioned in the standard were investigated, and found them well below the readings resented in the table shown above.

**Result:** PASS  
No Emission was detected higher than the specified limit

Uncertainty				
The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%.				
30MHz – 200MHz	Horizontal	Expanded Uncertainty U	k = 2	4.83dB
30MHz – 200MHz	Vertical	Expanded Uncertainty U	k = 2	4.84dB
200MHz – 1GHz	Horizontal	Expanded Uncertainty U	k = 2	4.66dB
200MHz – 1GHz	Vertical	Expanded Uncertainty U	k = 2	4.65dB

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### Test and results of immunity measurement according to EN 55014-2 – EMC

### Electrostatic discharge (ESD) according to IEC 61000-4-2

#### General information about the test:

Instruments:		
Description	Manufacturer	Model number
ESD simulator set	Schaffner	NSG435

#### Environmental conditions:

Parameter	Rated value	Recorded value
Ambient temperature:	15 °C - 35 °C	28 °C
Atmospheric pressure:	(86 – 106) kPa	101.2 kPa
Relative humidity:	30 % - 60 %	49 %

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## TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

### Test Results

Information concerning the test:

Performance criteria: B

Protocol:

Application of ESD	Point of Discharge	Applied Voltage (kV)			No. of Discharge	Result / Comment
Indirect Horizontally	Left, right, front, back	+4			10	PASS
Indirect Horizontally	Left, right, front, back	-4			10	PASS
Indirect Vertically	Left, right, front, back	+4			10	PASS
Indirect Vertically	Left, right, front, back	-4			10	PASS
Direct Air	Refer to description on next page	+2	+4	+8	10	PASS
Direct Air	Refer to description on next page	-2	-4	-8	10	PASS
Direct Contact	Refer to description on next page	+4			N/A	N/A
Direct Contact	Refer to description on next page	-4			N/A	N/A

**Result:**

**PASS**  
The submitted sample met the requirement of Electrostatic Discharge Test with criterion B.

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## TEST REPORT

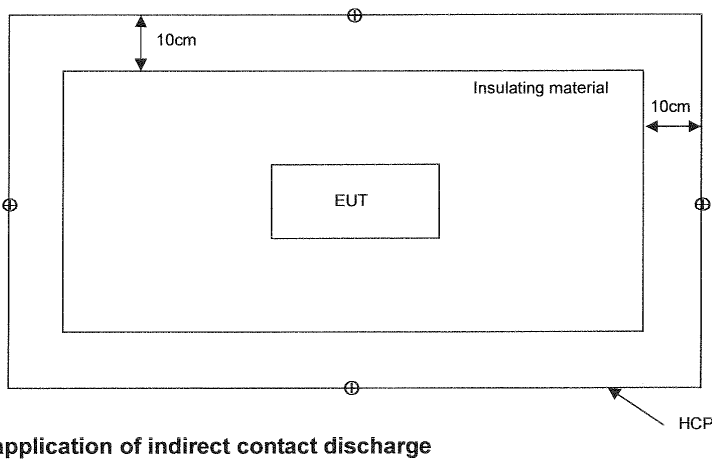
REPORT NO. : A20121352  
DATE : Apr.19,2013

### Test Results

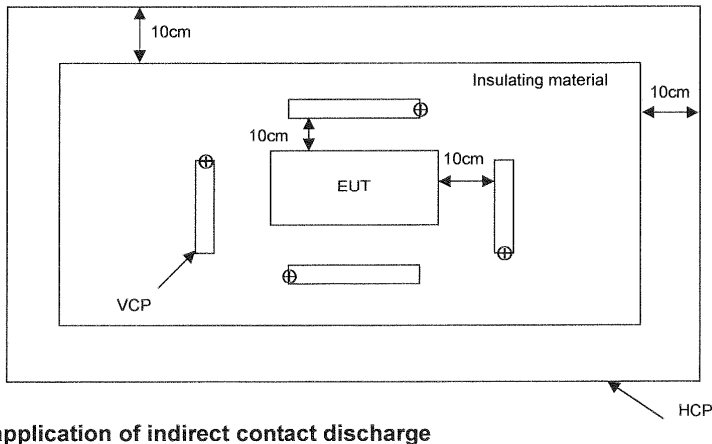
*Electrostatic discharge (ESD) according to IEC 61000-4-2 (con'd)*

Details of indirect discharges applied:

Horizontal Coupling Plane (0.8 m x 1.6 m)



Vertical Coupling Plane (0.5 m x 0.5 m)



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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## Test Results

*Electrostatic discharge (ESD) according to IEC 61000-4-2 (con'd)*

Details of direct discharges applied:

Application of direct contact discharges and direct air discharges

### *Description of ESD Test*

Contact discharge is applied to the following positions of EUT:

- N/A

Air discharge is applied to the following positions of EUT:

- the insulated case
- gap located at the insulated case

Date(s) of test(s) conducted : April 3 – 9, 2013

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## TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

**TEST RESULTS:**

**4.0 2011/65/EU - RESTRICTION OF HAZARDOUS SUBSTANCES (RoHS)  
SCREENING METHOD OF LEAD, CADMIUM, MERCURY, CHROMIUM AND BROMINE  
USING ENERGY-DISPERSIVE X-RAY FLUORESCENCE SPECTROSCOPY**

NO	DESCRIPTION	TEST ELEMENT					CONCLUSION
		LEAD (mg/kg)	CADMIUM (mg/kg)	MERCURY (mg/kg)	CHROMIUM (mg/kg)	BROMINE (mg/kg)	
1	TRANSLUCENT YELLOW SOFT PLASTIC HOUSING	< 500	< 50	< 500	< 500	< 300	PASS
2	TRANSLUCENT BLUE SOFT PLASTIC HOUSING	< 500	< 50	< 500	< 500	< 300	PASS
3	TRANSLUCENT PINK SOFT PLASTIC HOUSING	< 500	< 50	< 500	< 500	< 300	PASS
4	TRANSLUCENT PURPLE SOFT PLASTIC HOUSING	< 500	< 50	< 500	< 500	< 300	PASS
5	TRANSLUCENT GREEN SOFT PLASTIC HOUSING	< 500	< 50	< 500	< 500	< 300	PASS
6	TRANSLUCENT ORANGE SOFT PLASTIC HOUSING	< 500	< 50	< 500	< 500	< 300	PASS

\*\*\*\*\* End of Page 39 of 45 \*\*\*\*\*

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## TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

**TEST RESULTS:**

NO	DESCRIPTION	TEST ELEMENT					CONCLUSION
		LEAD (mg/kg)	CADMIUM (mg/kg)	MERCURY (mg/kg)	CHROMIUM (mg/kg)	BROMINE (mg/kg)	
7	TRANSPARENT CLEAR SOFT PLASTIC HOUSING	< 500	< 50	< 500	< 500	< 300	PASS
8	SILVERY METAL PLATE	< 500	< 50	< 500	> 500 Cr VI Spot Test Negative*	---	PASS
9	SILVERY METAL SPRING	< 500	< 50	< 500	< 500	---	PASS
10	SILVERY METAL PLATE	< 500	< 50	< 500	> 500 Cr VI Spot Test Negative*	---	PASS
11	(A) TRANSPARENT CLEAR PLASTIC LED	< 500	< 50	< 500	< 500	---##	PASS
	(B) SILVERY METAL LEG	< 500	< 50	< 500	< 500	---	PASS
12	BROWN PCB BOARD	< 500	< 50	< 500	< 500	< 300	PASS
13	WHITE EPOXY ON PCB BOARD	< 500	< 50	< 500	< 500	< 300	PASS
14	SILVERY SOLDER	< 500	< 50	< 500	< 500	---	PASS

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

### LIMIT OF RESTRICTION OF HAZARDOUS SUBSTANCES 2011/65/EU

HAZARDOUS SUSTANCES	LIMIT (mg/kg)
LEAD	1000
CADMIUM	100
MERCURY	1000
HEXAVALENT CHROMIUM (CrVI)	1000
POLYBROMINATED BIPHENYLS (PBB)	1000
POLYBROMAINED DIPHENYLEETHERS (PBDE)	1000

## REMARKS :

\* CrVI SPOT TEST WAS PERFORMED BY THE TEST METHOD ACCORDING TO ANNEX B, BS EN 62321:2009. POSITIVE RESULTS INDICATE HEXAVALENT CHROMIUM (CrVI) ON SURFACE.

## BROMINATED FLAME RETARDANTS (PBB & PBDE) TEST WAS PERFORMED WITH REFERENCE TO TEST METHOD: BS EN 62321:2009 AND QUANTITATION WITH GC-MS. PLEASE REFER TO RESULTS IN SECTION 2.

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## TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

### TEST RESULTS:

#### 5.0 2011/65/EU - RESTRICTION OF HAZARDOUS SUBSTANCES (RoHS) - BROMINATED FLAME RETARDANTS (PBB & PBDE) TEST:

##### TEST METHOD: BS EN 62321:2009 AND QUANTITATION WITH GC-MS

POLYBROMINATED BIPHENYLS (PBBs)	SAMPLE (11-A)
REPORTING LIMIT	10
RoHS REQUIREMENTS	1000
MONOBROMOBIPHENYL	<10
DIBROMOBIPHENYL	<10
TRIBROMOBIPHENYL	<10
TETRABROMOBIPHENYL	<10
PENTABROMOBIPHENYL	<10
HEXABROMOBIPHENYL	<10
HEPTABROMOBIPHENYL	<10
OCTABROMOBIPHENYL	<10
NONABROMOBIPHENYL	<10
DECABROMOBIPHENYL	<10
TOTAL CONCENTRATIONS OF THE ABOVE PBB COMPOUNDS	<10

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# TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

## TEST RESULTS:

<b>POLYBROMINATED DIPHENYL ETHERS (PBDEs)</b>	
REPORTING LIMIT	10
RoHS REQUIREMENTS	1000
MONOBROMODIPHENYL ETHER	<10
DIBROMODIPHENYL ETHER	<10
TRIBROMODIPHENYL ETHER	<10
TETRABROMODIPHENYL ETHER	<10
PENTABROMODIPHENYL ETHER	<10
HEXABROMODIPHENYL ETHER	<10
HEPTABROMODIPHENYL ETHER	<10
OCTABROMODIPHENYL ETHER	<10
NONABROMODIPHENYL ETHER	<10
DECABROMODIPHENYL ETHER	<10
TOTAL CONCENTRATIONS OF THE ABOVE PBDE COMPOUNDS	<10

ALL CONCENTRATIONS EXPRESS IN PPM (PART PER MILLION)  
"<" MEANS "LESS THAN"

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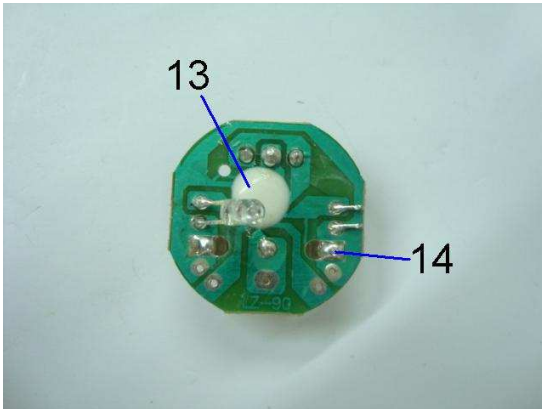
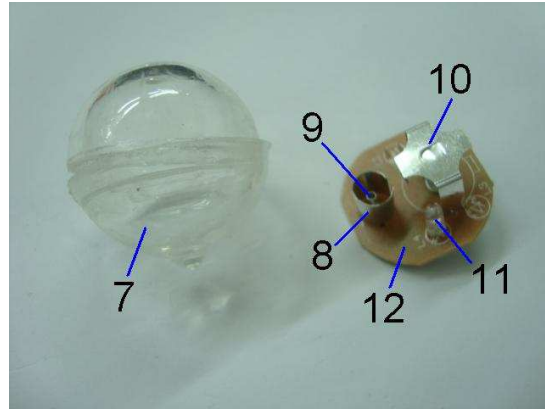
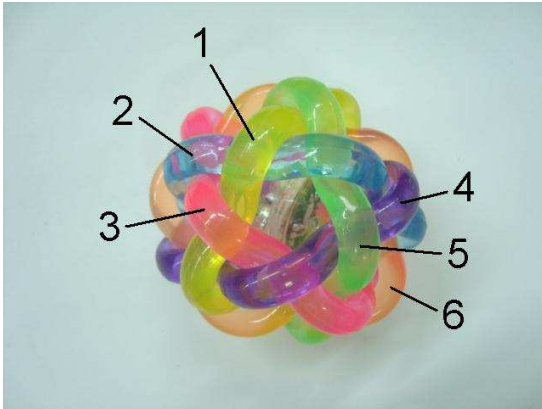
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## TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

### SAMPLE IDENTIFICATION(S) AND PHOTO(S)



Date(s) of test(s) conducted : April 5 – 16, 2013

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## TEST REPORT

REPORT NO. : A20121352  
DATE : Apr.19,2013

### Product Photo(s):



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## TERMS AND CONDITIONS OF SERVICE

UL VS Hong Kong Limited ("UL VS") undertakes to provide services ("Work(s)") to its Customer subject to the terms and conditions ("Terms") contained herein.

The term of limitation of liability contained herein has been conspicuously marked to draw to the attention of the Customer. The Customer is advised by UL VS to take separate legal advice and is fully aware of the meaning and the legal significance of this term. The Customer agrees that this term is integral part of this Agreement.

### COMPUTATION OF CHARGES AND PAYMENT

- 1.1 (a) Consulting time shall be charged on a daily basis.  
(b) Where the personnel of UL VS are assigned to its Customer for any in-house projects, the Customer shall be billed on an hourly basis on the compensation rates of its personnel.
- 1.2 Disbursements incurred on the Customer's behalf such as expenditure for communications, transportation, travel, purchase of any materials, tools, equipment, components or parts which are directly related to the Work(s) shall be billed at costs and shall additionally include UL VS's reasonable handling charge at the discretion of UL VS.
- 1.3 Where in the opinion of UL VS the Work(s) are time consuming entailing the use of special equipment and disbursements, the Customer shall be charged on an "equipment-hour" basis on the time spent.
- 1.4 Payments shall be made in Hong Kong Dollars at UL VS's address or at such other address and in such manner as UL VS may from time to time specify. Payment made by post shall be at the risk of the Customer.
- 1.5 The Customer undertakes during the continuance of this Agreement: -
  - (a) to punctually pay all billings rendered to the Customer from time to time;
  - (b) unless otherwise agreed in writing, payment is to be made within seven (7) days from the date of Invoice or Debit Note;
  - (c) where the Customer shall fail to pay within time, UL VS shall charge interest on overdue invoices at the rate of 2% per month;
  - (d) UL VS shall have a lien on any goods of the Customer until payment but the exercise of such lien shall not prevent interest from accruing.
- 1.6 If the Customer shall fail to pay UL VS for any reason under Clause 1.5 or if the Customer shall commit a breach of any of its obligation under this Agreement or if a receiver of the Customer is appointed or if any resolution or petition to wind up the Customer's business shall be passed or presented (except for the purpose of reconstruction), UL VS may without prejudice to its other rights either suspend or terminate the Agreement and in such an event UL VS may also suspend or terminate any other existing contracts without being liable to damages.

### OBLIGATIONS OF THE CUSTOMER

- 2.1 If the Customer intends to make any change(s) to the Work(s) hereunder or assign any other work to UL VS prior to the completion of Work(s), such a change or new assignment shall only be effective in writing between both of the parties. If UL VS suffers from any loss or damage due to such a change or new assignment, the Customer shall compensate UL VS for such losses and damages.
- 2.2 If the Work(s) undertaken by UL VS hereunder requires any assistance from the Customer, the Customer shall be obliged to provide all necessary and reasonable assistance which UL VS may deem fit. If the Work(s) undertaken by UL VS hereunder cannot be completed due to the Customer's failure to perform its obligation to assist, UL VS shall have the right to demand the Customer to perform its obligation within a reasonable period of time and may appropriately extend the time limit for UL VS to complete its Work(s). If upon the expiration of such reasonable time period the Customer still fails to perform its obligation to assist, UL VS may terminate this Agreement, without prejudice to any other rights of UL VS hereunder or under any applicable laws and regulations.

### SAMPLES

- 3.1 Customer shall abide by all applicable regulations when shipping samples to UL VS. Improper shipping may result in additional charges for costs incurred by UL VS: (a) to identify samples to UL VS; and (b) damages done to UL VS personnel or property as a result of improper packaging, labeling or omission of identifying documents. UL VS shall have the right to refuse receipt of any shipment that, in its discretion, is unsafe or has been shipped improperly. Any costs associated by refusal to accept shipment under this clause are the sole responsibility of the Customer. The Customer shall indemnify and hold harmless UL VS for any and all damages, expenses, fines, judgments, liabilities and costs (including attorney's fee) incurred by UL VS and arising from the improper packaging or shipment of the samples by the Customer.

### PATENT RIGHTS

- 4.1 Any invention made in the performance of Work(s) for the Customer by UL VS within the field of Work(s) undertaken for the Customer shall belong to the Customer.
- 4.2 UL VS's use of the aforesaid inventions shall be free of any royalty fees provided that the use of such inventions are confined to the performance of Work(s) for the Customer.

### CONFIDENTIAL TREATMENT OF INFORMATION

- 5.1 Unless otherwise specifically agreed between the parties, the Work(s) rendered by UL VS to the Customer shall be on a non-exclusive best-efforts basis.
- 5.2 It is explicitly agreed by UL VS and the Customer that all technical information (whether contained in models, drawings, reproductions of drawings, written reports, letters, memoranda or notes or in any other form) shall be kept strictly confidential by UL VS for the purposes of this Agreement and UL VS shall at all times use all reasonable efforts to prevent disclosure to third parties of any part thereof unless UL VS shall have first obtained the written consent of the Customer specifically authorizing such disclosure. **PROVIDED ALWAYS AND IT IS MUTUALLY AGREED** that the confidentiality shall extend for a period of five (5) years from the date of completion of its Work(s) and **PROVIDED FURTHER** that UL VS shall not be liable under this clause if through no fault of UL VS the information is generally known to the public; or the information is generally known to UL VS; or is independently developed by UL VS without recourse to the materials provided by the Customer; or the information is necessary for performance by UL VS under this Agreement; or is disclosed in accordance with a judgment or order issued by a competent court of any jurisdiction to which the Terms are subject, or with an order, notice or requirement issued by a governmental authority; or is disclosed to the certification or accreditation bodies with which the information are relevant to the scope of certification or accreditation in order to assess UL VS's competence and compliance with the relevant certification or accreditation criteria.
- 5.3 UL VS undertakes that the identity of its Customers and the nature of Work(s) rendered shall be kept confidential unless the Customer agrees in writing to their release **PROVIDED ALWAYS** that UL VS shall not be liable under this clause if through no fault act or failure on its part the identity of the Customer is generally known to the public.

### DATA AND DOCUMENT RETENTION

- 6.1 (a) After the Work(s) are rendered, UL VS may retain a copy of all documents relating to the Work(s) (the "Supporting Documents") for as long as UL VS, in its sole discretion, deems fit.  
(b) Unless otherwise specified or required by the applicable law, the Supporting Documents over three (3) years of age will be automatically destroyed by UL VS without prior notice to the Customer. Should any or all Supporting Documents less than three (3) years are scheduled to be destroyed, UL VS shall give the Customer thirty (30) days' written notice to the Customer's last known address of its intention to destroy the Supporting Documents. Unless the Customer makes a written request to UL VS reaching UL VS before the expiration of the said thirty (30) days seeking delivery of those documents to the Customer at the Customer's expenses, those documents shall be destroyed.  
(c) The Customer shall indemnify UL VS for any costs or expenses in responding to or opposing any subpoena, the production of any documents in Court seeking the disclosure of the said documents or any information contained therein.

### SOLICITATION OF EMPLOYEES

- 7.1 It is mutually agreed that neither party shall solicit the employees of the other for employment or hire unless prior written consent to do so is obtained.

### E-MAIL DISCLAIMER

- 8.1 UL VS shall upon written request of the Customer send the final report(s) / result(s) hereunder by e-mail rather than by paper hard copy. UL VS considers e-mail a valuable and efficient tool, however, UL VS hereby gives cautions to the Customer that the report(s) / result(s) in electronic version may inadvertently be modified once it is in the Customer's word processing system. Further, the current e-mail transmission technology may allow for interception of message(s) and report(s) / result(s) by third parties. UL VS shall not be held responsible for these risks, which are out of its control. Should report(s) / result(s) be sent to the Customer by e-mail on its request, such a request SHALL BE DEEMED TO BE AN ACCEPTANCE OF THE RISK THAT THE REPORT(S) / RESULT(S) MAY BE INTERCEPTED BY THIRD PARTIES. The Customer shall agree that the report(s) / result(s) shall be sent by UL VS unencrypted. Transmission of the report(s) / result(s) (or other material(s) requested by the Customer) via the internet or other public network shall not be considered to constitute a breach of any confidentiality or other provisions of this Agreement between UL VS and the Customer, and UL VS shall in no way be liable for any damages resulting from such a transmission. Additionally, UL VS shall not be liable for any damages incurred by the Customer for any changes made to the report(s) / result(s) after it has been transmitted.

### LIMITATION OF LIABILITY

- 9.1 Subject to Clause 9.2 and notwithstanding anything contained in this Agreement, in no circumstances (except where UL VS has willfully refused to perform any of its obligations under this Agreement or under any order placed pursuant to Clause 2.1) shall UL VS be liable, in contract, tort (including negligence or breach of statutory duty) or otherwise howsoever, and whatever the cause thereof, (a) for any loss of profit, business, contracts, revenues, or anticipated savings; or (b) for any special indirect or consequential damage of any nature whatsoever.
- 9.2 If and to the extent that the Control of Exemption Clauses Ordinance (Cap. 71 Laws of Hong Kong) applies to this Agreement and that UL VS is held liable to the Customer, notwithstanding Clause 9.1 and anything contained in this Agreement, UL VS's liability to the Customer, in contract, tort (including negligence or breach of statutory duty) or howsoever otherwise arising, shall in respect of this Agreement be limited to the amount of the fee paid in respect of the specific Work which gives rise to such claim.

### INDEMNITY

- 10.1 In the event of actual or threatened suit against UL VS in relation to the Work(s) undertaken on behalf of the Customer or in relation to any of the Products or the Trade Mark or Patent of the Customer or of any allegation of infringement of any letters patent, registered design, trade mark or trade name, the Customer shall indemnify UL VS harmless from any liability, action, claim, demand, costs, charges and expenses arising therefrom or expenses including solicitors fees, counsel fees in defending such action **PROVIDED ALWAYS** that the Customer will at its own election either effect any settlement or compromise or at its own expenses defend any such action or proceeding and the Customer shall pay the costs of any settlement or compromise effected.

### EFFECT OF PROPOSAL

- 11.1 The accompanying proposal is valid for a period of ninety (90) days from the date of the proposal unless extended in writing by UL VS. Upon the acceptance of such proposal, this Terms shall form part of this Agreement with the Customer and notwithstanding any prior discussions or prior oral or written agreements to the contrary, the Terms herein shall be applicable and take precedence over any conflicting terms contained in any documents submitted by the Customer.

### MISCELLANEOUS PROVISIONS

- 12.1 Any provision of this Agreement prohibited by or regarded as unlawful or unenforceable under any applicable law actually applied by any court of competent jurisdiction shall, to the extent required by such law, be severed by this Agreement and rendered ineffective so far as is possible without modifying the remaining provisions of this Agreement. Where however the provisions of any such applicable law may be waived, they are hereby waived by the parties hereto to the full extent permitted by such law to the end that this Agreement shall be valid and binding agreement enforceable in accordance with the Terms.
- 12.2 A certificate signed by any officer of UL VS as to the amount due from the Customer hereunder at the date of such certificate shall, in the absence of manifest error, be conclusive evidence of the amount due.
- 12.3 Nothing in this Agreement shall be considered to form a partnership between the parties. No party shall represent that it acts as agent for another or has any capacity to bind another in any contractual or other arrangements.
- 12.4 Save as herein otherwise provided any notice required to be given hereunder shall be sufficiently given if given in writing or by facsimile, email, internet or other possible means to the last known postal address or fax number or email address of the addressee and every notice shall be deemed to have been received and given at the time when in the course of transmission it should have been delivered at the address or fax number or email address to which it was sent.
- 12.5 This report or certificate does not relieve seller(s) / supplier(s) from their contractual responsibility with regards to the quality/quantity of this delivery nor does it prejudice the Customer's right to claim towards seller(s) / supplier(s) for compensation for any apparent and/or hidden defects not detected during UL VS's random inspection or testing or audit.

### GOVERNING LAW

- 13.1 This Agreement and the rights and obligations of the parties shall in all respects be governed, construed, interpreted and operated in accordance with the Laws and Regulations of Hong Kong.