

TEST REPORT

APPLICANT :
ADDRESS :
SAMPLE DESCRIPTION : + Hand, Highlighter
ITEM NO. : LT81485
COUNTRY OF ORIGIN : China
COUNTRY TO IMPORT : The Netherlands
AGE REQUESTED ON APPLICATION FORM : >3
LABELED AGE GRADE : Not Present
AGE GRADE APPLIED IN TESTING : Over 3 Years
SAMPLE RECEIVED DATE : 19-Oct-2016
TURN AROUND TIME : 19-Oct-2016 to 26-Oct-2016, 6 Working Days

The following test item(s) was/were performed on submitted sample(s) and/or component(s) confirmed by applicant.

TEST REQUESTED	TEST METHOD / REGULATION	RESULT
Mechanical and Physical Properties	EN71 Part 1:2014	Pass (Except Section 7.1&7.2)
Labeling Requirement	Directive 2009/48/EC	See Test Result
Flammability of Toys	EN71 Part 2:2011+A1:2014	Pass
Migration of Certain Elements	EN71 Part 3:2013+A1:2014	Pass
Writing and Marking Instruments - Part 1: Specification for Caps to Reduce the Risk of Asphyxiation	BS 7272-1:2008	See Test Result
Writing and Marking Instruments - Part 2: Specification for End Closures to Reduce the Risk of Asphyxiation	BS 7272-2:2008+A1:2014	See Test Result

Results obtained refer only to samples, products or material received in Laboratory, as described in point related to sample description, and tested in conditions shown in present report. Eurofins Product Testing Service (Shanghai) Co., Ltd ensures that this job has been performed according to our Quality System and complying contract and legal conditions. If you happen to have any comments, please do it by sending email to sh.info@eurofins.com and referring to this report number. Reproduction of this document is only valid if it is done completely and under the written permission of Eurofins Product Testing Service (Shanghai) Co., Ltd. If you happen to have any complaints, please do it by sending email to chinacomplaint@eurofins.com and referring to this report number.

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***** FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S) *****

Signed for and on behalf of
Eurofins Product Testing Service (Shanghai) Co., Ltd

Terric Ji
Lab Manager

SAMPLE PHOTO



EFSH16100973-CG-01

TO BE CONTINUED

COMPONENT LIST

Component No.	Component
1	Multi-color coating on pen
2	Green ink
3	Fluorescein ink (quote from EFSH16100971-CG-01)
4	Orange ink
5	Blue ink
6	Pink ink
7	Transparent fluorescein plastic pen body (quote from EFSH16100971-CG-01)
8	Dark green plastic pen body (quote from EFSH16100971-CG-01)
9	Orange plastic pen body (quote from EFSH16100971-CG-01)
10	Pink plastic pen body (quote from EFSH16100971-CG-01)
11	Blue plastic pen body (quote from EFSH16100971-CG-01)
12	Transparent white plastic body
13	Orange plastic pen head (quote from EFSH16100966-CG-01)
14	Blue plastic pen head (quote from EFSH16100966-CG-01)
15	Fluorescein plastic pen head (quote from EFSH16100966-CG-01)
16	Pink plastic pen head (quote from EFSH16100966-CG-01)
17	Green plastic pen head (quote from EFSH16100966-CG-01)
18	White fabric pen head excluding ink (quote from EFSH16100971-CG-01)

TO BE CONTINUED

TEST RESULT

Mechanical and Physical Properties

Test Request: As specified in European Standard on Safety of Toys EN71 Part 1:2014

Section	Description	Result
4	General requirements	
4.1	Material cleanliness (by visual assessment)	P
4.2	Assembly	N/A
4.3	Flexible plastic sheeting	N/A
4.4	Toy Bags	N/A
4.5	Glass	N/A
4.6	Expanding Materials	N/A
4.7	Edges	P
4.8	Points and Metallic Wires	P
4.9	Protruding parts	N/A
4.10	Parts moving against each other:	
4.10.1	Folding and sliding mechanisms	N/A
4.10.2	Driving mechanisms.	N/A
4.10.3	Hinges	N/A
4.10.4	Springs	N/A
4.11	Mouth-actuated toys and other toys intended to be put in the mouth	N/A
4.12	Balloons	N/A
4.13	Cords of toy kites and other flying toys.	N/A
4.14	Enclosures:	
4.14.1	Toys which a child can enter	N/A
4.14.2	Masks and helmets	N/A
4.15	Toys intended to bear the mass of a child:	
4.15.1	Toys propelled by the child or by other means	N/A
4.15.2	Toy bicycles	N/A
4.15.3	Rocking horses and similar toys	N/A
4.15.4	Toys not propelled by a child	N/A
4.15.5	Toys scooters	N/A
4.16	Heavy immobile toys	N/A
4.17	Projectiles	N/A
4.18	Aquatic toys and inflatable toys	N/A
4.19	Percussion caps specifically designed for use in toys and toys using percussion caps	N/A
4.20	Acoustics	
4.20.2.1	General	N/A
4.20.2.2	Close-to-the-ear toys	N/A
4.20.2.3	Table-top or floor toys	N/A
4.20.2.4	Hand-held toys	N/A
4.20.2.5	Toys using headphones or earphones	N/A
4.20.2.6	Rattles	N/A
4.20.2.7	Squeeze toys	N/A
4.20.2.8	Pull-along or push toys	N/A
4.20.2.9	Percussion toys	N/A
4.20.2.10	Wind toys	N/A
4.20.2.11	Cap-firing toys	N/A
4.20.2.12	Voice toys	N/A
4.21	Toys containing a non-electrical heat source	N/A
4.22	Small balls	N/A

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

Note: P – Pass

N/A – Not Applicable

N/R – Not Request

Remark:

The caps are small parts as received. There should be appropriate age warning on toy or its packaging. As per client's request, no relevant package was provided with the tested sample(s), consequently, Section 7.1&7.2 in the request standard was not evaluated.

TO BE CONTINUED

TEST RESULT

Labeling Requirement

Test Request: Labeling requirement including Washing/Cleaning instruction, CE mark, importer / manufacturer name and address, product identification as specified in Directive 2009/48/EC – Safety of toys

	Observation Result	Location	Conclusion
Washing/Cleaning instruction	Not Applicable	--	--
CE mark	Not Present	--	See Note 1
Importer's Name & Address	Not Present	--	See Note 2
Manufacturer's Name & Address	Not Present	--	
Product ID	Present	Product	Pass

Note:

1. According to TSD 2009/48/EC, The CE marking shall be affixed before the toy is placed on the market and its height must be at least 5mm.
2. According to TSD 2009/48/EC, manufacturer's and Importer's name, registered trade name or registered trade mark and the address at which the manufacturer can be contacted must be indicated on the toy or, where that is not possible, on its packaging or in a document accompanying the toy.

Flammability of Toys

Test Request: As Specified in European Standard on Safety of Toys EN71 Part 2:2011+A1:2014

Section	Description	Result
4	Requirements	
4.1	General requirements	P
4.2	Toys to be worn on the head	N/A
4.3	Toy disguise costumes and toys intended to be worn by a child in play	N/A
4.4	Toys intended to be entered by a child.	N/A
4.5	Soft-filled toys (animals and dolls, etc) (Sample was not tested if its maximum dimension is 150mm or less.)	N/A

Remark:

P – Pass

NA – Not Applicable

TO BE CONTINUED

TEST RESULT

Migration of Certain Elements

Test Request: Migration of certain elements as specified in European Standard on Safety of Toys EN71 Part 3:2013+A1:2014

Test Method: Extractable Organic Tin –With reference to EN 71 Part 3:2013+A1:2014, analysis was performed by GC-MS.
 General elements – With reference to EN 71 Part 3:2013+A1:2014, analysis was performed by ICP-MS.
 Extractable Chromium(III) and Chromium(VI) – With reference to EN 71 Part 3:2013+A1:2014, analysis was performed by HPLC-ICP-MS.

Test Item(s):	Unit	Result					
		1*	2	3*	4	5	6
Category Type		III	II	II	II	II	II
Extractable Lead (Pb)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Antimony (Sb)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Arsenic (As)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Barium (Ba)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Cadmium (Cd)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Mercury (Hg)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Selenium (Se)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Boron (B)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Cobalt (Co)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Manganese (Mn)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Strontium (Sr)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Zinc (Zn)	mg/kg	ND	127	ND	ND	ND	ND
Extractable Copper (Cu)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Aluminum (Al)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Nickel (Ni)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Tin (Sn)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Organic Tin ^{#1}	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Chromium ^{#2}	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Chromium (III) (Cr III)	mg/kg	-	-	-	-	-	-
Extractable Chromium (VI) (Cr VI)	mg/kg	-	-	-	-	-	-

Remarks:

mg/kg = milligram per kilogram

MDL = Method Detection Limit

ND = Not Detected, less than MDL

* - The test result was calculated as if 100 mg of test portion had been used and the sample weight of test portion is less than 100 mg.

Note:

^{#1} - The migration of organic tin is expressed as tributyltin.

^{#2} - If the migration of total Chromium is below the maximum limit for Chromium (VI), it can be inferred that the material complies with the requirements for both Chromium(III) and Chromium(VI).

TO BE CONTINUED

TEST RESULT

Migration of Certain Elements

Test Request: Migration of certain elements as specified in European Standard on Safety of Toys EN71 Part 3:2013+A1:2014

Test Method: Extractable Organic Tin –With reference to EN 71 Part 3:2013+A1:2014, analysis was performed by GC-MS.
 General elements – With reference to EN 71 Part 3:2013+A1:2014, analysis was performed by ICP-MS.
 Extractable Chromium(III) and Chromium(VI) – With reference to EN 71 Part 3:2013+A1:2014, analysis was performed by HPLC-ICP-MS.

Test Item(s):	Unit	Result					
		7	8	9	10	11	12
Category Type		III	III	III	III	III	III
Extractable Lead (Pb)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Antimony (Sb)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Arsenic (As)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Barium (Ba)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Cadmium (Cd)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Mercury (Hg)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Selenium (Se)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Boron (B)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Cobalt (Co)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Manganese (Mn)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Strontium (Sr)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Zinc (Zn)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Copper (Cu)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Aluminum (Al)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Nickel (Ni)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Tin (Sn)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Organic Tin ^{#1}	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Chromium ^{#2}	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Chromium (III) (Cr III)	mg/kg	-	-	-	-	-	-
Extractable Chromium (VI) (Cr VI)	mg/kg	-	-	-	-	-	-

Remarks:

mg/kg = milligram per kilogram

MDL = Method Detection Limit

ND = Not Detected, less than MDL

Note:

^{#1} - The migration of organic tin is expressed as tributyltin.

^{#2} - If the migration of total Chromium is below the maximum limit for Chromium (VI), it can be inferred that the material complies with the requirements for both Chromium(III) and Chromium(VI).

TO BE CONTINUED

TEST RESULT

Migration of Certain Elements

Test Request: Migration of certain elements as specified in European Standard on Safety of Toys EN71 Part 3:2013+A1:2014

Test Method: Extractable Organic Tin –With reference to EN 71 Part 3:2013+A1:2014, analysis was performed by GC-MS.
 General elements – With reference to EN 71 Part 3:2013+A1:2014, analysis was performed by ICP-MS.
 Extractable Chromium(III) and Chromium(VI) – With reference to EN 71 Part 3:2013+A1:2014, analysis was performed by HPLC-ICP-MS.

Test Item(s):	Unit	Result					
		13	14	15	16	17	18
Category Type		III	III	III	III	III	III
Extractable Lead (Pb)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Antimony (Sb)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Arsenic (As)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Barium (Ba)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Cadmium (Cd)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Mercury (Hg)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Selenium (Se)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Boron (B)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Cobalt (Co)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Manganese (Mn)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Strontium (Sr)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Zinc (Zn)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Copper (Cu)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Aluminum (Al)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Nickel (Ni)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Tin (Sn)	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Organic Tin ^{#1}	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Chromium ^{#2}	mg/kg	ND	ND	ND	ND	ND	ND
Extractable Chromium (III) (Cr III)	mg/kg	-	-	-	-	-	-
Extractable Chromium (VI) (Cr VI)	mg/kg	-	-	-	-	-	-

Remarks:

mg/kg = milligram per kilogram

MDL = Method Detection Limit

ND = Not Detected, less than MDL

Note:

^{#1} - The migration of organic tin is expressed as tributyltin.

^{#2} - If the migration of total Chromium is below the maximum limit for Chromium (VI), it can be inferred that the material complies with the requirements for both Chromium(III) and Chromium(VI).

TO BE CONTINUED

TEST RESULT

Limits –MDL per category type:

Test Item(s):	Unit	Limit	MDL	Limit	MDL	Limit	MDL
Category Type		I		II		III	
Extractable Lead (Pb)	mg/kg	13.5	1	3.4	0.2	160	10
Extractable Antimony (Sb)	mg/kg	45	5	11.3	1	560	10
Extractable Arsenic (As)	mg/kg	3.8	0.2	0.9	0.1	47	5
Extractable Barium (Ba)	mg/kg	1500	50	375	10	18750	50
Extractable Cadmium (Cd)	mg/kg	1.3	0.1	0.3	0.05	17	1
Extractable Mercury (Hg)	mg/kg	7.5	0.5	1.9	0.2	94	10
Extractable Selenium (Se)	mg/kg	37.5	2	9.4	1	460	10
Extractable Boron (B)	mg/kg	1200	50	300	10	15000	50
Extractable Cobalt (Co)	mg/kg	10.5	1	2.6	0.2	130	10
Extractable Manganese (Mn)	mg/kg	1200	50	300	10	15000	50
Extractable Strontium (Sr)	mg/kg	4500	50	1125	50	56000	50
Extractable Zinc (Zn)	mg/kg	3750	50	938	50	46000	50
Extractable Copper (Cu)	mg/kg	622.5	10	156	10	7700	50
Extractable Aluminum (Al)	mg/kg	5625	50	1406	50	70000	50
Extractable Nickel (Ni)	mg/kg	75	5	18.8	2	930	10
Extractable Tin (Sn)	mg/kg	15000	50	3750	50	180000	50
Extractable Organic Tin ^{#1}	mg/kg	0.9	0.2	0.2	0.2	12	0.2
Extractable Chromium ^{#2}	mg/kg	-	0.02	-	0.005	-	0.02
Extractable Chromium (III) (Cr III)	mg/kg	37.5	2	9.4	1	460	10
Extractable Chromium (VI) (Cr VI)	mg/kg	0.02	0.02	0.005	0.005	0.2	0.1

Category I: dry, brittle, powder-like or pliable toy material

Category II: liquid or sticky toy material

Category III: scrapped-off toy material

“-“ : Not Regulated

TO BE CONTINUED

TEST RESULT

BS 7272-1:2008 - Writing and Marking Instruments

-Part 1: Specification for Caps to Reduce the Risk of Asphyxiation

1. Number of Test Specimen: 2 pieces
2. Test Result : details shown as following table

Clause	Test Requirement / Method	Result
3	Requirements	
3.1	General Caps shall conform to at least one of the following 3.2 or 3.3.	
3.2	Cap size When a cap is introduced with its main axis perpendicular to a 16mm diameter ring gauge of at least 19mm thickness, and part of the cap enters the gauge, at least 5mm of the length shall not enter under its own weight.	Pass
3.3	Ventilated caps air flow When tested in accordance with Annex A, caps shall permit a minimum air flow of 8L/min, measured at room temperature, with a maximum pressure drop of 1.33kPa.	/
3.4	Test report	
4	Identification Writing or marking instruments, or their packaging or accompanying documentation, shall be legibly and indelibly identified with the name, trademark or other means of identifying the manufacturer/supplier.	Pass

BS 7272-2:2008+A1:2014 - Writing and Marking Instruments

-Part 2: Specification for End Closures to Reduce the Risk of Asphyxiation

1. Number of Test Specimen: 2 pieces
2. Test Result : details shown as following table

Clause	Test Requirement / Method	Result
4	Requirements	
4.1	General Except for cap-like end closures and those secured by a thread, which shall conform to 4.7, other end closures shall conform to at least one of the following requirements. -Size -Security -Inaccessibility -Minimal protrusion or; -Air flow.	

TO BE CONTINUED

TEST RESULT

Clause	Test Requirement / Method	Result
4.2	Size An end closure shall not pass through a 16 mm diameter ring gauge of at least 19mm thickness under its own weight.	Pass
4.3	Security The end closure shall not be removed when subjected to a force of 50N applied in line with the body of the writing or marking instrument.	/
4.4	Inaccessibility The end closure when in the form of a plug shall be completely recessed, and be reasonably secure by withstanding minimum of force of 10N. When tested in accordance with Annex B, applied in line with the body of the writing or marking instrument.	/
4.5	Minimal protrusion The grippable surface of an end closure, when in the form of a plug, shall not extend more than 1 mm beyond the end of writing or marking instrument and overall the end closure shall not extend more than 3mm beyond the end of the writing or marking instrument, it shall be reasonably secure by withstanding a minimum force of 10N, when tested in accordance with Annex B, applied in line with the body of the writing or marking instrument.	/
4.6	Air flow An end closure shall meet the requirements of BS 7272-1:2008,3.3 and be reasonably secure by withstanding a minimum force of 10N, when tested in accordance with Annex B, applied in line with the body of the writing or marking instrument.	/
4.7	Additional safeguard For end closures that do not conform to 4.2(Size), if the end closure is either a) In the form of a cap and fits over the barrel (instead of inside it like a plug) and its length exceeds its diameter; or b) Secured by a screw thread but does not conform to requirement 4.4(Inaccessibility), Then it shall conform to 4.3(Security) and 4.6(Airflow).	/
5	Identification Writing or marking instruments, or their packaging or accompanying documentation, shall be legibly and indelibly identified with the name, trademark or other means of identifying the manufacturer/supplier.	Pass

*** END OF THE REPORT ***