

## TEST REPORT

Applicant: Qbi Globe INC.  
10F-3, No. 530, Yingcai Rd., West Dist.  
Taichung City 40360, Taiwan (R.O.C.)

Number : TWNH00102160

Issue Date : Sep 18, 2024

### Sample Description:

One (1) Group of Submitted Samples Said To Be :

Item Name	: Bulider - Fun and Learn STEM Track (Rainbow Playground Series)
Item No.	: 128
Quantity	: 1 Group
Vendor/Manufacturer	: RICH EASY TECHNOLOGY ENTERPRISE CO., LTD.
Country of Origin	: Taiwan
Goods Exported To	: America, Europe, Japan, Korea
Date Sample Received	: Sep 09, 2024
Date Test Started	: Sep 09, 2024

### Test Conducted:

As requested by the applicant, for details please refer to attached pages.

### Conclusion:

Please see page two.

### Remarks:

# = Results were transferred from report No. TWNH00100997 dated May 15, 2024.

Authorized By:  
On behalf of Intertek Testing Services  
Taiwan Limited

Matt Wang  
General Manager



Signed by:

Thomas Chou  
Manager



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Conclusion:

<u>Tested sample</u>	<u>Standard</u>	<u>Result</u>
Submitted Samples	Mechanical and physical properties — As per European standard on safety of toys EN 71 part 1: 2014 + A1 : 2018	Pass
	Flammability test — As per European standard on safety of toys EN 71 part 2: 2020	Pass
Tested Components of Submitted Samples	19 Toxic Element Migration Test — As per European standard on safety of toys EN 71-3: 2019+A1:2021	Pass (#)
	Phthalates Content — As per annex XVII items 51 and items 52 of the REACH regulation (EC) No. 1907/2006 and its amendment (EU) 2018/2005	Pass (#)
	Total Cadmium (Cd) Content — As per annex XVII item 23 of the REACH regulation (EC) No. 1907/2006	Pass (#)

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Matt Wang  
General Manager



Signed by:

*Thomas Chou*

Thomas Chou  
Manager



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### 1. Mechanical and Physical Properties

As per European standard on safety of toys EN 71 part 1:2014 + A1 : 2018

Appropriate age group for testing : For ages over 3 years

<u>Clause</u>	<u>Testing item</u>	<u>Assessment</u>
4*	General requirements	P
5	Toys intended for children under 36 months	NA
6	Packaging	NA
7*	Warnings, markings and instructions for use	P

Remarks : P = Pass ; NA = Not applicable  
\* = The following subclauses of the standard are found applicable :

- 1) 4.1 Material cleanliness
- 2) 4.7 Edges
- 3) 4.8 Points and metallic, wires
- 4) 4.20 Acoustics
- 5) 4.23 Magnets
- 6) 7.1 General
- 7) 7.2 Toys not intended for children under 36 months

### 2. Flammability Test

As per European standard on safety of toys EN 71 part 2 : 2020

<u>Clause</u>	<u>Testing item</u>	<u>Assessment</u>
4.1	General	
	— Cellulose nitrate	P
	— Highly flammable solids	P
	— Pile surface	NA
	— Flammable gases, extremely flammable liquids, highly flammable liquids, flammable liquids or flammable gels	NA
4.2	Toys to be worn on the head (5.2/5.3/5.4)	NA
4.3	Toy disguise costumes and toys intended to be worn by a child in play (5.4/5.5)	NA
4.4	Toys intended to be entered by a child (5.4)	NA
4.5	Soft-filled toys(5.5)	NA

Remarks : P = Pass  
NA = Not applicable



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### 3. 19 Toxic Element Migration Test

As per EN 71-3:2019+A1:2021 and followed by Inductively Coupled Plasma-Optical Emission Spectrometer (ICP-OES) and Inductively Coupled Plasma Mass Spectrometer (ICP-MS).  
Further confirmation test was determined by High Performance Liquid Chromatography with Diode Array Detection (HPLC-DAD), Liquid Chromatography /Inductively Coupled Plasma Mass Spectrometer (LC/ICP-MS), and Gas Chromatography-Mass Spectrometer (GC-MS) when necessary.

Category III: Scraped-off toy material

Element	Result (mg/kg)						Detection limit (mg/kg)	Limit (mg/kg)
	(1)	(2)	(3)	(4)	(5)	(6)		
Aluminium (Al)	ND	ND	ND	ND	ND	ND	300	28130
Antimony (Sb)	ND	ND	ND	ND	ND	ND	10	560
Arsenic (As)	ND	ND	ND	ND	ND	ND	10	47
Barium (Ba)	ND	ND	ND	ND	ND	ND	10	18750
Boron (B)	ND	ND	ND	ND	ND	ND	50	15000
Cadmium (Cd)	ND	ND	ND	ND	ND	ND	5	17
Chromium (III) (Cr(III))	ND	ND	ND	ND	ND	ND	10	460
Chromium (VI) (Cr(VI))	ND	ND	ND	ND	ND	ND	0.025	0.053
Cobalt (Co)	ND	ND	ND	ND	ND	ND	10	130
Copper (Cu)	ND	ND	ND	ND	ND	ND	10	7700
Lead (Pb)	ND	ND	ND	ND	ND	ND	10	23
Manganese (Mn)	ND	ND	ND	ND	ND	ND	10	15000
Mercury (Hg)	ND	ND	ND	ND	ND	ND	10	94
Nickel (Ni)	ND	ND	ND	ND	ND	ND	10	930
Selenium (Se)	ND	ND	ND	ND	ND	ND	10	460
Strontium (Sr)	ND	ND	ND	ND	ND	ND	100	56000
Tin (Sn)	ND	ND	ND	ND	ND	ND	10	180000
Organic tin	ND	ND	ND	ND	ND	ND	3.0	12
Zinc (Zn)	ND	ND	ND	ND	ND	ND	100	46000



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### 3. 19 Toxic Element Migration Test

Element	Result (mg/kg)						Detection limit (mg/kg)	Limit (mg/kg)
	(7)	(8)	(9)	(10)	(11)	(12)		
Aluminium (Al)	ND	ND	ND	ND	ND	ND	300	28130
Antimony (Sb)	ND	ND	ND	ND	ND	ND	10	560
Arsenic (As)	ND	ND	ND	ND	ND	ND	10	47
Barium (Ba)	ND	ND	ND	ND	ND	ND	10	18750
Boron (B)	ND	ND	ND	ND	ND	ND	50	15000
Cadmium (Cd)	ND	ND	ND	ND	ND	ND	5	17
Chromium (III) (Cr(III))	ND	ND	ND	ND	ND	ND	10	460
Chromium (VI) (Cr(VI))	ND	ND	ND	ND	ND	ND	0.025	0.053
Cobalt (Co)	ND	ND	ND	ND	ND	ND	10	130
Copper (Cu)	ND	ND	ND	ND	ND	ND	10	7700
Lead (Pb)	ND	ND	ND	ND	ND	ND	10	23
Manganese (Mn)	ND	ND	ND	ND	ND	ND	10	15000
Mercury (Hg)	ND	ND	ND	ND	ND	ND	10	94
Nickel (Ni)	ND	ND	ND	ND	ND	ND	10	930
Selenium (Se)	ND	ND	ND	ND	ND	ND	10	460
Strontium (Sr)	ND	ND	ND	ND	ND	ND	100	56000
Tin (Sn)	ND	ND	ND	ND	ND	ND	10	180000
Organic tin	ND	ND	ND	ND	ND	ND	3.0	12
Zinc (Zn)	ND	ND	ND	ND	ND	ND	100	46000

Element	Result (mg/kg)						Detection limit (mg/kg)	Limit (mg/kg)
	(13)	(14)	(15)	(16)	(17)	(18)		
Aluminium (Al)	ND	ND	ND	ND	ND	ND	300	28130
Antimony (Sb)	ND	ND	ND	ND	ND	ND	10	560
Arsenic (As)	ND	ND	ND	ND	ND	ND	10	47
Barium (Ba)	ND	ND	ND	ND	ND	ND	10	18750
Boron (B)	ND	ND	ND	ND	ND	ND	50	15000
Cadmium (Cd)	ND	ND	ND	ND	ND	ND	5	17
Chromium (III) (Cr(III))	ND	ND	ND	ND	ND	ND	10	460
Chromium (VI) (Cr(VI))	ND	ND	ND	ND	ND	ND	0.025	0.053
Cobalt (Co)	ND	ND	ND	ND	ND	ND	10	130
Copper (Cu)	ND	ND	ND	ND	ND	ND	10	7700
Lead (Pb)	ND	ND	ND	ND	ND	ND	10	23
Manganese (Mn)	ND	ND	ND	ND	ND	ND	10	15000
Mercury (Hg)	ND	ND	ND	ND	ND	ND	10	94
Nickel (Ni)	ND	ND	ND	ND	ND	ND	10	930
Selenium (Se)	ND	ND	ND	ND	ND	ND	10	460
Strontium (Sr)	ND	ND	ND	ND	ND	ND	100	56000
Tin (Sn)	ND	ND	ND	ND	ND	ND	10	180000
Organic tin	ND	ND	ND	ND	ND	ND	3.0	12
Zinc (Zn)	ND	ND	ND	ND	ND	ND	100	46000



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### 3. 19 Toxic Element Migration Test

Element	Result (mg/kg)					Detection limit (mg/kg)	Limit (mg/kg)
	(19)	(20)	(21)	(22)	(23)		
Aluminium (Al)	ND	ND	ND	ND	ND	300	28130
Antimony (Sb)	ND	ND	ND	ND	ND	10	560
Arsenic (As)	ND	ND	ND	ND	ND	10	47
Barium (Ba)	ND	ND	ND	ND	ND	10	18750
Boron (B)	ND	ND	ND	ND	ND	50	15000
Cadmium (Cd)	ND	ND	ND	ND	ND	5	17
Chromium (III) (Cr(III))	ND	ND	ND	ND	ND	10	460
Chromium (VI) (Cr(VI))	ND	ND	ND	ND	ND	0.025	0.053
Cobalt (Co)	ND	ND	ND	ND	ND	10	130
Copper (Cu)	ND	ND	ND	ND	ND	10	7700
Lead (Pb)	ND	ND	ND	ND	ND	10	23
Manganese (Mn)	ND	ND	ND	ND	ND	10	15000
Mercury (Hg)	ND	ND	ND	ND	ND	10	94
Nickel (Ni)	ND	ND	ND	ND	ND	10	930
Selenium (Se)	ND	ND	ND	ND	ND	10	460
Strontium (Sr)	ND	ND	ND	ND	ND	100	56000
Tin (Sn)	ND	ND	ND	ND	ND	10	180000
Organic tin	ND	ND	ND	ND	ND	3.0	12
Zinc (Zn)	ND	ND	ND	ND	ND	100	46000

Remarks: ND = Not detected

- Unless test result was marked with "Δ", organic tin content was derived from migration tin (Sn) content.
- According to the annex F to EN 71-3: 2019+A1:2021, the content of chromium (III) from the migration solution was calculated through the formula: chromium (III) = total chromium – chromium(VI).



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### 4. Phthalates Content

By solvent extraction and determined by Gas Chromatography-Mass Spectrometer (GC-MS).

I. Entry 51 of Annex XVII to Regulation (EC) No 1907/2006:

<u>Compound</u>	<u>(1/3)</u>	<u>Result (%)</u> <u>(2/9)</u>	<u>(4)</u>	<u>Limit (%)</u>
Diethyl hexyl phthalate (DEHP)	ND	ND	ND	0.1
Dibutyl phthalate (DBP)	ND	ND	ND	0.1
Benzyl butyl phthalate (BBP)	ND	ND	ND	0.1
Diisobutyl phthalate (DIBP)	ND	ND	ND	0.1
Sum of DEHP, DBP, BBP & DIBP	ND	ND	ND	0.1

<u>Compound</u>	<u>(5/6/7)</u>	<u>Result (%)</u> <u>(8)</u>	<u>(10/11/4)</u>	<u>Limit (%)</u>
Diethyl hexyl phthalate (DEHP)	ND	ND	ND	0.1
Dibutyl phthalate (DBP)	ND	ND	ND	0.1
Benzyl butyl phthalate (BBP)	ND	ND	ND	0.1
Diisobutyl phthalate (DIBP)	ND	ND	ND	0.1
Sum of DEHP, DBP, BBP & DIBP	ND	ND	ND	0.1

<u>Compound</u>	<u>(12/13)</u>	<u>Result (%)</u> <u>(15/16)</u>	<u>(17/18/19)</u>	<u>Limit (%)</u>
Diethyl hexyl phthalate (DEHP)	ND	ND	ND	0.1
Dibutyl phthalate (DBP)	ND	ND	ND	0.1
Benzyl butyl phthalate (BBP)	ND	ND	ND	0.1
Diisobutyl phthalate (DIBP)	ND	ND	ND	0.1
Sum of DEHP, DBP, BBP & DIBP	ND	ND	ND	0.1

<u>Compound</u>	<u>(20/21/22)</u>	<u>Result (%)</u> <u>(23)</u>	<u>Limit (%)</u>
Diethyl hexyl phthalate (DEHP)	ND	ND	0.1
Dibutyl phthalate (DBP)	ND	ND	0.1
Benzyl butyl phthalate (BBP)	ND	ND	0.1
Diisobutyl phthalate (DIBP)	ND	ND	0.1
Sum of DEHP, DBP, BBP & DIBP	ND	ND	0.1



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### 4. Phthalates Content

II. Entry 52 of Annex XVII to Regulation (EC) No 1907/2006:

<u>Compound</u>	<u>(1/3)</u>	<u>Result (%)</u> <u>(2/9)</u>	<u>(4)</u>	<u>Limit (%)</u>
Di-(iso-nonyl) phthalate (DINP)	ND	ND	ND	--
Di-(Iso-decyl) phthalate (DIDP)	ND	ND	ND	--
Di-(n-octyl) phthalate (DNOP)	ND	ND	ND	--
Sum of DINP, DIDP & DNOP	ND	ND	ND	0.1

<u>Compound</u>	<u>(5/6/7)</u>	<u>Result (%)</u> <u>(8)</u>	<u>(10/11/4)</u>	<u>Limit (%)</u>
Di-(iso-nonyl) phthalate (DINP)	ND	ND	ND	--
Di-(Iso-decyl) phthalate (DIDP)	ND	ND	ND	--
Di-(n-octyl) phthalate (DNOP)	ND	ND	ND	--
Sum of DINP, DIDP & DNOP	ND	ND	ND	0.1

<u>Compound</u>	<u>(12/13)</u>	<u>Result (%)</u> <u>(15/16)</u>	<u>(17/18/19)</u>	<u>Limit (%)</u>
Di-(iso-nonyl) phthalate (DINP)	ND	ND	ND	--
Di-(Iso-decyl) phthalate (DIDP)	ND	ND	ND	--
Di-(n-octyl) phthalate (DNOP)	ND	ND	ND	--
Sum of DINP, DIDP & DNOP	ND	ND	ND	0.1

<u>Compound</u>	<u>(20/21/22)</u>	<u>Result (%)</u> <u>(23)</u>	<u>Limit (%)</u>
Di-(iso-nonyl) phthalate (DINP)	ND	ND	--
Di-(Iso-decyl) phthalate (DIDP)	ND	ND	--
Di-(n-octyl) phthalate (DNOP)	ND	ND	--
Sum of DINP, DIDP & DNOP	ND	ND	0.1

Remarks: % = Percentage based on weight of tested sample

ND = Not detected

Detection limit = 0.005% (for each compound)

The above limits are quoted from Annex XVII Items 51 and Items 52 of the REACH regulation (EC) No. 1907/2006 and its amendment (EU) 2018/2005.





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### 5. Total Cadmium (Cd) Content

Acid digestion method was used and total cadmium content was determined by Inductively Coupled Plasma-Optical Emission Spectrometer (ICP-OES).

<u>Tested Component</u>	<u>Result (ppm)</u>	<u>Limit (ppm)</u>
(1/3)	ND	100
(2/9)	ND	100
(4)	ND	100
(5/6/7)	ND	1000
(8)	ND	100
(10/11/14)	ND	100
(12/13)	ND	100
(15/16)	ND	100
(17/18/19)	ND	100
(20/21/22)	ND	100
(23)	ND	100

Limit:

Not detected for cadmium plating

100 ppm for all plastic materials, paint contain less than 10% zinc, brazing fillers & metal parts of jewelry

1000 ppm for recovered PVC, coatings & paint contain greater than 10% zinc

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg

ND = Not detected

Detection limit = 5 ppm

Above limit was quoted according to annex XVII items 23 of the REACH regulation (EC) No. 1907/2006.



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Tested Components:

- (1) Black plastic wheel
  - (2) Black plastic car
  - (3) White plastic wheel
  - (4) Black soft plastic tire
  - (5) White coating on car
  - (6) Yellow coating on car
  - (7) Black coating on car
  - (8) Grey plastic base
  - (9) White plastic side
  - (10) Red plastic block
  - (11) Orange plastic block
  - (12) Yellow plastic block
  - (13) Teal plastic block
  - (14) Aqua blue plastic block
  - (15) Dark blue plastic block
  - (16) Purple plastic block
  - (17) Light pink plastic board
  - (18) Light yellow plastic board
  - (19) Sky blue plastic board
  - (20) Light greyish blue plastic board
  - (21) Light purple plastic board
  - (22) Light orange plastic block – Thin
  - (23) Light green plastic block - Thin
- 

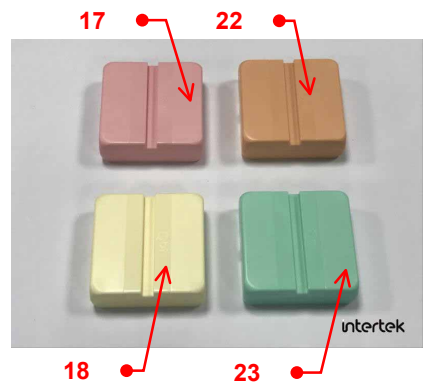
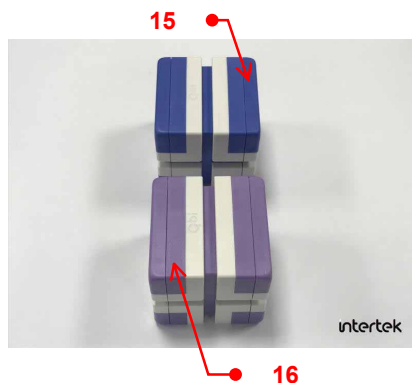
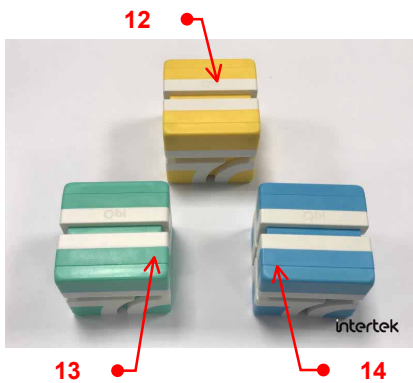
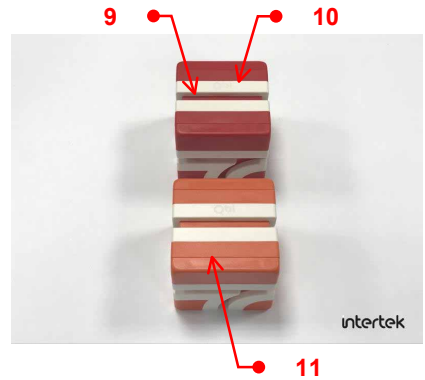
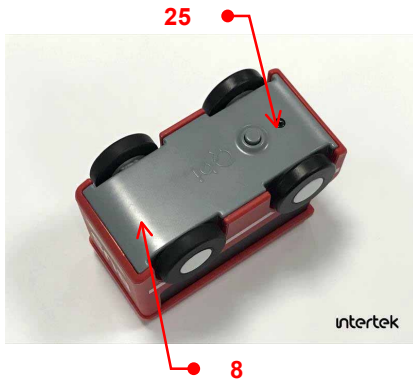
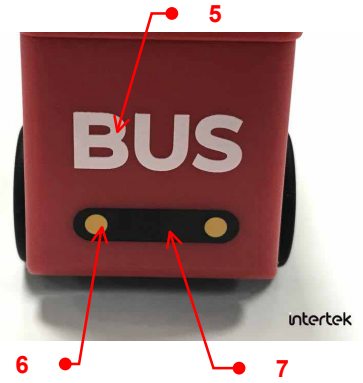
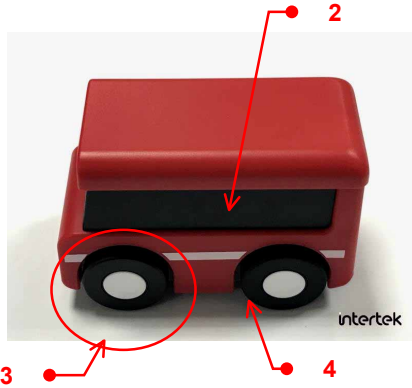


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Sample photo:

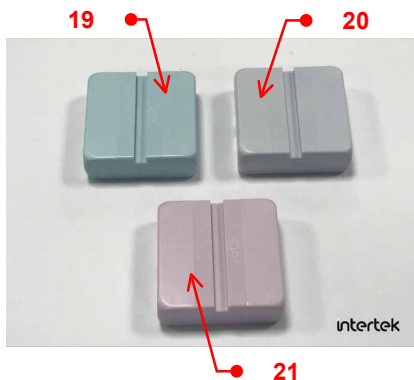
TWNH00102160



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Sample photo:



End of Report

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