

# TEST REPORT

Applicant: PETRON SPORTS LTD  
THE ARCHERY CENTRE  
BUCKLAND  
BUCKS  
ENGLAND  
HP22 5HZ

Number: HKGH02889844

Date: Jul 18, 2022

Sample and Information provided by customer :  
Item Name : **Sureshot Crossbow.**  
Item No. : **162/1.**  
Labelled Age Group : **6+.**  
Packaging Provided : **Yes.**  
Quantity : **4 Sets.**  
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For and on behalf of :  
Intertek Testing Services HK Ltd.



Cindy I.K. Chan  
Vice President



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**Conclusion:**

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

<u>Requirement</u>	<u>Result</u>
(1) EN 71-1:2014 + A1:2018 - Mechanical and physical properties	Pass
(2) EN 71-2:2020 - Flammability Test	Pass
(3) EN 71-3 : 2019 + A1 : 2021 - Migration of certain elements	Pass
(4) REACH Regulation (EC) no. 1907/2006, Annex XVII Items 51 & 52, amendment no. 552/2009 & 2018/2005 - Phthalates content	Pass
(5) REACH Regulation (EC) No.1907/2006 , Annex XVII Item 23 & amendment No. 2016/217 - Cadmium content requirement	Pass
(6) BS EN 71-1:2014 + A1:2018 - Mechanical and physical properties	Pass
(7) BS EN 71-2:2020 / EN 71-2:2020 - Flammability Test	Pass
(8) BS EN 71-2:2011 + A1:2014 - Flammability Test	Pass
(9) BS EN 71-3 : 2019 + A1 : 2021 - Migration of certain elements	Pass
(10) REACH Regulation (EC) no. 1907/2006, Annex XVII, Item 51 & 52 & amendment no. 552/2009 & 2018/2005 & The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019 No. 758) as amended - Phthalates content	Pass
(11) Cadmium Content Requirement in Annex XVII Entry 23 of the REACH Regulation (EC) No 1907/2006 and Amendment (EC) No 552/2009, (EU) No 494/2011, (EU) No 835/2012 and (EU) 2016/217 & The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019 No. 758) - Cadmium content requirement	Pass

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Decision Rule(s):

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

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

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(1) Mechanical and Physical Test

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

Age group for testing : For Ages Over 6 Years

Clause	Testing Items
8.3	Torque test (0.34 Nm)
8.4.2.1	Tension test (90 N)
8.4.2.4.1	Tension test for a non-foam shaft projectile with a suction cup (90 N)
8.4.2.5	Wall impact test for projectiles (3 times)

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



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

Abbreviation :      P = Pass                      NA = Not Applicable



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

### Marking

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

	Toy	Packaging
Manufacturer's name	Present	Present
Manufacturer's address	Present	Present
EU Importer's name	Absent #	Absent #
EU Importer's address	Absent #	Absent #
Product identification code	Present	Present
CE-marking	Present	Present

# = Great Britain-based authorised representatives will no longer be recognised in EU from 1 January 2021. Therefore, EU importer's name and address shall be indicated on the product itself.

Date sample received : Jun 02, 2022

Test Period : Jun 02, 2022 to Jul 05, 2022



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(2) Flammability Test

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

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

Abbreviation : P = Pass NA = Not Applicable

Date sample received : Jun 02, 2022

Test Period : Jun 02, 2022 to Jul 05, 2022



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(3) 19 Toxic Element Migration Test

Test Method : EN 71-3 : 2019 + A1 : 2021. Acid extraction method was used and toxic elements content were determined by Inductively Coupled Argon Plasma Spectrometry and Ion Chromatography- Inductively Coupled Plasma-Mass Spectrometry and/or Gas Chromatographic - Mass Spectrometry

Category (III): Scraped-off toy material:

	Result (mg/kg)			Limit (mg/kg)
	(1)	(4)	(5)	
Soluble Aluminium (Al)	<300	<300	<300	28130
Soluble Antimony (Sb)	<10	<10	<10	560
Soluble Arsenic (As)	<10	<10	<10	47
Soluble Barium (Ba)	<10	<10	<10	18750
Soluble Boron (B)	<50	<50	<50	15000
Soluble Cadmium (Cd)	<5	<5	<5	17
Soluble Chromium (III) (Cr III)	24	<10	<10	460
Soluble Chromium (VI) (Cr VI)	<0.025	<0.025	<0.025	0.053
Soluble Cobalt (Co)	<10	<10	<10	130
Soluble Copper (Cu)	<10	<10	<10	7700
Soluble Lead (Pb)	<10	<10	<10	23
Soluble Manganese (Mn)	230	<10	<10	15000
Soluble Mercury (Hg)	<10	<10	<10	94
Soluble Nickel (Ni)	<10	<10	<10	930
Soluble Selenium (Se)	<10	<10	<10	460
Soluble Strontium (Sr)	<100	<100	<100	56000
Soluble Tin (Sn)	<10	<10	<10	180000
Soluble Organic tin ++	<2.0	<2.0	<2.0	12
Soluble Zinc (Zn)	130	<100	<100	46000





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	Result (mg/kg)			Limit (mg/kg)
	(6)	(7)	(8)	
Soluble Aluminium (Al)	<300	<300	<300	28130
Soluble Antimony (Sb)	<10	<10	<10	560
Soluble Arsenic (As)	<10	<10	<10	47
Soluble Barium (Ba)	<10	<10	<10	18750
Soluble Boron (B)	<50	<50	<50	15000
Soluble Cadmium (Cd)	<5	<5	<5	17
Soluble Chromium (III) (Cr III)	<10	<10	<10	460
Soluble Chromium (VI) (Cr VI)	<0.025	<0.025	<0.025	0.053
Soluble Cobalt (Co)	<10	<10	<10	130
Soluble Copper (Cu)	<10	<10	<10	7700
Soluble Lead (Pb)	<10	<10	<10	23
Soluble Manganese (Mn)	<10	<10	<10	15000
Soluble Mercury (Hg)	<10	<10	<10	94
Soluble Nickel (Ni)	<10	<10	<10	930
Soluble Selenium (Se)	<10	<10	<10	460
Soluble Strontium (Sr)	<100	<100	<100	56000
Soluble Tin (Sn)	<10	<10	<10	180000
Soluble Organic tin ++	<2.0	<2.0	<2.0	12
Soluble Zinc (Zn)	<100	<100	<100	46000



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	Result (mg/kg)			Limit (mg/kg)
	(9)	(10)	(11)	
Soluble Aluminium (Al)	<300	<300	<300	28130
Soluble Antimony (Sb)	<10	<10	<10	560
Soluble Arsenic (As)	<10	<10	<10	47
Soluble Barium (Ba)	<10	<10	<10	18750
Soluble Boron (B)	<50	<50	<50	15000
Soluble Cadmium (Cd)	<5	<5	<5	17
Soluble Chromium (III) (Cr III)	<10	<10	<10	460
Soluble Chromium (VI) (Cr VI)	<0.025	<0.025	<0.025	0.053
Soluble Cobalt (Co)	<10	<10	<10	130
Soluble Copper (Cu)	<10	<10	<10	7700
Soluble Lead (Pb)	<10	<10	<10	23
Soluble Manganese (Mn)	<10	<10	<10	15000
Soluble Mercury (Hg)	<10	<10	<10	94
Soluble Nickel (Ni)	<10	<10	<10	930
Soluble Selenium (Se)	<10	<10	<10	460
Soluble Strontium (Sr)	<100	<100	<100	56000
Soluble Tin (Sn)	<10	<10	<10	180000
Soluble Organic tin ++	<2.0	<2.0	<2.0	12
Soluble Zinc (Zn)	<100	<100	<100	46000

mg/kg = milligram per kilogram

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

Organic tin test result was expressed as tributyl tin.

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

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



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## Tested Components:

- (1) Dull black coating on metal (bow spring).
- (2) @ Shiny black coating on metal (bow attachment plate, screw for attachment plate).
- (3) @ Black coating on plastic (bottom of bow body).
- (4) Orange plastic (dart, bow body).
- (5) Blue plastic (dart).
- (6) Yellow plastic (dart).
- (7) Black plastic (trigger, front, hammer of bow body, string holder of bow spring).
- (8) Dull black plastic (dart holder of bow body).
- (9) Shiny black plastic (suction cup of dart).
- (10) Paper label with transparent plastic film (sticker of bow body).
- (11) White fabric (string of bow spring).

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Test Period : Jun 02, 2022 to Jun 17, 2022



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(4) Phthalate Content Test

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

Seven Phthalates content:

Compound	Result (% w/w)			Limit (% w/w)
	(1/2/3)	(4/5)	(6/7)	
Dibutyl phthalate (DBP)	<0.01	<0.01	<0.01	--
Diethyl hexyl phthalate (DEHP)	<0.01	<0.01	<0.01	--
Benzyl butyl phthalate (BBP)	<0.01	<0.01	<0.01	--
Diisobutyl phthalate (DIBP)	<0.01	<0.01	<0.01	--
Sum of DBP, DEHP, BBP & DIBP	<0.01	<0.01	<0.01	0.1
Diisononyl phthalate (DINP)	<0.01	<0.01	<0.01	--
Di-n-octyl phthalate (DnOP)	<0.01	<0.01	<0.01	--
Diisodecyl phthalate (DIDP)	<0.01	<0.01	<0.01	--
Sum of DINP, DnOP & DIDP	<0.01	<0.01	<0.01	0.1

Compound	Result (% w/w)	Limit (% w/w)
	(8)	
Dibutyl phthalate (DBP)	<0.01	--
Diethyl hexyl phthalate (DEHP)	<0.01	--
Benzyl butyl phthalate (BBP)	<0.01	--
Diisobutyl phthalate (DIBP)	<0.01	--
Sum of DBP, DEHP, BBP & DIBP	<0.01	0.1
Diisononyl phthalate (DINP)	<0.01	--
Di-n-octyl phthalate (DnOP)	<0.01	--
Diisodecyl phthalate (DIDP)	<0.01	--
Sum of DINP, DnOP & DIDP	<0.01	0.1



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The above limit was quoted according to Annex XVII Items 51 & 52 of the REACH Regulation (EC) no. 1907/2006, amendment no. 552/2009 taking into account the (EU) regulation 2018/2005 modifying entry 51 for which the DIBP shall not be placed on the market after 7 July 2020 in toys or childcare articles, individually or in any combination with the first three phthalates which already exist in the entry 51, in a concentration equal to or greater than 0,1 % by weight of the plasticised material.

### Tested Components:

- (1) Orange plastic (dart, bow body).
- (2) Blue plastic (dart).
- (3) Yellow plastic (dart).
- (4) Black plastic (trigger, front, hammer of bow body, string holder of bow spring).
- (5) Dull black plastic (dart holder of bow body).
- (6) Shiny black plastic (suction cup of dart).
- (7) Paper label with transparent plastic film (sticker of bow body).
- (8) Coatings (dull black, shiny black, black) on sample (bow, spring, bow attachment plate, screw for attachment plate, bottom of bow body).

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**(5) Cadmium (Cd) Content**

Test Method : In House method TC008.TP. Acid digestion method was used and total Cadmium content was determined by Inductively Coupled Argon Plasma Spectrometry.

Tested Component	Result in %, w/w	Limit in %, w/w
(1/2/3)	ND	0.1
(4/5/6)	ND	0.01
(7/8)	ND	0.01
(9/10)	ND	0.01

ND : Not detected (< 0.0005%)

**Tested Components:**

- (1) Dull black coating on metal (bow spring).
- (2) Shiny black coating on metal (bow attachment plate, screw for attachment plate).
- (3) Black coating on plastic (bottom of bow body).
- (4) Orange plastic (dart, bow body).
- (5) Blue plastic (dart).
- (6) Yellow plastic (dart).
- (7) Black plastic (trigger, front, hammer of bow body, string holder of bow spring).
- (8) Dull black plastic (dart holder of bow body).
- (9) Shiny black plastic (suction cup of dart).
- (10) Paper label with transparent plastic film (sticker of bow body).

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(6) Physical and Mechanical Tests

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

Age group for testing : For Ages Over 6 Years

The submitted samples were undergone the following abuse tests:	
<u>Clause</u>	<u>Testing Items</u>
8.3	Torque test ( 0.34 Nm )
8.4.2.1	Tension test ( 90 N )
8.4.2.3	Protective components (60N)
8.4.2.4.1	Tension test for a non-foam shaft projectile with a suction cup (90N)
8.4.2.5	Wall impact test for projectiles (3 times)

<u>Clause</u>	<u>Requirement</u>	<u>Assessment</u>
4	General requirements	
4.1	Material cleanliness	P
4.2	Assembly	NA
4.3	Flexible plastic sheeting	NA
4.4	Toy bags	NA
4.5	Glass	NA
4.6	Expanding Materials	NA
4.7	Edges	P
4.8	Points and Metallic wires	P
4.9	Protruding parts	NA
4.10	Parts moving against each other	NA
4.11	Mouth actuated toys and other toys intended to be put into mouth	NA
4.12	Balloons	NA
4.13	Cords of toy kites and other flying toys	NA
4.14	Enclosures	NA
4.15	Toys intended to bear the mass of a child	NA
4.16	Heavy immobile toys	NA
4.17	Projectiles	P
4.18	Aquatic toys and inflatable toys	NA
4.19	Percussion caps specifically designed for use in toys and toys using percussion caps	NA
4.20	Acoustics	NA
4.21	Toys containing non -electrical heat source	NA



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Clause	Requirement	Assessment
4.22	Small balls	NA
4.23	Magnets	NA
4.24	Yo-yo balls	NA
4.25	Toys attached to food	NA
4.26	Toy Disguise Costumes	NA
4.27	Flying toys	NA
5	Toys intended for children under 36 months	
5.1	General requirements for toys intended for children under 36 months	NA
5.2	Soft-filled toys and soft-filled parts of a toy	NA
5.3	Plastic sheeting	NA
5.4	Cords, chains and electrical cables in toys	NA
5.5	Liquid filled toys	NA
5.6	Speed limitation of electrically driven ride-on toys	NA
5.7	Glass and porcelain	NA
5.8	Shape and size of certain toys	NA
5.9	Toys comprising monofilament fibres	NA
5.10	Small balls	NA
5.11	Play figures	NA
5.12	Hemispheric-shaped toys	NA
5.13	Suction cups	NA
5.14	Straps intended to be worn fully or partially around the neck	NA
5.15	Sledges with cords for pulling (7.24)	NA
6	Packaging	NA
7	Warnings, markings and instructions for use	
7.1	General	P
7.2	Toys not intended for children under 36 months	P
7.3	Latex balloons	NA
7.4	Aquatic toys	NA
7.5	Functional toys	NA
7.6	Hazardous sharp functional edges and points	NA
7.7	Projectile Toys	P
7.8	Imitation protective masks and helmets	NA
7.9	Toy kites	NA
7.10	Roller skates, inline skates, skateboards and certain other ride-on toys	NA
7.11	Toys intended to be attached to or strung across a cradle, cot, or perambulator	NA
7.12	Liquid-filled teethingers	NA
7.13	Percussion caps specifically designed for use in toys	NA
7.14	Acoustics	NA
7.15	Toy bicycles	NA
7.16	Toys intended to bear the mass of a child	NA
7.17	Toys comprising monofilament fibres	NA





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Clause	Requirement	Assessment
7.18	Toy scooters	NA
7.19	Rocking horses and similar toys	NA
7.20	Magnetic / electrical experimental sets	NA
7.21	Toys with electrical cables exceeding 300 mm in length	NA
7.22	Toys with cords or chains intended for children of 18 months and over but under 36 months	NA
7.23	Toys intended to be attached to a cradle, cot or perambulator	NA
7.24	Sledges with cords for pulling	NA
7.25	Flying toys	NA
7.26	Improvised projectiles	NA

Abbreviation : P = Pass NA = Not Applicable

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

**Marking**

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

After checking, it was found that

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

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

After checking, it was found that

	Toy	Packaging
UKCA marking	Present	Absent



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Date sample received : Jun 02, 2022  
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(7) Flammability Test

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

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

Abbreviation : P = Pass NA = Not Applicable

Date sample received : Jun 02, 2022  
Test Period : Jun 02, 2022 to Jul 05, 2022



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(8) Flammability Test

Test Standard : Standard on Safety of Toys BS EN 71-2:2011 + A1:2014

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

Abbreviation : P = Pass NA = Not Applicable

Date sample received : Jun 02, 2022

Test Period : Jun 02, 2022 to Jul 05, 2022



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(9) 19 Toxic Element Migration Test

Test Method : BS EN 71-3 : 2019 + A1 : 2021. Acid extraction method was used and toxic elements content were determined by Inductively Coupled Argon Plasma Spectrometry and Ion Chromatography- Inductively Coupled Plasma-Mass Spectrometry and/or Gas Chromatographic - Mass Spectrometry

Category (III): Scraped-off toy material:

	Result (mg/kg)			Limit (mg/kg)
	(1)	(4)	(5)	
Soluble Aluminium (Al)	<300	<300	<300	28130
Soluble Antimony (Sb)	<10	<10	<10	560
Soluble Arsenic (As)	<10	<10	<10	47
Soluble Barium (Ba)	<10	<10	<10	18750
Soluble Boron (B)	<50	<50	<50	15000
Soluble Cadmium (Cd)	<5	<5	<5	17
Soluble Chromium (III) (Cr III)	24	<10	<10	460
Soluble Chromium (VI) (Cr VI)	<0.025	<0.025	<0.025	0.053
Soluble Cobalt (Co)	<10	<10	<10	130
Soluble Copper (Cu)	<10	<10	<10	7700
Soluble Lead (Pb)	<10	<10	<10	23
Soluble Manganese (Mn)	230	<10	<10	15000
Soluble Mercury (Hg)	<10	<10	<10	94
Soluble Nickel (Ni)	<10	<10	<10	930
Soluble Selenium (Se)	<10	<10	<10	460
Soluble Strontium (Sr)	<100	<100	<100	56000
Soluble Tin (Sn)	<10	<10	<10	180000
Soluble Organic tin ++	<2.0	<2.0	<2.0	12
Soluble Zinc (Zn)	130	<100	<100	46000



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	Result (mg/kg)			Limit (mg/kg)
	(6)	(7)	(8)	
Soluble Aluminium (Al)	<300	<300	<300	28130
Soluble Antimony (Sb)	<10	<10	<10	560
Soluble Arsenic (As)	<10	<10	<10	47
Soluble Barium (Ba)	<10	<10	<10	18750
Soluble Boron (B)	<50	<50	<50	15000
Soluble Cadmium (Cd)	<5	<5	<5	17
Soluble Chromium (III) (Cr III)	<10	<10	<10	460
Soluble Chromium (VI) (Cr VI)	<0.025	<0.025	<0.025	0.053
Soluble Cobalt (Co)	<10	<10	<10	130
Soluble Copper (Cu)	<10	<10	<10	7700
Soluble Lead (Pb)	<10	<10	<10	23
Soluble Manganese (Mn)	<10	<10	<10	15000
Soluble Mercury (Hg)	<10	<10	<10	94
Soluble Nickel (Ni)	<10	<10	<10	930
Soluble Selenium (Se)	<10	<10	<10	460
Soluble Strontium (Sr)	<100	<100	<100	56000
Soluble Tin (Sn)	<10	<10	<10	180000
Soluble Organic tin ++	<2.0	<2.0	<2.0	12
Soluble Zinc (Zn)	<100	<100	<100	46000



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	Result (mg/kg)			Limit (mg/kg)
	(9)	(10)	(11)	
Soluble Aluminium (Al)	<300	<300	<300	28130
Soluble Antimony (Sb)	<10	<10	<10	560
Soluble Arsenic (As)	<10	<10	<10	47
Soluble Barium (Ba)	<10	<10	<10	18750
Soluble Boron (B)	<50	<50	<50	15000
Soluble Cadmium (Cd)	<5	<5	<5	17
Soluble Chromium (III) (Cr III)	<10	<10	<10	460
Soluble Chromium (VI) (Cr VI)	<0.025	<0.025	<0.025	0.053
Soluble Cobalt (Co)	<10	<10	<10	130
Soluble Copper (Cu)	<10	<10	<10	7700
Soluble Lead (Pb)	<10	<10	<10	23
Soluble Manganese (Mn)	<10	<10	<10	15000
Soluble Mercury (Hg)	<10	<10	<10	94
Soluble Nickel (Ni)	<10	<10	<10	930
Soluble Selenium (Se)	<10	<10	<10	460
Soluble Strontium (Sr)	<100	<100	<100	56000
Soluble Tin (Sn)	<10	<10	<10	180000
Soluble Organic tin ++	<2.0	<2.0	<2.0	12
Soluble Zinc (Zn)	<100	<100	<100	46000

mg/kg = milligram per kilogram

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

Organic tin test result was expressed as tributyl tin.

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

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



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## Tested Components:

- (1) Dull black coating on metal (bow spring).
- (2) @ Shiny black coating on metal (bow attachment plate, screw for attachment plate).
- (3) @ Black coating on plastic (bottom of bow body).
- (4) Orange plastic (dart, bow body).
- (5) Blue plastic (dart).
- (6) Yellow plastic (dart).
- (7) Black plastic (trigger, front, hammer of bow body, string holder of bow spring).
- (8) Dull black plastic (dart holder of bow body).
- (9) Shiny black plastic (suction cup of dart).
- (10) Paper label with transparent plastic film (sticker of bow body).
- (11) White fabric (string of bow spring).

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(10) Phthalate Content Test

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

Seven Phthalates content:

Compound	Result (% w/w)			Limit (% w/w)
	(1/2/3)	(4/5)	(6/7)	
Dibutyl phthalate (DBP)	<0.01	<0.01	<0.01	--
Diethyl hexyl phthalate (DEHP)	<0.01	<0.01	<0.01	--
Benzyl butyl phthalate (BBP)	<0.01	<0.01	<0.01	--
Diisobutyl phthalate (DIBP)	<0.01	<0.01	<0.01	--
Sum of DBP, DEHP, BBP & DIBP	<0.01	<0.01	<0.01	0.1
Diisononyl phthalate (DINP)	<0.01	<0.01	<0.01	--
Di-n-octyl phthalate (DnOP)	<0.01	<0.01	<0.01	--
Diisodecyl phthalate (DIDP)	<0.01	<0.01	<0.01	--
Sum of DINP, DnOP & DIDP	<0.01	<0.01	<0.01	0.1

Compound	Result (% w/w)	Limit (% w/w)
	(8)	
Dibutyl phthalate (DBP)	<0.01	--
Diethyl hexyl phthalate (DEHP)	<0.01	--
Benzyl butyl phthalate (BBP)	<0.01	--
Diisobutyl phthalate (DIBP)	<0.01	--
Sum of DBP, DEHP, BBP & DIBP	<0.01	0.1
Diisononyl phthalate (DINP)	<0.01	--
Di-n-octyl phthalate (DnOP)	<0.01	--
Diisodecyl phthalate (DIDP)	<0.01	--
Sum of DINP, DnOP & DIDP	<0.01	0.1





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

### Tested Components:

- (1) Orange plastic (dart, bow body).
- (2) Blue plastic (dart).
- (3) Yellow plastic (dart).
- (4) Black plastic (trigger, front, hammer of bow body, string holder of bow spring).
- (5) Dull black plastic (dart holder of bow body).
- (6) Shiny black plastic (suction cup of dart).
- (7) Paper label with transparent plastic film (sticker of bow body).
- (8) Coatings (dull black, shiny black, black) on sample (bow, spring, bow attachment plate, screw for attachment plate, bottom of bow body).

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(11) Cadmium (Cd) Content

Test Method : In House method TC008.TP. Acid digestion method was used and total Cadmium content was determined by Inductively Coupled Argon Plasma Spectrometry.

Tested Component	Result in %, w/w	Limit in %, w/w
(1/2/3)	ND	0.1
(4/5/6)	ND	0.01
(7/8)	ND	0.01
(9/10)	ND	0.01

ND : Not detected (< 0.0005%)

## Tested Components:

- (1) Dull black coating on metal (bow spring).
- (2) Shiny black coating on metal (bow attachment plate, screw for attachment plate).
- (3) Black coating on plastic (bottom of bow body).
- (4) Orange plastic (dart, bow body).
- (5) Blue plastic (dart).
- (6) Yellow plastic (dart).
- (7) Black plastic (trigger, front, hammer of bow body, string holder of bow spring).
- (8) Dull black plastic (dart holder of bow body).
- (9) Shiny black plastic (suction cup of dart).
- (10) Paper label with transparent plastic film (sticker of bow body).

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End of report

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