TEST REPORT

Applicant	:	**STEAM Academy PRO PBC**
Address	:	**16192 Coastal Highway, Lewes, DE 19958**
Manufacturer's name	:	**Shenzhen Sunbloom Technology Company Limited**
Address	:	**Room 801A, 8F, A7 Building, Tianrui Industrial Park, No. 35 Fuyuanyi Rd, Baoan district, Shenzhen City, Guangdong, China 518103**

Report on the submitted samples said to be:

Sample Name	:	Revolution Robotics Challenge Kit
Sample Description	:	N/A
Trade Mark	:	Revolution Robotics 88129312
Model No.	:	SA-RR-CK 2.0
ASIN	:	N/A
Labeled Age Grading	:	4~12 Years old
Requested Age Grading	:	4~12 Years old
Age Group Applied in Testing	:	4~12 Years old
Sample reception time	:	August 14, 2024
Testing Period	:	August 14, 2024 ~ August 20, 2024
Test request	:	Please refer to next page(s).
Test method	:	Please refer to next page(s).
Results	:	Please refer to next page(s).

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Redact By Yetta Reviewed By lala

Issued By Sophia Date of issue September 03, 2024

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TEST REQUEST		CONCLUSION
A	As specified in title 16, code of federal regulations, chapter II - consumer products safety commission of U.S.A	
	1. 16 CFR 1500.50.51.52.53 Simulating use and abuse of toys	Pass
	2. 16 CFR 1501 Small Objects	Pass
	3. 16 CFR 1500.48 Sharp point	Pass
	4. 16 CFR 1500.49 Sharp edge	Pass
B	CPSIA section 101(a)(2)-Lead in accessible substrate materials and 15 U.S.C. § 1278a Lead in Children's products	Pass
C	Consumer Product Safety Commission 16 CFR Ch.II Part 1303 – Ban of Lead in paint and similar surface coating	Pass
D	US Consumer Products Safety Improvement Act of 2008(H.R. 4040) title 1, section 108 requirement on phthalates content	Pass
E	ASTM F963-23 Standard Consumer Safety Specification for Toy Safety	
	1-. ASTM F963-23: Mechanical and Physical Tests	Pass
	2-. ASTM F963-23: Flammability Tests	Pass
	3-. ASTM F963-23: 4.3.5 Toxic Elements Test	Pass
	4-. ASTM F963-23: 4.3.8 Phthalates Test	Pass
F	CPSIA Section 103 Tracking Labels for Children’s Products	Pass

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Results:

A. As specified in title 16, code of federal regulations, chapter II - consumer products safety commission of U.S.A

Section	Description	Result
16 CFR 1500.50.51.52.53	Normal use testing	Pass
	Abuse testing	
	Impact test (53b)	Pass
	Bite test	N/A
	Flexure test	N/A
	Torque test(53e)	N/A
	Tension test(53f)	N/A
	Compression test(53g)	N/A
16 CFR 1501	Identifying toys and other articles intended for use by children under 3 years of age which present choking, aspiration, or ingestion hazards because of small parts.	N/A
16 CFR 1500.48	Technical requirements for determining a sharp point in toys and other articles intended for use by children under 8 years of age.	Pass
16 CFR 1500.49	Technical requirements for determining a sharp metal or glass edge in toys and other articles intended for use by children under 8 years of age.	Pass

-- NA = Not Applicable

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Tested part(s):

(1)	Blue plastic	(4)	White plastic	(7)	Green line skin
(2)	Yellow plastic	(5)	Black plastic	(8)	Blue thread skin
(3)	Green plastic	(6)	transparent plastic	(9)	Black thread skin

B. US Consumer Products Safety Improvement Act of 2008(H.R. 4040) title 1, section 101 for total lead content

Test method: With reference to CPSC-CH-E1001-08.3 & CPSC-CH-E1002-08.3 and 15 U.S.C. § 1278a by acid digestion and analysis was performed by inductively coupled plasma atomic emission spectrometer (ICP-OES)

Total Lead Content.

Item	Unit	MDL	Results			Limit
			1+2+3	4+5+6	7+8+9	
Lead Content (Pb)	mg/kg	2	N.D.	N.D.	N.D.	100
Conclusion	/	/	**Pass**	**Pass**	**Pass**	/

C. Consumer Product Safety Commission 16 CFR Ch.II Part 1303 – Ban of Lead in paint and similar surface coating

Test method:

Lead in paint and other similar surface coatings: With reference to CPSC-CH-E1003-09.1,sample was digested with acid mixture and analyzed by inductively coupled plasma atomic emission spectrometer (ICP-OES)

Total Lead Content in Paint/Similar Surface Coating Materials.

Item	Unit	MDL	Results			Limit
			1+2+3*	4+5+6*	7+8+9*	
Lead Content (Pb)	mg/kg	2	N.D.	N.D.	N.D.	90
Conclusion	/	/	**Pass**	**Pass**	**Pass**	/

Note:

- N.D. = Not Detected or less than MDL
- MDL = Method Detection Limit
- 0.1% = 1000mg/kg, mg/kg = ppm
- *= This test point are not applicable for this item.

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D. US Consumer Products Safety Improvement Act of 2008(H.R. 4040) title 1, section 108 requirement on phthalates content

Test method: With reference to CPSC-CH-C1001-09.4, by solvent extraction and analysis was performed by gas chromatographic-mass spectrometer (GC-MS).

Item	CAS No.	Unit	MDL	Results			Limit
				1+2+3	4+5+6	7+8+9	
Dibutyl Phthalate (DBP)	84-74-2	mg/kg	50	N.D.	N.D.	N.D.	1000
Benzyl butyl Phthalate (BBP)	85-68-7	mg/kg	50	N.D.	N.D.	N.D.	1000
Bis-(2-ethylhexyl) Phthalate (DEHP)	117-81-7	mg/kg	50	N.D.	N.D.	N.D.	1000
Di-n-hexyl phthalate (DHEXP)	68515-50-4	mg/kg	50	N.D.	N.D.	N.D.	1000
Diisononyl Phthalate (DINP)	28553-12-0	mg/kg	50	N.D.	N.D.	N.D.	1000
Di-n-pentyl phthalate (DPENP)	131-18-0	mg/kg	50	N.D.	N.D.	N.D.	1000
Dicycphexyl Phthalate (DCHP)	84-61-7	mg/kg	50	N.D.	N.D.	N.D.	1000
Diisobutyl Phthalate (DIBP)	84-69-5	mg/kg	50	N.D.	N.D.	N.D.	1000
Conclusion	/	/	/	**Pass**	**Pass**	**Pass**	/

Note:

- N.D. = Not Detected or less than MDL
- MDL = Method Detection Limit
- 0.1% = 1000mg/kg, mg/kg = ppm
- *= This test point are not applicable for this item.

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E. ASTM F963-23:

E.1. Safety aspects related to Mechanical and physical properties

Section	Description	Result
4	Safety requirements	
4.1	Material quality	Pass
4.3	Toxicology	
4.3.7	Stuffing Materials	N/A
4.4	Electrical/thermal energy	N/A
4.5	Sound producing toys	N/A
4.6	Small objects	
4.6.1	Toys that are intended for children under 36 months	N/A
4.6.2	Mouth-Actuated Toys	N/A
4.6.3	Toys and games that are intended for use by children who are at least three years old (36 months) but less than six years of age (72 months)	Pass
4.7	Accessible edges	Pass
4.8	Projections	Pass
4.9	Accessible points	Pass
4.10	Wires or rods	N/A
4.11	Nails and fasteners	N/A
4.12	Packaging film	Pass
4.13	Folding mechanisms and hinges	
4.13.1	Folding mechanisms	N/A
4.13.2	Hinge-Line Clearance	N/A
4.14	Cords and elastics in toys	N/A
4.15	Stability and over-load requirements	N/A
4.16	Confined spaces	N/A
4.17	Wheels, tires, and axles	N/A
4.18	Holes, clearance, and accessibility of mechanisms	Pass
4.19	Simulated protective devices	N/A
4.20	Pacifiers	N/A
4.21	Projectile toys	N/A
4.22	Teethers and teething toys	N/A
4.23	Rattles	N/A
4.24	Squeeze toys	N/A
4.25	Battery-operated toys	
4.25.1	Battery marking	Pass
4.25.2	Maximum allowable direct current potential	Pass

Section	Description	Result
4.25.3	Design for battery-operated toys	Pass
4.25.4	Battery Accessibility	Pass
4.25.5	Batteries of different types or capacities shall not be mixed within any single electrical circuit. In applications requiring more than one type or capacity of battery to provide different functions or in applications requiring the combination of alternating current and non-rechargeable batteries, each circuit shall be isolated electrically to prevent current from flowing between the individual circuits.	Pass
4.25.6	The surfaces of the batteries shall not achieve temperatures exceeding 71 ℃.	Pass
4.25.7	No condition shall occur that would cause the toy to fail the temperature requirements of 4.25.6 or present a combustion hazard as described in 4.25.	Pass
4.25.8	Do not mix old and new batteries. Do not mix alkaline, standard (carbon-zinc), or rechargeable batteries Toys which use non-replaceable batteries as the only source of power are not subject to the above.	Pass
4.25.9	Battery-powered Ride-on Toys	Pass
4.25.10	Toys that Contain Secondary Cells or Secondary Batteries	N/A
4.26	Toys intended to be attached to a crib or playpen	N/A
4.27	Stuffed and beanbag-type toys	N/A
4.28	Stroller carriage toys	N/A
4.29	Art materials	N/A
4.30	Toy gun marking	N/A
4.31	Balloons	N/A
4.32	Certain toys with spherical ends	N/A
4.33	Marbles	N/A
4.34	Balls	N/A
4.35	Pompoms	N/A
4.36	Hemispheric-shaped objects	N/A
4.37	Yo Yo elastic tether toys	N/A
4.38	Magnets	N/A
4.39	Jaw entrapment in handles and steering wheels	N/A
4.40	Expanding Materials	N/A
4.41	Toy chests	N/A
5	Safety labeling requirements	N/A
6	Instructional literature	N/A
7	Producer’s markings	N/A

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Test Parameters for Use and abuse testing

Test	Age Category of Intended User, months	Numerical Value	
		Stated by the Voluntary Standard	Recommended for Toy Manufactures
Drop test	Over 36 to 96	4x3.0ft±0.5in.(91cm)	3ft, 0.5in.(0.93m)
Torque test	Over 36 to 96	4±0.2in. · 1bf(0.45N.m)	4.2in. · 1bf(0.47N.m)
Tension test	Over 36 to 96	15±051bf(66.8N)	15.51bf(69.0N)

Note:1. As per client's requirement, the sample(s) was evaluated for use by children 4~12 Years old
2. N/A =Not Application

E.2. Flammability

Flammability test of material

Ref.: ASTM F963-23 Section 4.2

Method used: Federal Hazardous Substances Act FHSA 16 CFR 1500.44

Sample	Burn rate (in/sec.)	Result
Revolution Robotics Challenge Kit	Did Not Ignite	Pass

Note: In accordance with the ASTM F963, the burning rate should not be greater than 0.1 inch per second.
DNI = Did Not Ignited SE = Self-Extinguished IBE = Ignite But Extinguished

E.3. Heavy Metals Tests

1) Total Lead Content

Test method: ASTM F963-23-Total Lead Content (Clause 4.3.5.1) – Wet acid digestion., Analysis was performed by inductively coupled plasma atomic emission spectrometer (ICP-OES)

Item	Unit	MDL	Results			Limit
			1+2+3	4+5+6	7+8+9	
Lead Content (Pb)	mg/kg	2	N.D.	N.D.	N.D.	100
Conclusion	/	/	**Pass**	**Pass**	**Pass**	/

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2) Heavy Metals Content

Test method: ASTM F963-23: Soluble element Contents (Clause 4.3.5.2) - Samples were extracted by dilute hydrochloric acid in accordance with ASTM F963-23 (Clause 8.3), Analysis was performed by inductively coupled plasma atomic emission spectrometer (ICP-OES)

Item	Unit	MDL	Results			Limit
			1+2+3	4+5+6	7+8+9	
Soluble Lead (Pb)	mg/kg	2	N.D.	N.D.	N.D.	90
Soluble Antimony (Sb)	mg/kg	2	N.D.	N.D.	N.D.	60
Soluble Arsenic (As)	mg/kg	2	N.D.	N.D.	N.D.	25
Soluble Barium (Ba)	mg/kg	2	N.D.	N.D.	N.D.	1000
Soluble Cadmium (Cd)	mg/kg	2	N.D.	N.D.	N.D.	75
Soluble Chromium (Cr)	mg/kg	2	N.D.	N.D.	N.D.	60
Soluble Mercury (Hg)	mg/kg	2	N.D.	N.D.	N.D.	60
Soluble Selenium (Se)	mg/kg	2	N.D.	N.D.	N.D.	500
Conclusion	/	/	**Pass**	**Pass**	**Pass**	/

Note:

- N.D. = Not Detected or less than MDL
- MDL = Method Detection Limit
- 0.1% = 1000mg/kg, mg/kg = ppm

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E.4. Phthalates Test

Test method: With reference to 16 CFR 1307, CPSC-CH-C1001-09.4, by solvent extraction and analysis was performed by gas chromatographic-mass spectrometer (GC-MS).

Item	CAS No.	Unit	MDL	Results			Limit
				1+2+3	4+5+6	7+8+9	
Dibutyl Phthalate (DBP)	84-74-2	mg/kg	50	N.D.	N.D.	N.D.	1000
Benzyl butyl Phthalate (BBP)	85-68-7	mg/kg	50	N.D.	N.D.	N.D.	1000
Bis-(2-ethylhexyl) Phthalate (DEHP)	117-81-7	mg/kg	50	N.D.	N.D.	N.D.	1000
Di-n-hexyl phthalate (DHEXP)	68515-50-4	mg/kg	50	N.D.	N.D.	N.D.	1000
Diisononyl Phthalate (DINP)	28553-12-0	mg/kg	50	N.D.	N.D.	N.D.	1000
Di-n-pentyl phthalate (DPENP)	131-18-0	mg/kg	50	N.D.	N.D.	N.D.	1000
Dicycphexyl Phthalate (DCHP)	84-61-7	mg/kg	50	N.D.	N.D.	N.D.	1000
Diisobutyl Phthalate (DIBP)	84-69-5	mg/kg	50	N.D.	N.D.	N.D.	1000
Conclusion	/	/	/	**Pass**	**Pass**	**Pass**	/

Note:

- N.D. = Not Detected or less than MDL
- MDL = Method Detection Limit
- 0.1% = 1000mg/kg, mg/kg = ppm
- Flow chart appendix is included.
- Photo appendix is included.

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F. CPSIA Section 103 - Tracking Labels for Children's Products

Description	Result
a) Is the product intended for children under 12 years? If no, the section is not applicable.	Pass
b) Is the product under the exemption of marking on children's product?	Pass
1.Product is too small to be marked.	Pass
2.Products stay with or be contained in their original packaging.	Pass
3.Product is sold through a bulk vending machine.	N/A
4.Physical mark would weaken or damage the product or impair its utility.	Pass
5.Product surface would be impossible to mark permanently.	Pass
6.Aesthetics of the product would be ruined by a mark.	Pass
c) Is the product and packaging or only packaging (for product exempted from the marking) marked below information?	Pass
Name of the manufacturer or the name of the private labeler. (Name:Shenzhen Sunbloom Technology Company Limited)	Pass
Manufacturer or private labeler location, including the name of the country, and the name or other means of coding of city and state. (Location:Room 801A, 8F, A7 Building, Tianrui Industrial Park, No. 35 Fuyuanyi Rd, Baoan district, Shenzhen City, Guangdong, China 518103)	Pass
3) Date of production of the product, in a form of MM/YY or any other coding system. (Date:N/A)	N/A
4) Cohort information (including the batch, run number, or another identifying characteristic). (Model No.: SA-RR-CK 2.0)	Pass
d) Is the label permanent after below permanency testing?	Pass

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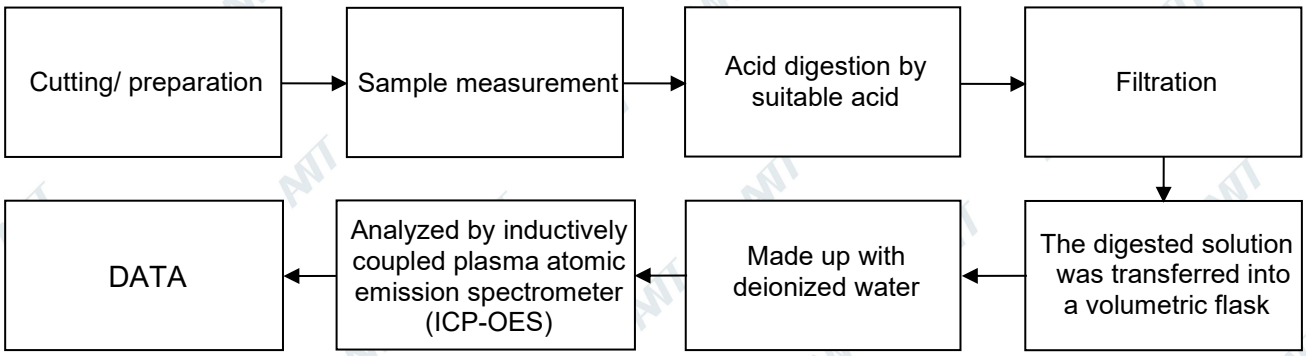
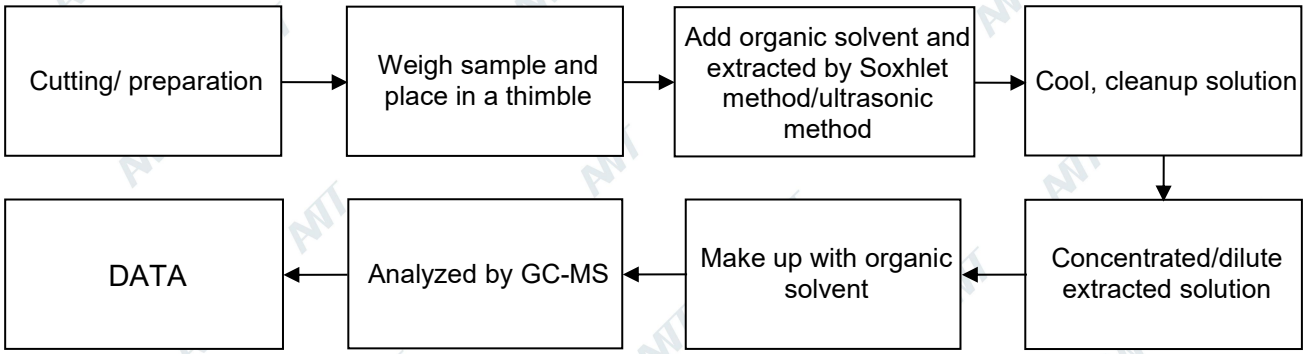
Appendix

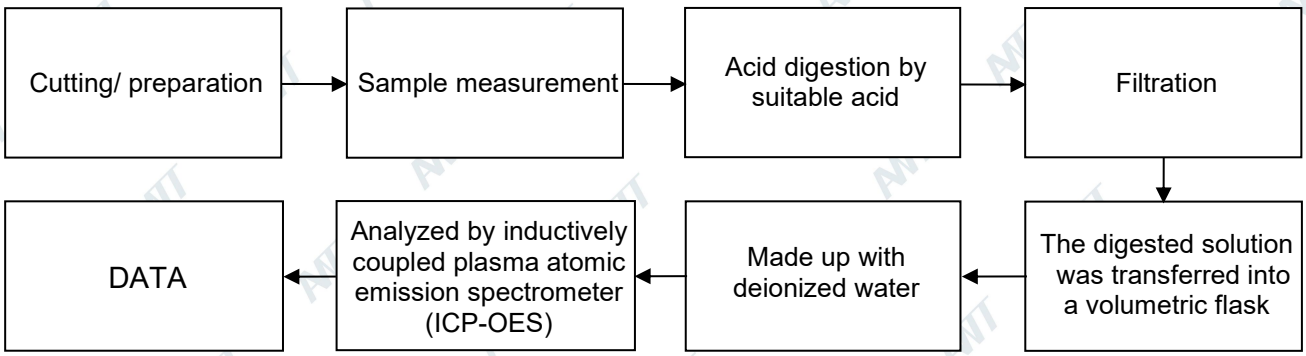
A. Test flow chart for Total Lead Content:



B. Test flow chart for Phthalates content:



C. Test flow chart for Lead, Cadmium, Mercury and Hexavalent Chromium content:



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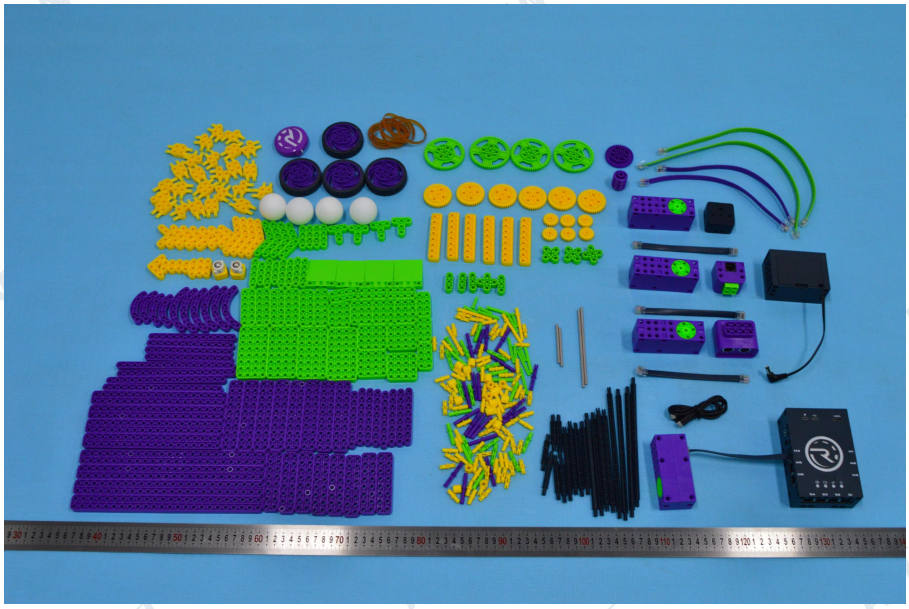
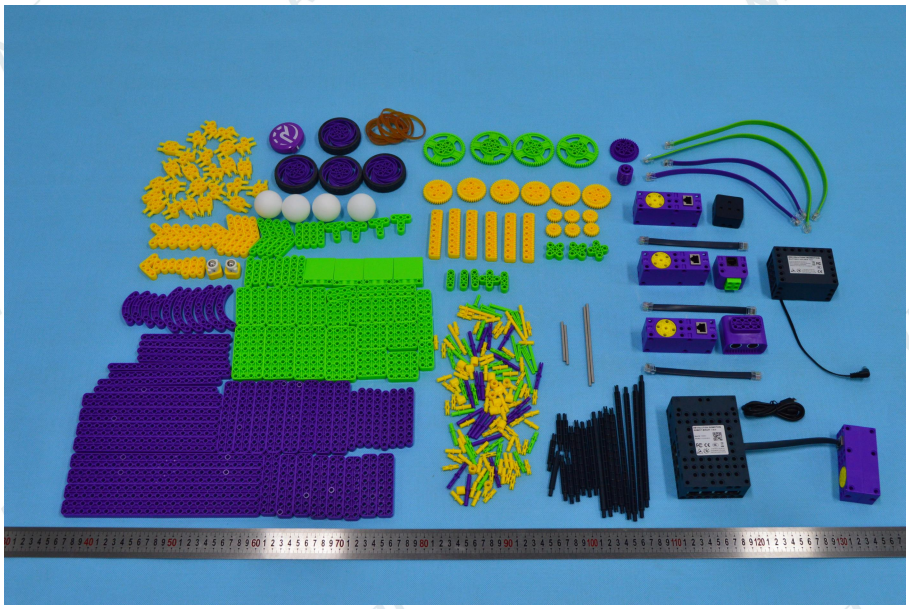
The photo of the sample





ANT authenticate the photo on original report only

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*** End of Report ***