

TEST REPORT

Applicant: SUNNYLIFE GROUP PTY LTD
B1 85 DUNNING AVENUE
ROSEBERY
NSW 2018
AUSTRALIA

Number: HKGH0302465102

Date: Sep 07, 2023

Attn: NOLIA CHIU

Sample and Information provided by customer :

Item Name : Swim Vest 1-2 Shark
Item No. : SCMSVAQS
Quantity : 7 pieces
Labelled Age Group : 1-2 YEARS
Packaging Provided : Yes (Artwork)
Country of Origin : China

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) BS EN 13138 - 1 : 2014 Buoyant aids for swimming instruction - Part 1 : Safety requirements and test methods for buoyant aids to be worn CE marking (Regulation EU) 2016/425) UKCA marking (UK2019 SI696 Schedule 35 Regulation 38)	Pass See note enclosed
(2) EN 71-3 : 2019 + A1 : 2021 - Migration of certain elements	Pass
(3) BS EN71-3:2019 and Directive (EU) 2019/1922 amending 2009/48/EC effective from 20 May 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 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
(6) REACH Regulation (EC) no. 1907/2006, Annex XVII Item 43 & amendment (EC) no. 552/2009 and (EU) no. 2096/2020 - Azocolourants content ∞	Pass
(7) REACH Regulation (EC) no. 1907/2006, Annex XVII, Item 43 & amendment no. 552/2009 and 2096/2020 & The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019 No. 758) as amended - Azocolourants content requirement ∞	Pass
(8) REACH Regulation (EC) no. 1907/2006, Annex XVII Item 61 & Amendment No. 412/2012 - Dimethylfumarate content requirement	Pass
(9) REACH Regulation (EC) no. 1907/2006, Annex XVII, Item 61 & amendment No. 412/2012 & The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019 No. 758) as amended - Dimethylfumarate content requirement	Pass



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<u>Requirement</u>	<u>Result</u>
(10) Regulation (EC) No. 1907/2006 on REACH Annex XVII as amended by Commission Regulation (EU) No. 835/2012 and Commission Regulation (EU) 2016/217 - Cadmium content requirement	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
(12) REACH Regulation (EC) No.1907/2006 , Annex XVII Item 63 & Commission regulation (EU) 2015/628 - Lead content requirement	Pass
(13) REACH Regulation (EC) No.1907/2006 , Annex XVII Item 63 & Commission regulation (EU) 2015/628 & The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019 No. 758) - Lead content requirement	Pass
(14) REACH Regulation (EC) no. 1907/2006 & amendment (EU) no. 1272/2013 Annex XVII Item 50 - Polycyclic aromatic hydrocarbons content	Pass
(15) REACH Regulation (EC) no. 1907/2006 & amendment no. 1272/2013, Annex XVII, Item 50 & The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019 No. 758) as amended - Polycyclic aromatic hydrocarbons content	Pass

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 inherited 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) Safety Requirements for Buoyant Aids to be Worn

Test Standard : BS EN 13138 - 1: 2014 - Buoyant aids for swimming instruction - Part 1 : Safety requirements and test methods for buoyant aids to be worn

Number of sample tested: Three (3) pieces.

Type of swimming aids: Swim Vest.

Intended age group as specified in the packaging:
For ages 1-2 (11-15 kg)

Note:

CE and UKCA marking is not specified in EN 13138-1 but per regulation (EU) 2016/425 and UK2019 SI696 Schedule 35 Regulation 38, the marking shall be affixed visibly, legibly and indelibly to the flotation device.

It was found that the CE and UKCA marking was provided on the flotation device.

Clause	Requirement	Assessment
5.1	General	P
5.2	Buoyancy	
5.2.1	Buoyancy characteristics of the complete device	P
5.2.2	Residual buoyancy	NA
5.3	Design, fit and positioning	
5.3.1	Adjustability – Class B devices	P
5.3.2	Buckles, zippers and other fixings	NA
5.3.3	Retention of function	P
5.3.4	Innocuousness	
5.3.4.1	General	P
5.3.4.2	Edges, corners and points	P
5.3.4.3	Small parts	P
5.4	Entire assembly and components	
5.4.1	Integrity of the entire assembly of worn devices	P
5.4.2	Thread	P
5.4.3	Valves, stoppers and other protruding parts	NA
5.5	Materials – mechanical properties	
5.5.1	Seam strength and durability of inflatable devices	NA
5.5.2	Resistance to puncturing	NA
	Resistance of foam and other inherent buoyant materials to water absorption	P
5.5.3	Resistance of foam and other inherent buoyant materials to compression	P
5.6	Materials and markings	



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Clause	Requirement	Assessment
5.6.2	Resistance to chlorinated salt water	P
5.6.3	Resistance of markings to saliva	P
5.6.4	Resistance of markings to perspiration	P
5.6.5	Adhesion of markings	P
7	Warnings and markings	
7.1	General	P#1
7.2	Warnings and markings on the product	P#1
7.3	Information supplied by the manufacturer	P#1
7.4	Consumer information at the point of sale	P#1

Abbreviation : P = Pass; NA = Not Applicable

Test data:

Clause 5.2.1 Buoyancy characteristics of the complete device

The buoyancy of the submitted samples was measured and recorded as follow:

Style	Measured buoyancy
For ages 1-2 (11-15 kg)	28.9 N

Requirement:

The device shall have minimum buoyancy according with following table:

Category of user		Minimum buoyancy for garment
Age years	Mass range (kg)	
1-2	11-15	20 N

Clause 5.5.2 Resistance of foam and other inherent buoyant materials to water absorption

The loss of buoyancy was measured and recorded as increased.

Requirement: The material sample shall lose no more than 10 % of its original buoyancy.

Clause 5.5.3 Resistance of foam and other inherent buoyant materials to compression

The loss of buoyancy was measured and recorded as increased.

Requirement: The material sample shall lose no more than 10 % of its original buoyancy.

Clause 5.6.2 Resistance to chlorinated salt water

The change in color of the entire submitted sample on grey scale was observed and recorded as follow after the test:

Gray scale	Requirement:
4-5	≥3

Clause 5.6.3 Resistance of marking to saliva

The change in color of the marking on grey scale of the submitted sample was observed and recorded as follow after the test: :

Gray scale	Requirement:
4-5	≥3



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Clause 5.6.4 Resistance of markings to perspiration

The change in color of the marking on grey scale of the submitted sample was observed and recorded as follow after the test:

Gray scale	Requirement:
4-5	≥3

Remarks

#1- Only the English version of the marking and/or instructions were assessed. According to the standard, all warnings and instructions for safe use as required by the standard shall be written in the official language of the country in which the product will be sold.

Date sample received : Jun 19, 2023; Jul 05, 2023

Testing period : Jul 19, 2023 to Jul 31, 2023



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(2) 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)	(2)	(3)	
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 ++	<5.0	<5.0	<5.0	12
Soluble Zinc (Zn)	<100	110	<100	46000



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	Result (mg/kg)			Limit (mg/kg)
	(4)	(5)	(6)	
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
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Soluble Zinc (Zn)	<100	<100	<100	46000

	Result (mg/kg)			Limit (mg/kg)
	(7)	(8)	(9)	
Soluble Aluminium (Al)	<300	<300	<300	28130
Soluble Antimony (Sb)	<10	<10	<10	560
Soluble Arsenic (As)	<10	<10	<10	47
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Soluble Organic tin ++	<5.0	<5.0	<5.0	12
Soluble Zinc (Zn)	<100	140	<100	46000



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Soluble Organic tin ++	<5.0	<5.0	<5.0	12
Soluble Zinc (Zn)	<100	<100	<100	46000

	Result (mg/kg)			Limit (mg/kg)
	(13)	(14)	(15)	
Soluble Aluminium (Al)	<300	<300	<300	28130
Soluble Antimony (Sb)	<10	<10	<10	560
Soluble Arsenic (As)	<10	<10	<10	47
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mg/kg = milligram per kilogram



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++ : 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) .

Tested Components:

- (1) White coating on fabric (warnings).
- (2) Ivory coating on metal (zipper head).
- (3) Ivory plastic (zipper teeth).
- (4) Fluorescent yellow plastic (badge).
- (5) Dull ivory plastic (buckle).
- (6) White hooked velcro.
- (7) White looped velcro.
- (8) Fluorescent yellow knit backed with ivory color foam (vest).
- (9) Light blue knit (vest).
- (10) Bluish green knit with fluorescent yellow thread (vest).
- (11) Black knit (vest).
- (12) Dull white knit (binding).
- (13) Ivory color fabric (zipper tape).
- (14) Dull white webbing (strap).
- (15) White satin with blue printing (sewn-in label).

Date sample received : Jun 19, 2023

Test Period : Jun 19, 2023 to Jun 30, 2023



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(3) 19 Toxic Element Migration Test

Test Method : BS EN71-3:2019. 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

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	Result (mg/kg)			Limit (mg/kg)
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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) .

^ : The new aluminium migration limit [2250mg/kg for Category (I), 560mg/kg for category (II) and 28130mg/kg for Category (III)] was quoted from directive (EU) 2019/1922 amending 2009/48/EC effective from 20 May 2021.



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Tested Components:

- (1) White coating on fabric (warnings).
- (2) Ivory coating on metal (zipper head).
- (3) Ivory plastic (zipper teeth).
- (4) Fluorescent yellow plastic (badge).
- (5) Dull ivory plastic (buckle).
- (6) White hooked velcro.
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- (9) Light blue knit (vest).
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- (15) White satin with blue printing (sewn-in label).

Date sample received : Jun 19, 2023

Test Period : Jun 19, 2023 to Jun 30, 2023



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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)	
Dibutyl phthalate (DBP)	<0.0100	<0.0100	<0.0100	--
Diethyl hexyl phthalate (DEHP)	<0.0100	<0.0100	<0.0100	--
Benzyl butyl phthalate (BBP)	<0.0100	<0.0100	<0.0100	--
Diisobutyl phthalate (DIBP)	<0.0100	<0.0100	<0.0100	--
Sum of DBP, DEHP, BBP & DIBP	<0.0100	<0.0100	<0.0100	0.1
Diisononyl phthalate (DINP)	<0.0100	<0.0100	<0.0100	--
Di-n-octyl phthalate (DnOP)	<0.0100	<0.0100	<0.0100	--
Diisodecyl phthalate (DIDP)	<0.0100	<0.0100	<0.0100	--
Sum of DINP, DnOP & DIDP	<0.0100	<0.0100	<0.0100	0.1

Four Phthalates content:

Compound	Result (% w/w)	Limit (% w/w)
	(7)	
Dibutyl phthalate (DBP)	<0.0100	--
Diethyl hexyl phthalate (DEHP)	<0.0100	--
Benzyl butyl phthalate (BBP)	<0.0100	--
Diisobutyl phthalate (DIBP)	<0.0100	--
Sum of DBP, DEHP, BBP & DIBP	<0.0100	0.1



TEST REPORT

Number : HKGH0302465102

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) Coatings on sample (vest, zipper).
- (2) Ivory plastic (zipper teeth).
- (3) Dull ivory plastic (buckle).
- (4) Fluorescent yellow plastic (badge).
- (5) White hooked velcro.
- (6) Fluorescent yellow knit backed with ivory color foam (vest).
- (7) White foam (insert of vest) (internal).

Date sample received : Jun 19, 2023

Test Period : Jun 19, 2023 to Jun 27, 2023



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TEST REPORT

Number : HKGH0302465102

(5) 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)	
Dibutyl phthalate (DBP)	<0.0100	<0.0100	<0.0100	--
Diethyl hexyl phthalate (DEHP)	<0.0100	<0.0100	<0.0100	--
Benzyl butyl phthalate (BBP)	<0.0100	<0.0100	<0.0100	--
Diisobutyl phthalate (DIBP)	<0.0100	<0.0100	<0.0100	--
Sum of DBP, DEHP, BBP & DIBP	<0.0100	<0.0100	<0.0100	0.1
Diisononyl phthalate (DINP)	<0.0100	<0.0100	<0.0100	--
Di-n-octyl phthalate (DnOP)	<0.0100	<0.0100	<0.0100	--
Diisodecyl phthalate (DIDP)	<0.0100	<0.0100	<0.0100	--
Sum of DINP, DnOP & DIDP	<0.0100	<0.0100	<0.0100	0.1

Four Phthalates content:

Compound	Result (% w/w)	Limit (% w/w)
	(7)	
Dibutyl phthalate (DBP)	<0.0100	--
Diethyl hexyl phthalate (DEHP)	<0.0100	--
Benzyl butyl phthalate (BBP)	<0.0100	--
Diisobutyl phthalate (DIBP)	<0.0100	--
Sum of DBP, DEHP, BBP & DIBP	<0.0100	0.1



TEST REPORT

Number : HKGH0302465102

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) Coatings on sample (vest, zipper).
- (2) Ivory plastic (zipper teeth).
- (3) Dull ivory plastic (buckle).
- (4) Fluorescent yellow plastic (badge).
- (5) White hooked velcro.
- (6) Fluorescent yellow knit backed with ivory color foam (vest).
- (7) White foam (insert of vest) (internal).

Date sample received : Jun 19, 2023

Test Period : Jun 19, 2023 to Jun 27, 2023



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TEST REPORT

Number : HKGH0302465102

(6) Detection Of Amines Derived From Azocolourants and Azodyes

Test Method : By extraction on cut sample according to the below listed test method(s), followed by Gas Chromatographic - Mass Spectrometric (GC-MS) analysis and confirmed by High-Performance Liquid Chromatography / Diode Array Detector (HPLC/DAD) analysis.

EN ISO 14362-1 : 2017 for Textile Material

Method T:

No.	Forbidden Amine	CAS No.	Result (ppm)		
			(1)	(2/3)	(4/5)
1	4-Aminodiphenyl	92-67-1	N	N	N
2	Benzidine	92-87-5	N	N	N
3	4-Chloro-o-toluidine	95-69-2	N	N	N
4	2-Naphthylamine	91-59-8	N	N	N
5	o-Aminoazotoluene	97-56-3	N	N	N
6	2-Amino-4-nitrotoluene	99-55-8	N	N	N
7	p-Chloroaniline	106-47-8	N	N	N
8	2,4-Diaminoanisole	615-05-4	N	N	N
9	4,4'-Diaminodiphenylmethane	101-77-9	N	N	N
10	3,3'-Dichlorobenzidine	91-94-1	N	N	N
11	3,3'-Dimethoxybenzidine	119-90-4	N	N	N
12	3,3'-Dimethylbenzidine	119-93-7	N	N	N
13	3,3'-Dimethyl-4,4'diaminodiphenylmethane	838-88-0	N	N	N
14	p-Cresidine	120-71-8	N	N	N
15	4,4'-Methylene-bis(2-chloroaniline)	101-14-4	N	N	N
16	4,4'-Oxydianiline	101-80-4	N	N	N
17	4,4'-Thiodianiline	139-65-1	N	N	N
18	o-Toluidine	95-53-4	N	N	N
19	2,4-Toluylenediamine	95-80-7	N	N	N
20	2,4,5-Trimethylaniline	137-17-7	N	N	N
21	o-Anisidine	90-04-0	N	N	N
22	p-Aminoazobenzene	60-09-3	N	N	N



TEST REPORT

Number : HKGH0302465102

No.	Forbidden Amine	CAS No.	Result (ppm)	
			(6)	(7)
1	4-Aminodiphenyl	92-67-1	N	N
2	Benzidine	92-87-5	N	N
3	4-Chloro-o-toluidine	95-69-2	N	N
4	2-Naphthylamine	91-59-8	N	N
5	o-Aminoazotoluene	97-56-3	N	N
6	2-Amino-4-nitrotoluene	99-55-8	N	N
7	p-Chloroaniline	106-47-8	N	N
8	2,4-Diaminoanisole	615-05-4	N	N
9	4,4'-Diaminodiphenylmethane	101-77-9	N	N
10	3,3'-Dichlorobenzidine	91-94-1	N	N
11	3,3'-Dimethoxybenzidine	119-90-4	N	N
12	3,3'-Dimethylbenzidine	119-93-7	N	N
13	3,3'-Dimethyl-4,4'diaminodiphenylmethane	838-88-0	N	N
14	p-Cresidine	120-71-8	N	N
15	4,4'-Methylene-bis(2-chloroaniline)	101-14-4	N	N
16	4,4'-Oxydianiline	101-80-4	N	N
17	4,4'-Thiodianiline	139-65-1	N	N
18	o-Toluidine	95-53-4	N	N
19	2,4-Toluylenediamine	95-80-7	N	N
20	2,4,5-Trimethylaniline	137-17-7	N	N
21	o-Anisidine	90-04-0	N	N
22	p-Aminoazobenzene	60-09-3	N	N



TEST REPORT

Number : HKGH0302465102

Method D:

No.	Forbidden Amine	CAS No.	Result (ppm)		
			(1)	(2/3)	(4/5)
1	4-Aminodiphenyl	92-67-1	N	N	N
2	Benzidine	92-87-5	N	N	N
3	4-Chloro-o-toluidine	95-69-2	N	N	N
4	2-Naphthylamine	91-59-8	N	N	N
5	o-Aminoazotoluene	97-56-3	N	N	N
6	2-Amino-4-nitrotoluene	99-55-8	N	N	N
7	p-Chloroaniline	106-47-8	N	N	N
8	2,4-Diaminoanisole	615-05-4	N	N	N
9	4,4'-Diaminodiphenylmethane	101-77-9	N	N	N
10	3,3'-Dichlorobenzidine	91-94-1	N	N	N
11	3,3'-Dimethoxybenzidine	119-90-4	N	N	N
12	3,3'-Dimethylbenzidine	119-93-7	N	N	N
13	3,3'-Dimethyl-4,4'diaminodiphenylmethane	838-88-0	N	N	N
14	p-Cresidine	120-71-8	N	N	N
15	4,4'-Methylene-bis(2-chloroaniline)	101-14-4	N	N	N
16	4,4'-Oxydianiline	101-80-4	N	N	N
17	4,4'-Thiodianiline	139-65-1	N	N	N
18	o-Toluidine	95-53-4	N	N	N
19	2,4-Toluylenediamine	95-80-7	N	N	N
20	2,4,5-Trimethylaniline	137-17-7	N	N	N
21	o-Anisidine	90-04-0	N	N	N
22	p-Aminoazobenzene	60-09-3	N	N	N



TEST REPORT

Number : HKGH0302465102

No.	Forbidden Amine	CAS No.	Result (ppm)	
			(6)	(7)
1	4-Aminodiphenyl	92-67-1	N	N
2	Benzidine	92-87-5	N	N
3	4-Chloro-o-toluidine	95-69-2	N	N
4	2-Naphthylamine	91-59-8	N	N
5	o-Aminoazotoluene	97-56-3	N	N
6	2-Amino-4-nitrotoluene	99-55-8	N	N
7	p-Chloroaniline	106-47-8	N	N
8	2,4-Diaminoanisole	615-05-4	N	N
9	4,4'-Diaminodiphenylmethane	101-77-9	N	N
10	3,3'-Dichlorobenzidine	91-94-1	N	N
11	3,3'-Dimethoxybenzidine	119-90-4	N	N
12	3,3'-Dimethylbenzidine	119-93-7	N	N
13	3,3'-Dimethyl-4,4'diaminodiphenylmethane	838-88-0	N	N
14	p-Cresidine	120-71-8	N	N
15	4,4'-Methylene-bis(2-chloroaniline)	101-14-4	N	N
16	4,4'-Oxydianiline	101-80-4	N	N
17	4,4'-Thiodianiline	139-65-1	N	N
18	o-Toluidine	95-53-4	N	N
19	2,4-Toluylenediamine	95-80-7	N	N
20	2,4,5-Trimethylaniline	137-17-7	N	N
21	o-Anisidine	90-04-0	N	N
22	p-Aminoazobenzene	60-09-3	N	N

N = Not detected
 Detection limit = 5 ppm
 Requirement = 30 ppm (max.)

ppm = parts per million = mg/kg

- High Performance Liquid Chromatographic (HPLC) analysis was used to confirm any detected amines.
 - The test component with p-aminoazobenzene less than detection limit was tested by EN ISO 14362-1 : 2017 for textile material / EN ISO 17234-1: 2015 for leather material.

Method T : Direct buffer extraction as per EN ISO 14362-1 : 2017 Section 10.2
 Method D : Colourant extraction with Xylene as per EN ISO 14362-1 : 2017 Section 10.1

If both methods T and D conducted, final conclusion was based on the highest value of each amine.



TEST REPORT

Number : HKGH0302465102

Tested Components:

- (1) Fluorescent yellow knit backed with ivory color foam (vest).
- (2) Light blue knit (vest).
- (3) Bluish green knit with fluorescent yellow thread (vest).
- (4) Black knit (vest).
- (5) Ivory color fabric (zipper tape).
- (6) White satin with blue printing (sewn-in label).
- (7) Bluish green knit with white coating and fluorescent yellow thread (knit).

Decision Rule:

∞ : In the case of levels per amine component is equal or smaller than 30 ppm:
According to the analysis as carried out, azo colorants which can release one or more of certain listed amines by cleavage of their azo group/s were not detected. The tested sample/component were in compliance with requirement.

In the case of levels per amine component is greater than 30 ppm:
The analytical result suggests that the commodity submitted has been manufactured or treated using azo colorant/s which can release one or more of certain listed amines by cleavage of their azo group/s at levels greater than 30 ppm. The tested sample/component did not comply the requirement.

Date sample received : Jun 19, 2023

Test Period : Jun 19, 2023 to Jun 29, 2023



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TEST REPORT

Number : HKGH0302465102

(7) Detection Of Amines Derived From Azocolourants and Azodyes

Test Method : By extraction on cut sample according to the below listed test method(s), followed by Gas Chromatographic - Mass Spectrometric (GC-MS) analysis and confirmed by High-Performance Liquid Chromatography / Diode Array Detector (HPLC/DAD) analysis.

BS EN ISO 14362-1 : 2017 for Textile Material

Method T:

No.	Forbidden Amine	CAS No.	Result (ppm)		
			(1)	(2/3)	(4/5)
1	4-Aminodiphenyl	92-67-1	N	N	N
2	Benzidine	92-87-5	N	N	N
3	4-Chloro-o-toluidine	95-69-2	N	N	N
4	2-Naphthylamine	91-59-8	N	N	N
5	o-Aminoazotoluene	97-56-3	N	N	N
6	2-Amino-4-nitrotoluene	99-55-8	N	N	N
7	p-Chloroaniline	106-47-8	N	N	N
8	2,4-Diaminoanisole	615-05-4	N	N	N
9	4,4'-Diaminodiphenylmethane	101-77-9	N	N	N
10	3,3'-Dichlorobenzidine	91-94-1	N	N	N
11	3,3'-Dimethoxybenzidine	119-90-4	N	N	N
12	3,3'-Dimethylbenzidine	119-93-7	N	N	N
13	3,3'-Dimethyl-4,4'diaminodiphenylmethane	838-88-0	N	N	N
14	p-Cresidine	120-71-8	N	N	N
15	4,4'-Methylene-bis(2-chloroaniline)	101-14-4	N	N	N
16	4,4'-Oxydianiline	101-80-4	N	N	N
17	4,4'-Thiodianiline	139-65-1	N	N	N
18	o-Toluidine	95-53-4	N	N	N
19	2,4-Toluylenediamine	95-80-7	N	N	N
20	2,4,5-Trimethylaniline	137-17-7	N	N	N
21	o-Anisidine	90-04-0	N	N	N
22	p-Aminoazobenzene	60-09-3	N	N	N



TEST REPORT

Number : HKGH0302465102

No.	Forbidden Amine	CAS No.	Result (ppm)	
			(6)	(7)
1	4-Aminodiphenyl	92-67-1	N	N
2	Benzidine	92-87-5	N	N
3	4-Chloro-o-toluidine	95-69-2	N	N
4	2-Naphthylamine	91-59-8	N	N
5	o-Aminoazotoluene	97-56-3	N	N
6	2-Amino-4-nitrotoluene	99-55-8	N	N
7	p-Chloroaniline	106-47-8	N	N
8	2,4-Diaminoanisole	615-05-4	N	N
9	4,4'-Diaminodiphenylmethane	101-77-9	N	N
10	3,3'-Dichlorobenzidine	91-94-1	N	N
11	3,3'-Dimethoxybenzidine	119-90-4	N	N
12	3,3'-Dimethylbenzidine	119-93-7	N	N
13	3,3'-Dimethyl-4,4'diaminodiphenylmethane	838-88-0	N	N
14	p-Cresidine	120-71-8	N	N
15	4,4'-Methylene-bis(2-chloroaniline)	101-14-4	N	N
16	4,4'-Oxydianiline	101-80-4	N	N
17	4,4'-Thiodianiline	139-65-1	N	N
18	o-Toluidine	95-53-4	N	N
19	2,4-Toluylenediamine	95-80-7	N	N
20	2,4,5-Trimethylaniline	137-17-7	N	N
21	o-Anisidine	90-04-0	N	N
22	p-Aminoazobenzene	60-09-3	N	N



TEST REPORT

Number : HKGH0302465102

Method D:

No.	Forbidden Amine	CAS No.	Result (ppm)		
			(1)	(2/3)	(4/5)
1	4-Aminodiphenyl	92-67-1	N	N	N
2	Benzidine	92-87-5	N	N	N
3	4-Chloro-o-toluidine	95-69-2	N	N	N
4	2-Naphthylamine	91-59-8	N	N	N
5	o-Aminoazotoluene	97-56-3	N	N	N
6	2-Amino-4-nitrotoluene	99-55-8	N	N	N
7	p-Chloroaniline	106-47-8	N	N	N
8	2,4-Diaminoanisole	615-05-4	N	N	N
9	4,4'-Diaminodiphenylmethane	101-77-9	N	N	N
10	3,3'-Dichlorobenzidine	91-94-1	N	N	N
11	3,3'-Dimethoxybenzidine	119-90-4	N	N	N
12	3,3'-Dimethylbenzidine	119-93-7	N	N	N
13	3,3'-Dimethyl-4,4'diaminodiphenylmethane	838-88-0	N	N	N
14	p-Cresidine	120-71-8	N	N	N
15	4,4'-Methylene-bis(2-chloroaniline)	101-14-4	N	N	N
16	4,4'-Oxydianiline	101-80-4	N	N	N
17	4,4'-Thiodianiline	139-65-1	N	N	N
18	o-Toluidine	95-53-4	N	N	N
19	2,4-Toluylenediamine	95-80-7	N	N	N
20	2,4,5-Trimethylaniline	137-17-7	N	N	N
21	o-Anisidine	90-04-0	N	N	N
22	p-Aminoazobenzene	60-09-3	N	N	N



TEST REPORT

Number : HKGH0302465102

No.	Forbidden Amine	CAS No.	Result (ppm)	
			(6)	(7)
1	4-Aminodiphenyl	92-67-1	N	N
2	Benzidine	92-87-5	N	N
3	4-Chloro-o-toluidine	95-69-2	N	N
4	2-Naphthylamine	91-59-8	N	N
5	o-Aminoazotoluene	97-56-3	N	N
6	2-Amino-4-nitrotoluene	99-55-8	N	N
7	p-Chloroaniline	106-47-8	N	N
8	2,4-Diaminoanisole	615-05-4	N	N
9	4,4'-Diaminodiphenylmethane	101-77-9	N	N
10	3,3'-Dichlorobenzidine	91-94-1	N	N
11	3,3'-Dimethoxybenzidine	119-90-4	N	N
12	3,3'-Dimethylbenzidine	119-93-7	N	N
13	3,3'-Dimethyl-4,4'diaminodiphenylmethane	838-88-0	N	N
14	p-Cresidine	120-71-8	N	N
15	4,4'-Methylene-bis(2-chloroaniline)	101-14-4	N	N
16	4,4'-Oxydianiline	101-80-4	N	N
17	4,4'-Thiodianiline	139-65-1	N	N
18	o-Toluidine	95-53-4	N	N
19	2,4-Toluylenediamine	95-80-7	N	N
20	2,4,5-Trimethylaniline	137-17-7	N	N
21	o-Anisidine	90-04-0	N	N
22	p-Aminoazobenzene	60-09-3	N	N

N = Not detected
 Detection limit = 5 ppm
 Requirement = 30 ppm (max.)

ppm = parts per million = mg/kg

- High Performance Liquid Chromatographic (HPLC) analysis was used to confirm any detected amines.
- The test component with p-aminoazobenzene less than detection limit was tested by BS EN ISO 14362-1 : 2017 for textile material / BS EN ISO 17234-1: 2015 for leather material.

Method T : Direct buffer extraction as per BS EN ISO 14362-1 : 2017 Section 10.2
 Method D : Colourant extraction with Xylene as per BS EN ISO 14362-1 : 2017 Section 10.1

If both methods T and D conducted, final conclusion was based on the highest value of each amine.



TEST REPORT

Number : HKGH0302465102

Tested Components:

- (1) Fluorescent yellow knit backed with ivory color foam (vest).
- (2) Light blue knit (vest).
- (3) Bluish green knit with fluorescent yellow thread (vest).
- (4) Black knit (vest).
- (5) Ivory color fabric (zipper tape).
- (6) White satin with blue printing (sewn-in label).
- (7) Bluish green knit with white coating and fluorescent yellow thread (knit).

Decision Rule:

∞ : In the case of levels per amine component is equal or smaller than 30 ppm:
According to the analysis as carried out, azo colorants which can release one or more of certain listed amines by cleavage of their azo group/s were not detected. The tested sample/component were in compliance with requirement.

In the case of levels per amine component is greater than 30 ppm:
The analytical result suggests that the commodity submitted has been manufactured or treated using azo colorant/s which can release one or more of certain listed amines by cleavage of their azo group/s at levels greater than 30 ppm. The tested sample/component did not comply the requirement.

Date sample received : Jun 19, 2023

Test Period : Jun 19, 2023 to Jun 29, 2023



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TEST REPORT

Number : HKGH0302465102

(8) Dimethylfumarate Content

Test Method : ISO 16186:2021 with Gas Chromatographic-Mass Spectrometric (GC-MS) analysis.

Tested Component	Result in ppm	Limit in ppm
(1/2)	<0.05	0.1
(3/4)	<0.05	0.1

Detection Limit = 0.05ppm

ppm = parts per million = mg/kg

Tested Components:

- (1) White hooked velcro.
- (2) White looped velcro.
- (3) Fluorescent yellow knit backed with ivory color foam (vest).
- (4) Light blue knit (vest).

Date sample received : Jun 19, 2023

Test Period : Jun 19, 2023 to Jul 15, 2023



TEST REPORT

Number : HKGH0302465102

(9) Dimethylfumarate Content

Test Method : ISO/TS 16186:2012 with Gas Chromatographic-Mass Spectrometric (GC-MS) analysis.

Tested Component	Result in ppm	Limit in ppm
(1/2)	<0.05	0.1
(3/4)	<0.05	0.1

Detection Limit = 0.05ppm

ppm = parts per million = mg/kg

Tested Components:

- (1) White hooked velcro.
- (2) White looped velcro.
- (3) Fluorescent yellow knit backed with ivory color foam (vest).
- (4) Light blue knit (vest).

Date sample received : Jun 19, 2023
Test Period : Jun 19, 2023 to Jul 15, 2023



TEST REPORT

Number : HKGH0302465102

(10) 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)	ND	0.1
(3/4)	ND	0.01
(5/6)	ND	0.01
(7)	ND	0.01

ND : Not detected (< 0.0005%)

The above limit was quoted according to Regulation (EC) No. 1907/2006 on REACH Annex XVII as amended by Commission Regulation (EU) No. 835/2012 and Commission Regulation (EU) 2016/217

Tested Components:

- (1) White coating on fabric (warnings).
- (2) Ivory coating on metal (zipper head).
- (3) Ivory plastic (zipper teeth).
- (4) Fluorescent yellow plastic (badge).
- (5) Dull ivory plastic (buckle).
- (6) White hooked velcro.
- (7) White foam (insert of vest) (internal).

Date sample received : Jun 19, 2023

Test Period : Jun 19, 2023 to Jun 30, 2023



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TEST REPORT

Number : HKGH0302465102

(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)	ND	0.1
(3/4)	ND	0.01
(5/6)	ND	0.01
(7)	ND	0.01

ND : Not detected (< 0.0005%)

The above limit was quoted according to 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)

Tested Components:

- (1) White coating on fabric (warnings).
- (2) Ivory coating on metal (zipper head).
- (3) Ivory plastic (zipper teeth).
- (4) Fluorescent yellow plastic (badge).
- (5) Dull ivory plastic (buckle).
- (6) White hooked velcro.
- (7) White foam (insert of vest) (internal).

Date sample received : Jun 19, 2023

Test Period : Jun 19, 2023 to Jun 30, 2023



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Number : HKGH0302465102

(12) Lead (Pb) Content

Test Method : Lead content requirement in Commission regulation (EU) 2015/628 amending Annex XVII item 63 of the REACH regulation (EC) No. 1907/2006, acid digestion was used and total Lead content was determined by inductively coupled argon plasma spectrometry.

Lead Content:

Tested Component	Result in %, w/w	Limit in %, w/w
(1/2)	ND	0.05
(3/4)	ND	0.05
(5/6)	ND	0.05
(7/8)	ND	0.05
(9)	ND	0.05
(10/11/12)	ND	0.05
(13/14)	ND	0.05
(15)	ND	0.05
(16)	ND	0.05
(17)	ND	0.05
(18)	ND	0.05



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ND : Not detected (< 0.002%)

Tested Components:

- (1) White coating on fabric (warnings).
- (2) Ivory coating on metal (zipper head).
- (3) Ivory plastic (zipper teeth).
- (4) Fluorescent yellow plastic (badge).
- (5) Dull ivory plastic (buckle).
- (6) White hooked velcro.
- (7) White looped velcro.
- (8) Light blue knit (vest).
- (9) Fluorescent yellow knit backed with ivory color foam (vest).
- (10) Bluish green knit with fluorescent yellow thread (vest).
- (11) Black knit (vest).
- (12) Dull white knit (binding).
- (13) Ivory color fabric (zipper tape).
- (14) Dull white webbing (strap).
- (15) White satin with blue printing (sewn-in label).
- (16) Silver color metal excluding ivory coating (zipper puller).
- (17) Silver color metal excluding ivory coating (zipper slider).
- (18) Silver color metal excluding ivory coating (holder of zipper puller).

Date sample received : Jun 19, 2023

Test Period : Jun 19, 2023 to Jun 30, 2023



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(13) Lead (Pb) Content

Test Method : Lead content requirement in Commission regulation (EU) 2015/628 amending Annex XVII item 63 of the REACH regulation (EC) No. 1907/2006, acid digestion was used and total Lead content was determined by inductively coupled argon plasma spectrometry.

Lead Content:

Tested Component	Result in %, w/w	Limit in %, w/w
(1/2)	ND	0.05
(3/4)	ND	0.05
(5/6)	ND	0.05
(7/8)	ND	0.05
(9)	ND	0.05
(10/11/12)	ND	0.05
(13/14)	ND	0.05
(15)	ND	0.05
(16)	ND	0.05
(17)	ND	0.05
(18)	ND	0.05



TEST REPORT

Number : HKGH0302465102

ND : Not detected (< 0.002%)

Tested Components:

- (1) White coating on fabric (warnings).
- (2) Ivory coating on metal (zipper head).
- (3) Ivory plastic (zipper teeth).
- (4) Fluorescent yellow plastic (badge).
- (5) Dull ivory plastic (buckle).
- (6) White hooked velcro.
- (7) White looped velcro.
- (8) Light blue knit (vest).
- (9) Fluorescent yellow knit backed with ivory color foam (vest).
- (10) Bluish green knit with fluorescent yellow thread (vest).
- (11) Black knit (vest).
- (12) Dull white knit (binding).
- (13) Ivory color fabric (zipper tape).
- (14) Dull white webbing (strap).
- (15) White satin with blue printing (sewn-in label).
- (16) Silver color metal excluding ivory coating (zipper puller).
- (17) Silver color metal excluding ivory coating (zipper slider).
- (18) Silver color metal excluding ivory coating (holder of zipper puller).

Date sample received : Jun 19, 2023

Test Period : Jun 19, 2023 to Jun 30, 2023



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(14) Polycyclic Aromatic Hydrocarbons (PAH) Content

Test Method : The document AfPS GS 2019:01 PAK issued by the Federal Institute for Occupational Safety and Health, solvent extraction and determined by Gas Chromatographic - Mass Spectrometry (GC/MS).

Compound	Result (ppm)			Limit (ppm)
	(1)	(2/3/4)	(5/6)	
Benzo(a)pyrene	<0.20	<0.20	<0.20	1
Benzo(e)pyrene	<0.20	<0.20	<0.20	1
Benzo(a)anthracene	<0.20	<0.20	<0.20	1
Chrysene	<0.20	<0.20	<0.20	1
Benzo(b)fluoranthene	<0.20	<0.20	<0.20	1
Benzo(j)fluoranthene	<0.20	<0.20	<0.20	1
Benzo(k)fluoranthene	<0.20	<0.20	<0.20	1
Dibenzo(a,h)anthracene	<0.20	<0.20	<0.20	1

Compound	Result (ppm)	Limit (ppm)
	(7)	
Benzo(a)pyrene	<0.20	1
Benzo(e)pyrene	<0.20	1
Benzo(a)anthracene	<0.20	1
Chrysene	<0.20	1
Benzo(b)fluoranthene	<0.20	1
Benzo(j)fluoranthene	<0.20	1
Benzo(k)fluoranthene	<0.20	1
Dibenzo(a,h)anthracene	<0.20	1



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The above limit was quoted according to Annex XVII Items 50 of the REACH Regulation (EC) no. 1907/2006 & amendment (EU) no. 1272/2013 for polycyclic aromatic hydrocarbons (PAH).

ppm = parts per million = mg/kg

Tested Components:

- (1) White coating on fabric (warnings).
- (2) Ivory plastic (zipper teeth).
- (3) Fluorescent yellow plastic (badge).
- (4) Dull ivory plastic (buckle).
- (5) White hooked velcro.
- (6) Fluorescent yellow knit backed with ivory color foam (vest).
- (7) Black knit (vest).

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(15) Polycyclic Aromatic Hydrocarbons (PAH) Content

Test Method : The document AfPS GS 2019:01 PAK issued by the Federal Institute for Occupational Safety and Health, solvent extraction and determined by Gas Chromatographic - Mass Spectrometry (GC/MS).

Compound	Result (ppm)			Limit (ppm)
	(1)	(2/3/4)	(5/6)	
Benzo(a)pyrene	<0.20	<0.20	<0.20	1
Benzo(e)pyrene	<0.20	<0.20	<0.20	1
Benzo(a)anthracene	<0.20	<0.20	<0.20	1
Chrysene	<0.20	<0.20	<0.20	1
Benzo(b)fluoranthene	<0.20	<0.20	<0.20	1
Benzo(j)fluoranthene	<0.20	<0.20	<0.20	1
Benzo(k)fluoranthene	<0.20	<0.20	<0.20	1
Dibenzo(a,h)anthracene	<0.20	<0.20	<0.20	1

Compound	Result (ppm)	Limit (ppm)
	(7)	
Benzo(a)pyrene	<0.20	1
Benzo(e)pyrene	<0.20	1
Benzo(a)anthracene	<0.20	1
Chrysene	<0.20	1
Benzo(b)fluoranthene	<0.20	1
Benzo(j)fluoranthene	<0.20	1
Benzo(k)fluoranthene	<0.20	1
Dibenzo(a,h)anthracene	<0.20	1



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The above limit was quoted according to REACH Regulation (EC) no. 1907/2006 & amendment no. 1272/2013, Annex XVII, Item 50 & The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019 No. 758) as amended for polycyclic aromatic hydrocarbons (PAH).

ppm = parts per million = mg/kg

Tested Components:

- (1) White coating on fabric (warnings).
- (2) Ivory plastic (zipper teeth).
- (3) Fluorescent yellow plastic (badge).
- (4) Dull ivory plastic (buckle).
- (5) White hooked velcro.
- (6) Fluorescent yellow knit backed with ivory color foam (vest).
- (7) Black knit (vest).

Date sample received : Jun 19, 2023

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End of report

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