

**Test Report No. 7191190153-EEC18**  
**dated September 06, 2018**

**Note:** This report is issued subject to the Testing and Certification Regulations of the TÜV SÜD Group and the General Terms and Conditions of Business of TÜV SÜD PSB Pte Ltd. In addition, this report is governed by the terms set out within this report.



PSB Singapore

**Choose certainty.  
Add value.**

**Client** : THAICOLOR CLAY CO., LTD. &  
TCC MARKETING CO., LTD.  
175/1 MOO 1, KAERAI KRATHUMBAN,  
SAMUTHSAKORN 74110,  
THAILAND  
ATTN: MS. KOTCHAKORN

**Test Sample** : RECEIVED ON 25/07/2018

**Test Period** : FROM 25/07/2018 TO 06/09/2018

**Sample Description** : CRAYONS

**Color** : /

**Product Type/ End Use** : /

**Model/Style** : /

**SKU No.:** : CY-12C/SD, CY-16C/JB, CY-12C/SJ

**Country of Origin** : THAILAND

**Country of Destination** : /

**Manufacturer** : THAICOLOR CLAY CO. LTD.



**Laboratory:**  
**TÜV SÜD PSB Pte. Ltd.**  
No.1 Science Park Drive  
Singapore 118221

Phone : +65-6885 1285  
Fax : +65-6776 8670  
E-mail: enquiries@tuv-sud-psb.sg  
www.tuv-sud-psb.sg  
Co. Reg : 199002667R

**Regional Head Office:**  
**TÜV SÜD Asia Pacific Pte. Ltd.**  
1 Science Park Drive, #02-01  
Singapore 118221  
**TÜV®**

SAMPLE PHOTO

DATE 5/09/2561

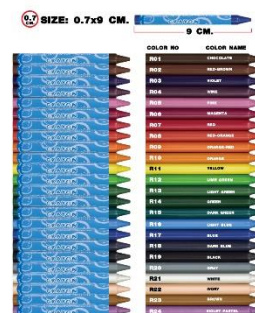
**CRAYONS  
SUPER JUMBO SIZE  
24 COLORS**



**CRAYONS  
JUMBO SIZE  
24 COLORS**



**CRAYONS  
STANDARD SIZE  
24 COLORS**



SAMPLE PHOTO

CRAYONS  
SUPER JUMBO SIZE  
12 COLORS



DATE 5/09/2561



DATE 5/09/2561

CRAYONS  
JUMBO SIZE  
16 COLORS



DATE 5/09/2561

CRAYONS  
STANDARD SIZE  
12 COLORS



SAMPLE PHOTO

CRAYONS  
SUPER JUMBO SIZE  
12 COLORS



DATE 5/09/2561

12 COLORS



1.4 CM. SIZE: 1.4x11.5 CM. 12 COLOR CRAYONS

CRAYONS  
JUMBO SIZE  
16 COLORS



DATE 5/09/2561

16 COLORS



1 CM. SIZE: 1x10 CM. 16 COLOR CRAYONS

CRAYONS  
STANDARD SIZE  
12 COLORS



DATE 5/09/2561

12 COLORS



0.7 CM. SIZE: 0.7x9 CM. 12 COLOR CRAYONS



**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

SAMPLE NO.	COLOR NAME	
1	CHOCOLATE	
2	RED-BROWN	
3	VIOLET	
4	WINE	
5	PINK	
6	MAGENTA	
7	RED	
8	RED-ORANGE	
9	ORANGE-RED	
10	ORANGE	
11	YELLOW	
12	LIME GREEN	
13	LIGHT GREEN	
14	GREEN	
15	DARK GREEN	
16	LIGHT BLUE	
17	BLUE	
18	DARK BLUE	
19	BLACK	
20	GRAY	
21	WHITE	
22	IVORY	
23	BROWN	
24	VIOLET PASTEL	



UPDATE 2018

**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**SUMMARY OF TEST RESULTS**

TEST REQUESTED	CONCLUSION	REMARK
MECHANICAL HAZARDS	PASS	US
FLAMMABILITY	PASS	US
TOTAL HEAVY METAL CONTENTS	PASS	US
TOTAL LEAD CONTENT IN SUBSTRATE	PASS	US
PHthalATES CONTENT	PASS	US
MECHANICAL HAZARD	PASS	EU
FLAMMABILITY	PASS	EU
MIGRATION OF CERTAIN ELEMENTS	PASS	EU
CADMIUM CONTENT	PASS	EU
PHthalATES CONTENT	PASS	EU
POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) CONTENT	PASS	EU
COLOURANTS CONTENT	PASS	EU
PRIMARY AROMATIC AMINES CONTENT	PASS	EU

For any concern or technical Inquiries, please contact

SUZEN CHONG  
VICE PRESIDENT  
ASEAN – SOFTLINE & HARDLINE  
Tel: +65 8686 6196  
Email: [suzen.chong@tuv-sud-psb.sg](mailto:suzen.chong@tuv-sud-psb.sg)

PERFORMED BY:

WONG KOK LEONG  
TEAM LEADER

APPROVED BY:

KOO CHIEH VOON  
HARDLINE PRODUCT MANAGER

**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULT(S):**

**PHYSICAL AND MECHANICAL HAZARDS (ASTM F963-17)**

Subclause	Requirement	Result
4.1	Material Quality	M
4.3.7	Stuffing Materials	NA
4.5	Sound-Producing Toys	NA
4.6	Small Objects	NA
4.7	Accessible Edges	M
4.8	Projections	NA
4.9	Accessible Points	M
4.10	Wires and Rods	NA
4.11	Nails and Fasteners	NA
4.12	Plastic Film	NA
4.13	Folding Mechanisms and Hinges	NA
4.14	Cords, Straps and Elastics	NA
4.15	Stability and Over-Load Requirements	NA
4.16	Confined Spaces	NA
4.17	Wheels, Tires and Axles	NA
4.18	Holes, Clearances and Accessibility of Mechanisms	NA
4.19	Simulated Protective Devices	NA
4.20	Pacifiers	NA
4.21	Projectile Toys	NA
4.22	Teethers and Teething Toys	NA
4.23	Rattles	NA
4.24	Squeeze Toys	NA
4.25	Battery-Operated Toys (exclude section 4.25.10 Battery-powered ride-on toys)	NA
4.26	Toys intended to be Attached to a Crib or Playpen	NA
4.27	Stuffed and Beanbag-Type Toys	NA
4.30	Toy Gun Marking	NA
4.32	Certain Toys with Nearly Spherical Ends	NA
4.34	Small Balls	NA
4.35	Pompoms	NA
4.36	Hemispheric-Shaped Objects	NA
4.38	Magnets	NA
4.39	Jaw Entrapment in Handles and Steering Wheels	NA
4.40	Expanding Materials	NA
5.2	Age Grading Labeling	NR
5.4 & 5.3	Aquatic Toys	NR
5.5 & 5.3	Crib and Playpen Toys	NR
5.6 & 5.3	Mobiles	NR
5.7 & 5.3	Stroller and Carriage Toys	NR
5.8 & 5.3	Toys Intended to be Assembled by an Adult	NR
5.9 & 5.3	Simulated Protective Devices	NR
5.10 & 5.3	Toys with Functional Sharp Edges or Sharp Points	NR
5.11	Small Objects, Small Balls, Marbles and Balloons (16 CFR 1500.19)	NR
5.12	Toy Caps (16 CFR 1500.86)	NR
5.13	Art Materials (16 CFR 1500.14(b)(8))	NR
5.15	Battery-Operated Toyss (exclude 5.15.1)	NR

**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULT(S):**

**PHYSICAL AND MECHANICAL HAZARDS (ASTM F963-17)**

Subclause	Requirement	Result
5.15.1 & 5.3	Battery-Powered Ride-On Toys	NR
5.15.2 & 5.3	Button or coin cell batteries	NR
5.16	Promotional Materials	NR
5.17 & 5.3	Magnets	NR
6.1	Definition and Description	NR
6.2	Crib and Playpen Toys	NR
6.3	Mobiles	NR
6.4 & 5.3	Toys Intended to be Assembled by an Adult	NR
6.5	Battery-Operated Toys	NR
6.6	Battery-Powered Ride-On Toys	NR
6.7	Toys in Contact with Food	NR
7.1	Producer's Name and Address	NR
7.2	Battery-Powered Ride-On Toys	NR

*M = Meet NM = Not Meet NA = Not Applicable R = Refer to Comment Section NR= Not Request  
NT = Not Tested NP = Not Presented*

**FLAMMABILITY (16 CFR SECTION 1500.3(c)(6)(vi))**

Requirement	Test Method Reference	Result
Burn rate no greater than 0.1 of an inch per second	16 CFR 1500.44	PASS



**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULT(S): (Continued)**

**Soluble Heavy Metals Content in Substrate - ASTM International Standard ASTM F963-17, Section 4.3.5.2(2)(b)**

**Test Method** : ASTM International Standard ASTM F963-17, Section 8.3.5 (Excluding 8.3.5.5(3)).

Soluble Element(s)	As	Ba	Cd	Cr	Hg	Pb	Sb	Se
Maximum Allowable Limit (mg/kg)	25	1 000	75	60	60	90	60	500

-	Unit	Result							
Test Item(s)	-	1	2	3	4	5	6	7	8
Soluble Arsenic (As)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Barium (Ba)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Cadmium (Cd)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Chromium (Cr)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Mercury (Hg)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Lead (Pb)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Antimony (Sb)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Selenium (Se)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
<b>Conclusion</b>	-	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

-	Unit	Result							
Test Item(s)	-	9	10	11	12	13	14	15	16
Soluble Arsenic (As)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Barium (Ba)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Cadmium (Cd)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Chromium (Cr)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Mercury (Hg)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Lead (Pb)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Antimony (Sb)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Selenium (Se)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
<b>Conclusion</b>	-	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

-	Unit	Result							
Test Item(s)	-	17	18	19	20	21	22	23	24
Soluble Arsenic (As)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Barium (Ba)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Cadmium (Cd)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Chromium (Cr)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Mercury (Hg)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Lead (Pb)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Antimony (Sb)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Soluble Selenium (Se)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
<b>Conclusion</b>	-	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Note / Key :

ND = Not detected

">" = Greater than

NR = Not requested

% = percent

g = gram(s)

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

Detection Limit ( mg/kg ) - As : 2.5 ; Ba : 5 ; Cd : 5 ; Cr : 5 ; Hg : 5 ; Pb : 5 ; Sb : 5 ; Se : 5

**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULT(S): (Continued)**

**Total Lead Content in Substrate - United States Consumer Product Safety Improvement Act (CPSIA) Section 101(a)(2)**

**Test Method** : U.S. CPSC-CH-E1002-08.3, analysis by ICP-OES

<b>Maximum Allowable Limit :</b>	<b>100 mg/kg</b>
----------------------------------	------------------

-	Unit	Result			
<b>Test Item(s)</b>	-	1+2+3	4+5+6	7+8+9	10+11+12
Total Lead (Pb)	mg/kg	ND	ND	ND	ND
<b>Conclusion</b>	-	PASS	PASS	PASS	PASS

-	Unit	Result			
<b>Test Item(s)</b>	-	13+14+15	16+17+18	19+20+21	22+23+24
Total Lead (Pb)	mg/kg	ND	ND	ND	ND
<b>Conclusion</b>	-	PASS	PASS	PASS	PASS

**Note / Key :**

ND = Not detected  
mg/kg = milligram(s) per kilogram = ppm = part(s) per million  
10000 mg/kg = 1 %  
Detection Limit (mg/kg) : 5

">" = Greater than  
% = percent

**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



**TEST RESULT(S): (Continued)**

**Phthalates Content in Children's Toys and Child Care Articles - United States Code of Federal Regulations (CFR), Title 16, Part 1307 and United States Consumer Product Safety Improvement Act (CPSIA) of 2008, Sections 108(a) and 108(b)(3)**

**Test Method** : In house method, solvent extraction by ultrasonic bath, determination by GC/MS

<b>Maximum Allowable Limit :</b>	<b>0.1 % ( Each of all listed phthalates ) <sup>[b]</sup></b>
----------------------------------	---

Test Item(s)	Result			Conclusion
	Detected Analyte(s)	Conc.	Unit	
1+2+3	ND	ND	%	PASS
4+5+6	ND	ND	%	PASS
7+8+9	ND	ND	%	PASS
10+11+12	ND	ND	%	PASS
13+14+15	ND	ND	%	PASS
16+17+18	ND	ND	%	PASS
19+20+21	ND	ND	%	PASS
22+23+24	ND	ND	%	PASS

Note / Key :

ND = Not detected

">" = Greater than

Conc. = Concentration

% = percent

1 % = 10 000 mg/kg

U. S. CPSC = United States Consumer Product Safety Commission

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

Detection Limit (%) : Each of the listed phthalates : 0.005

**APPENDIX**

**List of Phthalates [ U. S. 16 CFR 1307 and U. S. CPSIA of 2008, Sections 108(a) and 108(b)(3) ] :**

No.	Name of Analyte(s)	CAS-No.	No.	Name of Analyte(s)	CAS-No.
1	Butyl benzyl phthalate (BBP)	85-68-7	5	Di-iso-butyl phthalate (DIBP)	84-69-5
2	Dibutyl phthalate (DBP)	84-74-2	6	Di-n-pentyl phthalate (DnPP or DPENP)	131-18-0
3	Di-2-ethylhexyl phthalate (DEHP)	117-81-7	7	Di-n-hexyl phthalate (DnHP or DHEXP)	84-75-3
4	Di-iso-nonyl phthalate (DINP)	28553-12-0	8	Di-cyclohexyl phthalate (DCHP)	84-61-7

CAS-No. = Chemical Abstracts Service registry number

**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULTS:**

**MECHANICAL AND PHYSICAL PROPERTIES**  
(EN 71: PART 1- 2014)

Subclause	Requirement	Result
4.1	Material cleanliness	M
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 & 7.6	Edges	M
4.8 & 7.6	Points and metallic wires	NA
4.8e	Splinters	M
4.9	Protruding parts	NA
4.10.1	Folding and sliding mechanisms	NA
4.10.2	Driving mechanisms	NA
4.10.3	Hinges	NA
4.10.4	Springs	NA
4.11	Mouth actuated toys and other toys intended to be put in the mouth	NA
4.12 & 7.3	Balloons	NA
4.13 & 7.9	Cord of toy kites and other flying toys	NA
4.14.1	Toys which a child can enter	NA
4.12.3 & 7.8	Masks and helmets	NA
4.15.1	Toys propelled by child	NA
4.15.1.2 & 7.10.1 & 7.10.2 & 7.10.3 & 7.10.4 & 7.16	Toys propelled by child – instructions for use	NA
4.15.1.3	Toys propelled by child – Strength	NA
4.15.1.4	Toys propelled by child – Stability	NA
4.15.1.5	Toys propelled by child – Braking	NA
4.15.1.6	Toys propelled by child –Transmission	NA
4.15.1.7	Toys propelled by child –Insertion mark	NA
4.15.1.8	Electrically-driven ride-on toys	NA
4.15.2	Toy bicycles	NA
4.15.2.2 & 7.15	Toy bicycles – Warnings and instructions for use	NA
4.15.2.3	Toy bicycles – Braking	NA
4.15.3 & 7.16 & 7.19	Rocking horses and similar toys	NA
4.15.4 & 7.16	Toys not propelled by child	NA
4.15.5 & 7.18	Toy Scooters	NA
4.16	Heavy immobile toys	NA
4.17.1	Projectiles – General	NA
4.17.2	Projectile toys without stored energy	NA
4.17.3 & 7.7	Projectile toys with stored energy	NA
4.17.4 & 7.7	Bows and arrows	NA
4.18 & 7.4	Aquatic toys and inflatable toys	NA
4.19 & 7.13 & 7.14	Percussion caps	NA
4.20.2.1- 4.20.2.8, 4.20.2.10, 4.20.2.12	Acoustics	NA
4.20.2.9, 4.20.2.11 & 7.14	Acoustics – percussion toys & cap-firing toys	NA

**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULTS: (Continued)**

Subclause	Requirement	Result
4.21	Toys containing a non-electrical heat source	NA
4.22 & 7.2	Small balls	NA
4.23	Magnet	NA
4.23.2 a, b & c	Toy other than magnetic/ electrical experimental sets intended for children over 8 years	NA
4.23.3 & 7.20	Magnetic/ electrical experimental sets intended for children over 8 years	NA
4.24	Yo-yo ball	NA
4.25	Toys attached to food	NA
	<b>FOR TOYS INTENDED FOR CHILDREN UNDER 36 MONTHS</b>	
5	Cleaning instruction for item intended for child under 3 years of age	NA
5.1	General	NA
5.1a	Small parts - as received	NA
5.1b	Small parts, sharp points & sharp edge- after tests	NA
5.1c	Cross section < 2mm metal points & wires	NA
5.1e	Toys contain glue	NA
5.1f	Casing of toys(For toys less than 10 months)	NA
5.2	Fillings, coverings and seams	NA
5.3	Adhesion of plastic sheeting	NA
5.4 &	Cords on toys	NA
5.4(a)	Cords connected to self-retraction mechanism or in pull along toys	NA
5.4(b)&7.22	Cords and chains that can form tangled loop or noose	NA
5.4(c)& 7.22	Fixed loop of cords or chains	NA
5.4(d)	Nooses	NA
5.4(e)	Self-retraction mechanism	NA
5.4(f) & 7.11	Toy across cradle, cot or perambulator	NA
5.4(g)&7.22	Cords and chains with free end (exclude pull along toy)	NA
5.4(h)	Cords and chains with free end on pull along toy	NA
5.4(i) & 7.21	Electrical cables	NA
5.5 & 7.12	Liquid filled toys	NA
5.6	Electrically driven toys	NA
5.7	Glass and porcelain	NA
5.8	Shape and size	NA
5.9 & 7.17	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
6	Packaging	NR
	<b>WARNINGS, INSTRUCTIONS FOR USE</b>	
7	CE Mark	NR
7	Manufacturer name and address	NR
7	Importer name and address	NR
7	Product Identification	NR
7.1	General	NR
7.2	Toys not intended for children under 36 months	NR
7.5	Functional toys	NR



**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULTS: (Continued)**

**REQUIREMENTS & TESTS METHODS CROSS REFERENCE TABLE FOR PART 1**

Sub-clause	Test Method	Sub-clause	Test Method	Sub-clause	Test Method	Sub-clause	Test Method
4.3	8.25.1	4.14.2	8.3, 8.4.2.1, 8.5, 8.7, 8.8, 8.11, 8.12	4.17.3	8.24.1	5.3	8.4.2.1, 8.25
4.5	8.5, 8.7, 8.11, 8.12	4.15.1.3	8.11, 8.12, 8.21, 8.22	4.17.4	8.24.2	5.4	8.20, 8.36, 8.38, 8.39, 8.40
4.6	8.2, 8.3, 8.4.2.1, 8.5, 8.7, 8.8, 8.14	4.15.1.4	8.23.1	4.18	8.2, 8.3, 8.4.2.1	5.5	8.15
4.7	8.11	4.15.1.5	8.26.1	4.20	8.28	5.6	8.29
4.8	8.12, 8.13	4.15.1.8	8.29	4.21	8.30	5.8	8.16
4.9	8.4.2.3, 8.11, 8.12	4.15.2.4	8.26.2	4.22	8.3, 8.4.2.1, 8.5, 8.6, 8.7, 8.8, 8.32	5.10	8.3, 8.4.2.1, 8.5, 8.6, 8.7, 8.8, 8.9, 8.32
4.10.1	8.12.2, 8.12.3	4.15.3	8.21, 8.23.1	4.23	8.2, 8.3, 8.4.2.1, 8.4.2.2, 8.5, 8.6, 8.7, 8.8, 8.34, 8.35	5.11	8.33
4.10.2	8.5, 8.6, 8.7, 8.11, 8.12	4.15.4	8.21, 8.23.1	4.24	8.37	5.12	8.3, 8.4.2.1, 8.5, 8.6, 8.7, 8.8, 8.9
4.11	8.2, 8.3, 8.4.2.1, 8.9, 8.17	4.15.5	8.11, 8.12, 8.21, 8.22, 8.26.3, 8.27	4.25	8.2, 8.3, 8.4.2.1, 8.5, 8.7, 8.8, 8.32.1	5.13	8.3, 8.4.2.1, 8.5, 8.6, 8.7, 8.8, 8.32
4.13	8.19	4.16	8.23.2	5.1	8.2, 8.3, 8.4.2.1, 8.5, 8.7, 8.8, 8.9, 8.11, 8.12	5.14	8.38
4.14.1	8.31.1, 8.31.2	4.17.1	8.4.2.3				

M = Meet      NM = Not Meet  
NR = Not Request

NA = Not Applicable  
NT = Not Tested

R = Refer to Comment Section  
NP = Not Presented

**TEST RESULTS: (Continued)**

**FLAMMABILITY (EN 71 PART 2: 2011 + A1: 2014)**

Subclause	Requirement	Result
4.1	Cellulose nitrate	NP
4.1	Surface flash on a piled surface	NA
*4.1	Flammable Gases	NA
*4.1	Extremely flammable liquids, highly flammable liquids, flammable liquids and flammable gels	NA
4.2	Toys to be worn on the head	NA
4.3	Toys disguise costumes and toys intended to be worn by child in play	NA
4.3	Warning on product and packaging (10-30 mm/s)	NA
4.4	Toys intended to be entered by child	NA
4.4	Warning on product and packaging (10-30 mm/s)	NA
4.5	Soft- filed toys	NA

**REQUIREMENTS & TESTS METHODS CROSS REFERENCE TABLE FOR PART 2**

Sub-clause	Test Method	Sub-clause	Test Method	Sub-clause	Test Method	Sub-clause	Test Method
4.2.2	5.2	4.2.4	5.3	4.3	5.4	4.5	5.5
4.2.3	5.3	4.2.5	5.4	4.4	5.4	-	-

M = Meet      NM = Not Meet  
NR = Not Request

NA = Not Applicable  
NT = Not Tested

R = Refer to Comment Section  
NP = Not Presented

**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULTS: (Continued)**

**Migration of Certain Elements - European Standard EN 71 Part 3: 2013 with Amendment A2: 2017**

**Test Method** : With reference to EN 71 Part 3: 2013 with Amendment A2: 2017 by ICP-MS

See Soluble Element (Parameter) and its corresponding Maximum Allowable Limit (Req.) in Result Table	Type I	Dry, brittle, powder-like or pliable toy material
	Type II	Liquid or sticky toy material
	Type III	Scraped-off toy material

-	Unit	Req.	Result (mg/kg)						Detection Limit
Test Item(s)	-	-	1	2	3	4	5	6	
Type	-	I	I	I	I	I	I	I	I
Aluminium (Al)	mg/kg	5625	<5	<5	<5	<5	<5	<5	<5
Antimony (Sb)	mg/kg	45	<5	<5	<5	<5	<5	<5	<5
Arsenic (As)	mg/kg	3.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Barium (Ba)	mg/kg	1500	<5	<5	<5	<5	<5	<5	<5
Boron (B)	mg/kg	1200	<5	<5	<5	<5	<5	<5	<5
Cadmium (Cd)	mg/kg	1.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
#1Chromium (Cr)	mg/kg	/	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
#2Chromium III (Cr III)	mg/kg	37.5	/	/	/	/	/	/	/
#2Chromium VI (Cr VI)	mg/kg	0.02	/	/	/	/	/	/	/
Cobalt (Co)	mg/kg	10.5	<2	<2	<2	<2	<2	<2	<2
Copper (Cu)	mg/kg	622.5	<5	<5	<5	<5	<5	<5	<5
Lead (Pb)	mg/kg	13.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Manganese (Mn)	mg/kg	1200	<5	<5	<5	<5	<5	<5	<5
Mercury (Hg)	mg/kg	7.5	<1	<1	<1	<1	<1	<1	<1
Nickel (Ni)	mg/kg	75	<5	<5	<5	<5	<5	<5	<5
Selenium (Se)	mg/kg	37.5	<5	<5	<5	<5	<5	<5	<5
Strontium (Sr)	mg/kg	4500	<5	<5	<5	<5	<5	<5	<5
Tin (Sn)	mg/kg	15000	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
#3Organic tin	mg/kg	0.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Zinc (Zn)	mg/kg	3750	<5	<5	<5	<5	<5	15.6	<5
<b>Conclusion</b>	-	-	PASS	PASS	PASS	PASS	PASS	PASS	-

**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULTS: (Continued)**

-	Unit	Req.	Result (mg/kg)						
Test Item(s)	-	-	7	8	9	10	11	12	Detection Limit
Type	-	I	I	I	I	I	I	I	I
Aluminium (Al)	mg/kg	5625	<5	<5	<5	<5	<5	<5	<5
Antimony (Sb)	mg/kg	45	<5	<5	<5	<5	<5	<5	<5
Arsenic (As)	mg/kg	3.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Barium (Ba)	mg/kg	1500	<5	<5	<5	<5	<5	<5	<5
Boron (B)	mg/kg	1200	<5	<5	<5	<5	<5	<5	<5
Cadmium (Cd)	mg/kg	1.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
#1Chromium (Cr)	mg/kg	/	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
#2Chromium III (Cr III)	mg/kg	37.5	/	/	/	/	/	/	/
#2Chromium VI (Cr VI)	mg/kg	0.02	/	/	/	/	/	/	/
Cobalt (Co)	mg/kg	10.5	<2	<2	<2	<2	<2	<2	<2
Copper (Cu)	mg/kg	622.5	<5	<5	<5	<5	<5	<5	<5
Lead (Pb)	mg/kg	13.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Manganese (Mn)	mg/kg	1200	<5	<5	<5	<5	<5	<5	<5
Mercury (Hg)	mg/kg	7.5	<1	<1	<1	<1	<1	<1	<1
Nickel (Ni)	mg/kg	75	<5	<5	<5	<5	<5	<5	<5
Selenium (Se)	mg/kg	37.5	<5	<5	<5	<5	<5	<5	<5
Strontium (Sr)	mg/kg	4500	<5	<5	<5	<5	<5	<5	<5
Tin (Sn)	mg/kg	15000	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
#3Organic tin	mg/kg	0.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Zinc (Zn)	mg/kg	3750	<5	<5	<5	<5	<5	<5	<5
<b>Conclusion</b>	-	-	PASS	PASS	PASS	PASS	PASS	PASS	-

**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULTS: (Continued)**

-	Unit	Req.	Result (mg/kg)						
Test Item(s)	-	-	13	14	15	16	17	18	Detection Limit
Type	-	I	I	I	I	I	I	I	I
Aluminium (Al)	mg/kg	5625	<5	<5	<5	<5	<5	<5	<5
Antimony (Sb)	mg/kg	45	<5	<5	<5	<5	<5	<5	<5
Arsenic (As)	mg/kg	3.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Barium (Ba)	mg/kg	1500	<5	<5	<5	<5	<5	<5	<5
Boron (B)	mg/kg	1200	<5	<5	<5	<5	<5	<5	<5
Cadmium (Cd)	mg/kg	1.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
#1Chromium (Cr)	mg/kg	/	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
#2Chromium III (Cr III)	mg/kg	37.5	/	/	/	/	/	/	/
#2Chromium VI (Cr VI)	mg/kg	0.02	/	/	/	/	/	/	/
Cobalt (Co)	mg/kg	10.5	<2	<2	<2	<2	<2	<2	<2
Copper (Cu)	mg/kg	622.5	<5	<5	<5	<5	<5	<5	<5
Lead (Pb)	mg/kg	13.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Manganese (Mn)	mg/kg	1200	<5	<5	<5	<5	<5	<5	<5
Mercury (Hg)	mg/kg	7.5	<1	<1	<1	<1	<1	<1	<1
Nickel (Ni)	mg/kg	75	<5	<5	<5	<5	<5	<5	<5
Selenium (Se)	mg/kg	37.5	<5	<5	<5	<5	<5	<5	<5
Strontium (Sr)	mg/kg	4500	<5	<5	<5	<5	<5	<5	<5
Tin (Sn)	mg/kg	15000	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
#3Organic tin	mg/kg	0.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Zinc (Zn)	mg/kg	3750	<5	<5	<5	<5	<5	<5	<5
<b>Conclusion</b>	-	-	PASS	PASS	PASS	PASS	PASS	PASS	-



**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULTS: (Continued)**

-	Unit	Req.	Result (mg/kg)						
Test Item(s)	-	-	19	20	21	22	23	24	Detection Limit
Type	-	I	I	I	I	I	I	I	I
Aluminium (Al)	mg/kg	5625	<5	<5	<5	<5	<5	<5	<5
Antimony (Sb)	mg/kg	45	<5	<5	<5	<5	<5	<5	<5
Arsenic (As)	mg/kg	3.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Barium (Ba)	mg/kg	1500	<5	<5	<5	<5	<5	<5	<5
Boron (B)	mg/kg	1200	<5	<5	<5	<5	<5	<5	<5
Cadmium (Cd)	mg/kg	1.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
#1Chromium (Cr)	mg/kg	/	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
#2Chromium III (Cr III)	mg/kg	37.5	/	/	/	/	/	/	/
#2Chromium VI (Cr VI)	mg/kg	0.02	/	/	/	/	/	/	/
Cobalt (Co)	mg/kg	10.5	<2	<2	<2	<2	<2	<2	<2
Copper (Cu)	mg/kg	622.5	<5	<5	<5	<5	<5	<5	<5
Lead (Pb)	mg/kg	13.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Manganese (Mn)	mg/kg	1200	<5	<5	<5	<5	<5	<5	<5
Mercury (Hg)	mg/kg	7.5	<1	<1	<1	<1	<1	<1	<1
Nickel (Ni)	mg/kg	75	<5	<5	<5	<5	<5	<5	<5
Selenium (Se)	mg/kg	37.5	<5	<5	<5	<5	<5	<5	<5
Strontium (Sr)	mg/kg	4500	<5	<5	<5	<5	<5	<5	<5
Tin (Sn)	mg/kg	15000	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
#3Organic tin	mg/kg	0.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Zinc (Zn)	mg/kg	3750	<5	<5	<5	23.9	17.8	<5	<5
<b>Conclusion</b>	-	-	PASS	PASS	PASS	PASS	PASS	PASS	-

**Note / Key :**

ND = Not detected

NR = Not requested

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

">" = Greater than

g = gram(s)

Req. = Requirement

INCON. = Inconclusive

**Remark :**

- #1Chromium III and Chromium VI are determined by screening of total chromium
- #2Chromium VI is determined by UV-VIS spectrometry, Chromium (III) = total Chromium – Chromium (VI)
- #3Organic Tin is determined by screening of total Tin

**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULTS: (Continued)**

**Total Cadmium Content in Plastics - Regulation (EC) No. 1907/2006 Annex XVII Entry 23 Paragraph 1(a)**

**Test Method** : With reference to EN 1122: 2001 Method B. Acid digestion and analysis by Atomic Absorption Spectrophotometer (AAS) or Inductively Coupled Plasma - Atomic Emission Spectrometer (ICP-AES).

<b>Maximum Allowable Limit :</b>	<b>100 mg/kg</b>
----------------------------------	------------------

-	Unit	Result			
<b>Test Item(s)</b>	-	1+2+3	4+5+6	7+8+9	10+11+12
Total Cadmium (Cd)	mg/kg	ND	ND	ND	ND
<b>Conclusion</b>	-	PASS	PASS	PASS	PASS

-	Unit	Result			
<b>Test Item(s)</b>	-	13+14+15	16+17+18	19+20+21	22+23+24
Total Cadmium (Cd)	mg/kg	ND	ND	ND	ND
<b>Conclusion</b>	-	PASS	PASS	PASS	PASS

Note / Key :

ND = Not detected

mg/kg = milligram(s) per kilogram

Detection Limit (mg/kg): 10

">" = Greater than

"<" = Less than

**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULTS:**

**Phthalates Content in Toys and Childcare Articles - European Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) with Amendments up to EC No. 494/2011, Annex XVII, Entry 51 & 52**

Maximum allowable limit	0.1 % ( Sum of all listed phthalates )			
Tested Item(s)	Result			Conclusion
	Detected Analyte(s)	Conc.	Unit	
1+2+3	ND	ND	%	PASS
4+5+6	ND	ND	%	PASS
7+8+9	ND	ND	%	PASS
10+11+12	ND	ND	%	PASS
13+14+15	ND	ND	%	PASS
16+17+18	ND	ND	%	PASS
19+20+21	ND	ND	%	PASS
22+23+24	ND	ND	%	PASS

Note / Key :

ND = Not detected

% = percent

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

Detection Limit (%): Each 0.005

">" = Greater than

1 % = 10 000 mg/kg

Conc. = Concentration

Remark :

- The list of phthalates is summarized in table of Appendix.

**APPENDIX**

**List of Phthalates [ European Regulation EC No. 1907/2006, Annex XVII, Entry 51 & 52 ]:**

No.	Name of Analytes	CAS-No. [ EC No. ]	No.	Name of Analytes	CAS-No. [ EC No. ]
1	Butyl benzyl phthalate (BBP)	85-68-7 [ 201-622-7 ]	4	Di-iso-decyl phthalate (DIDP)	26761-40-0 & 68515-49-1 [ 247-977-1 & 271-091-4 ]
2	Dibutyl phthalate (DBP)	84-74-2 [ 201-557-4 ]	5	Di-iso-nonyl phthalate (DINP)	28553-12-0 & 68515-48-0 [ 249-079-5 & 271-090-9 ]
3	Di-2-ethylhexyl phthalate (DEHP)	117-81-7 [ 204-211-0 ]	6	Di-n-octyl phthalate (DNOP)	117-84-0 [ 204-214-7 ]

**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULTS:**

**Polycyclic Aromatic Hydrocarbons (PAHs) Content - European Parliament and Council Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII with its Latest Amendments, Entry 50, Point 5**

<b>Maximum Allowable Limit :</b>	<b>1.0 mg/kg ( Each of all listed PAHs )</b>
----------------------------------	--

Test Item(s)	Result				Conclusion
	Test Method	Detected Analyte(s)	Conc.	Unit	
1+2+3	II	ND	ND	mg/kg	PASS
4+5+6	II	ND	ND	mg/kg	PASS
7+8+9	II	ND	ND	mg/kg	PASS
10+11+12	II	ND	ND	mg/kg	PASS
13+14+15	II	ND	ND	mg/kg	PASS
16+17+18	II	ND	ND	mg/kg	PASS
19+20+21	II	ND	ND	mg/kg	PASS
22+23+24	II	ND	ND	mg/kg	PASS

**Note / Key :**

ND = Not detected  
 mg/kg = milligram(s) per kilogram = ppm = part(s) per million  
 1 % = 10 000 mg/kg  
 Detection Limit (mg/kg) -  
 For individual testing - Each of the listed PAHs : 0.2  
 For composite testing - Each of the listed PAHs : 0.2

">" = Greater than  
 Test Method I = Individual Testing

Conc. = Concentration  
 % = percent  
 Test Method II = Composite Testing

**Remark :**

- The list of polycyclic aromatic hydrocarbons is summarized in table of Appendix.

**APPENDIX**

<b>List of Polycyclic Aromatic Hydrocarbons</b> <b>[ European Parliament and Council Regulation EC No. 1907/2006, Annex XVII, Entry 50, Point 5 ] :</b>					
No.	Name of Analyte(s)	CAS-No.	No.	Name of Analyte(s)	CAS-No.
1	Benzo[a]pyrene (BaP)	50-32-8	5	Benzo[b]fluoranthene (BbFA)	205-99-2
2	Benzo[e]pyrene (BeP)	192-97-2	6	Benzo[j]fluoranthene (BjFA)	205-82-3
3	Benzo[a]anthracene (BaA)	56-55-3	7	Benzo[k]fluoranthene (BkFA)	207-08-9
4	Chrysene (CHR)	218-01-9	8	Dibenzo[a,h]anthracene (DBA <sub>h</sub> A)	53-70-3
CAS-No. = Chemical Abstracts Service registry number					

**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULT(S):**

**Colourants Content**

**Test Method** : with reference to EN71-10:2005 & EN71-11:2005, quantification by LC-MS

Test Parameter	CAS No.	Result (mg/kg)				Maximum permissible limit
		1	2	3	4	
Disperse Blue 1	2475-45-8	ND	ND	ND	ND	10
Disperse Blue 3	2475-46-9	ND	ND	ND	ND	10
Disperse Blue 106	12223-01-7	ND	ND	ND	ND	10
Disperse Blue 124	61951-51-7	ND	ND	ND	ND	10
Disperse Yellow 3	2832-40-8	ND	ND	ND	ND	10
Disperse Orange 3	730-40-5	ND	ND	ND	ND	10
Disperse Orange 37/76	12223-33-5 13301-61-6	ND	ND	ND	ND	10
Disperse Red 1	2872-52-8	ND	ND	ND	ND	10
Solvent Yellow 1	60-09-3	ND	ND	ND	ND	10
Solvent Yellow 2	60-11-7	ND	ND	ND	ND	10
Solvent Yellow 3	97-56-3	ND	ND	ND	ND	10
Basic Red 9	569-61-9	ND	ND	ND	ND	10
Basic Violet 1	8004-87-3	ND	ND	ND	ND	10
Basic Violet 3	548-62-9	ND	ND	ND	ND	10
Acid Red 26	3761-53-3	ND	ND	ND	ND	10
Acid Violet 49	1694-09-3	ND	ND	ND	ND	10
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

Test Parameter	CAS No.	Result (mg/kg)				Maximum permissible limit
		5	6	7	8	
Disperse Blue 1	2475-45-8	ND	ND	ND	ND	10
Disperse Blue 3	2475-46-9	ND	ND	ND	ND	10
Disperse Blue 106	12223-01-7	ND	ND	ND	ND	10
Disperse Blue 124	61951-51-7	ND	ND	ND	ND	10
Disperse Yellow 3	2832-40-8	ND	ND	ND	ND	10
Disperse Orange 3	730-40-5	ND	ND	ND	ND	10
Disperse Orange 37/76	12223-33-5 13301-61-6	ND	ND	ND	ND	10
Disperse Red 1	2872-52-8	ND	ND	ND	ND	10
Solvent Yellow 1	60-09-3	ND	ND	ND	ND	10
Solvent Yellow 2	60-11-7	ND	ND	ND	ND	10
Solvent Yellow 3	97-56-3	ND	ND	ND	ND	10
Basic Red 9	569-61-9	ND	ND	ND	ND	10
Basic Violet 1	8004-87-3	ND	ND	ND	ND	10
Basic Violet 3	548-62-9	ND	ND	ND	ND	10
Acid Red 26	3761-53-3	ND	ND	ND	ND	10
Acid Violet 49	1694-09-3	ND	ND	ND	ND	10
<b>Conclusion</b>		PASS	PASS	PASS	PASS	



**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULTS: (Continued)**

Test Parameter	CAS No.	Result (mg/kg)				
		9	10	11	12	Maximum permissible limit
Disperse Blue 1	2475-45-8	ND	ND	ND	ND	10
Disperse Blue 3	2475-46-9	ND	ND	ND	ND	10
Disperse Blue 106	12223-01-7	ND	ND	ND	ND	10
Disperse Blue 124	61951-51-7	ND	ND	ND	ND	10
Disperse Yellow 3	2832-40-8	ND	ND	ND	ND	10
Disperse Orange 3	730-40-5	ND	ND	ND	ND	10
Disperse Orange 37/76	12223-33-5 13301-61-6	ND	ND	ND	ND	10
Disperse Red 1	2872-52-8	ND	ND	ND	ND	10
Solvent Yellow 1	60-09-3	ND	ND	ND	ND	10
Solvent Yellow 2	60-11-7	ND	ND	ND	ND	10
Solvent Yellow 3	97-56-3	ND	ND	ND	ND	10
Basic Red 9	569-61-9	ND	ND	ND	ND	10
Basic Violet 1	8004-87-3	ND	ND	ND	ND	10
Basic Violet 3	548-62-9	ND	ND	ND	ND	10
Acid Red 26	3761-53-3	ND	ND	ND	ND	10
Acid Violet 49	1694-09-3	ND	ND	ND	ND	10
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

Test Parameter	CAS No.	Result (mg/kg)				Maximum permissible limit
		13	14	15	16	
Disperse Blue 1	2475-45-8	ND	ND	ND	ND	10
Disperse Blue 3	2475-46-9	ND	ND	ND	ND	10
Disperse Blue 106	12223-01-7	ND	ND	ND	ND	10
Disperse Blue 124	61951-51-7	ND	ND	ND	ND	10
Disperse Yellow 3	2832-40-8	ND	ND	ND	ND	10
Disperse Orange 3	730-40-5	ND	ND	ND	ND	10
Disperse Orange 37/76	12223-33-5 13301-61-6	ND	ND	ND	ND	10
Disperse Red 1	2872-52-8	ND	ND	ND	ND	10
Solvent Yellow 1	60-09-3	ND	ND	ND	ND	10
Solvent Yellow 2	60-11-7	ND	ND	ND	ND	10
Solvent Yellow 3	97-56-3	ND	ND	ND	ND	10
Basic Red 9	569-61-9	ND	ND	ND	ND	10
Basic Violet 1	8004-87-3	ND	ND	ND	ND	10
Basic Violet 3	548-62-9	ND	ND	ND	ND	10
Acid Red 26	3761-53-3	ND	ND	ND	ND	10
Acid Violet 49	1694-09-3	ND	ND	ND	ND	10
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULTS: (Continued)**

Test Parameter	CAS No.	Result (mg/kg)				
		17	18	19	20	Maximum permissible limit
Disperse Blue 1	2475-45-8	ND	ND	ND	ND	10
Disperse Blue 3	2475-46-9	ND	ND	ND	ND	10
Disperse Blue 106	12223-01-7	ND	ND	ND	ND	10
Disperse Blue 124	61951-51-7	ND	ND	ND	ND	10
Disperse Yellow 3	2832-40-8	ND	ND	ND	ND	10
Disperse Orange 3	730-40-5	ND	ND	ND	ND	10
Disperse Orange 37/76	12223-33-5 13301-61-6	ND	ND	ND	ND	10
Disperse Red 1	2872-52-8	ND	ND	ND	ND	10
Solvent Yellow 1	60-09-3	ND	ND	ND	ND	10
Solvent Yellow 2	60-11-7	ND	ND	ND	ND	10
Solvent Yellow 3	97-56-3	ND	ND	ND	ND	10
Basic Red 9	569-61-9	ND	ND	ND	ND	10
Basic Violet 1	8004-87-3	ND	ND	ND	ND	10
Basic Violet 3	548-62-9	ND	ND	ND	ND	10
Acid Red 26	3761-53-3	ND	ND	ND	ND	10
Acid Violet 49	1694-09-3	ND	ND	ND	ND	10
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

Test Parameter	CAS No.	Result (mg/kg)				Maximum permissible limit
		21	22	23	24	
Disperse Blue 1	2475-45-8	ND	ND	ND	ND	10
Disperse Blue 3	2475-46-9	ND	ND	ND	ND	10
Disperse Blue 106	12223-01-7	ND	ND	ND	ND	10
Disperse Blue 124	61951-51-7	ND	ND	ND	ND	10
Disperse Yellow 3	2832-40-8	ND	ND	ND	ND	10
Disperse Orange 3	730-40-5	ND	ND	ND	ND	10
Disperse Orange 37/76	12223-33-5 13301-61-6	ND	ND	ND	ND	10
Disperse Red 1	2872-52-8	ND	ND	ND	ND	10
Solvent Yellow 1	60-09-3	ND	ND	ND	ND	10
Solvent Yellow 2	60-11-7	ND	ND	ND	ND	10
Solvent Yellow 3	97-56-3	ND	ND	ND	ND	10
Basic Red 9	569-61-9	ND	ND	ND	ND	10
Basic Violet 1	8004-87-3	ND	ND	ND	ND	10
Basic Violet 3	548-62-9	ND	ND	ND	ND	10
Acid Red 26	3761-53-3	ND	ND	ND	ND	10
Acid Violet 49	1694-09-3	ND	ND	ND	ND	10
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

Note / Key :

ND = Not detected

mg/kg = milligram(s) per kilogram

Detection Limit: 10 mg/kg

Recommended limits according to EN71 Part 9, action limit

">" = Greater than

"<" = Less than

**Test Report No. 7191190153-EEC18**  
dated September 06, 2018



PSB Singapore

**TEST RESULTS: (Continued)**

**Primary Aromatic Amines Content**

**Test Method** : with reference to EN71-10:2005 & EN71-11:2005  
Determination by Gas Chromatography-Mass Selective Detection (GC-MSD),  
confirmation by High Performance Liquid Chromatographic (HPLC/DAD)

Test Parameter	Primary Aromatic Amines
Maximum permissible limit	5 mg/kg

Sample ID	Detected Amine Number	Concentration (mg/kg)	Conclusion
1	ND	ND	PASS
2	ND	ND	PASS
3	ND	ND	PASS
4	ND	ND	PASS
5	ND	ND	PASS
6	ND	ND	PASS
7	ND	ND	PASS
8	ND	ND	PASS
9	ND	ND	PASS
10	ND	ND	PASS
11	ND	ND	PASS
12	ND	ND	PASS
13	ND	ND	PASS
14	ND	ND	PASS
15	ND	ND	PASS
16	ND	ND	PASS
17	ND	ND	PASS
18	ND	ND	PASS
19	ND	ND	PASS
20	ND	ND	PASS
21	ND	ND	PASS
22	ND	ND	PASS
23	ND	ND	PASS
24	ND	ND	PASS

**Note / Key :**

ND = Not detected

">" = Greater than

"<" = Less than

mg/kg = milligram(s) per kilogram

Detection Limit: 5.0 mg/kg

Limit is action limit quoted from EN71-11:2005 clause 5.4.6

Amine No. = Refer to List of Banned Amines for the description of the detected Amine

LIST OF PRIMARY AROMATIC AMINES Specified Amines		
Number	Chemical Name	CAS Number
1	Benzidine	92-87-5
2	2-naphthylamine	91-59-8
3	4-chloroaniline	106-47-8
4	3,3'-dichlorobenzidine	91-94-1
5	3,3'-dimethoxybenzidine	119-90-4
6	3,3'-dimethylbenzidine	119-93-7
7	o-toluidine	95-53-4
8	2-methoxyaniline	90-04-0
9	Aniline	62-53-3

**Test Report No. 7191190153-EEC18**  
**dated September 06, 2018**



PSB Singapore

**Please note that this Report is issued under the following terms :**

1. This report applies to the sample of the specific product/equipment given at the time of its testing/calibration. The results are not used to indicate or imply that they are applicable to other similar items. In addition, such results must not be used to indicate or imply that TÜV SÜD PSB approves, recommends or endorses the manufacturer, supplier or user of such product/equipment, or that TÜV SÜD PSB in any way "guarantees" the later performance of the product/equipment. Unless otherwise stated in this report, no tests were conducted to determine long term effects of using the specific product/equipment.
2. The sample/s mentioned in this report is/are submitted/supplied/manufactured by the Client. TÜV SÜD PSB therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture, consignment or any information supplied.
3. Nothing in this report shall be interpreted to mean that TÜV SÜD PSB has verified or ascertained any endorsement or marks from any other testing authority or bodies that may be found on that sample.
4. This report shall not be reproduced wholly or in parts and no reference shall be made by the Client to TÜV SÜD PSB or to the report or results furnished by TÜV SÜD PSB in any advertisements or sales promotion.
5. Unless otherwise stated, the tests were carried out in TÜV SÜD PSB Pte Ltd, No.1 Science Park Drive Singapore 118221.

