



CONSUMER PRODUCTS SERVICES DIVISION

CARPENTERS MANUFACTORY LIMITED

Technical Report: (8520)020-0197(A)
Date Received: January 22, 2020

February 24, 2020
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CARPENTERS MANUFACTORY LIMITED
HUANG JIN JI INDUSTRIAL ZONE, SHANG JIE
VILLAGE, QI SHI TOWN, DONG GUAN CITY, GUANG
DONG PROVINCE, P.R.CHINA

Sample Description:	A. STEM WALL - 512 PIECE PEGS (8 COLOURS) SET I B. STEM WALL - 512 PIECE PEGS (6 COLOURS) SET II C. STEM WALL 512 PIECE SCREWS (MIXED COLOURS) D. STEM WALL 256 PIECE GEOMETRIC SHAPE PEGS (8 COLOURS) - PACK I E. STEM WALL 256 PIECE GEOMETRIC SHAPE PEGS (8 COLOURS) - PACK II F. STEM WALL 64 PIECE GEOMETRIC SHAPE PEGS (8 COLOURS) - PACK I G. STEM WALL 64 PIECE GEOMETRIC SHAPE PEGS (8 COLOURS) - PACK II H. STEM WALL 39 PIECE GEARS AND CHAIN SET I. STEM WALL - LACING PEGS AND ACCESSORIES		
Vendor:	CARPENTERS MANUFACTORY LIMITED 东莞天志木制品有限公司	Sample Size:	11
Manufacturer:	N/A		
Buyer:	N/A	SKN/SKU No.:	N/A
Labeled Age:	3 years +	PO No.:	N/A
Grade:			
Appropriate Age Grade:	NOT REQUESTED	Ref #:	N/A
Client Specified Age Grade:	3+	Country of Origin:	CHINA
Tested Age Grade:	OVER 3 YEARS OF AGE	Assortment No.:	N/A
UPC Code:	6955920012746, 6955920014450, 6955920012920, 6955920016034, 6955920014702, 6955920014818, 6955920014825, 6955920016119, 6955920014467	Country of Destination:	GLOBAL
Style No(s):	ME12746(ME14450,ME12920,ME14696,ME14702,ME14818,ME14825,ME13460,ME14467), ME14450(ME12746,ME12920,ME14696,ME14702,ME14818,ME14825,ME13460,ME14467), ME12920(ME12746,ME14450,ME14696,ME14702,ME14818,ME14825,ME13460,ME14467), ME14696(ME12746,ME14450,ME12920,ME14702,ME14818,ME14825,ME13460,ME14467), ME14702(ME12746,ME14450,ME12920,ME14696,ME14818,ME14825,ME13460,ME14467), ME14818(ME12746,ME14450,ME12920,ME14696,ME14702,ME14825,ME13460,ME14467), ME14825(ME12746,ME14450,ME12920,ME14696,ME14702,ME14818,ME13460,ME14467), ME13460(ME12746,ME14450,ME12920,ME14696,ME14702,ME14818,ME14825,ME14467), ME14467(ME12746,ME14450,ME12920,ME14696,ME14702,ME14818,ME14825,ME13460)		



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EXECUTIVE SUMMARY:

The sample(s) MEET the following requirement(s):

- Labeling requirements of "CE marking, manufacturer/ Importer name and address, and product identification" under "Directive 2009/48/EC Safety of Toy".
- The labeling requirements of the tested subclauses of the Australian/New Zealand Standard, "Safety of toys", AS/NZS ISO 8124: Part 1: 2019.
- The mechanical and physical properties requirements of the tested subclauses of the Australian/New Zealand Standard, "Safety of toys", AS/NZS ISO 8124: Part 1: 2019.
- The BBP, DBP DEHP and DIBP content requirements of the European Regulation (EC) No. 1907/2006 of the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII concerning the Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles, Item no. 51 (amended up to EU No. 2018/2005).
- The cadmium content requirement of the European Regulation (EC) No. 1907/2006 of the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII concerning the Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles, Item no. 23 (amended up to EU No. 2016/217).
- The free and hydrolyzed formaldehyde content requirement in accessible textile components of the European Standard, "Safety of Toys: Organic Chemical Compounds - Requirement", EN 71: Part 9: 2005, and Amendment A1: 2007, when tested according to BS EN ISO 14184-1.
- The migration of certain elements requirements of the European Standard, "Safety of Toys", EN 71 Part 3: 2019.
- The 17 phthalates content requirements of the client's specifications.

Note: At the request of the client, the sample(s) was evaluated for use by children 3+.

Note: Based on visual evaluation and/or material breakdown received, there is no applicable material(s) found in the sample(s) submitted and thus the corresponding testing of 2009/48/EC formamide has/have not been conducted.

Note: The received sample(s) contained accessible component(s) of less than 10 milligrams by weight on one single sample, therefore such component(s) was not subject to migration of certain elements of European Standard, "Safety of Toys", EN 71 Part 3: 2019, as specified in Clause 7.1 - Selection of test portions.

Note: Exemptions were granted to certain materials or products, such as natural materials / paper and similar materials / CMYK process printing inks / metal & alloys / dyed & undyed textiles. Therefore, the lead content analysis of some components was not conducted.

BUREAU VERITAS SHENZHEN CO., LTD.

Hon Yin Kan
Manager

Toys And Juvenile Products Department

HK/kg



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RESULTS:

2009/48/EC GENERAL LABELING REQUIREMENT

Requirement	Result
CE Mark	M
Manufacturer/ Importer name and address	M
Product Identification	M

M = Meet NM = Not Meet N/A = Not Applicable R = Refer to Comment Section



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RESULTS:

APPROPRIATE AGE GRADE DETERMINATION

The Appropriate Age Grade is determined with reference to the Age-grading guidelines of the Annex A of the AS/NZS Standard, "Safety of toys", AS/NZS 8124: Part 1: 2019

Note : The most stringent age grade from the Labeled Age Grade and the Appropriate Age Grade will be used for testing.

Note : If the client does not specify an age grade for testing or request Bureau Veritas Consumer Products Services, Inc. to determine an appropriate age grade, the labeled age grade will be used for testing.



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RESULTS:

MECHANICAL & PHYSICAL PROPERTIES – (AS/NZS ISO 8124.1:2019)

Subclause	Requirement	Result
4.1	Normal use	M
4.2	Reasonably foreseeable abuse	M
4.3	Material	M
4.4	Small parts	NA
4.5	Shape, size and strength of certain toys	NA
4.6	Edges	M
4.7	Points	M
4.8	Projections	NA
4.9	Metal wires and rods	NA
4.10	Plastic film or plastic bags in packaging and in toys	M
4.11	Cords	NA
4.12	Folding mechanisms	NA
4.13	Holes, clearances and accessibility of mechanisms	NA
4.14	Springs	NA
4.15	Stability and overload requirements	NA
4.16	Enclosures	NA
4.17	Simulated protective equipment	NA
4.18	Projectile toys	NA
4.19	Rotors and propellers	NA
4.20	Aquatic toys	NA
4.21	Braking	NA
4.22	Toy bicycles	NA
4.23	Speed limitation of electrically driven ride-on toys	NA
4.24	Toys containing a heat source	NA
4.25	Liquid-filled toys	NA
4.26	Mouth-actuated toys	NA
4.27	Toy roller skates, toy inline skates and toy skateboards	NA
4.28	Percussion caps specifically designed for use in toys	NA
4.29	Acoustic requirement	NA
4.30	Toy scooters	NA
4.31	Magnets and magnetic components	NA
4.32	Yo-yo balls	NA
4.33	Straps intended to be worn fully or partially around the neck	NA
4.34	Sledges and toboggans with cords for pulling	NA
4.35	Jaw entrapment in handles and steering wheels	NA

M = Meet NM = Not Meet N/A = Not Applicable R = Refer to Comment Section



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RESULTS:

BBP/DBP/DEHP/DIBP CONTENTS (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 51 (amended up to EU No. 2018/2005))

Test Method: With referenced to EN 14372:2004 Section 6.3.2, sample was extracted with organic solvent and then analyzed by Gas Chromatograph Mass Spectrometer

Sample Identity	Test Component	Location	Style
A.	Black coating	Pegs Geometric shape pegs	B E
	White coating	Geometric shape pegs	E
B.	Red plastic	Pegs Screws Geometric shape pegs	A C D,F
	Green plastic	Pegs Screws	A C
		Geometric shape pegs	D,F
	Blue plastic	Pegs Screws Geometric shape pegs	A C D,F
		Pegs Screws	A C
		Geometric shape pegs	D,F
C.	Black plastic	Pegs Screws Geometric shape pegs	A C D-G
	Purple plastic	Pegs Screws	A C
		Geometric shape pegs	D,F
	Orange plastic	Pegs Screws Geometric shape pegs	A C D,F
		Pegs Screws	A C
		Geometric shape pegs	D,F
D.	Yellow plastic	Pegs Screws Geometric shape pegs	A C D,F
	White plastic	Pegs Screws	A-B C
		Geometric shape pegs	D-G
	Light blue plastic	Pegs Screws Geometric shape pegs	B C D-G
		Pegs Screws	B C
		Geometric shape pegs	E,G
E.	Light green plastic	Pegs Geometric shape pegs	B E,G
	Pink plastic	Pegs Geometric shape pegs	B E,G
		Pegs Geometric shape pegs	B E,G
	Brown plastic	Pegs Screws Geometric shape pegs	B C D-G
		Pegs Screws	B C
		Geometric shape pegs	E,G
F.	Grey plastic	Pegs Geometric shape pegs	B E,G
	Light brown plastic	Chains Geometric shape pegs	H E,G
		Pegs Gear wheels	I H
	Flesh plastic	Pegs Screws Geometric shape pegs	I H D-G
		Pegs Screws	I H
		Geometric shape pegs	D-G
G.	Deep flesh plastic	Gear wheels	H
	Light yellow plastic	Gear wheels	H
	Soft red plastic	Gear wheels	H



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RESULTS:

BBP/DBP/DEHP/DIBP CONTENTS (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 51 (amended up to EU No. 2018/2005))

Test Method: With referenced to EN 14372:2004 Section 6.3.2, sample was extracted with organic solvent and then analyzed by Gas Chromatograph Mass Spectrometer

Sample Identity	Test Component	Location	Style
H.	Soft orange plastic	Gear wheels	H
	Soft purple plastic	Gear wheels	H
	Soft blue plastic	Gear wheels	H
I.	Soft green plastic	Gear wheels	H
	Clear plastic	End of rope	I
J.	Deep blue coating	Gear wheels	H
K.	Bright red coating	Bright red paint	H

Test Parameter:	BBP	DBP	DEHP	DIBP	Sum of four phthalates	
Limit (%):	0.1	0.1	0.1	0.1	0.1	
Sample	Result (%)					Conclusion
A.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	PASS
B.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	PASS
C.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	PASS
D.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	PASS
E.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	PASS
F.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	PASS
G.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	PASS
H.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	PASS
I.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	PASS
J.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	PASS
K.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	PASS

Detection Limit :

BBP = Butyl benzyl phthalate (0.005%)
 DBP = Dibutyl phthalate (0.005%)
 DEHP = Di(2-ethylhexyl) phthalate (0.005%)
 DIBP = Diisobutyl phthalate (0.005%)

Results reported in percentage

LT = Less than
 ND = None detected



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RESULTS:

CLIENT'S 17 PHTHALATES CONTENT SPECIFICATION

- **BBP/DBP/DEHP/DNOP/DINP/DIDP Content**

Color / Component	Location	Style
A. Composite of Black coating	Pegs	B
	Geometric shape pegs	E
White coating	Geometric shape pegs	E
B. Red plastic	Pegs	A
	Screws	C
	Geometric shape pegs	D,F
Green plastic	Pegs	A
	Screws	C
	Geometric shape pegs	D,F
Blue plastic	Pegs	A
	Screws	C
	Geometric shape pegs	D,F
C. Black plastic	Pegs	A
	Screws	C
	Geometric shape pegs	D-G
Purple plastic	Pegs	A
	Screws	C
	Geometric shape pegs	D,F
Orange plastic	Pegs	A
	Screws	C
	Geometric shape pegs	D,F
D. Yellow plastic	Pegs	A
	Screws	C
	Geometric shape pegs	D,F
White plastic	Pegs	A-B
	Screws	C
	Geometric shape pegs	D-G
Light blue plastic	Pegs	B
	Geometric shape pegs	E,G
E. Light green plastic	Pegs	B
	Geometric shape pegs	E,G
Pink plastic	Pegs	B
	Geometric shape pegs	E,G
Brown plastic	Pegs	B
	Geometric shape pegs	E,G
F. Grey plastic	Pegs	B
	Geometric shape pegs	E,G
	Chains	H
Light brown plastic	Geometric shape pegs	E,G
	Pegs	I
Flesh plastic	Gear wheels	H
G. Deep flesh plastic	Gear wheels	H
Light yellow plastic	Gear wheels	H
Soft red plastic	Gear wheels	H
H. Soft orange plastic	Gear wheels	H
Soft purple plastic	Gear wheels	H
Soft blue plastic	Gear wheels	H



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RESULTS:

CLIENT'S 17 PHTHALATES CONTENT SPECIFICATION

- **BBP/DBP/DEHP/DNOP/DINP/DIDP Content**

Color / Component	Location	Style
I. Soft green plastic Clear plastic	Gear wheels End of rope	H I
J. Deep blue coating	Gear wheels	H
K. Bright red coating	Bright red paint	H

Test Parameter	BBP	DBP	DEHP	DNOP	DINP	DIDP	
Limit (%)	0.1	0.1	0.1	0.1	0.1	0.1	
Sample	Result (%)						Conclusion
A	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
B	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
C	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
D	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
E	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
F	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
G	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
H	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
I	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
J	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
K	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS

Detection Limit :

DNOP = Di-n-octyl phthalate (0.005%) 117-84-0

DINP p

DIDP = Di-iso-decyl phthalate (0.005%)
26761-40-0 / 68515-49-1

BBP = Butyl benzyl phthalate (0.005%) 85-68-7

DBP = Dibutyl phthalate (0.005%) 84-74-2

DEHP = Di(2-ethylhexyl) phthalate (0.005%)
117-81-7

Results reported in percentage

LT = Less than

ND = None detected



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RESULTS:

CLIENT'S 17 PHTHALATES CONTENT SPECIFICATION

- **EC No. 201-559-5 / DiBP / DHNUP / DIHP / DMEP / DIPP / DnPP / DPP / PiPP / DHP / 1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear Content**

Test Parameter	DnPP	DPP	PiPP	DHP	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	
Limit (%)	0.1	0.1	0.1	0.1	0.1	
Sample						Conclusion
A	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
B	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
C	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
D	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
E	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
F	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
G	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
H	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
I	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
J	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS
K	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	PASS

Results reported in percentage

LT = Less than

ND = None detected

Detection Limit:

DiBP = Diisobutylphthalate 84-69-5

DHNUP = 1,2-Benzenedicarboxylic acid, di-C7,11-branched and linear alkyl esters 68515-42-4

DIHP = 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich 71888-89-6

DMEP = Dimethoxyethyl phthalate 117-82-8

DIPP = Diisopentylphthalate 605-50-5

DnPP = Dipentylphthalate 131-18-0

DPP = 1,2-benzenedicarboxylic acid dipentylester, branched and linear 84777-06-0

PiPP = n-Pentyl-Isopentylphthalate 776297-69-9

DHP = Dihexylphthalate 84-75-3

1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear 68515-50-4

EC No. 201-559-5 = 1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate 68515-51-5 /68648-93-1



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RESULTS:

FREE AND HYDROLYZED FORMALDEHYDE CONTENT IN ACCESSIBLE TEXTILES COMPONENTS (EN 71: Part 9: 2005 and Amendment A1: 2007)

Test Method: BS EN ISO 14184-1: 1999, Textiles - Determination of formaldehyde - Part 1: Free and hydrolyzed formaldehyde (water extraction method).

Parameter:				Formaldehyde	
Maximum allowable limit:				30 (mg/kg (ppm))	
Test Component			Result (mg/kg (ppm))	Conclusion	
	Color/Component	Location			Style No.
A.	Matt red cord	Rope	I	LT 16	PASS
B.	Matt yellow cord	Rope	I	LT 16	PASS
C.	Matt green cord	Rope	I	LT 16	PASS
D.	Matt blue cord	Rope	I	LT 16	PASS
E.	Matt orange cord	Rope	I	LT 16	PASS
F.	Matt purple cord	Rope	I	LT 16	PASS

mg/kg (ppm) = milligrams per kilogram (ppm = parts per million)

ND = Not Detected (Detection Limit = 16 mg/kg (ppm))

LT = Less than

** = Average the duplicate analyses*



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APPROPRIATE AGE GRADE DETERMINATION

The Appropriate Age Grade is determined with reference to the EN71: Part 1 : 2014 +A1:2018, CEN ISO/TR 8124-8:2016 Safety of toys - Part 8: Age Determination Guidelines prepared by Technical Committee CEN/TC 52 and Age Grade Determination Guidelines of the Consumer Product Safety Commission (CPSC).

Note : The most stringent age grade from the Labeled Age Grade and the Appropriate Age Grade will be used for testing.

Note : If the client does not specify an age grade for testing or request Bureau Veritas Consumer Products Services, Inc. to determine an appropriate age grade, the labeled age grade will be used for testing.



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RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019)

Test Method : European Standard EN 71 Part 3: 2019, Section 9.

Class: Category III - Scraped off toy material

Sample Identity	Color	Location	Style
A.	Black coating	Pegs Geometric shape pegs	B E
B.	White coating	Geometric shape pegs	E
C.	Red plastic	Pegs Screws Geometric shape pegs	A C D,F
D.	Green plastic	Pegs Screws Geometric shape pegs	A C D,F
E.	Blue plastic	Pegs Screws Geometric shape pegs	A C D,F
F.	Black plastic	Pegs Screws Geometric shape pegs	A C D-G
G.	Purple plastic	Pegs Screws Geometric shape pegs	A C D,F
H.	Orange plastic	Pegs Screws Geometric shape pegs	A C D,F
I.	Yellow plastic	Pegs Screws Geometric shape pegs	A C D,F
J.	White plastic	Pegs Screws Geometric shape pegs	A-B C D-G
K.	Light blue plastic	Pegs Geometric shape pegs	B E,G
L.	Light green plastic	Pegs Geometric shape pegs	B E,G
M.	Pink plastic	Pegs Geometric shape pegs	B E,G
N.	Brown plastic	Pegs Geometric shape pegs	B E,G
O.	Grey plastic	Pegs Geometric shape pegs Chains	B E,G H
P.	Light brown plastic	Geometric shape pegs Pegs	E,G I



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RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019)

Test Method : European Standard EN 71 Part 3: 2019, Section 9.

Class: Category III - Scraped off toy material

Sample Identity	Color	Location	Style
Q.	Flesh plastic	Gear wheels	H
R.	Deep flesh plastic	Gear wheels	H
S.	Light yellow plastic	Gear wheels	H
T.	Soft red plastic	Gear wheels	H
U.	Soft orange plastic	Gear wheels	H
V.	Soft purple plastic	Gear wheels	H
W.	Soft blue plastic	Gear wheels	H
X.	Soft green plastic	Gear wheels	H
Y.	Clear plastic	End of rope	I
Z.	Matt red cord	Rope	I
AA.	Matt yellow cord	Rope	I
AB.	Matt green cord	Rope	I
AC.	Matt blue cord	Rope	I
AD.	Matt orange cord	Rope	I
AE.	Matt purple cord	Rope	I
AF.	Bright red coating	Bright red paint	H
AG.	Light brown wood	Wooden board	H



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RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019)

Test Method : European Standard EN 71 Part 3: 2019, Section 9.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
		Category III	AE.	AF.	AG.	-	-
Aluminium (Al)	70000	LT 2	LT 2	LT 2	-	-	-
Arsenic (As)	47	LT 2	LT 2	LT 2	-	-	-
Boron (B)	15000	LT 2	LT 2	LT 2	-	-	-
Barium (Ba)	18750	LT 2	LT 2	LT 2	-	-	-
Cadmium (Cd)	17	LT 2	LT 2	LT 2	-	-	-
Cobalt (Co)	130	LT 2	LT 2	LT 2	-	-	-
Chromium III (Cr III)	460	LT 0.050	LT 0.050	LT 0.050	-	-	-
Chromium VI (Cr VI)	0.053						
Copper (Cu)	7700	LT 2	LT 2	LT 2	-	-	-
Mercury (Hg)	94	LT 2	LT 2	LT 2	-	-	-
Manganese (Mn)	15000	LT 2	LT 2	LT 2	-	-	-
Nickel (Ni)	930	LT 2	LT 2	LT 2	-	-	-
Lead (Pb)	23	LT 2	LT 2	LT 2	-	-	-
Antimony (Sb)	560	LT 2	LT 2	LT 2	-	-	-
Selenium (Se)	460	LT 2	LT 2	LT 2	-	-	-
Tin (Sn)	180000	LT 2	LT 2	LT 2	-	-	-
Organic tin	12	LT 2	LT 2	LT 2	-	-	-
Strontium (Sr)	56000	LT 2	LT 2	LT 2	-	-	-
Zinc (Zn)	46000	LT 2	53	LT 2	-	-	-
Mass of trace amount (gram)			0.0856		-	-	-
Conclusion		PASS	PASS	PASS	-	-	-

mg/kg = milligrams per kilogram (ppm=parts per million) LT = Less Than

* = Average of duplicate analysis

FR = Failed Result

Organic tin = migration of total organic tin is expressed as tributyl tin cation content in mg/kg

= Verified results (see note)

Remark:

- Results of Cr III and Cr VI were reported as sum of soluble Chromium content unless specified.
- Result(s) of organic tin was (were) calculated while assuming the tin content wholly contributed from tributyltin cation unless specified.

Note:

If soluble chromium content or soluble tin content exceeded the screening limits of soluble chromium (VI) or organic tin content, the results were verified by below method

- Chromium VI: EN71 part 3:2019, Annex F
- Organic tin: EN71 part 3:2019, Annex G by Gas Chromatography – Mass Spectroscopy analysis.



RESULTS:

CADMIUM CONTENT (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 23)

Category:				Plastics			
Element:				Cadmium			
Test Method				BS EN 1122: 2001, Method B			
Maximum Allowable Limit:				100 mg/kg (0.01% by weight)			
Sample Description				Reading 1	Reading 2	Average	Conclusion
Color / Component	Location	Style	Result (mg/kg)				
(A)	Red plastic	Pegs Screws Geometric shape	A C D,F	LT 10	LT 10	LT 10	PASS
	Green plastic	pegs Pegs Screws Geometric shape	A C D,F				
	Blue plastic	pegs Pegs Screws Geometric shape	A C D,F				
	Black plastic	pegs Pegs Screws Geometric shape	A C D-G				
(B)	Purple plastic	Pegs Screws Geometric shape	A C D,F	LT 10	LT 10	LT 10	PASS
	Orange plastic	pegs Pegs Screws Geometric shape	A C D,F				
	Yellow plastic	pegs Pegs Screws Geometric shape	A C D,F				
	White plastic	pegs Pegs Screws Geometric shape	A-B C D-G				
(C)	Light blue plastic	Pegs Geometric shape	B E,G	LT 10	LT 10	LT 10	PASS
	Light green plastic	pegs Pegs Geometric shape	B E,G				
	Pink plastic	pegs Pegs Geometric shape	B E,G				
	Brown plastic	pegs Pegs Geometric shape	B E,G				



RESULTS:

CADMIUM CONTENT (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 23)

Category:				Plastics			
Element:				Cadmium			
Test Method				BS EN 1122: 2001, Method B			
Maximum Allowable Limit:				100 mg/kg (0.01% by weight)			
Sample Description				Reading 1	Reading 2	Average	Conclusion
Color / Component	Location	Style	Result (mg/kg)				
(D)	Grey plastic	Pegs	B	LT 10	LT 10	LT 10	PASS
		Geometric shape pegs	E,G				
		Chains	H				
	Light brown plastic	Geometric shape pegs	E,G				
		Pegs	I				
	Flesh plastic	Gear wheels	H				
	Deep flesh plastic	Gear wheels	H				
(E)	Light yellow plastic	Gear wheels	H	LT 10	LT 10	LT 10	PASS
	Soft red plastic	Gear wheels	H				
	Soft orange plastic	Gear wheels	H				
	Soft purple plastic	Gear wheels	H				
(F)	Soft blue plastic	Gear wheels	H	LT 10	LT 10	LT 10	PASS
	Soft green plastic	Gear wheels	H				
	Clear plastic	End of rope	I				

LT = Less than

= Insufficient sample for duplicate analyses

mg/kg = milligrams per kilogram (ppm = parts per million)

Operator: Zhang Shao Zheng, Ryan

Category:				Paints on Painted Article			
Element:				Cadmium			
Test Method:				In house acid digestion			
Maximum Allowable Limit:				1000 mg/kg (0.1% by weight)			
Test Component				Result (mg/kg)	Conclusion		
Colour/Component	Location	Style					
(A)	Black coating	Pegs	B	LT 10	PASS		
		Geometric shape pegs	E				
	White coating	Geometric shape pegs	E				
	Deep blue coating	Gear wheels	H				
(B)	Bright red coating	Bright red paint	H	LT 10	PASS		

LT = Less than

* = Average of duplicate analyses

mg/kg = milligrams per kilogram (ppm = parts per million)



**BUREAU
VERITAS**

CARPENTERS MANUFACTORY LIMITED

Technical Report: **(8520)020-0197(A)**

February 24, 2020

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RESULTS:



RESULTS:



END OF REPORT