



Hong Kong Government Recognized Service Supplier
Approved Laboratory of The Woolmark Company

Members of :

American National Standards Institute
American Society for Testing and Materials
British Standards Institute

Hong Kong Association for Testing, Inspection and Certification Limited
Hong Kong Toys Council

Test Report

Number: HKGH01260703

Applicant: YIU WING (HONG KONG) INDUSTRIAL LIMITED
RM 11 3/F SHING WIN FTY BLDG
15-17 SHING YIP ST
KWUN TONG KLN
HK
Attn: MR JIMMY CHENG

Date: Dec 28, 2011

Sample Description:

One (1) submitted sample said to be **black colour coating**.

Tests conducted:

As requested by the applicant, refer to attached page(s) for details.

Conclusion:

<u>Tested Samples</u>	<u>Standard</u>	<u>Result</u>
Submitted sample	U.S. ASTM F963-08 for toxic elements test	Pass
	U.S. ASTM F963-11 for heavy elements test	Pass
	U.S. Code of Federal Regulations Title 16 Part 1303 for total Lead content in surface coating	Pass
Tested component of submitted sample	With reference to test method of IEC 62321 edition 1.0 : 2008 and maximum concentration limits quoted from RoHS Directives 2002/95/EC and amendment 2005/618/EC	Pass

For and on behalf of :
Intertek Testing Services HK Ltd.

Karen S.C. Ng
General Manager





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Tests Conducted

1 Toxic Elements Analysis

As per Section 4.3.5 of the ASTM Standard Consumer Safety Specification on Toy Safety F963-08, acid digestion and extraction methods were used and toxic elements content were determined by Inductively Coupled Argon Plasma Spectrometry.

	<u>Result in ppm</u>	<u>Limit ppm</u>
Total Lead (Pb)	<20	90
Sol. Barium (Ba)	<5	1000
Sol. Lead (Pb)	<5	90
Sol. Cadmium (Cd)	<5	75
Sol. Antimony (Sb)	<5	60
Sol. Selenium (Se)	<5	500
Sol. Chromium (Cr)	<5	60
Sol. Mercury (Hg)	<5	60
Sol. Arsenic (As)	<2.5	25

Sol. = Soluble
< = Less than
ppm = parts per million

Date sample received : Dec 14, 2011
Testing period : Dec 14, 2011 to Dec 20, 2011





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2 Heavy Elements Analysis in Surface Coating

As per Section 4.3.5.1 of the ASTM Standard Consumer Safety Specification on Toy Safety F963-11, CPSC-CH-E1003-09.1 and extraction methods were used and heavy elements content were determined by Inductively Coupled Argon Plasma Spectrometry.

	<u>Result in ppm</u>	<u>Limit ppm</u>
Total Lead (Pb)	<20	90
Sol. Barium (Ba)	<5	1000
Sol. Lead (Pb)	<5	90
Sol. Cadmium (Cd)	<5	75
Sol. Antimony (Sb)	<5	60
Sol. Selenium (Se)	<5	500
Sol. Chromium (Cr)	<5	60
Sol. Mercury (Hg)	<5	60
Sol. Arsenic (As)	<2.5	25

Sol. = Soluble
< = Less than
ppm = parts per million

Date sample received : Dec 14, 2011
Testing period : Dec 14, 2011 to Dec 20, 2011

3 Total Lead (Pb) Content

As per Standard Operating Procedure for Determining Lead (Pb) in Paint and Other Similar Surface Coatings, test method CPSC-CH-E1003-09.1 was used and total Lead content was determined by Inductively Coupled Argon Plasma Spectrometry.

Result : Less than 0.002%

Limit : 0.009%

Date sample received : Dec 14, 2011
Testing period : Dec 14, 2011 to Dec 20, 2011



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Tests Conducted

4 RoHS Chemical Test

(A) Test Result Summary:

Testing Item	Result
Cadmium (Cd) Content (mg/kg)	ND(<2)
Lead (Pb) Content (mg/kg)	ND(<2)
Mercury (Hg) Content (mg/kg)	ND(<2)
Chromium (VI) (Cr ⁶⁺) Content (mg/kg) (For Non-metal)	ND(<1)
Polybrominated Biphenyls (PBBs) (mg/kg)	
Monobromobiphenyl (MonoBB)	ND(<5)
Dibromobiphenyl (DiBB)	ND(<5)
Tribromobiphenyl (TriBB)	ND(<5)
Tetrabromobiphenyl (TetraBB)	ND(<5)
Pentabromobiphenyl (PentaBB)	ND(<5)
Hexabromobiphenyl (HexaBB)	ND(<5)
Heptabromobiphenyl (HeptaBB)	ND(<5)
Octabromobiphenyl (OctaBB)	ND(<5)
Nonabromobiphenyl (NonaBB)	ND(<5)
Decabromobiphenyl (DecaBB)	ND(<5)
Polybrominated Diphenyl Ethers (PBDEs) (mg/kg)	
Monobromodiphenyl Ether (MonoBDE)	ND(<5)
Dibromodiphenyl Ether (DiBDE)	ND(<5)
Tribromodiphenyl Ether (TriBDE)	ND(<5)
Tetrabromodiphenyl Ether (TetraBDE)	ND(<5)
Pentabromodiphenyl Ether (PentaBDE)	ND(<5)
Hexabromodiphenyl Ether (HexaBDE)	ND(<5)
Heptabromodiphenyl Ether (HeptaBDE)	ND(<5)
Octabromodiphenyl Ether (OctaBDE)	ND(<5)
Nonabromodiphenyl Ether (NonaBDE)	ND(<5)
Decabromodiphenyl Ether (DecaBDE)	ND(<5)

mg/kg = milligram per kilogram = ppm
 < = Less than
 ND = Not detected

Tested Component : Black coating.



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Tests Conducted

(B) RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 ppm)
Lead (Pb)	0.1% (1000 ppm)
Mercury (Hg)	0.1% (1000 ppm)
Chromium (VI) (Cr ⁶⁺)	0.1% (1000 ppm)
Polybrominated Biphenyls (PBBs)	0.1% (1000 ppm)
Polybrominated Diphenyl ethers (PBDEs)	0.1% (1000 ppm)

The above limits were quoted from 2002/95/EC and Amendment 2005/618/EC for homogeneous material.

(C) Test Method:

Testing Item	Testing Method	Reporting Limit
Cadmium (Cd) Content	With reference to IEC 62321 edition 1.0 : 2008, by acid digestion and determined by ICP-OES	2 mg/kg
Lead (Pb) Content	With reference to IEC 62321 edition 1.0 : 2008, by acid digestion and determined by ICP-OES	2 mg/kg
Mercury (Hg) Content	With reference to IEC 62321 edition 1.0 : 2008, by acid digestion and determined by ICP-OES	2 mg/kg
Chromium (VI) (Cr ⁶⁺) Content (For Non-Metal)	With reference to IEC 62321 edition 1.0 : 2008, by alkaline digestion and determined by UV-VIS Spectrophotometer	1 mg/kg
Polybrominated Biphenyls (PBBs) & Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321 edition 1.0 : 2008, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary	5 mg/kg

Date sample received: Dec 14, 2011

Testing period: Dec 14, 2011 to Dec 21, 2011

End of report

