

Laboratory Test Report

Report Number: 2021-753-3736 Rev 1

Page 2 of 7

Material list

Testing material No.	Component	Material	Colour
1	Chalk based furniture paint colours	Coating	Transparent

BS EN 71 – 3: 2019 - Migration of Certain Elements

Test method : With reference to BS EN 71 – 3: 2019: Migration of certain elements.
 General Elements analysis was performed by ICP-MS.
 Soluble Chromium(VI) analysis was performed by IC-UV-Vis.
 Soluble Organic Tin analysis was performed by GC-MS.

Element	Limit(mg/kg) Category III	MDL (mg/kg)	Material Test Result (mg/kg)
			1
Soluble Aluminium (Al)	28130	10	N.D.
Soluble Antimony (Sb)	560	10	N.D.
Soluble Arsenic (As)	47	10	N.D.
Soluble Barium (Ba)	18750	10	N.D.
Soluble Boron (B)	15000	10	N.D.
Soluble Cadmium (Cd)	17	8	N.D.
Soluble Chromium III (Cr III)	460	5	N.D. ^Δ
Soluble Chromium VI (Cr VI)	0.053	0.025	N.D. ^Δ
Soluble Cobalt (Co)	130	10	N.D.
Soluble Copper (Cu)	7700	10	N.D.
Soluble Lead (Pb)	23	10	N.D.
Soluble Manganese (Mn)	15000	10	N.D.
Soluble Mercury (Hg)	94	10	N.D.
Soluble Nickel (Ni)	930	10	N.D.
Soluble Selenium (Se)	460	10	N.D.
Soluble Strontium (Sr)	56000	10	N.D.
Soluble Tin (Sn)	180000	4.9	N.D.
Soluble Organic Tin	12	0.1	-- [^]
Soluble Zinc (Zn)	46000	10	N.D.

Element	Limit(mg/kg) Category III	MDL (mg/kg)	Material Test Result (mg/kg)
			1
Soluble Total Chromium	-	0.05	0.17

Note: - 1 mg/kg = 1 ppm = 0.0001%

- N.D. = Not Detected

- MDL = Method Detection Limit

- Unless specified, determination of Chromium (III) and Chromium (VI) was based on elemental analysis.

- The reported soluble organic tin value was calculated by summation of the migration values of Methyltin, Butyltin, Dibutyltin, Tributyltin, Tetra-butyltin, Mono-octyltin, Dioctyltin, Dipropyltin, Diphenyltin, Triphenyltin and Dimethyltin.

 -^ΔChromium (III) and Chromium (VI) confirmation test were performed on the tested component.

Laboratory Test Report

Report Number: 2021-753-3736 Rev 1

Page 3 of 7

-[^] Confirmation test of soluble organic tin is not required in case of soluble tin, after conversion, does not exceed the soluble organic tin requirement as specified in BS EN 71 – 3: 2019.

- Proposal of stricter migration limit for Aluminium (Al) according to the Commission Directive (EU) 2019/1922, which is enter into force from 20 May 2021.

BS EN 71 – 3: 2019 + A1: 2021 - Migration of Certain Elements

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Laboratory Test Report

Report Number: 2021-753-3736 Rev 1

Page 4 of 7

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Laboratory Test Report

Report Number: 2021-753-3736 Rev 1

Page 5 of 7

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Laboratory Test Report

Report Number: 2021-753-3736 Rev 1

Page 6 of 7

ASTM F963-17 4.3.5.1(2), Migration of Certain Elements in Paint and Similar Surface-coating Materials

Test method : As per ASTM F963-17, soluble toxic element contents are determined by Inductively Coupled Plasma Mass Spectrometry (ICP-MS).

Detection limit : 2.5 mg/kg for each of the 8 soluble toxic elements

Test No.	Material No.	Testing element								
		As	Ba	Cd	Cr	Hg	Pb	Sb	Se	
		Limit (mg/kg)								
		25	1000	75	60	60	90	60	500	
Test result (mg/kg)										
1	1	N.D.	3.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

 Note: - 1 mg/kg = 1 ppm = 0.0001%
 - N.D. = Not Detected

Toys Regulations SOR/2011-17 and Amendments
Section 23: Specific substances in surface coatings - Total Lead Content

Test method : Canada Product Safety Laboratory Book 5: Laboratory Policies and Procedures, Part B: Test Methods Section, Method C-02.

Test Item	Test result (mg/kg)	Detection Limit (mg/kg)	Limit (mg/kg)
	1		
Total Lead (Pb)	N.D.	10	90

 Note: - 1 mg/kg = 1 ppm = 0.0001%
 - N.D. = Not Detected

Section 23: Specific substances in surface coatings - Total Mercury Content

Test method : Canada Product Safety Laboratory Book 5: Laboratory Policies and Procedures, Part B: Test Methods Section, Method C-07.

Test Item	Test result (mg/kg)	Detection Limit (mg/kg)	Limit (mg/kg)
	1		
Total Mercury (Hg)	N.D.	10	N.D.

 Note: - 1 mg/kg = 1 ppm = 0.0001%
 - N.D. = Not Detected

Laboratory Test Report

Report Number: 2021-753-3736 Rev 1

Page 7 of 7

Section 23: Specific substances in surface coatings - Leachable Heavy Metal contents

Test method : Canada Product Safety Laboratory Book 5: Laboratory Policies and Procedures, Part B: Test Methods Section, Method C-03.
 Leachable heavy metal contents are determined by Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES).

Detection limit : 10 mg/kg for each element

Test No.	Material No.	Testing element				
		As	Ba	Cd	Sb	Se
		Limit [mg/kg]				
		1000	1000	1000	1000	1000
1	1	N.D.	N.D.	N.D.	N.D.	N.D.

Note: - 1 mg/kg = 1 ppm = 0.0001%
 - N.D. = Not Detected

Other Information / Remark:

N/A



END OF THE REPORT