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**LABORATORY OF MATERIAL
ENGINEERING AND ENVIRONMENT**



AB 910

REPORT No. 418/DLS/2013

Testing of two samples of wood used for manufacture of playgrounds, delivered for testing by MGA Entertainment Poland Sp. z o.o., in range of migration of certain elements

Orderer: MGA Entertainment Poland Sp. z o.o.
Grottgera 15a
76-200 Słupsk, Poland

Project: UP/DLS-15515/OR14

Name of tested object	Sample of wood SYLVA Sample 1
Orderer Markings	Sample 1
Number of sample, according to the R-DLS/7:	418/13/P1



Name of tested object	Sample of wood LACPOL Sample 2
Orderer Markings	Sample 2
Number of sample, according to the R-DLS/7:	418/13/P1



Date of delivery the object for testing:
Date of beginning / completion of tests:
Place of testing:

19.09.2013
20.09.2013 / 10.10.2013
Laboratory of Material Engineering and Environment

Sample number	Confirmation of conformity/non- conformity with the requirements	
CONFORMITY RELATING THE RESULTS OF ACCREDITED TESTS		
PN-EN 71-3 Standard: Safety of toys. Migration of certain elements		
418/13/P1 418/13/P2	Item 4 Requirements. Limit values of elements migration: Al < 70 000 mg/kg, Ba < 18 750 mg/kg, B < 15 000 mg/kg, Cu < 7 700 mg/kg, Sr < 56 000 mg/kg, Sn < 180 000 mg/kg, Zn < 46 000 mg/kg	+
CONFORMITY RELATING THE RESULTS OF NON ACCREDITED TESTS		
PN-EN 71-3 Standard: Safety of toys. Migration of certain elements		
418/13/P1 418/13/P2	Item 4 Requirements. Limit values of elements migration: Sb < 560 mg/kg, As < 47 mg/kg, Cd < 17 mg/kg, Cr (III) < 460 mg/kg, Cr (VI) < 0,2 mg/kg, Co < 130 mg/kg, Pb < 160 mg/kg, Mn < 15 000 mg/kg, Hg < 94 mg/kg, Ni < 930 mg/kg, Se < 460 mg/kg, Organic tin: < 12 mg/kg	+

signs: „+” – conforming to the requirements „-” – not conforming to the requirements

Note: Confirmation of conformity with the requirements is based on a confidence level of 95% for the expanded uncertainty of measurement results on which the decision of conformity is based.

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Gliwice, 10.10.2013

TEST REPORT CONTAINS THE RESULTS APPLICABLE ONLY TO THE TESTED OBJECT.
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Description of the samples

Sample of wood SYLVA Sample 1, used for manufacture of playgrounds.
 Sample of wood LACPOL Sample 2, used for manufacture of playgrounds.
 Samples were taken for testing and delivered by the Orderer.

Scope and methods of testing
ACCREDITED TESTS

Item	Tested parameters	Testing method	Testing procedure and standard
1	certain elements	determination of concentration of aluminium (Al), barium (Ba), boron (B), copper (Cu), strontium (Sr), tin (Sn), zinc (Zn) in the leaching solvent extract by Inductively coupled plasma optic emission spectrometry (ICP-OES) method	PB-DLS/09, 1 st ; 2013 PN-EN 71-3:2013-07
		determination of certain elements and organic tin compounds migration by the computational method	

NONACCREDITED TESTS

2	certain elements and organic tin compound migration	determination of concentration of antimony (Sb), arsenic (As), cadmium (Cd), cobalt (Co), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se) in the leaching solvent extract by Inductively coupled mass spectrometry (ICP-MS) method	PB-DLS/31, 1 st ; 2013 PB-DLS/32, 1 st ; 2013 PN-EN 71-3:2013-07
		determination of concentration of chromium (III) Cr (III) and chromium (VI) Cr (VI) in the leaching solvent extract by High Performance Liquid Chromatography with Inductively Coupled Mass Spectrometry method (HPLC-ICP-MS)	
		determination of concentration of organic tin cations BuT, DBT, TBT, TeBT, MOT, DOT, DProT, DPhT, TPhT in the leaching solvent extract by Inductively coupled gas chromatography coupled with mass spectrometry (GC-MS)	
		determination of certain elements and organic tin compounds migration by the computational method	

Results
ACCREDITED TESTS

Item	Sample No.	Migration of certain elements [mg/kg]									
		Al	S _x	Ba	S _x	B	S _x	Cu	S _x	Sr	S _x
1	418/13/P1	<125	-	<125	-	<125	-	4358	±41	<125	-
		Sn	S _x	Zn	S _x	-					
		<125	-	<125	-	-					
2	418/13/P2	<125	-	<125	-	290.2	±2.2	6118	±42	<125	-
		Sn	S _x	Zn	S _x	-					
		<125	-	<125	-	-					

S_x – standard deviation

The results and their standard deviation refer only to the tested sample and not to the product batch/substance/material the sample was taken from.

NONACCREDITED TESTS												
Item	Sample No.	Migration of certain elements [mg/kg]										
1	418/13/P1	Sb	s_x	As	s_x	Cd	s_x	Cr (III)	s_x	Cr (VI)	s_x	
		<50	-	< 1	-	< 1	-	< 50	-	< 0.19	-	
		Co	s_x	Pb	s_x	Mn	s_x	Hg	s_x	Ni	s_x	
		< 50	-	< 50	-	< 1000	-	< 50	-	< 50	-	
		Se	s_x	-								
		<50	-									
2	418/13/P2	Sb	s_x	As	s_x	Cd	s_x	Cr (III)	s_x	Cr (VI)	s_x	
		<50	-	< 1	-	< 1	-	< 50	-	< 0.19	-	
		Co	s_x	Pb	s_x	Mn	s_x	Hg	s_x	Ni	s_x	
		< 50	-	< 50	-	< 1000	-	< 50	-	< 50	-	
		Se	s_x	-								
		<50	-									

s_x – standard deviation

The results and their standard deviation refer only to the tested sample and not to the product batch/substance/material the sample was taken from.

NONACCREDITED TESTS									
Item	Sample No.	Migration of organic tin compound [mg/kg]							
1	418/13/P1	DBT	s_x	TBT	s_x	TeBT	s_x	MOT	s_x
		nd	-	nd	-	nd	-	nd	-
		DOT	s_x	DProT	s_x	DPhT	s_x	TPhT	s_x
		nd	-	nd	-	nd	-	nd	-
2	418/13/P2	DBT	s_x	TBT	s_x	TeBT	s_x	MOT	s_x
		nd	-	nd	-	nd	-	nd	-
		DOT	s_x	DProT	s_x	DPhT	s_x	TPhT	s_x
		nd	-	nd	-	nd	-	nd	-

s_x – standard deviation

nd – not detected

The results and their standard deviation refer only to the tested sample and not to the product batch/substance/material the sample was taken from.

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