EC TYPE EXAMINATION REPORT

NB 1417

ÉMI-TÜV

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ÉMI-TÜV SÜD Kft.
Central Laboratory
KERMI Department

Szentendre, 07/08/2024

File No.: R-200320001821

Name of Applicant:	**Euro-Matic Kft.**
address:	H-1224 Budapest, Máriás utca 30.
Date of application:	05/07/2024
Name of test samples:	60 mm colour ball, 75 mm colour ball, 80 mm colour ball
Producer of tested samples:	Euro-Matic Kft.
Subject of application:	Test of toys according to directive 2009/48/EC, MSZ EN 71-1:2014+A1:2018, MSZ EN 71-2:2021, MSZ EN 71-3:2019+A1:2021, lead, cadmium, phthalates, TCEP, TCPP, TDCP and PAH(s) determination. The MSZ EN 71-9:2005+A1:2008 2D, 2E, 2I test results based on the test report No. R-1379659 of the ÉMI-TÜV SÜD Kft. KERMI department.
Receipt date of test samples:	05/07/2024
Testing period:	05/07/2024 – 07/08/2024

NAH-1-1351/2019/K
TESTING LABORATORY

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Name of test samples:

60 mm colour ball,
75 mm colour ball,
80 mm colour ball

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Test results

Tests required by Directive, 2009/48/EC
(Harmonized Hungarian legislation: regulation 38/2011 (X.5.) NGM)

I. General requirements

Requirement		Result
General requirements	Risks related to the shape, construction, composition, use and function shall be minimized	No risk.

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II. PARTICULAR SAFETY REQUIREMENTS
II/1.
MSZ EN 71-1:2014+A1:2018 Toy safety
Part 1.: Physical and mechanical properties

Requirements				Results
4. General requirements				
4.1.	Material cleanliness	The materials must be clear and free of insect impurities.		Materials are visually clean.
4.7.	Édges	8.11.	Sharpness of edges	No burr, no sharp edges.
4.8.	Points and metallic wires	8.12.	Sharpness of points	No hazardous sharp points.
4.15.	Toys intended to bear the mass of a child			
5. Toys intended for children under 36 months				
5.1.	General requirements	8.2.	Small parts	The tested sample does not contain separable smaller parts.
		8.3.	Torque test	No arise small parts, edges and points.
		8.4.	Tension test	>90N
		8.5.	Drop test	No arise small parts, edges and points.
		8.6.	Tip over test	No arise small parts, edges and points.
		8.7.	Impact test	No arise small parts, edges and points.
		8.8.	Compression test	No arise small parts, edges and points.
6.	Packaging			Not packaged.
7.	Warnings and instruction for use	7.1.	General requirements	Warning labels according to requirements of Directive No. 2009/48/EC Recommended age group: 3+

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II/2.

MSZ EN 71-2:2021 Safety of toys
2. Part: Flammability

Requirement			Result
4.	Requirement		
4.1.	General requirements	Must not contain highly flammable solids.	The samples no contain highly flammable solids.

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II. PARTICULAR SAFETY REQUIREMENTS
II./3. Chemical properties

II./3.b. MSZ EN 71-3:2019+A1:2021 Safety of toys
Part 3. Migration of certain elements

Tested parameter	Result [mg/kg] ± 10 rel. %		LOQ [mg/kg]	Limit [mg/kg]
	ball mix red+green+yellow+ orange	ball mix white+blue+ transparent		Category III
Aluminium (Al)	<0.25	<0.25	0.25	28130
Antimony (Sb)	<0.025	<0.025	0.025	560
Arsenic (As)	<0.05	<0.05	0.05	47
Barium (Ba)	<0.15	<0.15	0.15	18750
Boron (B)	<0.25	0.3	0.25	15000
Cadmium (Cd)	<0.025	<0.025	0.025	17
Chromium (III) (Cr)	<0.01	<0.01	0.025	460
Chromium (VI) (Cr)	<0.01	<0.01	0.025	0.053
Cobalt (Co)	<0.025	<0.025	0.025	130
Copper (Cu)	0.6	<0.025	0.025	7700
Lead (Pb)	<0.025	<0.025	0.025	23
Manganese (Mn)	<0.025	<0.025	0.025	15000
Mercury (Hg)	<0.025	<0.025	0.025	94
Nickel (Ni)	<0.05	<0.05	0.05	930
Selenium (Se)	<0.05	<0.05	0.05	460
Strontium (Sr)	<0.05	<0.05	0.05	56000
Tin (Sn)	<0.05	<0.05	0.05	180000
Organic tin	<0.05	<0.05	0.05	12
Zinc (Zn)	0.8	<0.25	0.25	46000

LOQ: Limit of Quantification

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MSZ EN 71-9:2005+A1:2008 Safety of toys
Part 9: Organic chemical compounds

2 D Monomers (migration):

Test results according to Test report No. R-1379659 of ÉMI-TÜV SÜD Kft. KERMI Department

Tested parameter Monomers (CAS No.):	Result [mg/l]	LOQ [mg/l]	Limit [mg/l]
	ball mix		
Acrylamide (79-06-1)	<LOQ	0.01	0.02
Bisphenol A (80-05-7)	<LOQ	0.005	0.04
Formaldehyde (50-00-0)	<LOQ	0.1	2.5
Phenol (108-95-2)	<LOQ	1.0	5
Styrene (100-42-5)	<LOQ	0.01	0.75

LOQ: Limit of quantification

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MSZ EN 71-9:2005+A1:2008 Safety of toys
Part 9: Organic chemical compounds

2 E Solvents (migration):

Test results according to Test report No. R-1379659 of ÉMI-TÜV SÜD Kft. KERMI Department

Tested Parameter Migration of solvents (CAS No.):	Result [mg/l]	LOQ [mg/l]	Limit [mg/l]
	1.		
Trichloroethylene (79-01-6)	<LOQ	0.01	0.02
Dichloromethane (75-09-2)	<LOQ	0.05	0.06
2-Methoxyethyl acetate (110-49-6)	<LOQ	0.5	0.5
2-Ethoxyethanol (110-80-5)	<LOQ	0.5	
2-Ethoxyethyl acetate (111-15-9)	<LOQ	0.5	
Bis(2-methoxyethyl) ether (111-96-6)	<LOQ	0.5	
2-Methoxypropyl acetate (70657-70-4)	<LOQ	0.5	
Methanol (67-56-1)	<LOQ	0.5	5
Nitrobenzene (98-95-3)	<LOQ	0.01	0.02
Cyclohexanone (108-88-3)	<LOQ	0.5	46
3.5.5-Trimethyl-2-cyclohexene-1-one (78-59-1)	<LOQ	0.5	3
Toluene (108-88-3)	<LOQ	0.5	2
Ethylbenzene (100-41-4)	<LOQ	0.5	1
Xylene (all isomers) (various No.)	<LOQ	0.5	2(total)

LOQ: Limit of quantification

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MSZ EN 71-9:2005+A1:2008 Safety of toys
Part 9: Organic chemical compounds

2 I Determination of Plasticisers (migration)

Test results according to Test report No. R-1379659 of ÉMI-TÜV SÜD Kft. KERMI Department

Tested Parameter	Result [mg/l]	LOQ [mg/l]	Limit [mg/l]
	ball mix		
Triphenyl phosphate	<LOQ	0.02	0.03
Tri-o-cresyl phosphate	<LOQ	0.02	0.03
Tri-m-cresyl phosphate	<LOQ	0.02	0.03
Tri-p-cresyl phosphate	<LOQ	0.02	0.03

LOQ: Limit of quantification

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The toy should not contain dangerous substances according to 1907/2006/EC (REACH) and amendments:

Test method: MSZ EN 17294-2:2005, determination: ICP-MS

Tested Parameter	Result [mg/kg]		Limit [mg/kg]
	ball mix red+green+yellow+ orange	ball mix white+blue+ transparent	
Total cadmium content [mg/kg]	<10	<10	100 mg/kg
Total Lead content [w/w%]	<0.001	<0.001	0.05 w/w%

LOQ: Limit of Quantification, Cadmium: 10 mg/kg, Lead: 0.001 w/w%

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The toy should not contain dangerous substances according to 1907/2006/EC (REACH) and amendments: Phthalates

Test methods: CPSC-CH-C1001-09.4

No.	Tested Parameter	CAS No.	Result [w/w%]		LOQ [w/w%]	Limit [w/w%]
			ball mix red+ green+ yellow+ orange	ball mix white+ blue+ transparent		
01	Di-methyl phthalate	131-11-3	<LOQ	<LOQ	0.005	---
02	Di-ethyl phthalate	84-66-2	<LOQ	<LOQ	0.005	---
03	Di-propyl phthalate (DPrP)	131-16-8	<LOQ	<LOQ	0.005	---
04	Di-butyl phthalate (DBP)	84-74-2	<LOQ	<LOQ	0.005	0.1
05	Di-iso-buthyl phthalate (DiBP)	84-69-5	<LOQ	<LOQ	0.005	0.1
06	Benzyl butyl phthalate (BBP)	85-68-7	<LOQ	<LOQ	0.005	0.1
07	Di-pentyl phthalate (DPP)	131-18-0	<LOQ	<LOQ	0.005	0.1
08	Di-iso-pentyl phthalate (DiPP)	605-50-5	<LOQ	<LOQ	0.005	---
09	N-pentyl-isopentyl phthalate (nPiPP)	776297-69-9 84777-06-0	<LOQ	<LOQ	0.005	---
10	Di-hexyl phthalate (DHP) (DnHP)	84-75-3	<LOQ	<LOQ	0.005	0.1
11	Di-n-octyl phthalate (DnOP)	117-84-0	<LOQ	<LOQ	0.005	0.1
12	Di-iso-octyl phthalate (DiOP)	27554-26-3	<LOQ	<LOQ	0.05	---
13	Di-nonyl phthalate (DNP)	84-76-4	<LOQ	<LOQ	0.05	---
14	Di-iso-nonyl phthalate (DiNP)	68515-48-0	<LOQ	<LOQ	0.05	0.1
15	Di-decyl phthalate (DDP)	84-77-5	<LOQ	<LOQ	0.005	---
16	Di-iso-decyl phthalate (DiDP)	26761-40-0	<LOQ	<LOQ	0.05	0.1
17	Di-un-decyl phthalate (DUP)	3648-20-2	<LOQ	<LOQ	0.005	---
18	Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	<LOQ	<LOQ	0.005	0.1
19	Bis(2-methoxyethyl) phthalate (DMEP)	117-82-8	<LOQ	<LOQ	0.005	---
20	Di-allyl phthalate (DAP)	131-17-9	<LOQ	<LOQ	0.005	---
21	Di-phenyl phthalate (DPhP)	84-62-8	<LOQ	<LOQ	0.005	---
22	1.2-Benzenedicarboxylic acid. di-C6-8-branched alkyl esters. C-7 Rich (DiHP)	71888-89-6	<LOQ	<LOQ	0.05	---

LOQ: Limit of Quantification

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Polycyclic aromatic hydrocarbons (PAH)

Test method: AfPS GS 2019:01 PAK

Tested samples: Sample 1: ball, red
Sample 2: ball, green
Sample 3: ball, yellow
Sample 4: ball, orange

PAH	CAS No.	Result [mg/kg]			
		Sample 1	Sample 2	Sample 3	Sample 4
Benzo [a] pyrene	50-32-8	<LOQ	<LOQ	<LOQ	<LOQ
Benzo[e]pyrene	192-97-2	<LOQ	<LOQ	<LOQ	<LOQ
Benzo[j]fluoranthene	205-82-3	<LOQ	<LOQ	<LOQ	<LOQ
Benzo[a]anthracene	56-55-3	<LOQ	<LOQ	<LOQ	<LOQ
Benzo [b] fluoranthene	205-99-2	<LOQ	<LOQ	<LOQ	<LOQ
Benzo [k]fluoranthene	207-08-9	<LOQ	<LOQ	<LOQ	<LOQ
Chrysene	218-01-9	<LOQ	<LOQ	<LOQ	<LOQ
Dibenzo [a,h] anthracene	53-70-3	<LOQ	<LOQ	<LOQ	<LOQ
Benzo [g,h,i]perylene	191-24-2	<LOQ	<LOQ	<LOQ	<LOQ
Indeno [1,2,3-cd] pyrene	193-39-5	<LOQ	<LOQ	<LOQ	<LOQ
Phenantrene	85-01-8	<LOQ	<LOQ	<LOQ	<LOQ
Pyrene	129-00-0	<LOQ	<LOQ	<LOQ	<LOQ
Anthracene	120-12-	<LOQ	<LOQ	<LOQ	<LOQ
Fluoranthene	206-44-0	<LOQ	<LOQ	<LOQ	<LOQ
Naphthalane	91-20-3	<LOQ	<LOQ	<LOQ	<LOQ
Sum of 15 PAH (EPA)		<LOQ	<LOQ	<LOQ	<LOQ

LOQ: Limit of quantification: 0.2 mg/kg per component

Requirement: 1272/2013/EU: max. 0.5 mg/kg for **bold** labeled components

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Tested samples: Sample 5: ball, white
Sample 6: ball, blue
Sample 7: ball, transparent

PAH	CAS No.	Result [mg/kg]		
		Sample 5	Sample 6	Sample 7
Benzo [a] pyrene	50-32-8	<LOQ	<LOQ	<LOQ
Benzo[e]pyrene	192-97-2	<LOQ	<LOQ	<LOQ
Benzo[j]fluoranthene	205-82-3	<LOQ	<LOQ	<LOQ
Benzo[a]anthracene	56-55-3	<LOQ	<LOQ	<LOQ
Benzo [b] fluoranthene	205-99-2	<LOQ	<LOQ	<LOQ
Benzo [k]fluoranthene	207-08-9	<LOQ	<LOQ	<LOQ
Chrysene	218-01-9	<LOQ	<LOQ	<LOQ
Dibenzo [a,h] anthracene	53-70-3	<LOQ	<LOQ	<LOQ
Benzo [g,h,i]perylene	191-24-2	<LOQ	<LOQ	<LOQ
Indeno [1,2,3-cd] pyrene	193-39-5	<LOQ	<LOQ	<LOQ
Phenantrene	85-01-8	<LOQ	<LOQ	<LOQ
Pyrene	129-00-0	<LOQ	<LOQ	<LOQ
Anthracene	120-12-	<LOQ	<LOQ	<LOQ
Fluoranthene	206-44-0	<LOQ	<LOQ	<LOQ
Naphthalane	91-20-3	<LOQ	<LOQ	<LOQ
Sum of 15 PAH (EPA)		<LOQ	<LOQ	<LOQ

LOQ: Limit of quantification: 0.2 mg/kg per component

Requirement: 1272/2013/EU: max. 0.5 mg/kg for **bold** labeled components

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The toy should not contain dangerous substances according to 2014/81/EU

Test methods: MSZ EN 71-10:2005
MSZ EN 71-11:2005

Tested Parameter (CAS No.)	Result [mg/kg]	Limit [mg/kg]
	ball mix	
TCEP content CAS: 115-96-8	<LOQ	5
TCPP content CAS: 13674-84-5	<LOQ	5
TDCP content CAS: 13674-87-8	<LOQ	5

LOQ: Limit of Quantification: TCEP: 5 mg/kg TCPP, TDCP: 2 mg/kg

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II./5. Hygiene

Tested parameter	Requirement	Result
Hygiene	Toys must be so designed and manufactured as to meet the requirements of hygiene and cleanliness in order to avoid any risk of infection. sickness. and contamination	Clean by wet wipe.

II./6. Radioactivity

Tested parameter	Requirement	Result
Radioactivity	Toys must not contain radioactive elements or substances in forms or proportions like to be detrimental to a child's health. According to KERMI-014	The samples did not exceed background radiation.

The samples were used for tests.

ÉMI-TÜV SÜD KR.
KERMI Osztály

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