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04.04.2019

Report No. 0003287683/30 AZ 337804

Test item: Four PU foams

Identification: Article name: 1. ST 2236 I, 2. ST 2536 I, 3. ST 2836, 4. ST 3040 I
Date stamp of article: 1. 28.02.2019, 2. 05.03.2019, 3. 05.03.2019, 4. 05.03.2019
Material / Component: Polyurethane foam
Manufacturer's name: OOO EVROPLAST (Ltd)
Batch No.: 1. 392019020082, 2. 392019030010, 3. 392019030009, 4. 392019030007

Condition at delivery: No claim

Date of delivery: 25.03.2019

Place of testing: Cologne, Nuremberg

Test period: 28.03.2019 to 04.04.2019

Test scope: Parameters selected by customer

Test specification: IKEA IOS-MAT-0010 Vers. AA-10911-14 dated 2018-06-20/
IKEA IOS-MAT-0054 Vers. AA-92520-11 dated 2018-11-14

Test result: Pass - According to the kind and extent of tests performed the test items meet the test specification.

Cologne, 04.04.2019



Sachverständige(r)/Expert
Signiert von: Margot Thiel



Sachverständige(r)/Expert
Signiert von: Petra Van Dyck

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1. Results

EN 71-3, Migration of certain elements, category 3

Sample No.	337804-005	337804-006	337804-007
Sample composition	Art. 1	Art. 2	Art. 3
Unit	mg/kg	mg/kg	mg/kg
Migratable elements, article testing			
Dewaxing	n	n	n
Aluminium	<100	<100	<100
Antimony	<5	<5	<5
Arsenic	<1	<1	<1
Barium	<100	<100	<100
Boron	<10	<10	<10
Cadmium	<0,1	<0,1	<0,1
Chromium, total	<0,05	<0,05	<0,05
Chromium (III)	<0,05	<0,05	<0,05
Chromium(VI)	<0,05	<0,05	<0,05
Cobalt	<1	<1	<1
Copper	<10	<10	<10
Lead	<1	<1	<1
Manganese	<100	<100	<100
Mercury	<1	<1	<1
Nickel	<10	<10	<10
Selenium	<5	<5	<5
Strontium	<100	<100	<100
Tin*	3,2	4,2	4,9
Zinc	<100	<100	<100

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Sample No.	337804-008		
Sample composition	Art. 4		
Unit	mg/kg		
Migratable elements, article testing			
Dewaxing	n		
Aluminium	<100		
Antimony	<5		
Arsenic	<1		
Barium	<100		
Boron	<10		
Cadmium	<0,1		
Chromium, total	<0,05		
Chromium (III)	<0,05		
Chromium(VI)	<0,05		
Cobalt	<1		
Copper	<10		
Lead	<1		
Manganese	<100		
Mercury	<1		
Nickel	<10		
Selenium	<5		
Strontium	<100		
Tin*	4,8		
Zinc	<100		

Legal limit values according to Directive 2009/48/EC:

Category 3:

Scraped-off toy material

aluminium 70000 mg/kg, antimony 560 mg/kg, arsenic 47 mg/kg, barium 18750 mg/kg, boron 15000 mg/kg, cadmium 17 mg/kg, chromium(III) 460 mg/kg, chromium(VI) 0,2 mg/kg, cobalt 130 mg/kg, copper 7700 mg/kg, lead 23 mg/kg, manganese 15000 mg/kg, mercury 94 mg/kg, nickel 930 mg/kg, selenium 460 mg/kg, strontium 56000 mg/kg, tin 180000 mg/kg, zinc 46000 mg/kg

According to Directive (EU) 2018/725 the limit value for chromium VI will be decreased to 0.053 mg/kg (valid from 18 November 2019).

*Tin: If the migration of tin is less than the reporting limit the compliance with the limit value of 12 mg/kg can be confirmed. The determination of tin-organic compounds is not required in regards to metals and all-mineral materials like glass, ceramics etc.

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EN 71-3, Migration of certain elements, organic tins as tributyltin equivalent

Sample No.	337804-005.1	337804-006.1	337804-007.1
Sample composition	Art. 1	Art. 2	Art. 3
Unit	mg/kg	mg/kg	mg/kg
Sum of organic tins	n.n.	n.n.	n.n.
Category	3	3	3
Methyl tin (TBT-equivalent)	<0,04	<0,04	<0,04
Monobutyl tin (TBT-equivalent)	<0,06	<0,06	<0,06
Dibutyl tin (TBT-equivalent)	<0,06	<0,06	<0,06
Tributyl tin	<0,02	<0,02	<0,02
Tetrabutyl tin (TBT-equivalent)	<0,04	<0,04	<0,04
n-Octyl tin (TBT-equivalent)	<0,04	<0,04	<0,04
Di-n-octyl tin (TBT-equivalent)	<0,02	<0,02	<0,02
Di-n-propyl tin (TBT-equivalent)	<0,02	<0,02	<0,02
Diphenyl tin (TBT-equivalent)	<0,06	<0,06	<0,06
Triphenyl tin (TBT-equivalent)	<0,12	<0,12	<0,12
Tricyclohexyl tin (TBT-equivalent)	<0,06	<0,06	<0,06
Dimethyl tin (TBT-equivalent)	<0,06	<0,06	<0,06

Sample No.	337804-008.1		
Sample composition	Art. 4		
Unit	mg/kg		
Sum of organic tins	n.n.		
Category	3		
Methyl tin (TBT-equivalent)	<0,04		
Monobutyl tin (TBT-equivalent)	<0,06		
Dibutyl tin (TBT-equivalent)	<0,06		
Tributyl tin	<0,02		
Tetrabutyl tin (TBT-equivalent)	<0,04		
n-Octyl tin (TBT-equivalent)	<0,04		
Di-n-octyl tin (TBT-equivalent)	<0,02		
Di-n-propyl tin (TBT-equivalent)	<0,02		
Diphenyl tin (TBT-equivalent)	<0,06		
Triphenyl tin (TBT-equivalent)	<0,12		
Tricyclohexyl tin (TBT-equivalent)	<0,06		
Dimethyl tin (TBT-equivalent)	<0,06		

n.n. not detectable

Legal limit values according to Directive 2009/48/EC:

Category 1:

Dry, brittle, powder-like or pliable toy material

Organic tin 0,9 mg/kg

Category 2:

Liquid or sticky toy material

Organic tin 0,2 mg/kg

Category 3:

Scraped-off toy material

Organic tin 12 mg/kg

*the scope of the stated parameters extends the scope of parameters listed in the DIN EN 71-3, because the migration limit of the Directive 2009/48/EC refers to organic tins in general. A harmonised list does not exist yet.

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Lead total basic material, USA

Sample No.	337804-009	337804-010	337804-011
Sample composition	Art. 1	Art. 2	Art. 3
Unit	mg/kg	mg/kg	mg/kg
Lead	<10	<10	<10

Sample No.	337804-012		
Sample composition	Art. 4		
Unit	mg/kg		
Lead	<10		

Limit values:

40 mg/kg for polymerics (plastics, silicone, rubber, latex, elastomers), PU-foams, latex-foam, label, textiles
90 mg/kg for wood, natural materials, glass, ceramics, enamel

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Phthalates, CPSC

Sample No.	337804-013	337804-014	337804-015
Sample composition	Art. 1	Art. 2	Art. 3
Unit	mg/kg	mg/kg	mg/kg
Phthalates, total	n.n.	n.n.	n.n.
Dimethylphthalate, DMP	<50	<50	<50
Diethylphthalate, DEP	<50	<50	<50
Dipropylphthalate, DPP	<50	<50	<50
Dibutylphthalate, DBP	<50	<50	<50
Diisobutylphthalate, DIBP	<50	<50	<50
Di-n-pentylphthalate, DnPP	<50	<50	<50
n-Pentyl-isopentyl phthalate, PiPP	<50	<50	<50
Diisopentylphthalate DiPP	<50	<50	<50
Di-n-hexyl phthalate, DNHP	<50	<50	<50
Dicyclohexylphthalate, DCHP	<50	<50	<50
Benzylbutylphthalate, BBP	<50	<50	<50
1,2-Benzenedicarboxylic acid, di-C6 -8-branched alkyl esters, C7-rich, DIHP	n.n.	n.n.	n.n.
1,2-benzenedicarboxylic acid, di-C7-11-branched and linear alkyl ester, DHNUP	n.n.	n.n.	n.n.
Bis-(2-ethylhexyl)phthalate, DEHP	<50	<50	<50
Di-n-octylphthalate, DNOP	<50	<50	<50
Di-n-nonyl phthalate, DnNP	n.n.	n.n.	n.n.
Diisononylphthalate, DINP	<50	<50	<50
Diisodecylphthalate, DIDP	<50	<50	<50
Bis-(2-methoxyethyl) phthalate, BMEP	<50	<50	<50
Bis(2-n-butoxyethyl)phthalate, BBEP	<50	<50	<50
Bis(4-methyl-2-pentyl)phthalate, BMPP	<50	<50	<50
Bis(2-ethoxyethyl)phthalate, BEEP	<50	<50	<50
Butyloctylphthalate	<50	<50	<50
Hexyl-2-ethylhexylphthalate, HEHP	<50	<50	<50
Diphenylphthalate	<50	<50	<50
Dibenzylphthalate	<50	<50	<50
1,2-Benzenedicarboxylic acid, di-C7-9-branched and linear alkyl esters	n.n.	n.n.	n.n.
1,2-Benzenedicarboxylic acid, di-C9-11-branched and linear alkyl esters	n.n.	n.n.	n.n.

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Sample No.	337804-016		
Sample composition	Art. 4		
Unit	mg/kg		
Phthalates, total	n.n.		
Dimethylphthalate, DMP	<50		
Diethylphthalate, DEP	<50		
Dipropylphthalate, DPP	<50		
Dibutylphthalate, DBP	<50		
Diisobutylphthalate, DIBP	<50		
Di-n-pentylphthalate, DnPP	<50		
n-Pentyl-isopentyl phthalate, PiPP	<50		
Diisopentylphthalate DiPP	<50		
Di-n-hexyl phthalate, DNHP	<50		
Dicyclohexylphthalate, DCHP	<50		
Benzylbutylphthalate, BBP	<50		
1,2-Benzenedicarboxylic acid, di-C6 -8-branched alkyl esters, C7-rich, DIHP	n.n.		
1,2-benzenedicarboxylic acid, di-C7-11-branched and linear alkyl ester, DHNUP	n.n.		
Bis-(2-ethylhexyl)phthalate, DEHP	<50		
Di-n-octylphthalate, DNOP	<50		
Di-n-nonyl phthalate, DnNP	n.n.		
Diisononylphthalate, DINP	<50		
Diisodecylphthalate, DIDP	<50		
Bis-(2-methoxyethyl) phthalate, BMEP	<50		
Bis(2-n-butoxyethyl)phthalate, BBEP	<50		
Bis(4-methyl-2-pentyl)phthalate, BMPP	<50		
Bis(2-ethoxyethyl)phthalate, BEEP	<50		
Butyloctylphthalate	<50		
Hexyl-2-ethylhexylphthalate, HEHP	<50		
Diphenylphthalate	<50		
Dibenzylphthalate	<50		
1,2-Benzenedicarboxylic acid, di-C7-9-branched and linear alkyl esters	n.n.		
1,2-Benzenedicarboxylic acid, di-C9-11-branched and linear alkyl esters	n.n.		

n.n. not detectable

Limit values: 100 mg/kg per compound, 250 mg/kg total

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TDA and MDA

Sample No.	337804-001	337804-002	337804-003
Sample composition	Art. 1	Art. 2	Art. 3
Unit	mg/kg	mg/kg	mg/kg
2,4-Toluylendiamine	<1	<1	<1
2,6-Toluylendiamine	<1	<1	<1
2,2-Diaminodiphenylmethane	<1	<1	<1
2,4-Diaminodiphenylmethane	<1	<1	<1
4,4'-Diaminodiphenylmethane	<1	<1	<1

Sample No.	337804-004		
Sample composition	Art. 4		
Unit	mg/kg		
2,4-Toluylendiamine	<1		
2,6-Toluylendiamine	<1		
2,2-Diaminodiphenylmethane	<1		
2,4-Diaminodiphenylmethane	<1		
4,4'-Diaminodiphenylmethane	<1		

Limit value 5 mg/kg per compound

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2. Summary of methods

EN 71-3, Migration of certain elements, category 3	Standard: DIN EN 71-3	Issue date: 01.08.18
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Method description:
Safety of toys - Part 3: Migration of certain elements and chromium(VI) from toy materials of category III - Analysis by ICP-MS according to DIN EN ISO 17294-2 respectively chromium(VI) after pre-column accumulation and post-column derivatisation by ion chromatography

EN 71-3, Migration of certain elements, organic tins as tributyltin equivalent	Standard: DIN EN 71-3	Issue date: 01.08.18
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Method description:
Safety of toys - Part 3: Migration of certain elements, determination of organic tins - Results are stated as tributyltin equivalent according to part 9.3 - Quantification by GS-MS

Notes:
Single components with an amount below the detection limit are not included in the calculation of the sum. In case that all components are not detected, the result is n.d. (not detectable).

Lead total basic material, USA	Standard: MS-0022823*	Issue date: 21.01.19
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Method description:
Determination of the total content of lead after decomposition according to ASTM E 1645-01 (Standard Practice for Preparation of Dried Paint Samples by Hotplate or Microwave Digestion for Subsequent Lead Analysis), quantification by ICP according to ASTM E 1613-12 (Standard Test Method for Determination of Lead by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES), Flame Atomic Absorption Spectrometry (FAAS), or Graphite Furnace Atomic Absorption Spectrometry (GFAAS) Techniques), as far as possible identical to CPSC-CH-E1002-08

Notes:
* in-house working instruction

Phthalates, CPSC		
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Method description:
Determination of selected phthalates after extraction with organic solvent, quantification by GC-MS according to: CPSC-CH-C1001-09.3

Notes:
Not quantifiable compounds e.g. technical mixtures or isomers are marked with *. The indication of results for non quantifiable compounds is d = detected. In the report only the quantifiable respectively detected compounds are stated, however all listed compounds are analysed.

TDA and MDA		
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Method description:
Determination of TDA and MDA after extraction with 0,1% acetic acid, afterwards derivatization with pentafluoropropionic acid anhydride (PFPA) and quantification by LC-MS according to Analytica Chimica Acta 510 (2004) 109-119, deviation in sample preparation 0,4 g on 6 ml