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25.06.2018

Report No. 0003259454/180 AZ 310006

Test item: One foam

Identification: Article name: Flexible foam  
Article No.: HS2525  
Date stamp: 16 May 2018  
Material: Polyurethane  
Manufacturer's name: «Egida +» ltd.  
Supplier name: «Egida +» ltd.

Condition at delivery: No claim

Date of delivery: 12.06.2018

Place of testing: Cologne, Nuremberg

Test period: 12.06.2018 to 25.06.2018

Test scope: Parameters selected by customer

Test specification: IKEA IOS-MAT-0054 Vers. AA-92520-10 dated 2018-04-18  
IKEA IOS-MAT-0010 Vers. AA-10911-13 dated 2015-11-13

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

Cologne, 25.06.2018

X



Sachverständige(r)/Expert  
Signiert von: Gunther Bier

X



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.	310006-003		
Sample composition	Art. 1		
Unit	mg/kg		
<b>Soluble heavy metals</b>			
Aluminium	<100		
Antimony	<5		
Arsenic	<1		
Barium	<100		
Boron	<10		
Cadmium	<0,1		
Chromium, total	0,069		
Chromium (III)	0,069		
Chromium(VI)	<0,2		
Cobalt	<1		
Copper	<10		
Lead	<1		
Manganese	<100		
Mercury	<1		
Nickel	<10		
Selenium	<5		
Strontium	<100		
Tin*	36		
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 160 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) 2017/738 the limit value for lead will be decreased to 23 mg/kg. (valid from 28 October 2018).

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.	310006-003.1		
Sample composition	Art. 1		
Unit	mg/kg		
<b>Sum of organic tins</b>	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.

**Lead total basic material, USA**

Sample No.	310006-005		
Sample composition	Art. 1		
Unit	mg/kg		
<b>Lead</b>	<10		

Limit values:

40 mg/kg for polymerics (plastics, silicone, rubber, latex, elastomers), PU-foam, latex-foam, label, textiles

90 mg/kg for wood, natural materials, glass, ceramics, enamel

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**Organotin compounds**

Sample No.	310006-002		
Sample composition	Art. 1		
Unit	mg/kg		
<b>Organotin compounds, total</b>	n.n.		
Monobutyltin, MBT	<0,005		
Dibutyltin, DBT	<0,005		
Tributyltin, TBT	<0,005		
Tetrabutyltin, TeBT	<0,005		
Monooctyltin, MOT	<0,005		
Diocetyl tin, DOT	<0,005		
Tricyclohexyltin, TcyT	<0,005		
Triphenyltin, TPhT	<0,005		
Di-n-propyl tin	<0,005		
Diphenyl tin	<0,005		

Limit values:

DBT and TBT 0,1 mg/kg each for polymerics (plastics, silicone, rubber, latex, elastomers), textiles, PU foam

DBT and TBT 0,2 mg/kg each for coverings and organic coatings

Sum of all organotin compounds 2,5 mg/kg

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**Phthalates, CPSC**

Sample No.	310006-006		
Sample composition	Art. 1		
Unit	mg/kg		
<b>Phthalates, total</b>	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

**TDA and MDA**

Sample No.	310006-001		
Sample composition	Art. 1		
Unit	mg/kg		
<b>2,4-Toluyldiamine</b>	<1		
2,6-Toluyldiamine	<1		
2,2-Diaminodiphenylmethane	<1		
2,4-Diaminodiphenylmethane	<1		
4,4'-Diaminodiphenylmethane	<1		

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**Volatile organic compounds, tenax-method**

loading:	1,0	m <sup>2</sup> /m <sup>3</sup>	
exchange of air:	1,0	/h	
temperature:	23	°C	
relative humidity:	50	%	
sampling:		acc. ISO 16000-6/-9	
start of sampling in chamber	48	h	

Sample No.	Info		310006-004
Sample Name			004) Art. 1
	CMR 1A/B Classification acc. to GHS <sup>1)</sup>	CAS Nr.	µg/m <sup>3</sup>
<b>aromatic hydrocarbons</b>			
phenol	Muta.2	108-95-2	<1
formamide	Repr.1B	75-12-7	<1

limit of quantification:

calibrated substances 1 µg/m<sup>3</sup> substance specific

\*not calibrated substances 5 µg/m<sup>3</sup> quantified as the toluene equivalent, semi quantitative

\*\* most likely library proposal, quantified as toluene equivalent

\*\*\*value out of calibrated range, semi quantitative

RT: retention time

1)Classification according to Part 3 of Annex VI of (EC) No 1272/2008 incl. amendments, for the purposes of its adaptation to technical and scientific progress (ATP)

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## 2. Summary of methods

<b>EN 71-3, Migration of certain elements, category 3</b>	<b>Standard: EN 71-3:2013+A2:2017</b>	<b>Issue date: 09.08.17</b>
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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

<b>EN 71-3, Migration of certain elements, organic tins as tributyltin equivalent</b>	<b>Standard: EN 71-3:2013+A2:2017</b>	<b>Issue date: 09.08.17</b>
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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).

<b>Lead total basic material, USA</b>	<b>Standard: MS-0022823</b>	<b>Issue date: 24.01.18</b>
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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

<b>Organotin compounds</b>		
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Method description:  
In-house method - Determination of organotin compounds after extraction with methanolic solvent and derivatisation. Quantification by GC-MS

Notes:  
Quantification equates the DIN EN ISO 17353.

<b>Phthalates, CPSC</b>		
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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.

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<b>TDA and MDA</b>		
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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

<b>Volatile organic compounds, tenax-method</b>	<b>Standard: DIN ISO 16000-6</b>	<b>Issue date: 01.12.04</b>
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Method description:

Indoor air - Part 6: Determination of volatile organic compounds in indoor and chamber air by active sampling on TENAX TA, thermal desorption and gas-chromatography MSD/FID

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