

Test Report

Number: SZHH01433797

Applicant: SHEN ZHEN MENCONN ELECTRONIC CO., LTD
NO.13A JINYUAN ONE ROAD JINYUAN
INDUSTRIAL ZONE HE'AO LONGGANG DISTRICT
SHENZHEN CITY

Date: Jan 21, 2020

Attn: CHEN ZHAO NONG

Sample Description:

One (1) submitted sample said to be **Silver Color Metal [Terminal Wafer=Tin/Gold (端子/铜针)] .**

Item No. : **A1001 1002 1003 1004 1006 1007 0800 1008 1009 1011 1012 1013 1014
1250 1251 1252 1253 1254 1255 1256 1257 1258 1259 1500 1501
1502 1503 1504 1505 1506 2001 2002 2003 2004 2005 2006 2007
2008 2009 2013 2014 2015 2016 2100 2211 2500 2501 2502 2503
2504 2505 2506 2507 2508 2509 2510 2512 2540 2541 2542
2543 2544 2545 2546 2547 2548 2549 3500 3800 3960 3961
3962 3963 4000 5001 5081 5058 5082 7500 2361 1561 7921**

B1259 1502 2011 2012 2512 2513 3965 3961 3962 3963

**C1250 1500 1301 1801 2003 2363 2503 2504 2505 2544 2020 3030 3961
3962 4014 4255 1058 5030 5058 6350 6500**

CE-1 CE-1X CE-2X

Date Sample Received : Jan 16, 2020.
Testing Period : Jan 16, 2020 ~Jan 21, 2020



Tests conducted:

As requested by the applicant, refer to attached page(s) for details.



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Conclusion:

<u>Tested Sample</u>	<u>Standard</u>	<u>Result</u>
Tested components of submitted sample	EN 71-3:2013+A3:2018 on migration of certain elements	See Comment
	EN 71-3:2013+A3:2018 on migration of certain elements and (EU) 2018/725 amending 2009/48/EC (applies from 18 November 2019) for Chromium (VI) migration and (EU) 2019/1922 amending 2009/48/EC (applies from 20 May 2021) for Aluminium migration	See Comment
	EN 71-3:2019 on migration of certain elements	See Comment
	EN 71-3:2019 on migration of certain elements and (EU) 2019/1922 amending 2009/48/EC (applies from 20 May 2021) for Aluminium migration	See Comment
	EU REACH Regulation (EC) No 1907/2006 Article 33(1) Obligation to provide information of safe use (see REACH requirement in report for details)	Meet Requirement
	Restriction of the use of certain hazardous substance in electrical and electronic equipment (RoHS Directive 2011/65/EU and amendment Commission Delegated Directive (EU) 2015/863 with effective from 22 July 2019)	Pass

Comment:

The testing scope of the following standard(s) was not applicable to the submitted samples. However, the test results of the tested component met the related requirements as stated in this report

Authorized by:
For Intertek Testing Services
Shenzhen Ltd.



Rachel L. Guo
General Manager



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Tests Conducted

1 19 Toxic Element Migration Test

(A) Test Result

With reference to EN 71-3:2013+A3:2018 and followed by Inductively Coupled Plasma Atomic Emission Spectrometry, Inductively Coupled Argon Mass Spectrometry, Ion Chromatography- Inductively Coupled Plasma-Mass Spectrometry, Ion Chromatography with UV-VIS and Gas Chromatographic - Mass Spectrometry.

Category (III): Scraped-off toy material

Element	Result (mg/kg)		Reporting Limit (mg/kg)	Limit (mg/kg)
	Tested Component			
	(1)			
Aluminium (Al)	ND		300	70000 / 28130▲
Antimony (Sb)	ND		10	560
Arsenic (As)	ND		10	47
Barium (Ba)	ND		10	18750
Boron (B)	ND		50	15000
Cadmium (Cd)	ND		5	17
Chromium (III) (Cr III) **	ND		10	460
Chromium (VI) (Cr VI) **	ND#		0.025	0.2/0.053◎
Cobalt (Co)	ND		10	130
Copper (Cu)	ND		10	7700
Lead (Pb)	ND		10	23
Manganese (Mn)	ND		10	15000
Mercury (Hg)	ND		10	94
Nickel (Ni)	ND		10	930
Selenium (Se)	ND		10	460
Strontium (Sr)	ND		100	56000
Tin (Sn)	806		2.5	180000
Organic tin **	NDΔ		2.0	12
Zinc (Zn)	ND		100	46000

Remark : mg/kg = milligram per kilogram
 ++ = Unless the test results were marked with "#" or "Δ", Chromium (III) & Chromium (VI) and Organic tin contents were not directly determined and were derived from migration results of total chromium and tin respectively.
 - Organic tin test result was expressed as tributyl tin.
 ND = Not detected (less than reporting limit)
 ▲ = The new Aluminium migration limit were quoted from Directive (EU) 2019/1922 amending Directive 2009/48/EC applicable from 20 May 2021.
 ◎ = The new Chromium (VI) migration limit [(0.053mg/kg for Category (III))] were quoted from Directive (EU) 2018/725 amending Directive 2009/48/EC applicable from 18 November 2019.



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= Confirmation of Chromium (VI) test was performed on the tested component. And the reported value of migration of Chromium (III) = migration value of total Chromium – migration value of Chromium(VI).

Δ = Confirmation test was performed on the tested component. The reported value was the sum of the migration values of Methyl tin, Butyl tin, Dibutyl tin, Tributyl tin, Tetrabutyl tin, n-Octyl tin, Di-n-octyl tin, Di-n-propyl tin, Diphenyl tin, Triphenyl tin and Dimethyl tin after converted to Tributyl tin by calculation. Other Organic tin compounds may be also be present in sample as stated in EN 71-3:2013+A3:2018.

Tested component(s): (1) Silver color metal sheet.

(B) Categories of various toy materials

Category I: Dry, brittle, powder like or pliable

Solid toy material from which powder-like material is released during playing and semi-solid materials that may also leave residues on the hands during play. The material can be ingested. Contamination of the hands with the material may contribute to the oral exposure of the material. (e.g. the cores of colouring pencils, chalk, crayons, modelling clays and plaster).

Category II: Liquid or sticky

Fluid or viscous toy material, which can be ingested or to which dermal exposure may occur during playing. (e.g. liquid paints, finger paints, liquid ink in pens, glue sticks, slimes, bubble solution).

Category III: Scraped-off

Solid toy material with or without a coating, which can be ingested as a result of biting, tooth scraping, sucking or licking. (e.g. coatings, lacquers, plastics, paper, textiles, glass, ceramic, metallic, wooden, bone, leather and other materials).



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2 19 Toxic Element Migration Test

(A) Test Result

With reference to EN 71-3:2019 and followed by Inductively Coupled Plasma Atomic Emission Spectrometry, Inductively Coupled Argon Mass Spectrometry, Ion Chromatography- Inductively Coupled Plasma-Mass Spectrometry, Ion Chromatography with UV-VIS and Gas Chromatographic - Mass Spectrometry.

Category (III): Scraped-off toy material

Element	Result (mg/kg)		Reporting Limit (mg/kg)	Limit (mg/kg)
	Tested Component			
	(1)			
Aluminium (Al)	ND		300	70000 / 28130 [▲]
Antimony (Sb)	ND		10	560
Arsenic (As)	ND		10	47
Barium (Ba)	ND		10	18750
Boron (B)	ND		50	15000
Cadmium (Cd)	ND		5	17
Chromium (III) (Cr III) **	ND		10	460
Chromium (VI) (Cr VI) **	ND#		0.025	0.053
Cobalt (Co)	ND		10	130
Copper (Cu)	ND		10	7700
Lead (Pb)	ND		10	23
Manganese (Mn)	ND		10	15000
Mercury (Hg)	ND		10	94
Nickel (Ni)	ND		10	930
Selenium (Se)	ND		10	460
Strontium (Sr)	ND		100	56000
Tin (Sn)	806		2.5	180000
Organic tin **	ND ^Δ		2.0	12
Zinc (Zn)	ND		100	46000

Remark : mg/kg = milligram per kilogram

++ = Unless the test results were marked with "#" or "Δ", Chromium (III) & Chromium (VI) and Organic tin contents were not directly determined and were derived from migration results of total chromium and tin respectively.

- Organic tin test result was expressed as tributyl tin.

ND = Not detected (less than reporting limit)

▲ = The new Aluminium migration limit were quoted from Directive (EU) 2019/1922 amending Directive 2009/48/EC applicable from 20 May 2021.

= Confirmation of Chromium (VI) test was performed on the tested component. And the reported value of migration of Chromium (III) = migration value of total Chromium – migration value of Chromium(VI).

Δ = Confirmation test was performed on the tested component. The reported value was the sum of the migration values of Dimethyl tin, Methyl tin, Butyl tin, Dibutyl tin, Tributyl tin, Tetrabutyl tin, n-Octyl tin, Di-n-octyl tin, Di-n-propyl tin, Diphenyl tin and Triphenyl tin after converted to Tributyl tin by calculation. Other Organic tin compounds may be also be present in sample as stated in EN 71-3:2019.



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Tested component(s): (1) Silver color metal sheet.

(B) Categories of various toy materials

Category I: Dry, brittle, powder like or pliable

Solid toy material from which powder-like material is released during playing and semi-solid materials that may also leave residues on the hands during play. The material can be ingested. Contamination of the hands with the material may contribute to the oral exposure of the material. (e.g. the cores of colouring pencils, chalk, crayons, modelling clays and plaster).

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Fluid or viscous toy material, which can be ingested or to which dermal exposure may occur during playing. (e.g. liquid paints, finger paints, liquid ink in pens, glue sticks, slimes, bubble solution).

Category III: Scraped-off

Solid toy material with or without a coating, which can be ingested as a result of biting, tooth scraping, sucking or licking. (e.g. coatings, lacquers, plastics, paper, textiles, glass, ceramic, metallic, wooden, bone, leather and other materials).

3 (I) SVHC Testing Results

By Inductively Coupled Plasma Optical Emission Spectrometry, Ion Chromatography, UV-Visible Spectrophotometry, Gas Chromatographic - Mass Spectrometry, Liquid Chromatographic / Tandem Mass Spectrometer and High Performance Liquid Chromatography analysis.

Chemical Substance	Results % (w/w)
	Tested components
Tested SVHCs in Chemical list	ND

SVHC = Substance of very high concern
 ND = Not detected (less than reporting limit)
 Reporting limit = 0.1%

Test components: Silver color metal sheet.



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Tested SVHC Chemicals list:

	Chemical Substance	CAS No.		Chemical Substance	CAS No.
1	Cobalt Dichloride Δ	7646-79-9	2	Diarsenic Pentaoxide Δ	1303-28-2
3	Diarsenic Trioxide Δ	1327-53-3	4	Lead Hydrogen Arsenate Δ	7784-40-9
5	Triethyl Arsenate Δ	15606-95-8	6	Sodium Dichromate Δ	7789-12-0, 10588-01-9
7	Bis (Tributyltin) Oxide (TBTO) Δ	56-35-9	8	Anthracene	120-12-7
9	4,4'-Diaminodiphenylmethane (MDA)	101-77-9	10	Hexabromocyclododecane (HBCDD) and All Major Diastereoisomers Identified (α-HBCDD, β-HBCDD, γ-HBCDD)	25637-99-4 and 3194-55-6 (134237-50-6, 134237-51-7, 134237-52-8)
11	5-Tert-Butyl-2,4,6-Trinitro-m-Xylene (Musk Xylene)	81-15-2	12	Bis (2-Ethylhexyl) Phthalate (DEHP)	117-81-7
13	Dibutyl Phthalate (DBP)	84-74-2	14	Benzyl Butyl Phthalate (BBP)	85-68-7
15	Short Chain Chlorinated Paraffins (C ₁₀₋₁₃)	85535-84-8	16	Lead Chromate Δ	7758-97-6
17	Lead Chromate Molybdate Sulphate Red (C.I. Pigment Red 104) Δ	12656-85-8	18	Lead Sulfochromate Yellow (C.I. Pigment Yellow 34) Δ	1344-37-2
19	Tris (2-Chloroethyl) Phosphate	115-96-8	20	2,4-Dinitrotoluene	121-14-2
21	Diisobutyl Phthalate (DIBP)	84-69-5	22	Coal Tar Pitch, High Temperature	65996-93-2
23	Anthracene Oil	90640-80-5	24	Anthracene Oil, Anthracene Paste, Distn. Lights	91995-17-4
25	Anthracene Oil, Anthracene Paste, Anthracene Fraction	91995-15-2	26	Anthracene Oil, Anthracene-low	90640-82-7
27	Anthracene Oil, Anthracene Paste	90640-81-6	28	Acrylamide	79-06-1
29	Boric Acid Δ	10043-35-3, 11113-50-1	30	Disodium Tetraborate, Anhydrous Δ	1330-43-4, 12179-04-3, 1303-96-4



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	Chemical Substance	CAS No.		Chemical Substance	CAS No.
31	Tetraboron Disodium Heptaoxide, Hydrate Δ	12267-73-1	32	Sodium Chromate Δ	7775-11-3
33	Potassium Chromate Δ	7789-00-6	34	Ammonium Dichromate Δ	7789-09-5
35	Potassium Dichromate Δ	7778-50-9	36	Trichloroethylene	79-01-6
37	2-Methoxyethanol	109-86-4	38	2-Ethoxyethanol	110-80-5
39	Cobalt Sulphate Δ	10124-43-3	40	Cobalt Dinitrate Δ	10141-05-6
41	Cobalt Carbonate Δ	513-79-1	42	Cobalt Diacetate Δ	71-48-7
43	Chromium Trioxide Δ	1333-82-0	44	Chromic Acid Δ Dichromic Acid Δ Oligomers of Chromic Acid and Dichromic Acid Δ	7738-94-5 13530-68-2 --
45	Strontium ChromateΔ	7789-06-2	46	2-ethoxyethyl acetate (2-EEA)	111-15-9
47	1,2-Benzenedicarboxylic acid, di-C ₇₋₁₁ -branched and linear alkyl esters (DHNUP)	68515-42-4	48	Hydrazine	7803-57-8 302-01-2
49	1-methyl-2-pyrrolidone	872-50-4	50	1,2,3-trichloropropane	96-18-4
51	1,2-Benzenedicarboxylic acid, di-C ₆₋₈ -branched alkyl esters, C ₇ -rich (DIHP)	71888-89-6	52	Lead dipicrateΔ	6477-64-1
53	Lead styphnateΔ	15245-44-0	54	Lead azide; Lead diazideΔ	13424-46-9
55	Phenolphthalein	77-09-8	56	2,2'-dichloro-4,4'-methylenedianiline (MOCA)	101-14-4
57	N,N-dimethylacetamide (DMAC)	127-19-5	58	Trilead diarsenateΔ	3687-31-8
59	Calcium arsenateΔ	7778-44-1	60	Arsenic acidΔ	7778-39-4



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	Chemical Substance	CAS No.		Chemical Substance	CAS No.
61	Bis(2-methoxyethyl) ether	111-96-6	62	1,2-Dichloroethane	107-06-2
63	4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)	140-66-9	64	2-Methoxyaniline; o-Anisidine	90-04-0
65	Bis(2-methoxyethyl) phthalate (DMEP)	117-82-8	66	Formaldehyde, oligomeric reaction products with aniline (technical MDA)	25214-70-4
67	Pentazinc chromate octahydroxide Δ	49663-84-5	68	Potassium hydroxyoctaoxodizincate di-chromate Δ	11103-86-9
69	Dichromium tris(chromate) Δ	24613-89-6	70	Aluminosilicate Refractory Ceramic Fibres Δ	(Index No. 650-017-00-8)
71	Zirconia Aluminosilicate Refractory Ceramic Fibres Δ	(Index No. 650-017-00-8)	72	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2
73	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	74	Diboron trioxide Δ	1303-86-2
75	Formamide	75-12-7	76	Lead(II) bis(methanesulfonate) Δ	17570-76-2
77	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	78	β -TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6
79	4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	90-94-8	80	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1



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	Chemical Substance	CAS No.		Chemical Substance	CAS No.
81	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)] +	548-62-9	82	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylenecyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Blue 26) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)] +	2580-56-5
83	α,α-Bis[4-(dimethylamino)phenyl]-4-(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)] +	6786-83-0	84	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)] +	561-41-1
85	Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	1163-19-5	86	Pentacosafuorotridecanoic acid	72629-94-8
87	Tricosafuorododecanoic acid	307-55-1	88	Henicosafuoroundecanoic acid	2058-94-8
89	Heptacosafuorotetradecanoic acid	376-06-7	90	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3



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	Chemical Substance	CAS No.		Chemical Substance	CAS No.
91	<p>Cyclohexane-1,2-dicarboxylic anhydride [1]</p> <p>cis-cyclohexane-1,2-dicarboxylic anhydride [2]</p> <p>trans-cyclohexane-1,2-dicarboxylic anhydride [3]</p> <p>[The individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis- and trans-isomers [1] are covered by this entry].</p>	<p>85-42-7</p> <p>13149-00-3</p> <p>14166-21-3</p>	92	<p>Hexahydromethylphthalic anhydride [1],</p> <p>Hexahydro-4-methylphthalic anhydride [2],</p> <p>Hexahydro-1-methylphthalic anhydride [3],</p> <p>Hexahydro-3-methylphthalic anhydride [4]</p> <p>[The individual isomers [2], [3] and [4] (including their cis- and trans-stereo isomeric forms) and all possible combinations of the isomers [1] are covered by this entry]</p>	<p>25550-51-0</p> <p>19438-60-9</p> <p>48122-14-1</p> <p>57110-29-9</p>
93	<p>4-Nonylphenol, branched and linear</p> <p>[substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]</p>	--	94	<p>4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated</p> <p>[covering well-defined substances and UVCB substances, polymers and homologues]</p>	--
95	Methoxyacetic acid	625-45-6	96	N,N-dimethylformamide	68-12-2
97	Dibutyltin dichloride (DBTC) Δ	683-18-1	98	Lead monoxide (Lead oxide) Δ	1317-36-8
99	Orange lead (Lead tetroxide) Δ	1314-41-6	100	Lead bis(tetrafluoroborate) Δ	13814-96-5



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	Chemical Substance	CAS No.		Chemical Substance	CAS No.
101	Trilead bis(carbonate)dihydr oxide Δ	1319-46-6	102	Lead titanium trioxideΔ	12060-00-3
103	Lead titanium zirconium oxideΔ	12626-81-2	104	Silicic acid, lead salt Δ	11120-22-2
105	Silicic acid (H ₂ Si ₂ O ₅), barium salt (1:1), lead-dopedΔ [with lead (Pb) content above the applicable generic concentration limit for 'toxicity for reproduction' Repr. 1A (CLP) or category 1 (DSD); the substance is a member of the group entry of lead compounds, with index number 082-001-00-6 in Regulation (EC) No 1272/2008]	68784-75-8	106	1-bromopropane (n-propyl bromide)	106-94-5
107	Methyloxirane (Propylene oxide)	75-56-9	108	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0
109	Diisopentylphthalate (DIPP)	605-50-5	110	N-pentyl-isopentylphthalate	776297-69-9
111	1,2-diethoxyethane	629-14-1	112	Acetic acid, lead salt, basicΔ	51404-69-4
113	Lead oxide sulfateΔ	12036-76-9	114	[Phthalato(2-)]dioxotrileadΔ	69011-06-9
115	Dioxobis(stearato)trileadΔ	12578-12-0	116	Fatty acids, C16-18, lead saltsΔ	91031-62-8
117	Lead cyanamidateΔ	20837-86-9	118	Lead dinitrateΔ	10099-74-8
119	Pentalead tetraoxide sulphateΔ	12065-90-6	120	Pyrochlore, antimony lead yellowΔ	8012-00-8
121	Sulfurous acid, lead salt, dibasicΔ	62229-08-7	122	TetraethylleadΔ	78-00-2



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	Chemical Substance	CAS No.		Chemical Substance	CAS No.
123	Tetralead trioxide sulphate Δ	12202-17-4	124	Trilead dioxide phosphonate Δ	12141-20-7
125	Furan	110-00-9	126	Diethyl sulphate	64-67-5
127	Dimethyl sulphate	77-78-1	128	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2
129	Dinoseb (6-sec-butyl-2,4-dinitrophenol)	88-85-7	130	4,4'-methylenedi-o-toluidine	838-88-0
131	4,4'-oxydianiline and its salts	101-80-4	132	4-aminoazobenzene	60-09-3
133	4-methyl-m-phenylenediamine (toluene-2,4-diamine)	95-80-7	134	6-methoxy-m-toluidine (p-cresidine)	120-71-8
135	Biphenyl-4-ylamine	92-67-1	136	o-aminoazotoluene [(4-o-tolylazo-o-toluidine)]	97-56-3
137	o-toluidine	95-53-4	138	N-methylacetamide	79-16-3
139	Cadmium Δ	7440-43-9	140	Cadmium oxide Δ	1306-19-0
141	Dipentyl phthalate (DPP)	131-18-0	142	4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof]	--
143	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1



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	Chemical Substance	CAS No.		Chemical Substance	CAS No.
145	Cadmium sulphide Δ	1306-23-6	146	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0
147	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	148	Dihexyl phthalate (DnHP)	84-75-3
149	Imidazolidine-2-thione (2-imidazoline-2-thiol)	96-45-7	150	Lead di(acetate) Δ	301-04-2
151	Trixylyl phosphate	25155-23-1	152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear (Diisohexyl phthalate(DIHP))	68515-50-4
153	Cadmium chloride Δ	10108-64-2	154	Sodium perborate; perboric acid, sodium salt Δ	--
155	Sodium peroxometaborate Δ	7632-04-4	156	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1
157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	158	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1
159	Cadmium fluoride Δ	7790-79-6	160	Cadmium sulphate Δ	10124-36-4; 31119-53-6



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	Chemical Substance	CAS No.		Chemical Substance	CAS No.
161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	15571-58-1; 27107-89-7	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate (EC No. 201-559-5)	68515-51-5 68648-93-1
163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	117933-89-8	164	Nitrobenzene	98-95-3
165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3
167	1,3-propanesultone	1120-71-4	168	Perfluorononan-1-oi-c-acid and its sodium and ammonium salts	375-95-1 21049-39-8 4149-60-4
169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	170	4,4'-isopropylidenediphenol (bisphenol A; BPA)	80-05-7



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	Chemical Substance	CAS No.		Chemical Substance	CAS No.
171	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	335-76-2 3830-45-3 3108-42-7	172	4-heptylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 7 covalently bound predominantly in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	--
173	p-(1,1 dimethylpropyl)phenol	80-46-6	174	Perfluorohexane-1-sulphonic acid and its salts (PFHxS)	355-46-4
175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	13560-89-9 ; 135821-74-8 ; 135821-03-3	176	Benz[a]anthracene	56-55-3
177	Cadmium nitrate Δ	10325-94-7	178	Cadmium carbonate Δ	513-78-0
179	Cadmium hydroxide Δ	21041-95-2	180	Chrysene	218-01-9
181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with $\geq 0.1\%$ w/w 4-heptylphenol, branched and linear]	--	182	Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride, TMA)	552-30-7



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	Chemical Substance	CAS No.		Chemical Substance	CAS No.
183	Dicyclohexyl phthalate (DCHP)	84-61-7	184	Octamethylcyclotetrasiloxane (D4)	556-67-2
185	Decamethylcyclopentasiloxane (D5)	541-02-6	186	Dodecamethylcyclohexasiloxane (D6)	540-97-6
187	Lead	7439-92-1	188	Disodium octaborate Δ	12008-41-2
189	Benzo[ghi]perylene	191-24-2	190	Terphenyl hydrogenate	61788-32-7
191	Ethylenediamine (EDA)	107-15-3	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one	15087-24-8
193	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	194	Benzo[k]fluoranthene	207-08-9
195	Fluoranthene	206-44-0	196	Phenanthrene	85-01-8
197	Pyrene	129-00-0	198	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides (covering any of their individual isomers and combinations thereof)	--
199	4-tert-butylphenol (PTBP)	98-54-4	200	2-methoxyethyl acetate	110-49-6
201	Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with $\geq 0.1\%$ w/w of 4-nonylphenol, branched and linear (4-NP) +	--			



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Tested proposed SVHC Chemicals list in the Public Consultations on 3 September 2019:

	Chemical Substance	CAS No.		Chemical Substance	CAS No.
1	2-benzyl-2-dimethylamino-4'-morpholinobutyrop henone	119313-12-1	2	2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one	71868-10-5
3	Diisohexyl phthalate	71850-09-4	4	Perfluorobutane sulfonic acid (PFBS) and its salts	--

Δ = Determination was based on elemental analysis. The content was calculated based on assumption of worst-case.

+ = The content was calculated based on assumption of worst-case.

Notes:

Substances of very high concern (SVHC) are classified as:

Carcinogenic, mutagenic or toxic to reproduction category 1 (proven on humans) and category 2 (proven on animals)

Persistent, bioaccumulative and toxic chemicals (PBT)

Very persistent and very bioaccumulative chemicals (vPvB)

Other similar substances such as endocrine disrupters

If the imported or manufactured volume of each individual SVHC in article is more than 0.1% (w/w) and if it exceeds 1 tonne per year across all product ranges, then importer or manufacturer require notification to the European Chemical Agency (ECHA). For substances included in the Candidate List on or after 1 December 2010, the notifications have to be submitted no later than 6 months after the inclusion. The following information has to be submitted for notification:

Identification of the registrant and the substance

Classification and labelling of the substance

Description of use of the substance and the article

Registration number, if available

Tonnage range

REACH requirement:

As per article 33(1) of regulation (EC) No 1907/2006 (REACH), recipients of product must be provided with information of safe use if any of the tested substances (SVHC) exceeded 0.1% (w/w). A product meets the requirement of article 33(1) by default when no SVHC exceeds 0.1% (w/w).

As per Court of the European Union Judgment in Case C-106/14, press release No 100/15 dated 10 September 2015, each of the articles incorporated as a component of a complex product is covered by the relevant duties to notify and provide information when they contain a substance of very high concern in a concentration above 0.1% of their mass.



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Tests Conducted

4 RoHS Chemical Test

(A) Test Result Summary:

<u>Test Item</u>	<u>Result</u>
	(1)
Cadmium (Cd) Content (mg/kg)	ND
Lead (Pb) Content (mg/kg)	25
Mercury (Hg) Content (mg/kg)	ND
Chromium (VI)(Cr ⁶⁺) Content (mg/kg)	ND
Chromium (VI)(Cr ⁶⁺) Result (By Boiling Water Extraction on Metal) (µg/cm ²)	Negative
Polybrominated Biphenyls (PBBs)(mg/kg)	
Monobromobiphenyl (MonoBB)	ND
Dibromobiphenyl (DiBB)	ND
Tribromobiphenyl (TriBB)	ND
Tetrabromobiphenyl (TetraBB)	ND
Pentabromobiphenyl (PentaBB)	ND
Hexabromobiphenyl (HexaBB)	ND
Heptabromobiphenyl (HeptaBB)	ND
Octabromobiphenyl (OctaBB)	ND
Nonabromobiphenyl (NonaBB)	ND
Decabromobiphenyl (DecaBB)	ND
Polybrominated Diphenyl Ethers (PBDEs)(mg/kg)	
Monobromodiphenyl Ether (MonoBDE)	ND
Dibromodiphenyl Ether (DiBDE)	ND
Tribromodiphenyl Ether (TriBDE)	ND
Tetrabromodiphenyl Ether (TetraBDE)	ND
Pentabromodiphenyl Ether (PentaBDE)	ND
Hexabromodiphenyl Ether (HexaBDE)	ND
Heptabromodiphenyl Ether (HeptaBDE)	ND
Octabromodiphenyl Ether (OctaBDE)	ND
Nonabromodiphenyl Ether (NonaBDE)	ND
Decabromodiphenyl Ether (DecaBDE)	ND

Non-toys:

<u>Test Item</u>	<u>Result</u>
	(1)
Dibutyl phthalate (DBP) (mg/kg)	ND
Di-(2-ethyl hexyl) phthalate (DEHP) (mg/kg)	ND
Benzyl butyl phthalate (BBP) (mg/kg)	ND
Di-(iso-butyl) phthalate (DIBP) (mg/kg)	ND

ND = Not detected

Positive = A positive test result indicated the concentration of Cr(VI) is greater than threshold of 0.13 µg/cm² for boiling-water-extraction procedures by visual comparison / by UV-VIS Spectrophotometer analysis. The sample coating is considered to contain Cr(VI).

Negative = A negative test result indicated the concentration of Cr(VI) is less than threshold of 0.10 µg/cm² for boiling-water-extraction procedures by UV-VIS Spectrophotometer analysis. The coating is considered a non-Cr(VI) based coating.



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Inconclusive = A inconclusive test result indicated the concentration of Cr(VI) is between 0.10 µg/cm² and 0.13 µg/cm² boiling-water-extraction procedures by UV-VIS Spectrophotometer analysis. Unavoidable coating variations may influence the determination.

Tested components: (1) Silver color metal sheet.

(B) RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)
Dibutyl phthalate (DBP)	0.1% (1000 mg/kg)
Di-(2-ethyl hexyl) phthalate (DEHP)	0.1% (1000 mg/kg)
Benzyl butyl phthalate (BBP)	0.1% (1000 mg/kg)
Di-(iso-butyl) phthalate (DIBP)	0.1% (1000 mg/kg)

The above limits were quoted from Directive 2011/65/EU and amendment Commission Delegated Directive (EU) 2015/863 for homogeneous material.

(C) Test Method:

Testing Item	Testing Method	Reporting Limit
Mercury (Hg) Content	With reference to IEC 62321-4 Edition 1.0:2013+AMD1:2017, by acid digestion and determined by ICP - OES	2 mg/kg
Cadmium (Cd) Content	With reference to IEC 62321-5 Edition 1.0:2013, by acid digestion and determined by ICP - OES	2 mg/kg
Lead (Pb) Content	With reference to IEC 62321-5 Edition 1.0:2013, by acid digestion and determined by ICP - OES	2 mg/kg
Polybrominated Biphenyls (PBBs) & Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321-6 Edition 1.0:2015, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary	5 mg/kg
Chromium (VI) (Cr ⁶⁺) Content	With reference to IEC 62321-7-1 Edition 1.0:2015, by boiling water extraction and determined by UV-VIS Spectrophotometer	0.10 µg/cm ²
Chromium (VI)(Cr ⁶⁺) Content	With reference to IEC 62321-7-2 Edition 1.0:2017, Hexavalent chromium – Determination of hexavalent chromium (Cr(VI) in polymers and electronics by the colorimetric method	10 mg/kg
Dibutyl phthalate (DBP) & Di-(2-ethyl hexyl) phthalate (DEHP) & Benzyl butyl phthalate (BBP) & Di-(iso-butyl) phthalate (DIBP)	With reference to IEC 62321-8 Edition 1.0:2017, by Gas Chromatographic-Mass Spectrometric (GC-MS) analysis	100 mg/kg

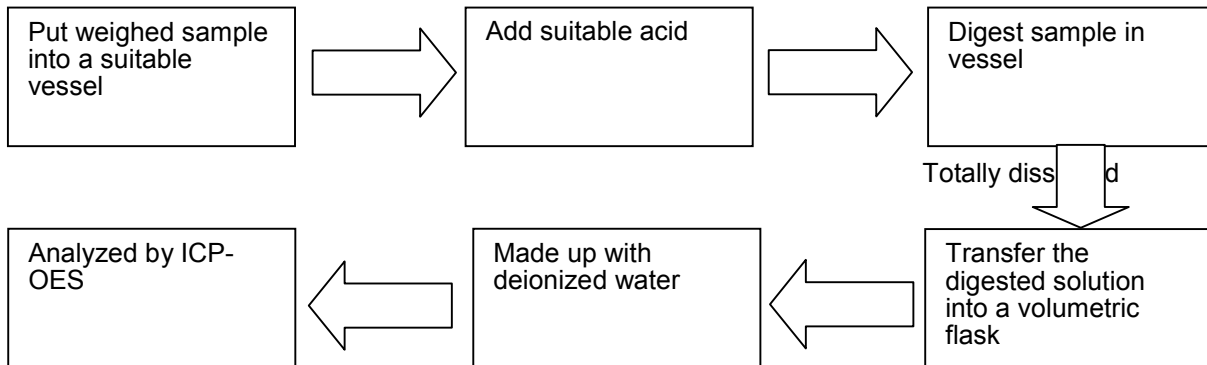


Test Report

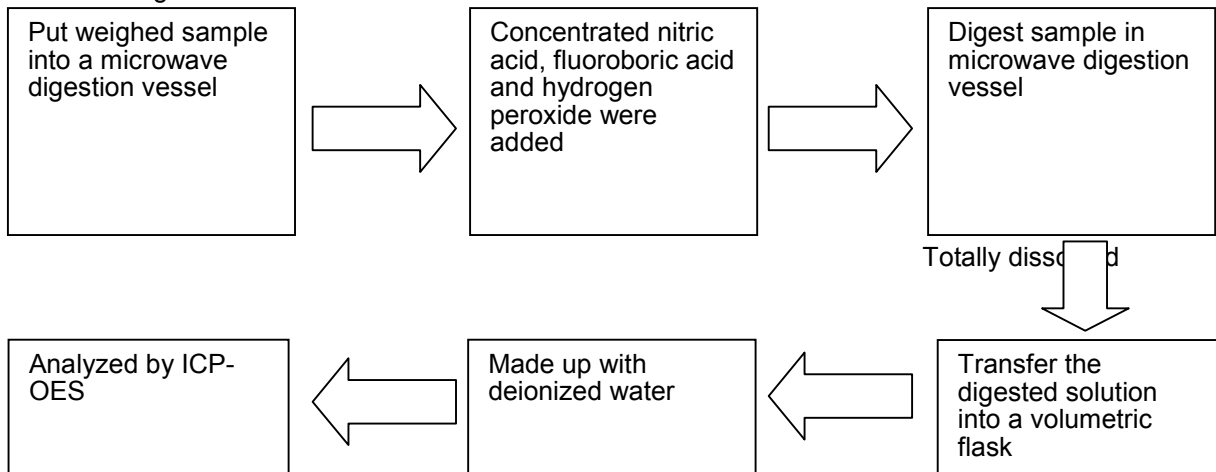
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Tests Conducted

(D) Measurement Flowchart:
1. Test for Cd/Pb Contents



2. Test for Hg Content

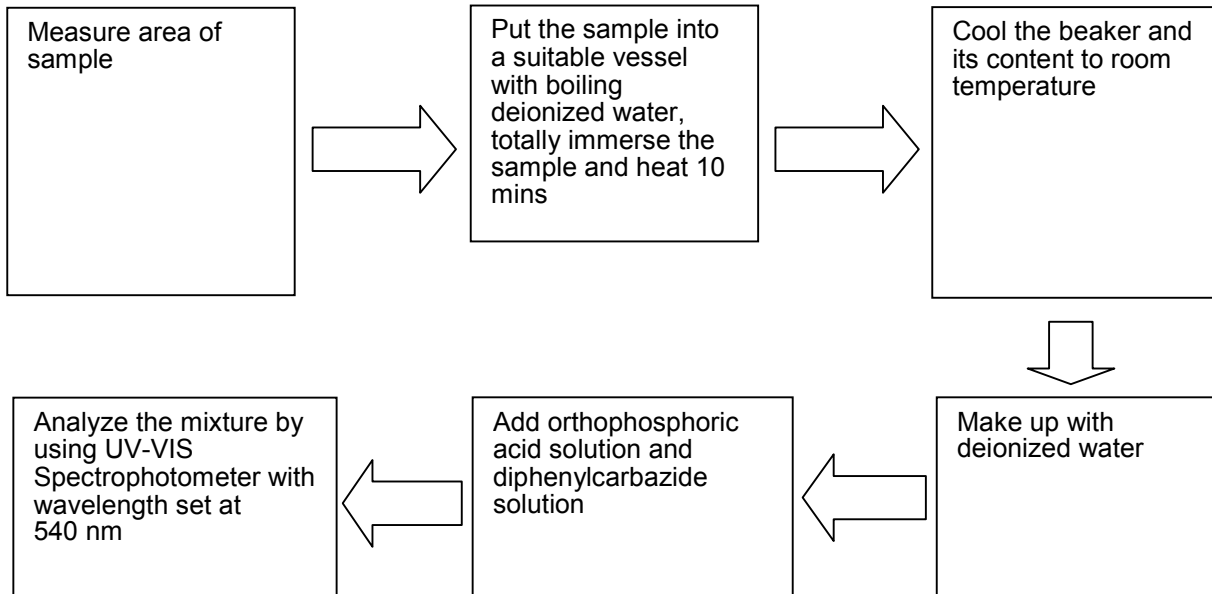


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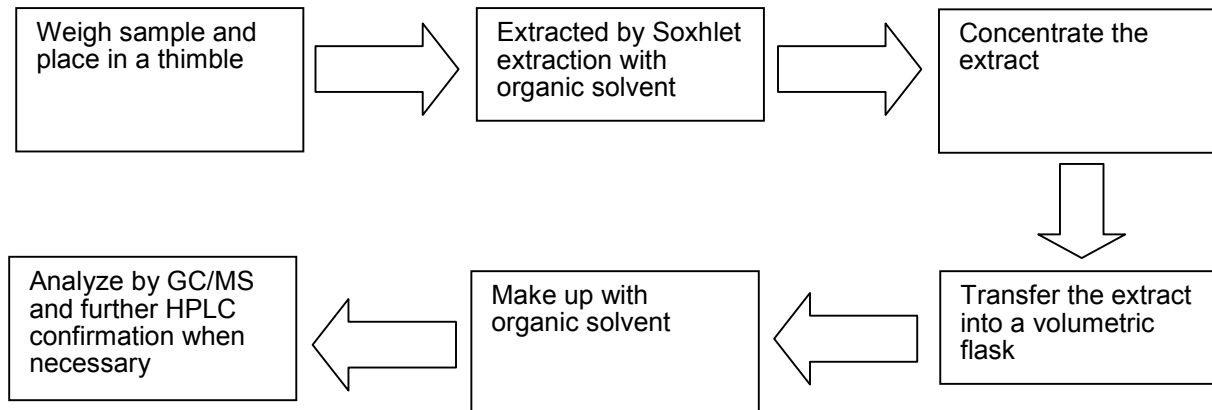
Number: SZHH01433797

Tests Conducted

3. Test for Chromium (VI) (Cr⁶⁺) Content (Boiling Water Extraction)



4. Test for PBBs/PBDEs Contents

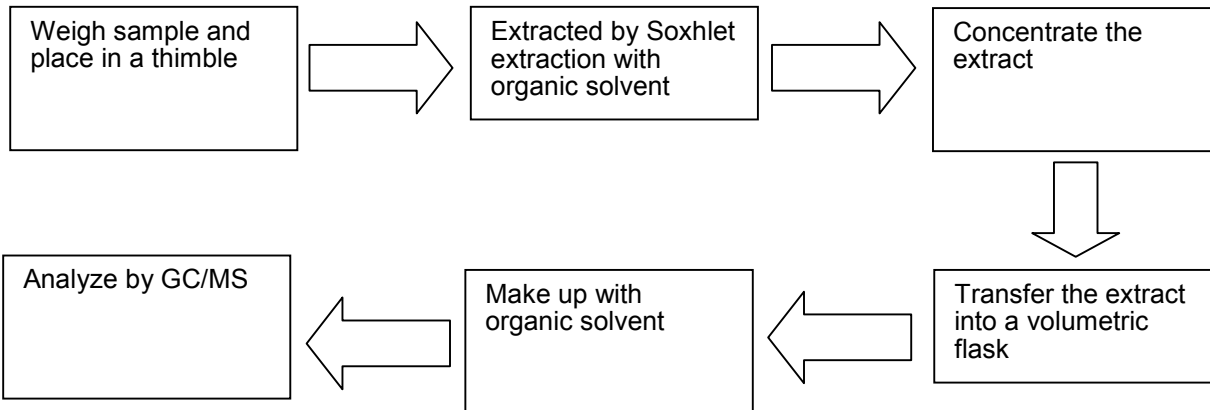


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Tests Conducted

5. Test for Phthalate Contents



End of report

The statements of conformity reported have considered the decision rule agreed, namely that Intertek have taken account of measurement uncertainty as calculated by Intertek, and applied according to ILAC-G8/09:2019 (Non-binary acceptance based on guard band $w = U$) except designation from the customer, regulation or test specification.

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