

Shenzhen Center for Analysis and Measurement of Material Surface

Test Report

Report No.: SAC2016-08937E-R1

Date: Dec.28, 2016

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Customer : SHENZHEN REFOND OPTOELECTRONICS CO.,LTD
Address : 1-8th Floor, Building #1, 10th Industrial Zone, Tian Liao Community, Gong Ming Area, Guang Ming New District, SHENZHEN, CHINA

Sample Information:

Sample Name : TOP LED
Sample Description : /
Model/P.O. No. : SMD-LED(3528)
Item/Lot No. : /
Material : /
Buyer : /
Supplier : /
Manufacturer : /
Received Date : Dec.14, 2016
Test Period : Dec.14, 2016~Dec.28, 2016
Test Requested : 1. As specified by customer, to determine the Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr⁶⁺), PBBs, PBDEs, DBP, BBP, DEHP and DIBP content.
2. As specified by customer, to determine the 173 kinds of substances of very high concern (SVHC) under Regulation (EC) No 1907/2006 of REACH.

Note(s): This report replaces the report whose report No. is SAC2016-08937E.

Test Method: Please refer to the following page(s).

Test Result(s): Please refer to the following page(s).

Edited by: Don

Audited by: Sampson

Approved by: Allen



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Test Method:

Test Item(s)	Test Method	Equipment
Lead(Pb), Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013	ICP-OES
Hexavalent Chromium(Cr ⁶⁺)	IEC 62321:2008	UV-Vis
PBBs, PBDEs	IEC 62321-6:2015	GC-MS
DBP, BBP, DEHP, DIBP	EN 14372:2004	GC-MS
SVHC	Refer to the following page(s).	Refer to the following page(s).

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Test Result(s):

1. Test Result(s)(RoHS2.0):

Test Item(s)	MDL(mg/kg)	Result(s)* (mg/kg)	Limit* ¹ (mg/kg)
Pb	2	N.D.	1000
Cd	2	N.D.	100
Hg	2	N.D.	1000
Cr ⁶⁺	2	N.D.	1000
Monobromobiphenyl	5	N.D.	—
Dibromobiphenyl	5	N.D.	—
Tribromobiphenyl	5	N.D.	—
Tetrabromobiphenyl	5	N.D.	—
Pentabromobiphenyl	5	N.D.	—
Hexabromobiphenyl	5	N.D.	—
Heptabromobiphenyl	5	N.D.	—
Octabromobiphenyl	5	N.D.	—
Nonabromobiphenyl	5	N.D.	—
Decabromodiphenyl	5	N.D.	—
Polybromobiphenyl(PBBs)	—	N.D.	1000
Monobromobiphenyl ether	5	N.D.	—
Bibromobiphenyl ether	5	N.D.	—
Tribromobiphenyl ether	5	N.D.	—
Tetrabromobiphenyl ether	5	N.D.	—
Pentabromobiphenyl ether	5	N.D.	—
Hexabromobiphenyl ether	5	N.D.	—
Heptabromobiphenyl ether	5	N.D.	—
Octabromobiphenyl ether	5	N.D.	—
Nonabromobiphenyl ether	5	N.D.	—
Decabromodiphenyl ether	5	N.D.	—
Polybromodiphenyl ether(PBDEs)	—	N.D.	1000
Dibutyl phthalate(DBP)	10	N.D.	1000
Butyl benzyl phthalate(BBP)	10	N.D.	1000
Bis(2-ethylhexyl) phthalate(DEHP)	10	N.D.	1000
Diisobutyl phthalate(DIBP)	10	N.D.	1000

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Remark: mg/kg=ppm=parts per million

N.D.=Not Detected (<MDL); MDL=method detection limit

*: According to customer's requirements, the testing is based on mixed samples while not on individual material, and the result is only for reference during inhouse quality control.

*¹: The Limit is(are) from EU RoHS 2011/65/EU and 2015/863/EU.

3. Test Result(s)(SVHC):

No.	Test Items	CAS No.	Test Methods	Equipment	Results (%)	MDL(%)
1	Anthracene	120-12-7	US EPA 3550C:2007 US EPA 8270D:2014	GC-MS	N.D.	0.01
2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2		GC-MS	N.D.	0.01
3	Short Chain Chlorinated Paraffines(SCCPs)	85535-84-8		GC-MS	N.D.	0.01
4	2,4-Dinitrotoluene	121-14-2		GC-MS	N.D.	0.01
5	Anthracene oil	90640-80-5		GC-MS	N.D.	0.01
6	Anthracene oil, anthracene paste, distn. lights	91995-17-4		GC-MS	N.D.	0.01
7	Anthracene oil, anthracene paste, anthracene fraction	91995-15-2		GC-MS	N.D.	0.01
8	Anthracene oil, anthracene-low	90640-82-7		GC-MS	N.D.	0.01
9	Anthracene oil, anthracene paste	90640-81-6		GC-MS	N.D.	0.01
10	Pitch, coal tar, high-temp.	65996-93-2		GC-MS	N.D.	0.01
11	Tris(2-chloroethyl) phosphate	115-96-8		GC-MS	N.D.	0.01
12	2-Methoxyethanol	109-86-4	US EPA 3550C:2007 US EPA 8270D:2014	GC-MS	N.D.	0.01
13	2-Ethoxyethanol	110-80-5		GC-MS	N.D.	0.01
14	1,2-Benzendicarboxylic acid, di-(C7-11)-branched and linear alkyl esters	68515-42-4	US EPA 3550C:2007 US EPA 8270D:2014	GC-MS	N.D.	0.01
15	Hydrazine; Hydrazine base; Diamine; Hydrazine anhydrous	7803-57-8 302-01-2		GC-MS	N.D.	0.01
16	1-Methyl-2-pyrrolidone	872-50-4		GC-MS	N.D.	0.01
17	1,2,3-Trichloropropane	96-18-4		GC-MS	N.D.	0.01

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No.	Test Items	CAS No.	Test Methods	Equipment	Results (%)	MDL(%)
18	1,2-Benzenedicarboxylic acid, di-(C6-8)-branched and linear alkyl esters	71888-89-6	US EPA 3550C:2007 US EPA 8270D:2014	GC-MS	N.D.	0.01
19	Trichloroethylene	79-01-6		GC-MS	N.D.	0.01
20	4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)	111-15-9		GC-MS	N.D.	0.01
21	4,4'-Diaminodiphenylmethane	101-77-9	ISO 17234:2010	GC-MS	N.D.	0.01
22	Dibutyl phthalate(DBP)	84-74-2	US EPA 3540C:1996 US EPA 8270D:2014	GC-MS	N.D.	0.01
23	Bis(2-ethyl(hexyl) phthalate)(DEHP)	117-81-7		GC-MS	N.D.	0.01
24	Diisobutyl Phthalate (DIBP)	84-69-5		GC-MS	N.D.	0.01
25	Benzyl butyl phthalate (BBP)	85-68-7		GC-MS	N.D.	0.01
26	Hexabromocyclododecane(HBC DD)	25637-99-4	US EPA 3550C:2007 US EPA 8270D:2014	GC-MS	N.D.	0.01
27	4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)	140-66-9		GC-MS	N.D.	0.01
28	1,2-Dichloroethane	107-06-2		GC-MS	N.D.	0.01
29	Bis(2-methoxyethyl) ether	111-96-6		GC-MS	N.D.	0.01
30	N,N-dimethylacetamide	127-19-5		GC-MS	N.D.	0.01
31	Phenolphthalein	77-09-8		GC-MS	N.D.	0.01
32	2,2'-dichloro-4,4'-methylene dianiline (MOCA)	101-14-4		GC-MS	N.D.	0.01
33	Formaldehyde, oligomeric reaction products with aniline	25214-704	US EPA 3550C:2007 US EPA 8270D:2014	GC-MS	N.D.	0.01
34	Bis(2-methoxyethyl) phthalate(DMEP)	117-82-8	US EPA 3550C:2007 US EPA 8270D:2014	GC-MS	N.D.	0.01
35	2-Methoxyaniline; o-Anisidine	90-04-0		GC-MS	N.D.	0.01
36	Bis(tributyltin) oxide(TBTO)	56-35-9	ISO 17353:2004	GC-MS	N.D.	0.01
37	Acrylamide	79-06-1	US EPA 3550C:2007 US EPA 8321B:2007	HPLC	N.D.	0.01

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38	Lead hydrogen arsenate	7784-40-9	US EPA 3052:1996 US EPA 6010C:2007	ICP-OES	N.D.	0.01
39	Triethyl arsenate	15606-95-8		ICP-OES	N.D.	0.01
40	Diarsenic pentaoxide	1303-28-2	US EPA 3052:1996 US EPA 6010C:2007	ICP-OES	N.D.	0.01
41	Diarsenic trioxide	1327-53-3		ICP-OES	N.D.	0.01
42	Cobalt dichloride	7646-79-9	US EPA 3052:1996 EN 14582:2007	ICP-OES IC	N.D.	0.01
43	Sodium dichromate	7789-12-0	US EPA 3052:1996 US EPA 3060A:1996	ICP-OES UV-Vis	N.D.	0.01
44	Lead chromate	7758-97-6	US EPA 3052:1996 US EPA 3060A:1996 US EPA 6010C:2007	ICP-OES UV-Vis	N.D.	0.01
45	Lead chromate molybdate sulfate red	12656-85-8		ICP-OES UV-Vis	N.D.	0.01
46	Dichromium tris(chromate)	24613-89-6		ICP-OES UV-Vis	N.D.	0.01
47	Potassium hydroxyoctaoxodizincatedi-chromate	11103-86-9		ICP-OES UV-Vis	N.D.	0.01
48	Lead chromate	1344-37-2		ICP-OES	N.D.	0.01
49	Aluminosilicate, Refractory Ceramic Fibres	/		US EPA 3052:1996 US EPA 6010C:2007	ICP-OES	N.D.
50	Zirconia Aluminosilicate, Refractory Ceramic Fibres	/	ICP-OES		N.D.	0.01
51	Pentazinc chromate octahydroxide	49663-84-5	ICP-OES		N.D.	0.01
52	Lead azide Lead diazide	13424-46-9	ICP-OES		N.D.	0.01
53	Lead styphnate	15245-44-0	ICP-OES		N.D.	0.01
54	Lead dipicrate	6477-64-1	US EPA 3052:1996 US EPA 6010C:2007		ICP-OES	N.D.
55	Arsenic acid	7778-39-4		ICP-OES	N.D.	0.01
56	Calcium arsenate	7778-44-1		ICP-OES	N.D.	0.01
57	Trilead diarsenate	3687-31-8		ICP-OES	N.D.	0.01
58	Boric acid	10043-35-3 11113-50-1		ICP-OES	N.D.	0.01
59	Disodium tetraborate, anhydrous, Heptahydrate, Decahydrate	1330-43-4 12179-04-3 1303-96-4		ICP-OES	N.D.	0.01

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60	Tetraboron disodium heptaoxide, hydrate	12267-73-1	US EPA 3052:1996 US EPA 6010C:2007	ICP-OES	N.D.	0.01
61	Sodium chromate	7775-11-3	US EPA 3052:1996 US EPA 3060A:1996	ICP-OES UV-Vis	N.D.	0.01
62	Potassium chromate	7789-00-6		ICP-OES UV-Vis	N.D.	0.01
63	Potassium dichromate	7778-50-9	US EPA 3052:1996 US EPA 3060A:1996	ICP-OES UV-Vis	N.D.	0.01
64	Chromium trioxide	1333-82-0		ICP-OES	N.D.	0.01
65	Ammonium dichromate	7789-09-5	US EPA 3052:1996 US EPA 3060A:1996 EN 14582:2007	ICP-OES UV-Vis IC	N.D.	0.01
66	Cobalt(II) diacetate	71-48-7	US EPA 3052:1996 EN 14582:2007	ICP-OES IC	N.D.	0.01
67	Cobalt(II) carbonate	513-79-1		ICP-OES IC	N.D.	0.01
68	Cobalt(II) Dinitrate	10141-05-6		ICP-OES IC	N.D.	0.01
69	Cobalt(II) sulphate	10124-43-3		ICP-OES IC	N.D.	0.01
70	Chromic acid, Dichromic acid, Oligomers of chromic acid and Dichromic acid	7738-94-5 13530-68-2	US EPA 3052:1996 US EPA 6010C:2007 US EPA 3060A:1996	ICP-OES UV-Vis	N.D.	0.01
71	Strontium chromate	7789-06-2		ICP-OES UV-Vis	N.D.	0.01
72	Diboron trioxide	1303-86-2	US EPA 3052:1996 US EPA 6010C:2007	ICP-OES	N.D.	0.01
73	Lead(II) bis(methanesulfonate)	17570-76-2		ICP-OES	N.D.	0.01
74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	US EPA 3550C:2007 US EPA 8270D:2014	GC-MS	N.D.	0.01
75	1,2-dimethoxyethane	110-71-4		GC-MS	N.D.	0.01
76	Formamide	75-12-7		GC-MS	N.D.	0.01
77	TGIC(1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9		GC-MS	N.D.	0.01

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No.	Test Items	CAS No.	Test Methods	Equipment	Results (%)	MDL(%)
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	US EPA 3550C:2007 US EPA 8270D:2014	GC-MS	N.D.	0.01
79	4,4'-bis(dimethylamino)benzophenone(Michler's ketone)	90-94-8		GC-MS	N.D.	0.01
80	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1		GC-MS	N.D.	0.01
81	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol	561-41-1	US EPA 3550C:2007 US EPA 8270D:2014	GC-MS	N.D.	0.01
82	4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)	548-62-9	US EPA 3550C:2007 US EPA 8321B:2007	HPLC	N.D.	0.01
83	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Blue 26)	2580-56-5		HPLC	N.D.	0.01
84	α, α -Bis[4-(dimethylamino)phenyl]-4-(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4)	6786-83-0		HPLC	N.D.	0.01
85	4-methyl-m-phenylenediamine (2,4-toluene-diamine)	95-80-7	ISO 17234:2010	GC-MS	N.D.	0.01
86	Biphenyl-4-ylamine	92-67-1		GC-MS	N.D.	0.01
87	4,4'-methylenedi-o-toluidine	838-88-0	ISO 17234:2010	GC-MS	N.D.	0.01
88	o-Toluidine; 2-Aminotoluene	95-53-4		GC-MS	N.D.	0.01
89	o-aminoazotoluene	97-56-3		GC-MS	N.D.	0.01
90	4-Aminoazobenzene	60-09-3		GC-MS	N.D.	0.01
91	4,4'-oxydianiline and its salts	101-80-4		GC-MS	N.D.	0.01
92	6-methoxy-m-toluidine (p-cresidine)	120-71-8		GC-MS	N.D.	0.01

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No.	Test Items	CAS No.	Test Methods	Equipment	Results (%)	MDL(%)
93	Dibutyltin dichloride (DBT)	683-18-1	ISO 17353:2004	GC-MS	N.D.	0.01
94	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	US EPA 3550C:2007 US EPA 8270D:2014	GC-MS	N.D.	0.01
95	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2		GC-MS	N.D.	0.01
96	N-methylacetamide	79-16-3		GC-MS	N.D.	0.01
97	Dinoseb	88-85-7		GC-MS	N.D.	0.01
98	Dimethyl sulphate	77-78-1		GC-MS	N.D.	0.01
99	Furan	110-00-9	US EPA 3550C:2007 US EPA 8270D:2014	GC-MS	N.D.	0.01
100	Pyrochlore, antimony lead yellow	8012-00-8		GC-MS	N.D.	0.01
101	Diethyl sulphate	64-67-5		GC-MS	N.D.	0.01
102	1,2-epoxypropane	75-56-9		GC-MS	N.D.	0.01
103	1-bromopropane	106-94-5		GC-MS	N.D.	0.01
104	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5		GC-MS	N.D.	0.01
105	4-Nonylphenol, branched and linear -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	—	US EPA 3550C:2007 US EPA 8270D:2014	GC-MS	N.D.	0.01

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106	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated -covering well-defined substances and UVCB substances, polymers and homologues	—	US EPA 3550C:2007 US EPA 8270D:2014	GC-MS	N.D.	0.01
107	1,2-Diethoxyethane	629-14-1		GC-MS	N.D.	0.01
108	Cyclohexane-1,2-dicarboxylic anhydride(Hexahydrophthalic anhydride - HHPA)	85-42-7		GC-MS	N.D.	0.01
109	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	25550-51-0 19438-60-9 48122-14-1 57110-29-9		GC-MS	N.D.	0.01
110	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	US EPA 3550C:2007 US EPA 8270D:2014	GC-MS	N.D.	0.01
111	N-pentyl-isopentylphthalate	776297-69-9		GC-MS	N.D.	0.01
112	Methoxy acetic acid	625-45-6		GC-MS	N.D.	0.01
113	Diisopentylphthalate	605-50-5		GC-MS	N.D.	0.01
114	N,N-dimethylformamide; dimethyl formamide	68-12-2		GC-MS	N.D.	0.01
115	Heptacosaf fluorotetradecanoic acid	376-06-7	US EPA 3550C:2007 US EPA 8231B:2007	HPLC	N.D.	0.01
116	Pentacosaf fluorotridecanoic acid	72629-94-8		HPLC	N.D.	0.01
117	Henicosaf fluoroundecanoic acid	2058-94-8		HPLC	N.D.	0.01
118	Tricosaf fluorododecanoic acid	307-55-1		HPLC	N.D.	0.01

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No.	Test Items	CAS No.	Test Methods	Equipment	Results (%)	MDL(%)	
119	Pentalead tetraoxide sulphate	12065-90-6	US EPA 3052:1996	ICP-OES	N.D.	0.01	
120	Lead dinitrate	10099-74-8	US EPA 6010C:2007	ICP-OES	N.D.	0.01	
121	Tetralead trioxide sulphate	12202-17-4	US EPA 3052:1996 US EPA 6010C:2007	ICP-OES	N.D.	0.01	
122	Lead oxide (lead monoxide)	1317-36-8		ICP-OES	N.D.	0.01	
123	Lead titanium trioxide	12060-00-3		ICP-OES	N.D.	0.01	
124	Dioxobis(stearato)trilead	12578-12-0		ICP-OES	N.D.	0.01	
125	Acetic acid, lead salt, basic	51404-69-4		ICP-OES	N.D.	0.01	
126	Tetraethyllead	78-00-2		ICP-OES	N.D.	0.01	
127	[Phthalato(2-)] dioxotrilead	69011-06-9		ICP-OES	N.D.	0.01	
128	Lead cyanamidate	20837-86-9		ICP-OES	N.D.	0.01	
129	Silicic acid, barium salt, lead-doped	68784-75-8		ICP-OES	N.D.	0.01	
130	Trilead dioxide phosphonate	12141-20-7		ICP-OES	N.D.	0.01	
131	Lead Titanium Zirconium Oxide	12626-81-2		ICP-OES	N.D.	0.01	
132	Basic lead carbonate (trilead bis(carbonate) dihydroxide)	1319-46-6		US EPA 3052:1996 US EPA 6010C:2007	ICP-OES	N.D.	0.01
133	Fatty acids, C16-18, lead salts	91031-62-8			ICP-OES	N.D.	0.01
134	Lead tetroxide (orange lead)	1314-41-6			ICP-OES	N.D.	0.01
135	Sulfurous acid, lead salt, dibasic	62229-08-7	ICP-OES		N.D.	0.01	
136	Lead oxide sulphate	12036-76-9	ICP-OES		N.D.	0.01	
137	Lead bis (tetrafluoroborate)	13814-96-5	ICP-OES		N.D.	0.01	
138	Silicic acid, lead salt	11120-22-2	ICP-OES		N.D.	0.01	
139	Cadmium	7440-43-9	ICP-OES		N.D.	0.01	
140	Cadmium oxide	1306-19-0	ICP-OES		N.D.	0.01	

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141	Dipentyl phthalate (DPP)	131-18-0	US EPA 3540C:1996 US EPA 8270D:2014	GC-MS	N.D.	0.01
142	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	US EPA 3550C:2007 US EPA 8231B:2007	HPLC	N.D.	0.01
143	Pentadecafluorooctanoic acid (PFOA)	335-67-1		HPLC	N.D.	0.01
144	4-Nonylphenol branched and linear, ethoxylated	—		HPLC	N.D.	0.01
145	Cadmium sulphide	1306-23-6	US EPA 3052:1996 US EPA 6010C:2007	ICP-OES	N.D.	0.01
146	Lead di (acetate)	301-04-2		ICP-OES	N.D.	0.01
147	Disodium3,3'-[[1,1'-biphenyl]-4, 4'-diylbis(azo)] bis(4-aminonaphthalene-1-sulph onate) (C.I. Direct Red 28)	573-58-0	US EPA 3550C:2007 US EPA 8231B:2007	HPLC	N.D.	0.01
148	Disodium4-amino-3-[[4'-[(2,4-d iaminophenyl)azo] [1,1'-biphenyl]-4-yl] azo] -5-hydroxy-6-(phenylazo)naph thalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	US EPA 3550C:2007 US EPA 8231B:2007	HPLC	N.D.	0.01
149	Imidazolidine-2-thione; 2-imidazoline-2-thiol	96-45-7	US EPA 3540C:1996 US EPA 8270D:2014	GC-MS	N.D.	0.01
150	Trixylyl phosphate	25155-23-1		GC-MS	N.D.	0.01
151	Dihexyl phthalate	84-75-3		GC-MS	N.D.	0.01
152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4		GC-MS	N.D.	0.01

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No.	Test Items	CAS No.	Test Methods	Equipment	Results (%)	MDL(%)
153	Cadmium chloride	10108-64-2	US EPA 3052:1996 US EPA 6010C:2007	ICP-OES	N.D.	0.01
154	Sodium peroxometaborate	7632-04-4		ICP-OES	N.D.	0.01
155	Sodium perborate; perboric acid, sodium salt	—		ICP-OES	N.D.	0.01
156	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	US EPA 3550C:2007	HPLC	N.D.	0.01
157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	US EPA 8231B:2007	HPLC	N.D.	0.01
158	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetra decanoate (DOTE)	15571-58-1	US EPA 3540C:1996 US EPA 8270D:2014	GC-MS	N.D.	0.01
159	Cadmium fluoride	7790-79-6	US EPA 3052:1996 US EPA 6010C:2007	ICP-OES	N.D.	0.01
160	Cadmium sulphate	10124-36-4; 31119-53-6		ICP-OES	N.D.	0.01
161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetra decanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannate tradecanoate (reaction mass of DOTE and MOTE)	—	US EPA 3540C:1996 US EPA 8270D:2014	GC-MS	N.D.	0.01
162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate	68515-51-5 68648-93-1	US EPA 3540C:1996 US EPA 8270D:2014	GC-MS	N.D.	0.01

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No.	Test Items	CAS No.	Test Methods	Equipment	Results (%)	MDL(%)
163	5-sec-butyl-2-(2,4-dimethyl cyclohex-3-en-1-yl)-5-methyl-1, 3- dioxane [1], 5-sec-butyl-2-(4,6-dimethyl cyclohex-3-en-1-yl)-5-methyl-1, 3- dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	—	US EPA 3540C:1996 US EPA 8270D:2014	GC-MS	N.D.	0.01
164	1,3-propanesultone	1120-71-4	US EPA 3540C:1996 US EPA 8270D:2014	GC-MS	N.D.	0.01
165	2,4-di-tert-butyl-6-(5-chloroben zotriazol-2-yl)phenol (UV-327)	3864-99-1	US EPA 3540C:1996 US EPA 8270D:2014	GC-MS	N.D.	0.01
166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	US EPA 3540C:1996 US EPA 8270D:2014	GC-MS	N.D.	0.01
167	Nitrobenzene	98-95-3	US EPA 3540C:1996 US EPA 8270D:2014	GC-MS	N.D.	0.01
168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1 21049-39-8 4149-60-4	US EPA 3540C:1996 US EPA 8270D:2014	GC-MS	N.D.	0.01
169	Benzo[def]chrysene	50-32-8	US EPA 3540C:1996 US EPA 8270D:2014	GC-MS	N.D.	0.01
170	Bisphenol A	80-05-7	US EPA 3550C:2007 US EPA 8231B:2007	HPLC	N.D.	0.01
171	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7 335-76-2 3830-45-3	US EPA 3550C:2007 US EPA 8231B:2007	HPLC	N.D.	0.01
172	4-heptyl-phenol	---	US EPA 3550C:2007 US EPA 8231B:2007	HPLC	N.D.	0.01
173	4-tert-butylphenol	98-54-4	US EPA 3550C:2007 US EPA 8231B:2007	HPLC	N.D.	0.01

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Remark: -N.D.=Not Detected (<MDL);

-MDL=Method Detected Limit;

-0.1%=1000mg/kg=1000ppm;

-* The result of Cobalt dichloride was calculated by the testing result of heavy metal element and anion. The result of Diarsenic pentaoxide, Diarsenic trioxide, Sodium dichromate dehydrate, Lead hydrogen arsenate, Aluminosilicate, Zirconia aluminosilicate, Lead chromate, Lead sulphate yellow and lead chromate molybdate sulphate red, Boric acid, Disodium tetraborate, anhydrous, Tetraboron disodium heptaoxide, hydrate, Sodium chromate, Potassium chromate, Ammonium dichromate and Potassium dichromate, Cobalt sulphate, Cobalt Dinitrate, Cobalt carbonate, Cobalt diacetate, Chromium trioxide, Chromic acid, Dichromic acid, Oligomers of chromic acid and Dichromic acid, Strontium chromate, Dichromium tris(chromate), Potassium hydroxyoctaoxidizincatedi-chromate, Pentazinc chromate octahydroxide, Aluminosilicate Refractory Ceramic Fibres (RCF), Zirconia Aluminosilicate Refractory Ceramic Fibres Zr-RCF, Lead azide Lead diazide, Lead styphnate, Lead dipicrate, Arsenic acid, Calcium arsenate, Trilead diarsenate, Pentalead tetraoxide sulphate, Lead dinitrate, Tetralead trioxide sulphate, Lead oxide (lead monoxide) , Lead titanium trioxide, Dioxobis(stearato)trilead, Acetic acid, lead salt, basic, Tetraethyllead, [Phthalato(2-)]dioxotrilead, Lead cyanamidate, Silicic acid, barium salt, lead-doped, Trilead dioxide phosphonate, Lead Titanium Zirconium Oxide, Basic lead carbonate (trilead bis(carbonate)dihydroxide) , Fatty acids, C16-18, lead salts, Lead tetroxide (orange lead) , Sulfurous acid, lead salt, dibasic, lead oxide sulphate, Lead bis(tetrafluoroborate) , Silicic acid, lead salt, Cadmium oxide were calculated by the testing result of heavy metal element. To judge if the sample contains above metal compounds, further confirmation is needed; MDL is obtained by evaluating elements conversion (such as B, Na, K, As, Pb, Co, Si, Zr, Mo and Cr⁶⁺). The result of Bis(tributyltin) oxide was calculated by the testing result of tributyltin. This result was the screening result of Bis(tributyltin) oxide, including tributyltin oxide and its salts. If wants to know the exact content of Bis(tributyltin) oxide, further confirmation is needed; MDL is obtained by evaluating tributyltin content.

Test Report

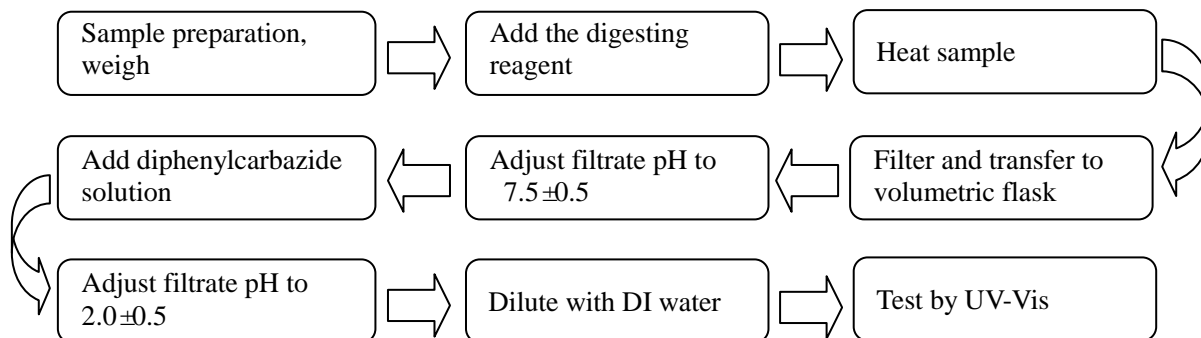
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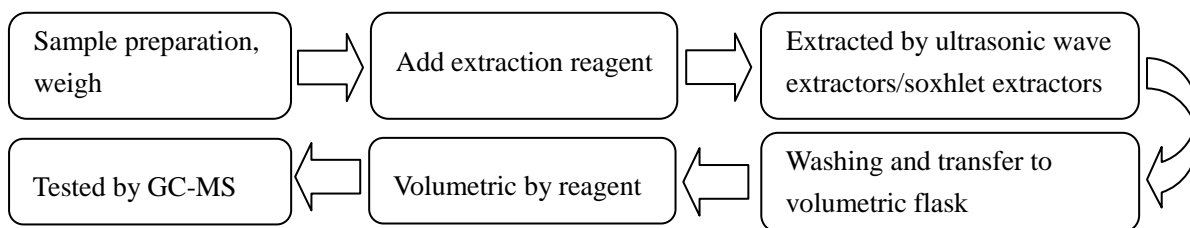
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Test Process:

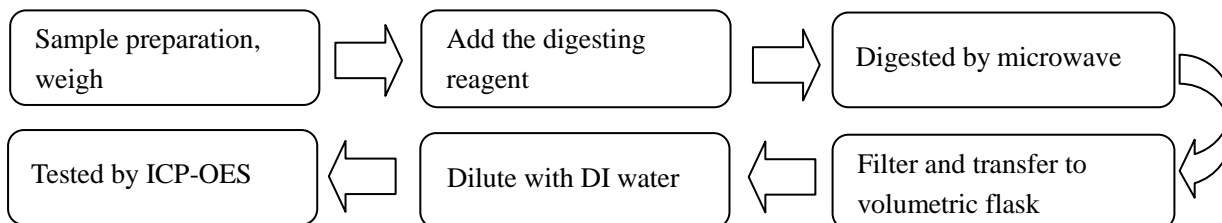
1. IEC 62321:2008:



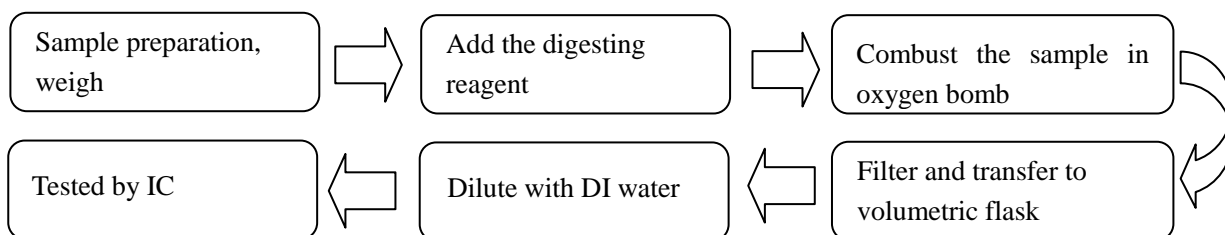
2. US EPA 3540C:1996&EPA 8270D:2014, US EPA 3550C:2007&EPA 8270D:2014, EN 14372:2004, IEC 62321-6:2015:



3. US EPA 3052:1996 & US EPA 6010C:2007, IEC 62321-5:2013, IEC 62321-4:2013:



4. EN 14582:2007:



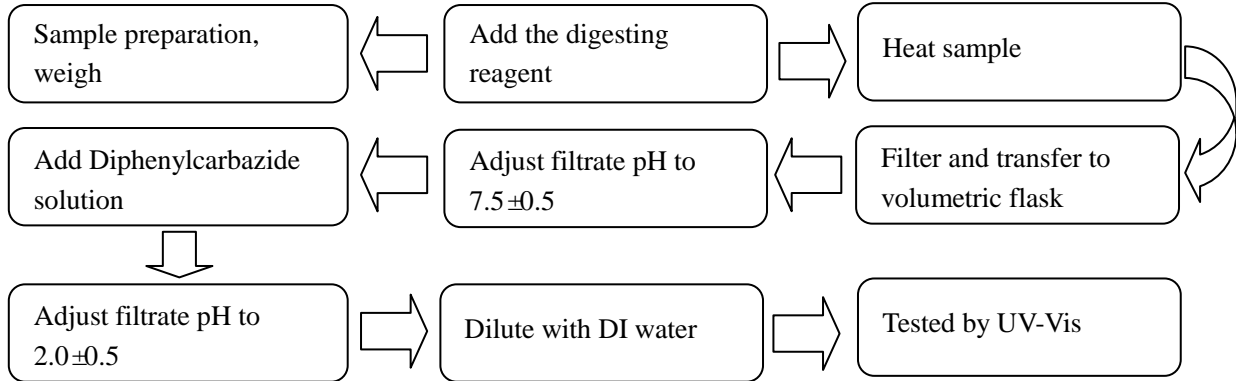
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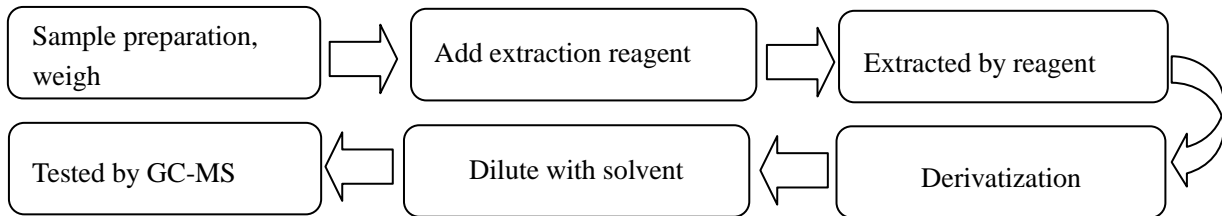
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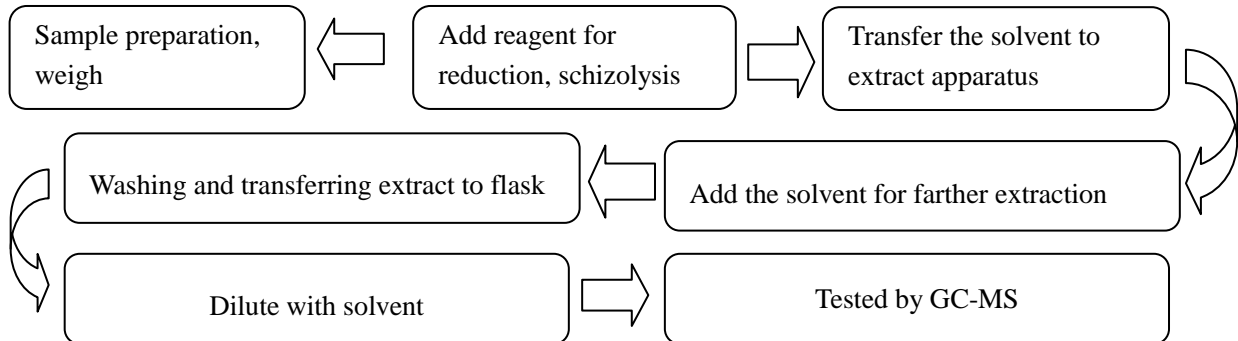
5. US EPA 3060A:1996:



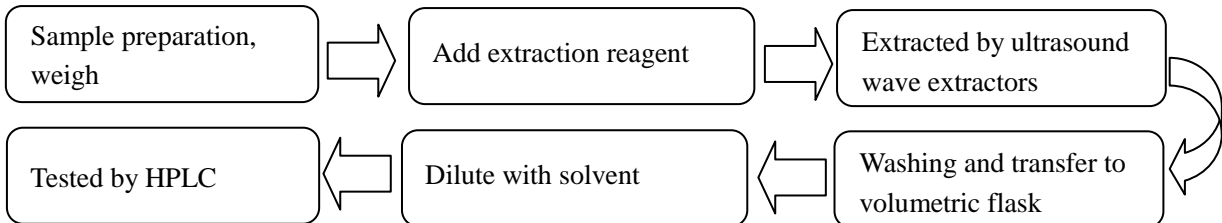
6. ISO 17353:2004:



7. ISO 17234-1:2010:



8. US EPA 3550C:2007 & US EPA 8231B: 2007:



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Photo of the sample



*** End of report ***

This report is invalid without the Special Seal of our Center. This report shall not be altered, increased or deleted. The results shown in this report refer only to the sample(s) tested.