

**Test Report
(SVHC)**

No. SHAEC1624464601

Date: 07 Dec 2016

Page 1 of 15

Shanghai MXCHIP Information Technology Co., Ltd
9th Floor, No.5, Lane 2145 JinshaJiang Road, Putuo District, Shanghai

The following sample(s) was/were submitted and identified on behalf of the clients as : EMW3166

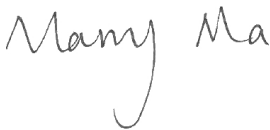
SGS Job No. : SP16-039770 - SUZ
 Client Ref. Information : EMW3166-P/EMW3166-E/EMW3166-B
 Tested Basic Model No. : EMW3166
 Date of Sample Received : 09 Nov 2016
 Testing Period : 09 Nov 2016 - 15 Nov 2016
 Test Requested : As requested by client, SVHC screening is performed according to:
 (i) One hundred and sixty nine (169) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jun 20, 2016 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are $\leq 0.1\%$ (w/w) in the submitted sample. See sample 001	PASS
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Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.



Marry Ma
Approved Signatory



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Test Report (SVHC)

No. SHAEC1624464601

Date: 07 Dec 2016

Page 2 of 15

Remark :

(1) The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA: <http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.

(2) Concerning article(s):

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

(3) Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

(4) Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and No 790/2009, client is suggested to prepare a Safety Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:



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Test Report (SVHC)

No. SHAEC1624464601

Date: 07 Dec 2016

Page 3 of 15

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as dangerous according Dangerous Preparations Directive 1999/45/EC or classified as hazardous under the CLP Regulation (EC) No 1272/2008, when their concentrations are equal to, or greater than, those defined in the Article 3(3) of 1999/45/EC or the lower values given in Part 3 of Annex VI of Regulation (EC) No. 1272/2008;
- or
- a mixture is not classified as dangerous under Directive 1999/45/EC, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

(5) If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA16-244646.001	Electronic components group

Test Method :

SGS In-House method-SHTC-CHEM-SOP-97-T, SHTC-CHEM-SOP-302-T, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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**Test Report
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No. SHAEC1624464601

Date: 07 Dec 2016

Page 4 of 15

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Notes :

- (1) The table above only shows detected SVHC, and SVHC that below RL are not reported. Please refer to Appendix for the full list of tested SVHC.
- (2) RL = Reporting Limit. All RL are based on homogenous material
ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
- (3) [△]CAS No. of diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD): 134237-50-6, 134237-51-7, 134237-52-8
[☆]CAS No. of 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; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
- (4) * The test result is based on the calculation of selected element(s) / marker(s) and to the worst-case scenario. For detail information, please refer to the SGS REACH website: www.reach.sgs.com/substance-of-very-high-concern-analysis-information-page.htm
Calculated concentration of boric compounds are based on the total boron for liquid, powder and paste samples and water extractive boron for other samples by ICP-OES.
RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, titanium, barium and cadmium respectively), except molybdenum RL=0.0005%, boron RL=0.0025 % (only for Lead bis (tetrafluoroborate)).
- (5) § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) $\geq 0.1\%$ (w/w).
- (6) Composite test has been performed in equal proportion for the components/material per client requested. And the result is calculated using the minimum sample weight.
- (7) In consideration of the analysis requirement and the limit of sample volume, the screening test for the article is based on components / material enough to test.



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Test Report (SVHC)

No. SHAEC1624464601

Date: 07 Dec 2016

Page 5 of 15

Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.100
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.100
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.100
I	4	Anthracene	120-12-7	0.100
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.100
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.100
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.100
I	8	Cobalt dichloride*	7646-79-9	0.010
I	9	Diarsenic pentaoxide*	1303-28-2	0.010
I	10	Diarsenic trioxide*	1327-53-3	0.010
I	11	Dibutyl phthalate (DBP)	84-74-2	0.100
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) [△]	25637-99-4, 3194- 55-6	0.100
I	13	Lead hydrogen arsenate*	7784-40-9	0.010
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.010
I	15	Triethyl arsenate*	15606-95-8	0.010
II	16	2,4-Dinitrotoluene	121-14-2	0.100
II	17	Acrylamide	79-06-1	0.100
II	18	Anthracene oil*	90640-80-5	0.100
II	19	Anthracene oil, anthracene paste*	90640-81-6	0.100
II	20	Anthracene oil, anthracene paste, anthracene fraction*	91995-15-2	0.100



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Test Report (SVHC)

No. SHAEC1624464601

Date: 07 Dec 2016

Page 6 of 15

Appendix

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Batch	No.	Substance Name	CAS No.	RL (%)
II	21	Anthracene oil, anthracene paste, distn. lights*	91995-17-4	0.100
II	22	Anthracene oil, anthracene-low*	90640-82-7	0.100
II	23	Diisobutyl phthalate	84-69-5	0.100
II	24	Lead chromate*	7758-97-6	0.010
II	25	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.010
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.010
II	27	Pitch, coal tar, high temp.*	65996-93-2	0.100
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.100
III	29	Ammonium dichromate*	7789-09-5	0.010
III	30	Boric acid*	10043-35-3, 11113-50-1	0.010
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.010
III	32	Potassium chromate*	7789-00-6	0.010
III	33	Potassium dichromate*	7778-50-9	0.010
III	34	Sodium chromate*	7775-11-3	0.010
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.010
III	36	Trichloroethylene	79-01-6	0.100
IV	37	2-Ethoxyethanol	110-80-5	0.100
IV	38	2-Methoxyethanol	109-86-4	0.100
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5 - 13530-68-2	0.010



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Test Report (SVHC)

No. SHAEC1624464601

Date: 07 Dec 2016

Page 7 of 15

Appendix

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Batch	No.	Substance Name	CAS No.	RL (%)
IV	40	Chromium trioxide*	1333-82-0	0.010
IV	41	Cobalt(II) carbonate*	513-79-1	0.010
IV	42	Cobalt(II) diacetate*	71-48-7	0.010
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.010
IV	44	Cobalt(II) sulphate*	10124-43-3	0.010
V	45	1,2,3-trichloropropane	96-18-4	0.100
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.100
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.100
V	48	1-methyl-2-pyrrolidone	872-50-4	0.100
V	49	2-ethoxyethyl acetate	111-15-9	0.100
V	50	Hydrazine	7803-57-8, 302-01-2	0.100
V	51	Strontium chromate*	7789-06-2	0.010
VI	52	1,2-Dichloroethane	107-06-2	0.100
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.100
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.100
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.100
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.010
VI	57	Arsenic acid*	7778-39-4	0.010
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.100
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.100



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Test Report (SVHC)

No. SHAEC1624464601

Date: 07 Dec 2016

Page 8 of 15

Appendix

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VI	60	Calcium arsenate*	7778-44-1	0.010
VI	61	Dichromium tris(chromate) *	24613-89-6	0.010
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.100
VI	63	Lead diazide, Lead azide*	13424-46-9	0.010
VI	64	Lead dipicrate*	6477-64-1	0.010
VI	65	Lead styphnate*	15245-44-0	0.010
VI	66	N,N-dimethylacetamide	127-19-5	0.100
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.010
VI	68	Phenolphthalein	77-09-8	0.100
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.010
VI	70	Trilead diarsenate*	3687-31-8	0.010
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.010
VII	72	[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	0.100
VII	73	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylamm onium chloride (C.I. Basic Violet 3)§	548-62-9	0.100
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.100
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.100
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.100
VII	77	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol§	561-41-1	0.100
VII	78	Diboron trioxide*	1303-86-2	0.010



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Test Report (SVHC)

No. SHAEC1624464601

Date: 07 Dec 2016

Page 9 of 15

Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VII	79	Formamide	75-12-7	0.100
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.010
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.100
VII	82	TGIC (1,3,5-tris (oxiranylmethyl) -1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	0.100
VII	83	α,α -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.100
VII	84	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	0.100
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.010
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.100
VIII	87	1,2-Diethoxyethane	629-14-1	0.100
VIII	88	1-Bromopropane	106-94-5	0.100
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.100
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.100
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.100
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.100
VIII	93	4-Aminoazobenzene	60-09-3	0.100
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.100
VIII	95	4-Nonylphenol, branched and linear	-	0.100
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.100
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.010



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Test Report (SVHC)

No. SHAEC1624464601

Date: 07 Dec 2016

Page 10 of 15

Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	98	Biphenyl-4-ylamine	92-67-1	0.100
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.100
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7, 13149-00-3, 14166-21-3	0.100
VIII	101	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.100
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.100
VIII	103	Diethyl sulphate	64-67-5	0.100
VIII	104	Diisopentylphthalate	605-50-5	0.100
VIII	105	Dimethyl sulphate	77-78-1	0.100
VIII	106	Dinoseb	88-85-7	0.100
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.010
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.010
VIII	109	Furan	110-00-9	0.100
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.100
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.100
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.100
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.010
VIII	114	Lead cyanamidate*	20837-86-9	0.010
VIII	115	Lead dinitrate*	10099-74-8	0.010
VIII	116	Lead monoxide*	1317-36-8	0.010



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Test Report (SVHC)

No. SHAEC1624464601

Date: 07 Dec 2016

Page 11 of 15

Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	117	Lead oxide sulfate*	12036-76-9	0.010
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.010
VIII	119	Lead titanium trioxide*	12060-00-3	0.010
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.010
VIII	121	Methoxyacetic acid	625-45-6	0.100
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.100
VIII	123	N,N-dimethylformamide	68-12-2	0.100
VIII	124	N-Methylacetamide	79-16-3	0.100
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.100
VIII	126	o-Aminoazotoluene	97-56-3	0.100
VIII	127	o-Toluidine	95-53-4	0.100
VIII	128	Pentacosfluorotridecanoic acid	72629-94-8	0.100
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.010
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.010
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.010
VIII	132	Silicic acid, lead salt*	11120-22-2	0.010
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.010
VIII	134	Tetraethyllead*	78-00-2	0.010
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.010
VIII	136	Tricosfluorododecanoic acid	307-55-1	0.100
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.010



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Test Report (SVHC)

No. SHAEC1624464601

Date: 07 Dec 2016

Page 12 of 15

Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.010
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.100
IX	140	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	0.100
IX	141	Cadmium oxide*	1306-19-0	0.010
IX	142	Cadmium*	7440-43-9	0.010
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.100
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.100
X	145	Cadmium sulphide*	1306-23-6	0.010
X	146	Dihexyl phthalate	84-75-3	0.100
X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.100
X	148	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	0.100
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.100
X	150	Lead di(acetate)*	301-04-2	0.010
X	151	Trixylyl phosphate	25155-23-1	0.100
XI	152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	0.100
XI	153	Cadmium chloride*	10108-64-2	0.010
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.010
XI	155	Sodium peroxometaborate*	7632-04-4	0.010
XII	156	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.100



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Test Report (SVHC)

No. SHAEC1624464601

Date: 07 Dec 2016

Page 13 of 15

Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.100
XII	158	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1	0.100
XII	159	Cadmium fluoride*	7790-79-6	0.010
XII	160	Cadmium sulphate*	10124-36-4,31119-53-6	0.010
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 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 & MOTE)	-	0.100
XIII	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	0.100
XIII	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]		0.100
XIV	164	1,3-propanesultone	1120-71-4	0.100
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl) phenol (UV-327)	3864-99-1	0.100
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.100
XIV	167	Nitrobenzene	98-95-3	0.100
XIV	168	Perfluorononan-1-ic-acid and its sodium and ammonium salts	375-95-1,21049-39-8,4149-60-4	0.100
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050



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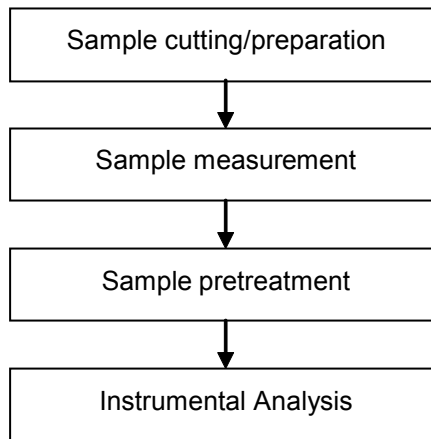
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ATTACHMENTS

SVHC Testing Flow Chart

- 1) Name of the person who made testing: Katie Huang/Yeshn Wu
- 2) Name of the person in charge of testing: Chaven Lian



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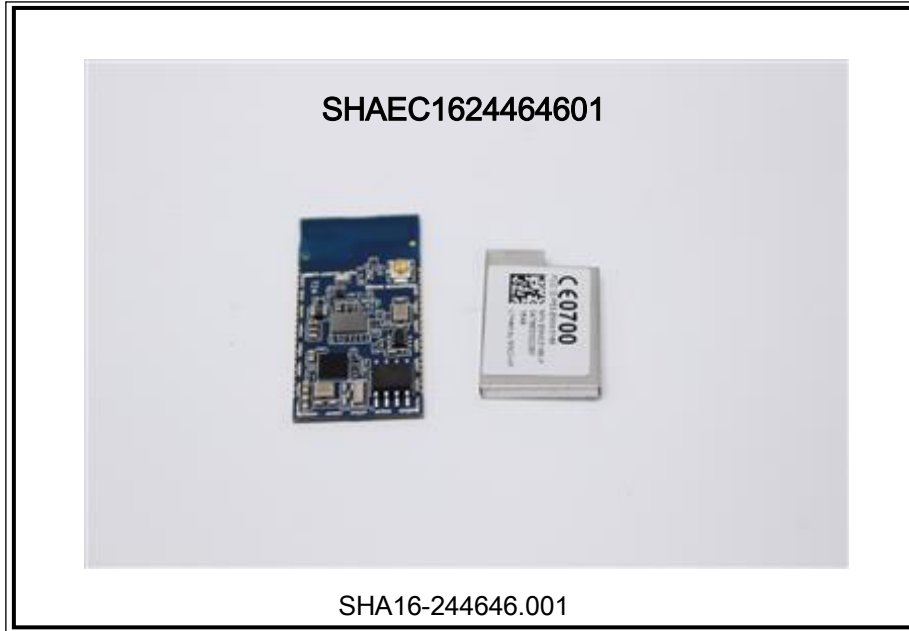
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No. SHAEC1624464601

Date: 07 Dec 2016

Page 15 of 15

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