Test Report (SVHC)

3F ELECTRONICS INDUSTRY CORP.LTD
NO.5, ZHENXING RD, LIYUHE INDUSTRY PARK, LOU VILLAGE, GONGMING STREET, BAOAN DISTRICT, SHENZHEN

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

SGS Job No. :	CP13-032346 - GZ
Client Ref. Info. :	Copper and Tin
Date of Sample Received :	24 Jun 2013
Testing Period :	24 Jun 2013 - 28 Jun 2013
Test Requested :	As requested by client, SVHC screening is performed according to: (i)One hundred and thirty eight (138) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Dec 19, 2012 regarding Regulation (EC) No 1907/2006 concerning the REACH.
Test Results :	Please refer to next page(s).

Summary :

According to the specified scope and analytical techniques, concentrations of tested SVHC are ≤ 0.1% (w/w) in the submitted sample.	PASS

Signed for and on behalf of
SGS-CSTC Ltd.

Zmguan

Zm guan
Approved Signatory

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SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

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 interpretation of ECHA for SVHC in article unless indicated otherwise. Detail explanation is available at the following link:
http://webstage.contribute.sgs.net/corpreach/documents/SGS-CTS_SVHC-paper-EN-11.pdf

(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)

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No 1907/2006, in which:
- 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 ≥ 1 % by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or ≥ 0.2 % by volume for gaseous mixtures; or
(b) a substance that is PBT, or vPvB in an individual concentration of ≥ 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 ≥ 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
1	CAN13-095380.001	Silvery wire

Test Method :
SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, GC-MS, UV-VIS and Colorimetric Method/HPLC-DAD/MS.

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

NO.	Substance Name	CAS No.	EC No.	001 Concentration (%)	RL (%)
1	[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	219-943-6	ND	0.050
2	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)§	548-62-9	208-953-6	ND	0.050
3	[Phthalato(2-)]dioxotrilead*	69011-06-9	273-688-5	ND	0.005
4	1,2,3-trichloropropane	96-18-4	202-486-1	ND	0.050
5	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	276-158-1	ND	0.050
6	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	271-084-6	ND	0.050
7	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	284-032-2	ND	0.050
8	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	203-977-3	ND	0.050
9	1,2-Dichloroethane	107-06-2	203-458-1	ND	0.050
10	1,2-Diethoxyethane	629-14-1	211-076-1	ND	0.050
11	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	203-794-9	ND	0.050
12	1-Bromopropane	106-94-5	203-445-0	ND	0.050
13	1-methyl-2-pyrrolidone	872-50-4	212-828-1	ND	0.050
14	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	202-918-9	ND	0.050
15	2,4-Dinitrotoluene	121-14-2	204-450-0	ND	0.050

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NO.	Substance Name	CAS No.	EC No.	001 Concentration (%)	RL (%)
16	2-Ethoxyethanol	110-80-5	203-804-1	ND	0.050
17	2-ethoxyethyl acetate	111-15-9	203-839-2	ND	0.050
18	2-Methoxyaniline; o-Anisidine	90-04-0	201-963-1	ND	0.050
19	2-Methoxyethanol	109-86-4	203-713-7	ND	0.050
20	3-Ethyl-2-methyl-2-(3-methylbutyl) -1,3-oxazolidine	143860-04-2	421-150-7	ND	0.050
21	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	205-426-2	ND	0.050
22	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	-	ND	0.050
23	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	202-974-4	ND	0.050
24	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	202-027-5	ND	0.050
25	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol§	561-41-1	209-218-2	ND	0.050
26	4,4'-Methylenedi-o-toluidine	838-88-0	212-658-8	ND	0.050
27	4,4'-Oxydianiline and its salts	101-80-4	202-977-0	ND	0.050
28	4-Aminoazobenzene	60-09-3	200-453-6	ND	0.050
29	4-Methyl-m-phenylenediamine	95-80-7	202-453-1	ND	0.050
30	4-Nonylphenol, branched and linear	-	-	ND	0.050
31	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	201-329-4	ND	0.050
32	6-Methoxy-m-toluidine	120-71-8	204-419-1	ND	0.050
33	Acetic acid, lead salt, basic*	51404-69-4	257-175-3	ND	0.005
34	Acrylamide	79-06-1	201-173-7	ND	0.050
35	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	287-476-5	ND	0.050

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NO.	Substance Name	CAS No.	EC No.	001 Concentration (%)	RL (%)
36	Aluminosilicate Refractory Ceramic Fibres *▲	650-017-00-8 (Index no.)	-	ND	0.005
37	Ammonium dichromate*	7789-09-5	232-143-1	ND	0.005
38	Anthracene	120-12-7	204-371-1	ND	0.050
39	Anthracene oil*	90640-80-5	292-602-7	ND	0.050
40	Anthracene oil, anthracene paste*	90640-81-6	292-603-2	ND	0.050
41	Anthracene oil, anthracene paste, anthracene fraction*	91995-15-2	295-275-9	ND	0.050
42	Anthracene oil, anthracene paste, distn. lights*	91995-17-4	295-278-5	ND	0.050
43	Anthracene oil, anthracene-low*	90640-82-7	292-604-8	ND	0.050
44	Arsenic acid*	7778-39-4	231-901-9	ND	0.005
45	Benzyl butyl phthalate (BBP)	85-68-7	201-622-7	ND	0.050
46	Biphenyl-4-ylamine	92-67-1	202-177-1	ND	0.050
47	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	204-211-0	ND	0.050
48	Bis(2-methoxyethyl) ether	111-96-6	203-924-4	ND	0.050
49	Bis(2-methoxyethyl) phthalate	117-82-8	204-212-6	ND	0.050
50	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	214-604-9	ND	0.050
51	Bis(tributyltin)oxide (TBTO)	56-35-9	200-268-0	ND	0.050
52	Boric acid*	10043-35-3, 11113-50-1	233-139-2, 234-343-4	ND	0.005
53	Calcium arsenate*	7778-44-1	231-904-5	ND	0.005
54	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5 - 13530-68-2	231-801-5 - 236-881-5	ND	0.005

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198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

NO.	Substance Name	CAS No.	EC No.	001 Concentration (%)	RL (%)
55	Chromium trioxide*	1333-82-0	215-607-8	ND	0.005
56	Cobalt dichloride*	7646-79-9	231-589-4	ND	0.005
57	Cobalt(II) carbonate*	513-79-1	208-169-4	ND	0.005
58	Cobalt(II) diacetate*	71-48-7	200-755-8	ND	0.005
59	Cobalt(II) dinitrate*	10141-05-6	233-402-1	ND	0.005
60	Cobalt(II) sulphate*	10124-43-3	233-334-2	ND	0.005
61	Diarsenic pentaoxide*	1303-28-2	215-116-9	ND	0.005
62	Diarsenic trioxide*	1327-53-3	215-481-4	ND	0.005
63	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	204-650-8	ND	0.050
64	Diboron trioxide*	1303-86-2	215-125-8	ND	0.005
65	Dibutyl phthalate (DBP)	84-74-2	201-557-4	ND	0.050
66	Dibutyltin dichloride (DBTC)	683-18-1	211-670-0	ND	0.050
67	Dichromium tris(chromate) *	24613-89-6	246-356-2	ND	0.005
68	Diethyl sulphate	64-67-5	200-589-6	ND	0.050
69	Diisobutyl phthalate	84-69-5	201-553-2	ND	0.050
70	Diisopentylphthalate	605-50-5	210-088-4	ND	0.050
71	Dimethyl sulphate	77-78-1	201-058-1	ND	0.050
72	Dinoseb	88-85-7	201-861-7	ND	0.050
73	Dioxobis(stearato)trilead*	12578-12-0	235-702-8	ND	0.005
74	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	215-540-4	ND	0.005
75	Fatty acids, C16-18, lead salts*	91031-62-8	292-966-7	ND	0.005

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NO.	Substance Name	CAS No.	EC No.	001 Concentration (%)	RL (%)
76	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	500-036-1	ND	0.050
77	Formamide	75-12-7	200-842-0	ND	0.050
78	Furan	110-00-9	203-727-3	ND	0.050
79	Henicosafluoroundecanoic acid	2058-94-8	218-165-4	ND	0.050
80	Heptacosafluorotetradecanoic acid	376-06-7	206-803-4	ND	0.050
81	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD)△	25637-99-4, 3194- 55-6	247-148-4, 221-695-9	ND	0.050
82	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	201-604-9, 236-086-3, 238-009-9	ND	0.050
83	Hexahydromethylphathalic anhydride, Hexahydro-4-methylphathalic anhydride, Hexahydro-1-methylphathalic anhydride, Hexahydro-3-methylphathalic anhydride	☆	☆	ND	0.050
84	Hydrazine	7803-57-8, 302-01-2	206-114-9	ND	0.050
85	Lead bis(tetrafluoroborate)*	13814-96-5	237-486-0	ND	0.005
86	Lead chromate*	7758-97-6	231-846-0	ND	0.005
87	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	235-759-9	ND	0.005
88	Lead cyanamidate*	20837-86-9	244-073-9	ND	0.005
89	Lead diazide, Lead azide*	13424-46-9	236-542-1	ND	0.005
90	Lead dinitrate*	10099-74-8	233-245-9	ND	0.005
91	Lead dipicrate*	6477-64-1	229-335-2	ND	0.005
92	Lead hydrogen arsenate*	7784-40-9	232-064-2	ND	0.005

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Member of the SGS Group (SGS SA)

NO.	Substance Name	CAS No.	EC No.	001 Concentration (%)	RL (%)
93	Lead monoxide*	1317-36-8	215-267-0	ND	0.005
94	Lead oxide sulfate*	12036-76-9	234-853-7	ND	0.005
95	Lead styphnate*	15245-44-0	239-290-0	ND	0.005
96	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	215-693-7	ND	0.005
97	Lead tetroxide (orange lead)*	1314-41-6	215-235-6	ND	0.005
98	Lead titanium trioxide*	12060-00-3	235-038-9	ND	0.005
99	Lead titanium zirconium oxide*	12626-81-2	235-727-4	ND	0.005
100	Lead(II) bis(methanesulfonate)*	17570-76-2	401-750-5	ND	0.005
101	Methoxyacetic acid	625-45-6	210-894-6	ND	0.050
102	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	202-959-2	ND	0.050
103	N,N-dimethylacetamide	127-19-5	204-826-4	ND	0.050
104	N,N-dimethylformamide	68-12-2	200-679-5	ND	0.050
105	N-Methylacetamide	79-16-3	201-182-6	ND	0.050
106	N-Pentyl-isopentylphthalate	776297-69-9	-	ND	0.050
107	o-Aminoazotoluene	97-56-3	202-591-2	ND	0.050
108	o-Toluidine	95-53-4	202-429-0	ND	0.050
109	Pentacosafluorotridecanoic acid	72629-94-8	276-745-2	ND	0.050
110	Pentalead tetraoxide sulphate*	12065-90-6	235-067-7	ND	0.005
111	Pentazinc chromate octahydroxide*	49663-84-5	256-418-0	ND	0.005
112	Phenolphthalein	77-09-8	201-004-7	ND	0.050
113	Pitch, coal tar, high temp.*	65996-93-2	266-028-2	ND	0.050
114	Potassium chromate*	7789-00-6	232-140-5	ND	0.005

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198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com
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NO.	Substance Name	CAS No.	EC No.	001 Concentration (%)	RL (%)
115	Potassium dichromate*	7778-50-9	231-906-6	ND	0.005
116	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	234-329-8	ND	0.005
117	Methyloxirane (Propylene oxide)	75-56-9	200-879-2	ND	0.050
118	Pyrochlore, antimony lead yellow*	8012-00-8	232-382-1	ND	0.005
119	Silicic acid, barium salt, lead-doped*	68784-75-8	272-271-5	ND	0.005
120	Silicic acid, lead salt*	11120-22-2	234-363-3	ND	0.005
121	Sodium chromate*	7775-11-3	231-889-5	ND	0.005
122	Sodium dichromate*	7789-12-0, 10588-01-9	234-190-3	ND	0.005
123	Strontium chromate*	7789-06-2	232-142-6	ND	0.005
124	Sulfurous acid, lead salt, dibasic*	62229-08-7	263-467-1	ND	0.005
125	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	235-541-3	ND	0.005
126	Tetraethyllead*	78-00-2	201-075-4	ND	0.005
127	Tetralead trioxide sulphate*	12202-17-4	235-380-9	ND	0.005
128	TGIC (1,3,5-tris(oxiranylmethyl) -1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	219-514-3	ND	0.050
129	Trichloroethylene	79-01-6	201-167-4	ND	0.050
130	Tricosafluorododecanoic acid	307-55-1	206-203-2	ND	0.050
131	Triethyl arsenate*	15606-95-8	427-700-2	ND	0.005
132	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	215-290-6	ND	0.005
133	Trilead diarsenate*	3687-31-8	222-979-5	ND	0.005
134	Trilead dioxide phosphonate*	12141-20-7	235-252-2	ND	0.005
135	Tris(2-chloroethyl)phosphate	115-96-8	204-118-5	ND	0.050

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198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.cn.sgs.com
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NO.	Substance Name	CAS No.	EC No.	001 Concentration (%)	RL (%)
136	Zirconia Aluminosilicate Refractory Ceramic Fibres*▲	650-017-00-8 (Index no.)	-	ND	0.005
137	α,α-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	229-851-8	ND	0.050
138	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	423-400-0	ND	0.050

Notes :

1.RL = Reporting Limit. All RL are based on homogenous material.ND = Not detected (lower than RL), ND is denoted on the SVHC substance.

2.*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.

3. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI),aluminum, zirconium, boron, strontium, zinc, antimony, titanium and barium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).

4.▲ On Jun 18, 2012, ECHA consolidated two entries of aluminosilicate refractory ceramic fibres and two of zirconia aluminosilicate refractory ceramic fibres in the Candidate List of SVHC for authorization published in Jan 2010 and Dec 2011 into one entry for aluminosilicate refractory ceramic fibres and one for zirconia aluminosilicate refractory ceramic fibres.

5. Calculated concentration of boric compounds are based on the water extractive boron by ICP-OES.

6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8.

7. ☆ CAS No. of Hexahydromethylphathalic anhydride, Hexahydro-4-methylphathalic anhydride, Hexahydro-1-methylphathalic anhydride, Hexahydro-3-methylphathalic 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.

8. § 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) ≥0.1% (w/w).

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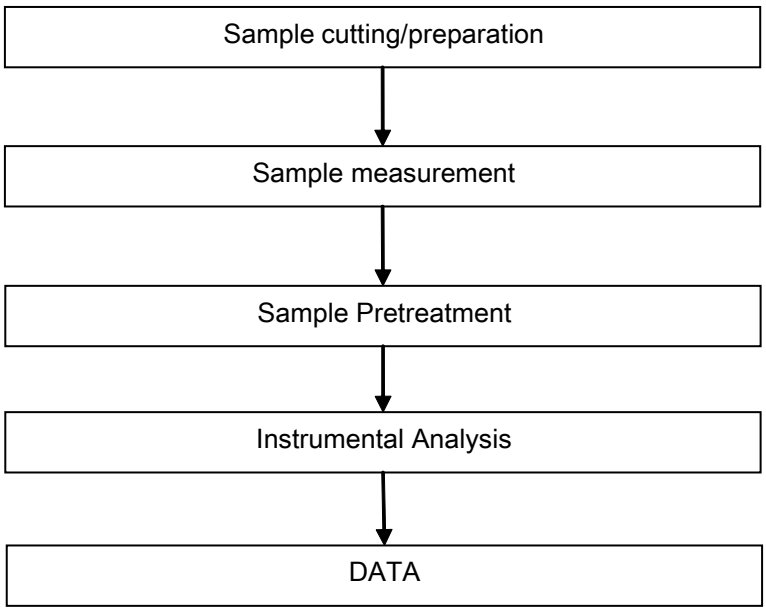
ATTACHMENTS

SVHC Testing Flow Chart

1) Name of the person who made testing: Michael Tso / Liu Qiong
2) Name of the person in charge of testing: Adams Yu / Yolanda Wei



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