

Test Report

No. SHAEC1500414801

Date: 14 Jan 2015

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KUNSHAN NICERA ELECTRICAL APPLIANCE CO.,LTD
ZHOUZHUANG TOWN KUNSHAN CITY JIANGSU PROVINCE

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

SGS Job No. : SP15-000284 - SH

Date of Sample Received : 08 Jan 2015

Testing Period : 08 Jan 2015 - 14 Jan 2015

Test Requested : Selected test(s) as requested by client.

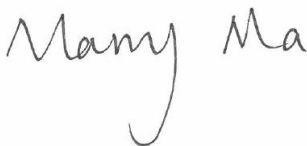
Test Method : Please refer to next page(s).

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

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

When tested as specified, Dimethyl fumarate(DMF) content of the submitted sample comply with Commission Regulation (EU) No 412/2012 and Entry 61 of Annex XVII of REACH Regulation (EC) No 1907/2006

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.



Marry Ma
Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA15-004148.001	Black solid

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive 2011/65/EU

- Test Method :
- (1) With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.
 - (2) With reference to IEC 62321-5:2013, determination of Lead by AAS.
 - (3) With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.
 - (4) With reference to IEC 62321:2008, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.
 - (5) With reference to IEC 62321:2008, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	2	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND



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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND

Notes :

- (1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II

Halogen

Test Method : With reference to EN 14582: 2007, analysis was performed by Ion Chromatograph (IC).

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Fluorine (F)	mg/kg	50	ND
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

Element(s)

Test Method : With reference to US EPA Method 3052:1996, analysis was performed by ICP-OES.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Arsenic (As)	mg/kg	10	ND
Nickel (Ni)	mg/kg	5	55

Notes :

- (1) Arsenic Reference Information: Entry 19 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2006/139/EC):
- (i) Shall not be placed on the market, or used, as substances or in mixtures where the substance or mixture is intended for use to prevent the fouling by micro-organisms, plants or animals of: — the hulls of boats,



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- cages, floats, nets and any other appliances or equipment used for fish or shellfish farming,
- any totally or partly submerged appliances or equipment.
- (ii) Shall not be placed on the market, or used, as substances or in mixtures where the substance or mixture is intended for use in the treatment of industrial waters, irrespective of their use.
- (iii) Shall not be used in the preservation of wood. Furthermore, wood so treated shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information

Organic-tin compounds

Test Method : With reference to ISO 17353: 2004 with carbamate, analysis was performed by GC-MS.

Test Item(s)	Unit	MDL	001
Dibutyl tin (DBT)	mg/kg	0.02	ND
Dioctyl tin (DOT)	mg/kg	0.02	ND

Tetrabromobisphenol A (TBBP-A)

Test Method : With reference to US EPA 3540C: 1996, analysis was performed by GC-MS.

Test Item(s)	Unit	MDL	001
Tetrabromobisphenol A (TBBP-A)	mg/kg	10	ND

Formaldehyde

Test Method : With reference to ISO 17226-1: 2008, analysis was performed by HPLC-DAD.

Test Item(s)	Unit	MDL	001
Formaldehyde	mg/kg	20	ND

Hexabromocyclododecane (HBCDD)

Test Method : Determination of HBCDD by GC-MS based on IEC 62321:2008.

Test Item(s)	Unit	MDL	001
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND



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Notes :

- (1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Hexabromocyclododecane (HBCDD) is considered as a priority for risk evaluation and substance restriction.

Commission Regulation (EU) No 412/2012 and Entry 61 of Annex XVII of REACH Regulation (EC) No 1907/2006 - Dimethyl fumarate(DMF)

Test Method : Solvent extraction, analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Dimethyl fumarate(DMF)	0.1	mg/kg	0.1	ND

Short Chained Chlorinated Paraffin (SCCP)

Test Method : With reference to US EPA 3550C: 2007, analysis was performed by GC-ECD / GC-NCI-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Short Chained Chlorinated Paraffin (SCCP)	mg/kg	50	ND

Phthalates

Test Method : With reference to EN 14372:2004, analysis was performed by GC-MS

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Dibutyl Phthalate (DBP)	84-74-2	%	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	%	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%	0.003	ND
Diisononyl Phthalate (DINP)	28553-12-0	%	0.01	ND
	/68515-48-0			
Di-n-octyl Phthalate (DNOP)	117-84-0	%	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0	%	0.01	ND
	/68515-49-1			
Diisobutyl Phthalate (DIBP)	84-69-5	%	0.003	ND
Di-n-pentyl Phthalates (DnPP)	131-18-0	%	0.003	ND

Notes :

- (1) DBP,BBP,DEHP Reference information: Entry 51 of Regulation (EC) No 552/2009 amending Annex



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- XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC):
- i) Shall not be used as substances or in mixtures, in concentrations greater than 0,1 % by weight of the plasticised material, in toys and childcare articles.
 - ii) Toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information

DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC).

- i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.
- ii) Such toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information

PFOS (Perfluorooctane Sulfonates) and PFOA (Perfluorooctanoic Acid)

Test Method : With reference to US EPA 3550C: 2007, analysis was performed by HPLC-MS.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Perfluorooctane Sulfonates (PFOS) and related Acid,Metal Salt and Amide	1000	mg/kg	10	ND
Perfluorooctanoic Acid (PFOA)	-	mg/kg	10	ND

Notes :

Max. limit specified by commission regulation (EU) No. 757/2010 amending regulation (EC) No 850/2004.

Polycyclic aromatic hydrocarbons (PAHs)

Test Method : With reference to ZEK 01.4-08 of German ZLS and its amendments, analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Sum of 18 PAHs	mg/kg	-	ND
Naphthalene(NAP)	mg/kg	0.1	ND
Acenaphthylene(ANY)	mg/kg	0.1	ND
Acenaphthene(ANA)	mg/kg	0.1	ND
Fluorene(FLU)	mg/kg	0.1	ND
Phenanthrene(PHE)	mg/kg	0.1	ND
Anthracene(ANT)	mg/kg	0.1	ND
Fluoranthene(FLT)	mg/kg	0.1	ND



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Test Item(s)	Unit	MDL	001
Pyrene(PYR)	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	mg/kg	0.1	ND
Chrysene(CHR)	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF) and Benzo(j)fluoranthene(BjF)	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	mg/kg	0.1	ND

Notes :

Above 8 PAHs(BaA,CHR,BbF,BjF,BkF,BeP,BaP,DBA) are listed in Commission Regulation (EU) No 1272/2013 amending Annex XVII to Regulation (EC) No 1907/2006.

(1) In order to protect the health of consumers from the risk arising from exposure to PAHs in articles, limits on the PAH content in the accessible plastic or rubber parts of articles should be set, and the placing on the market of articles containing any of the PAHs in concentrations greater than 1 mg/kg in those parts should be prohibited.

(2) Taking into account the vulnerability of children a lower limit value should be established. Therefore the placing on the market of toys and childcare articles, containing any of the PAHs in concentrations greater than 0,5 mg/kg in their accessible plastic or rubber parts, should be prohibited.

ZEK 01.4-08: Restraining maximum values for products

Parameter	Category 1	Category 2	Category 3
	Material indented to be put in the mouth or material for toys with normal skin contact for children aged < 36 months	Materials those are not included in Category 1, with predictable contact with the skin longer than 30 s. (long-term skin contact).	Materials those are not included in Category 1 or 2, with predictable skin contact up to 30 s (short-term skin contact).
Benzo(a)pyrene (mg/kg)	<0.2**	1	20
Sum of 18 PAHs (mg/kg)*	<0.2**	10	200

Notes:

- * = Only PAH substances >0.1 mg/kg are taken into account while calculating the sum of PAHs
- ** = In case that the maximum values exceed the limits of category 1, but are within the limits of category 2, one may confirm the suitability of the tested material which is indented to be put in the mouth by additional specific migration tests of PAH components based on DIN EN 1186ff and §64 LFGB 80.30-1. The conclusion of the migration test results must be made based on food law criteria.



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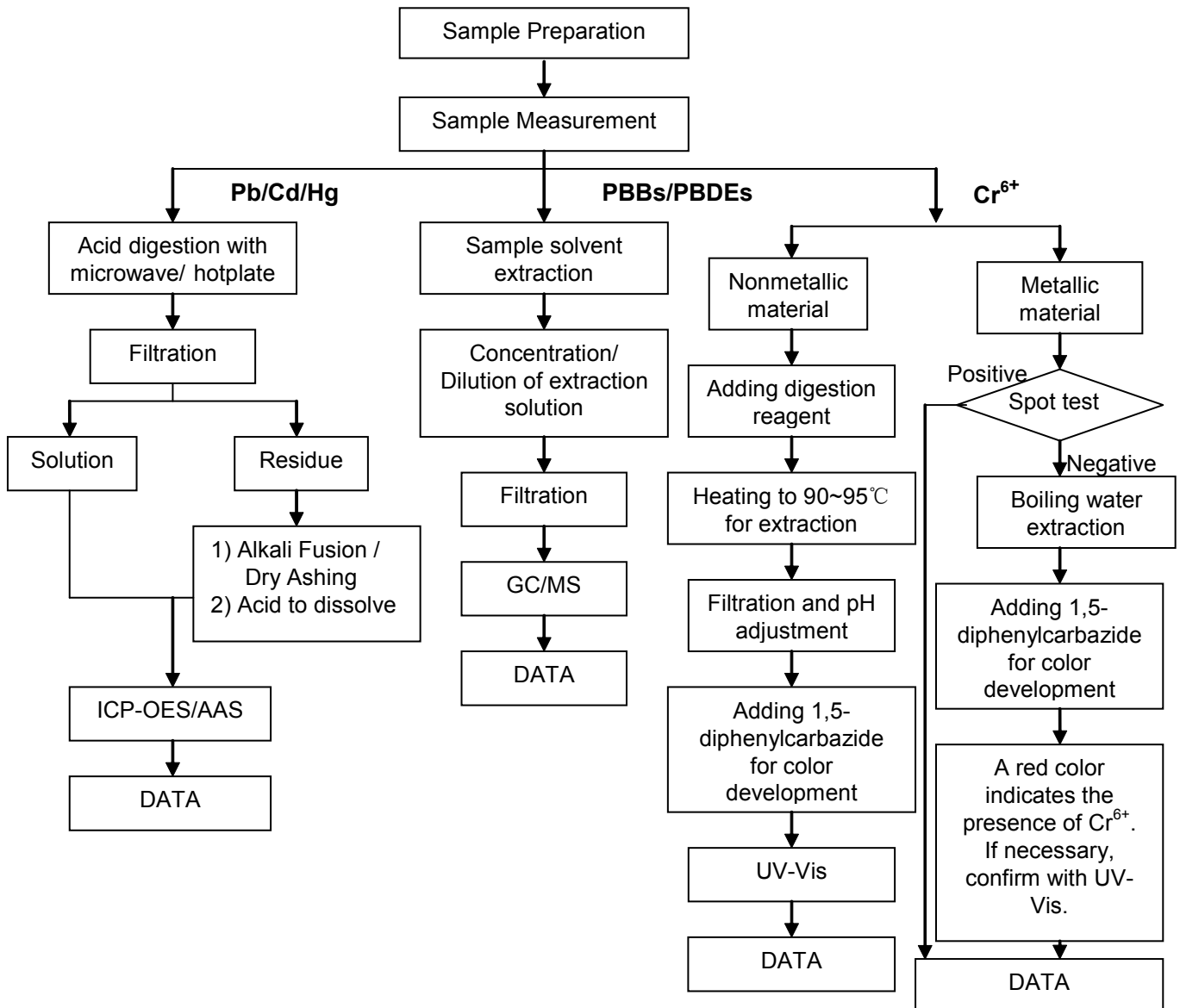
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RoHS Testing Flow Chart

- 1) Name of the person who made testing: Bob Zhang/Gary Xu/Stone Chen/Sunny Qin
- 2) Name of the person in charge of testing: Jan Shi/Summer Jin/Jessy Huang
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ and PBBs/PBDEs test method excluded)



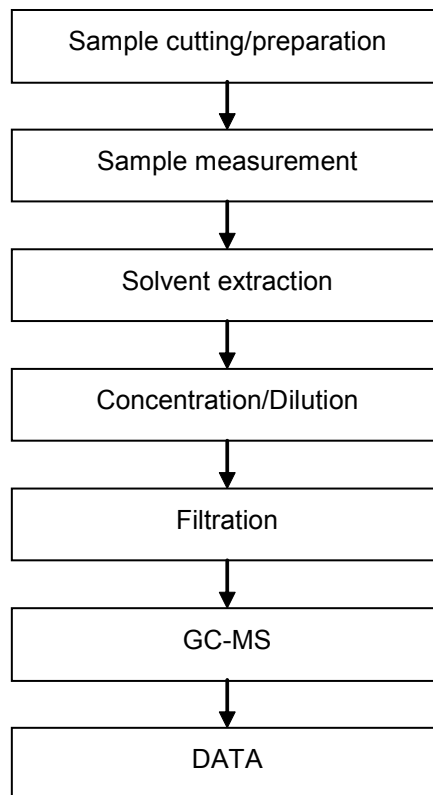
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Phthalates Testing Flow Chart

- 1) Name of the person who made testing: Sherlock Gao
- 2) Name of the person in charge of testing: Myra Ma



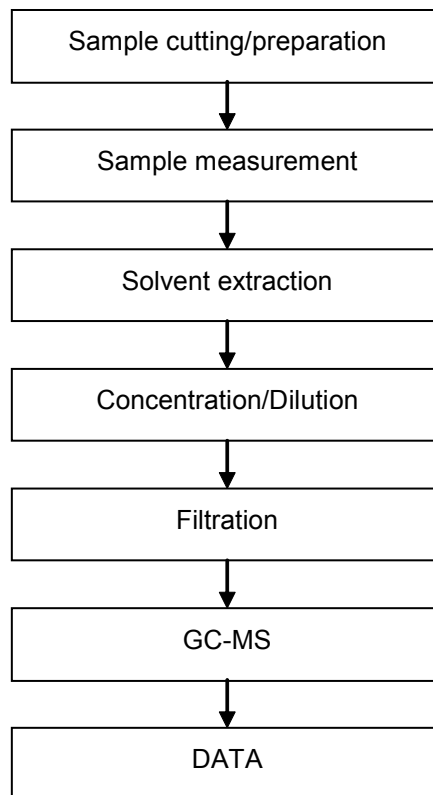
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HBCDD Testing Flow Chart

- 1) Name of the person who made testing: Gary Xu
- 2) Name of the person in charge of testing: Jessy Huang



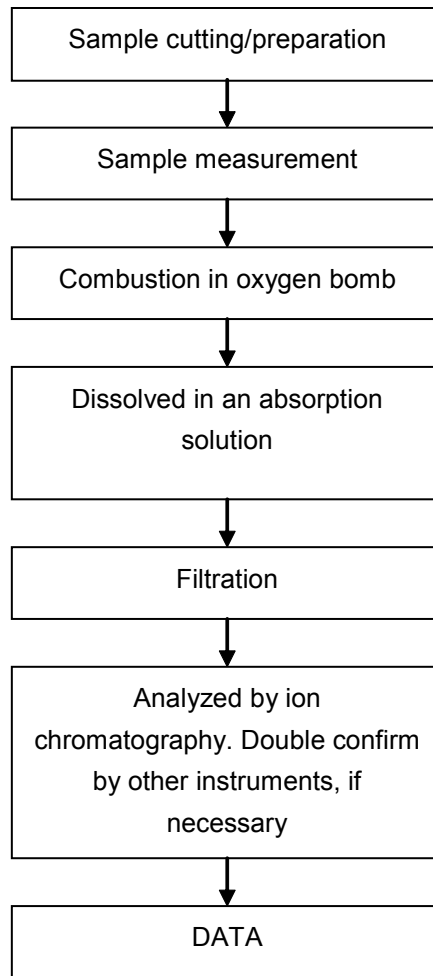
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Halogen Testing (oxygen bomb) Flow Chart

- 1) Name of the person who made testing: Sisily Yin
- 2) Name of the person in charge of testing: Linda Li



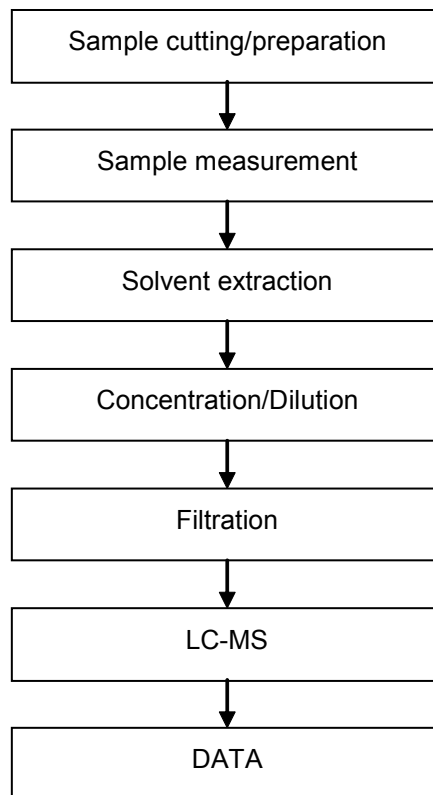
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ATTACHMENTS

PFOS/PFOA Testing Flow Chart

- 1) Name of the person who made testing: Jane Yang
- 2) Name of the person in charge of testing: Myra Ma



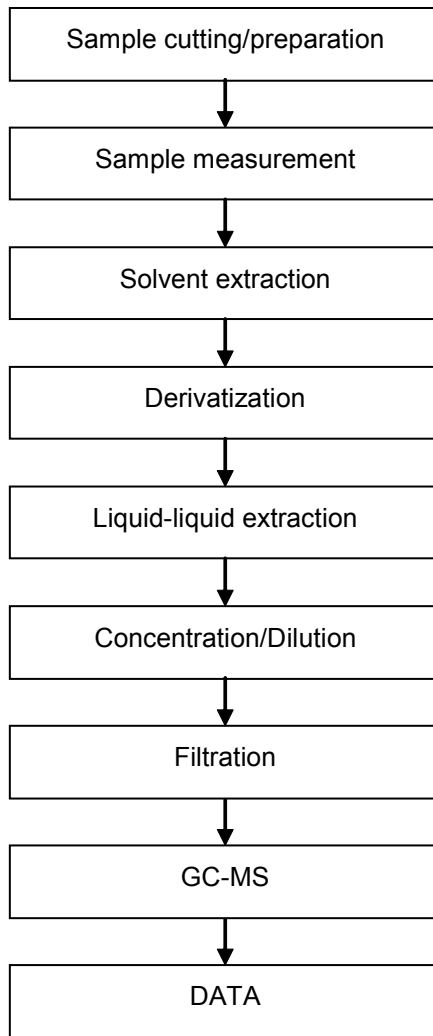
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TBBP-A Testing Flow Chart

- 1) Name of the person who made testing: Gary Xu
- 2) Name of the person in charge of testing: Jessy Huang



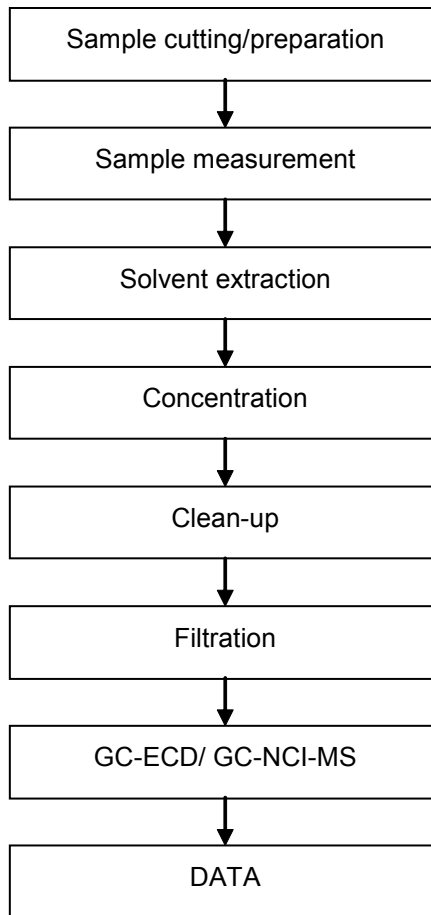
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SCCP Testing Flow Chart

- 1) Name of the person who made testing: Brin Feng
- 2) Name of the person in charge of testing: Zirco Yu



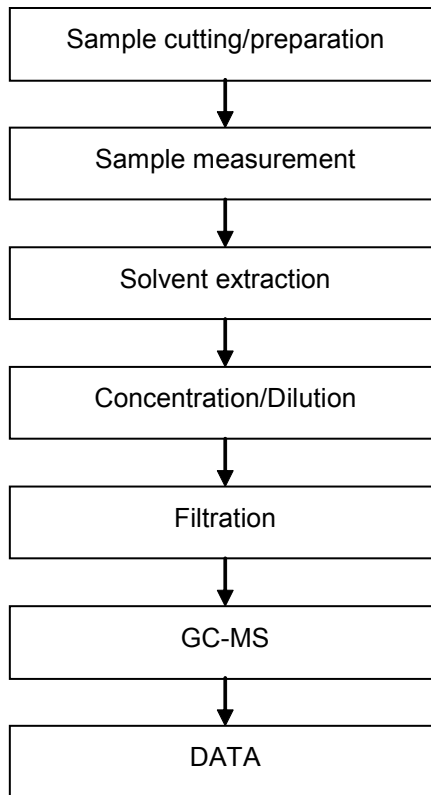
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DMF (Dimethyl fumarate) Testing Flow Chart

- 1) Name of the person who made testing: Lisa Duan
- 2) Name of the person in charge of testing: Jessy Huang



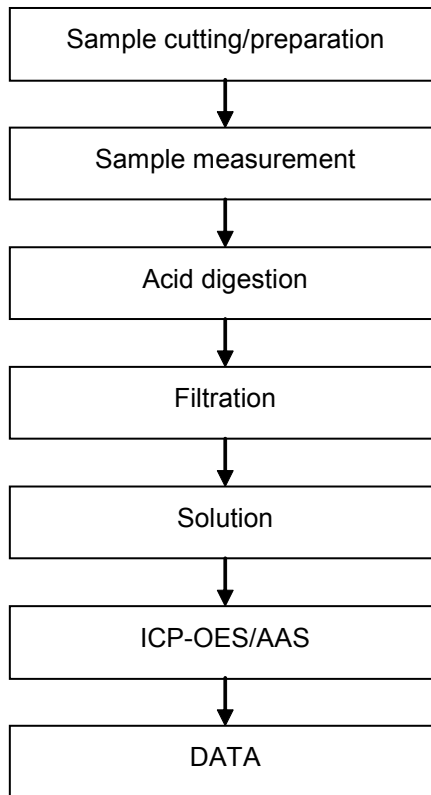
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Elements Testing Flow Chart

- 1) Name of the person who made testing: Bob Zhang/Sunny Qin
- 2) Name of the person in charge of testing: Summer Jin/Jan Shi



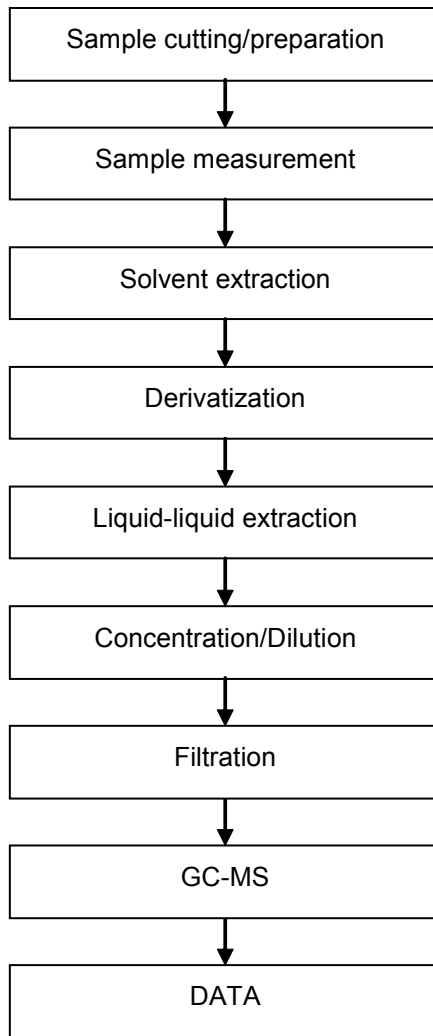
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Organotin Testing Flow Chart

- 1) Name of the person who made testing: Celia Hu
- 2) Name of the person in charge of testing: Jessy Huang



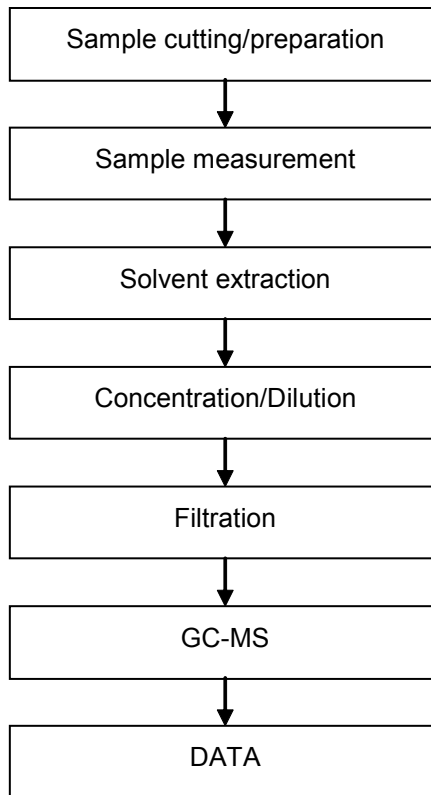
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PAHs Testing Flow Chart

- 1) Name of the person who made testing: Lisa Duan
- 2) Name of the person in charge of testing: Jessy Huang



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Sample photo:



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測試報告

號碼(No.) : CE/2014/83428

日期(Date) : 2014/09/03

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Test Report

聯茂電子股份有限公司

ITEQ CORPORATION

新竹縣新埔鎮內立里大魯閣路17號

NO.17, DALUGE RD., XINPU TOWNSHIP, HSINCHU COUNTY 305, TAIWAN R.O.C.



以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by/on behalf of the applicant as) :

樣品名稱(Sample Description) : COPPER CLAD LAMINATE
樣品型號(Style/Item No.) : IT-180TC
收件日期(Sample Receiving Date) : 2014/08/21
測試期間(Testing Period) : 2014/08/21 TO 2014/09/03

測試結果(Test Results) : 請見下一頁 (Please refer to next pages).

結論(Conclusion) : 根據客戶所提供的樣品, 其鎘、鉛、汞、六價鉻、多溴聯苯及多溴聯苯醚的測試結果符合RoHS指令2002/95/EC的更新指令2011/65/EU之要求 (Based on the performed tests on submitted samples, the test results of Cadmium, Lead, Mercury, Hexavalent Chromium Cr(VI), PBBs and PBDEs comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.)

Troy Chang, Manager - Tech
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

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測試報告

號碼(No.) : CE/2014/83428

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Test Report

聯茂電子股份有限公司

ITEQ CORPORATION

新竹縣新埔鎮內立里大魯閣路17號

NO.17, DALUGE RD., XINPU TOWNSHIP, HSINCHU COUNTY 305, TAIWAN R.O.C.



測試結果(Test Results)

測試部位(PART NAME)No.1 : 銅色板子 (COPPER COLORED BOARD) (重量/Weight: 135.6g)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				No.1	
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321-5: 2013方法, 以感應耦合電漿 原子發射光譜儀檢測. / With reference to	2	n.d.	100
鉛 / Lead (Pb)	mg/kg	IEC 62321-5: 2013 and performed by ICP- AES.	2	n.d.	1000
汞 / Mercury (Hg)	mg/kg	參考IEC 62321-4: 2013方法, 以感應耦合電漿 原子發射光譜儀檢測. / With reference to	2	n.d.	1000
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	參考IEC 62321: 2008方法, 以UV-VIS檢測. / With reference to IEC 62321: 2008 and	2	n.d.	1000
銻 / Antimony (Sb)	mg/kg	參考US EPA 3052方法, 以感應耦合電漿原子發 射光譜儀檢測. / With reference to US EPA	2	n.d.	-
三氧化二銻 / Antimony trioxide (Sb ₂ O ₃)***(CAS No.: 1309-64-4)	mg/kg	參考US EPA 3052方法, 以感應耦合電漿原子發 射光譜儀檢測. / With reference to US EPA	-	n.d.	-
鈹 / Beryllium (Be)	mg/kg	參考US EPA 3052方法, 以感應耦合電漿原子發 射光譜儀檢測. / With reference to US EPA	2	n.d.	-
氧化鈹 / Beryllium oxide (BeO)***	mg/kg	參考US EPA 3052方法, 以感應耦合電漿原子發 射光譜儀檢測. / With reference to US EPA	-	n.d.	-

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測試報告

號碼(No.) : CE/2014/83428

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Test Report

聯茂電子股份有限公司

ITEQ CORPORATION

新竹縣新埔鎮內立里大魯閣路17號

NO.17, DALUGE RD., XINPU TOWNSHIP, HSINCHU COUNTY 305, TAIWAN R.O.C.



測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No.1	法規 限值 (Limit)
鎳 / Nickel (Ni)	mg/kg	參考US EPA 3052方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to US EPA Method 3052. Analysis was performed by ICP-AES.	2	14	-
富馬酸二甲酯 / Dimethyl Fumarate (CAS No.: 624-49-7)	mg/kg	參考US EPA 3550C方法, 以氣相層析/質譜儀檢測. / With reference to US EPA 3550C method. Analysis was performed by GC/MS.	0.1	n.d.	-
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	參考US EPA 3550C: 2007方法, 以液相層析/質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.	-
全氟辛酸 / PFOA (CAS No.: 335-67-1)	mg/kg		10	n.d.	-
聚氯乙烯 / PVC	**	以紅外光譜分析及焰色法檢測. / Analysis was performed by FTIR and FLAME Test.	-	Negative	-
四溴雙酚-A / Tetrabromobisphenol A (TBBP-A) (CAS No.: 79-94-7)	mg/kg	參考Global SOP RSTS-E&E-121方法, 以液相層析/質譜儀分析. / With reference to Global SOP RSTS-E&E-121. Analysis was performed by LC/MS.	10	n.d.	-
六溴環十二烷及所有主要被辨別出的異構物 / Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	參考IEC 62321: 2008方法, 以氣相層析/質譜儀檢測. / With reference to IEC 62321: 2008 method. Analysis was performed by GC/MS.	5	n.d.	-
鹵素 (氟) / Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	參考BS EN 14582:2007, 以離子層析儀分析. / With reference to BS EN 14582:2007. Analysis was performed by IC.	50	266	-
鹵素 (氯) / Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)	mg/kg		50	67	-
鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg		50	9610	-

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Test Report

聯茂電子股份有限公司

ITEQ CORPORATION

新竹縣新埔鎮內立里大魯閣路17號

NO.17, DALUGE RD., XINPU TOWNSHIP, HSINCHU COUNTY 305, TAIWAN R.O.C.



測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				No.1	
雙酚 A / Bisphenol A (CAS No.: 80-05-7)	mg/kg	參考RSTS-HL-229-1方法, 以超高效能液相層析串聯質譜儀檢測. / With reference to RSTS-HL-229-1 method. Analysis was performed by UPLC-MSMS.	1	n.d.	-
鄰苯二甲酸甲苯基丁酯 / BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	%	參考EN 14372, 以氣相層析/質譜儀檢測. / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.	-
鄰苯二甲酸二(2-乙基己基)酯 / DEHP (Di-(2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	%		0.003	n.d.	-
鄰苯二甲酸二異癸酯 / DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1)	%		0.01	n.d.	-
鄰苯二甲酸二異壬酯 / DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0)	%		0.01	n.d.	-
鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	%		0.003	n.d.	-
鄰苯二甲酸二丁酯 / DBP (Di-butyl phthalate) (CAS No.: 84-74-2)	%		0.003	n.d.	-
鄰苯二甲酸二異丁酯 / DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	%		0.003	n.d.	-
鄰苯二甲酸二己酯 / DNHP (Di-n-hexyl phthalate) (CAS No.: 84-75-3)	%		0.003	n.d.	-
有機錫 / Organic-tin compounds					
三丁基錫 / Tributyl Tin (TBT)	mg/kg	參考ISO 17353方法, 以氣相層析儀/火焰光度偵測器檢測. / With reference to ISO 17353. Analysis was performed by GC/FPD.	0.03	n.d.	-
三苯基錫 / Triphenyl Tin (TphT)	mg/kg		0.03	n.d.	-
二丁基錫 / Dibutyl Tin (DBT)	mg/kg		0.03	n.d.	-
二辛基錫 / Dioctyl Tin (DOT)	mg/kg		0.03	n.d.	-
三丁基錫氧化物 / Tributyl Tin Oxide (TBTO)** (CAS No.: 56-35-9)	mg/kg		-	n.d.	-

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Test Report

聯茂電子股份有限公司

ITEQ CORPORATION

新竹縣新埔鎮內立里大魯閣路17號

NO.17, DALUGE RD., XINPU TOWNSHIP, HSINCHU COUNTY 305, TAIWAN R.O.C.



測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result) No.1	法規 限值 (Limit)
多溴聯苯總和 / Sum of PBBs	mg/kg	參考IEC 62321: 2008方法, 以氣相層析/質譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.	1000
一溴聯苯 / Monobromobiphenyl	mg/kg		5	n.d.	-
二溴聯苯 / Dibromobiphenyl	mg/kg		5	n.d.	-
三溴聯苯 / Tribromobiphenyl	mg/kg		5	n.d.	-
四溴聯苯 / Tetrabromobiphenyl	mg/kg		5	n.d.	-
五溴聯苯 / Pentabromobiphenyl	mg/kg		5	n.d.	-
六溴聯苯 / Hexabromobiphenyl	mg/kg		5	n.d.	-
七溴聯苯 / Heptabromobiphenyl	mg/kg		5	n.d.	-
八溴聯苯 / Octabromobiphenyl	mg/kg		5	n.d.	-
九溴聯苯 / Nonabromobiphenyl	mg/kg		5	n.d.	-
十溴聯苯 / Decabromobiphenyl	mg/kg		5	n.d.	-
多溴聯苯醚總和 / Sum of PBDEs	mg/kg		-	n.d.	1000
一溴聯苯醚 / Monobromodiphenyl ether	mg/kg		5	n.d.	-
二溴聯苯醚 / Dibromodiphenyl ether	mg/kg		5	n.d.	-
三溴聯苯醚 / Tribromodiphenyl ether	mg/kg		5	n.d.	-
四溴聯苯醚 / Tetrabromodiphenyl ether	mg/kg		5	n.d.	-
五溴聯苯醚 / Pentabromodiphenyl ether	mg/kg		5	n.d.	-
六溴聯苯醚 / Hexabromodiphenyl ether	mg/kg		5	n.d.	-
七溴聯苯醚 / Heptabromodiphenyl ether	mg/kg		5	n.d.	-
八溴聯苯醚 / Octabromodiphenyl ether	mg/kg		5	n.d.	-
九溴聯苯醚 / Nonabromodiphenyl ether	mg/kg	5	n.d.	-	
十溴聯苯醚 / Decabromodiphenyl ether	mg/kg	5	n.d.	-	

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備註(Note) :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected (未檢出)
3. MDL = Method Detection Limit (方法偵測極限值)
4. "-" = Not Regulated (無規格值)
5. ** = Qualitative analysis (No Unit) 定性分析(無單位)
6. Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
7. ***: 該物質是由"三丁基錫"或各別元素(例如: 鈹、銻)之測試結果計算得知。其MDL是針對"三丁基錫"或元素(例如: 鈹、銻)之評估。(The substance was calculated by the test results of Tributyl Tin or element (Ex. Beryllium, Antimony respectively). The MDL was evaluated for Tributyl Tin or element (Ex. Beryllium, Antimony respectively).)
8. 參數換算表 / Parameter Conversion Table :
Please refer to http://twap.sgs.com/sgsrsts/chn/download-REACH_tw.asp

PFOS參考資訊(Reference Information) : 持久性有機污染物 POPs - (EU) 757/2010

PFOS濃度在物質或製備中不得超過0.001%(10ppm), 在半成品、成品或零部件中不得超過0.1%(1000ppm), 在紡織品或塗層材料中不得超過1 $\mu\text{g}/\text{m}^2$ 。

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1 $\mu\text{g}/\text{m}^2$.)

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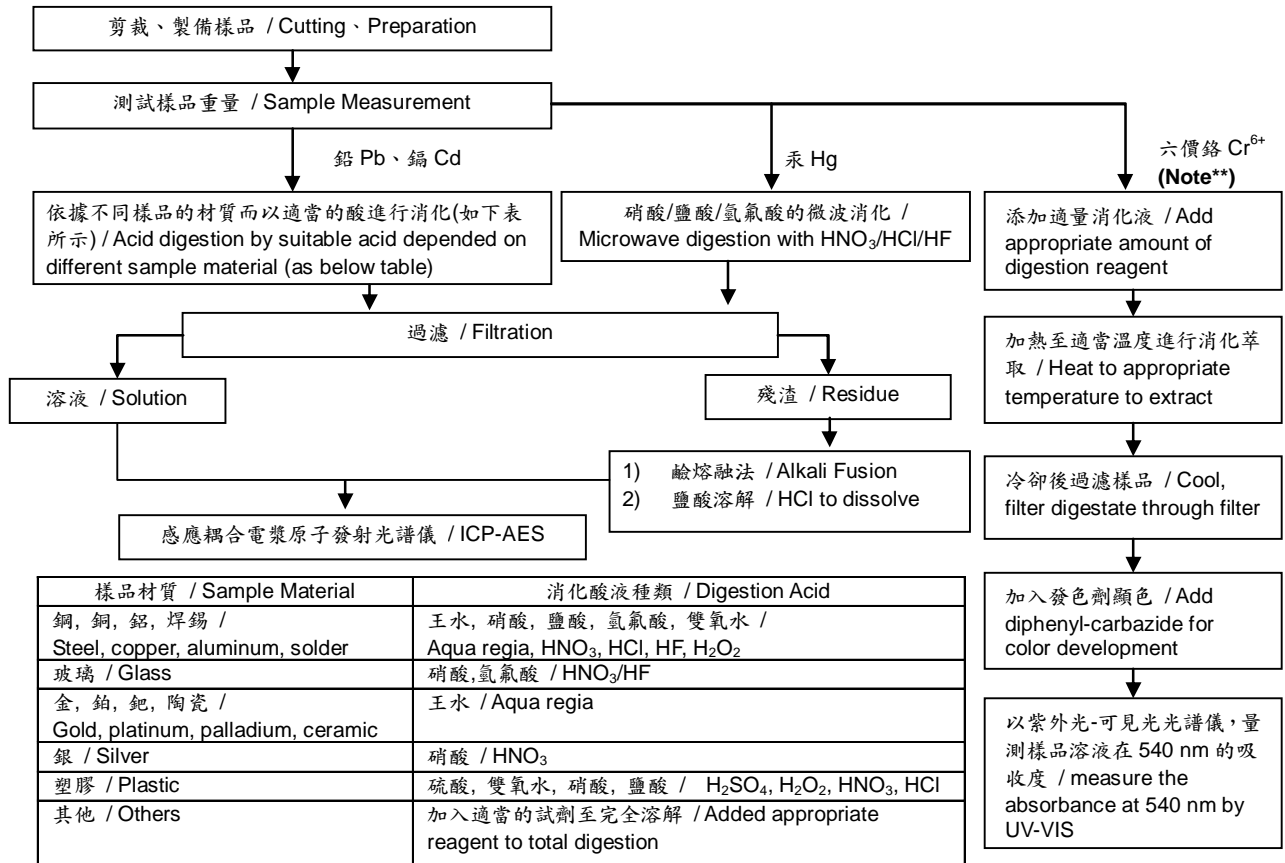
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NO.17, DALUGE RD., XINPU TOWNSHIP, HSINCHU COUNTY 305, TAIWAN R.O.C.



- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



Note** (For IEC 62321)

- (1) 針對非金屬材料加入鹼性消化液，加熱至 90~95°C 萃取。 / For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.
- (2) 針對金屬材料加入純水，加熱至沸騰萃取。 / For metallic material, add pure water and heat to boiling.

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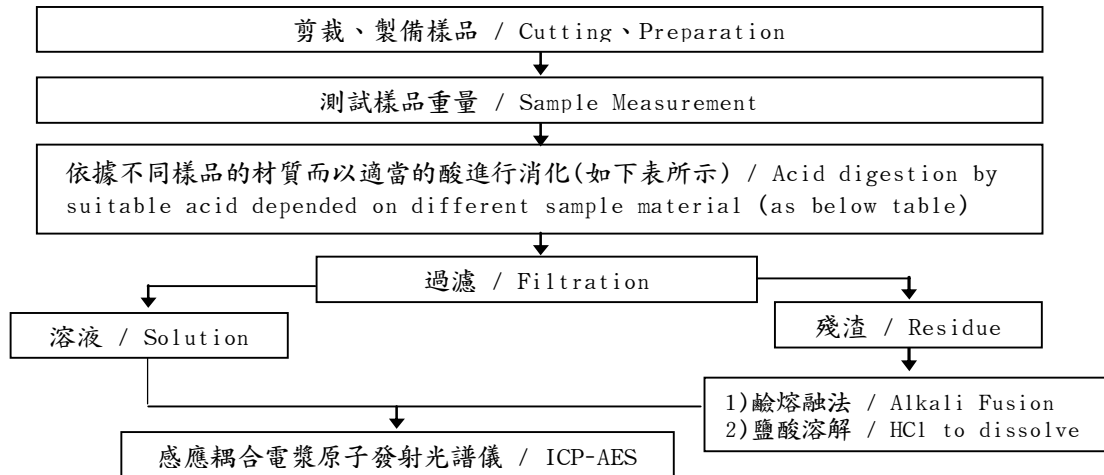
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang

元素以 ICP-AES 分析的消化流程圖

(Flow Chart of digestion for the elements analysis performed by ICP-AES)



鋼, 銅, 鋁, 焊錫 / Steel, copper, aluminum, solder	王水, 硝酸, 鹽酸, 氫氟酸, 雙氧水 / Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂
玻璃 / Glass	硝酸, 氫氟酸 / HNO ₃ /HF
金, 鉑, 鈀, 陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO ₃
塑膠 / Plastic	硫酸, 雙氧水, 硝酸, 鹽酸 / H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCl
其他 / Others	加入適當的試劑至完全溶解 / Added appropriate reagent to total digestion

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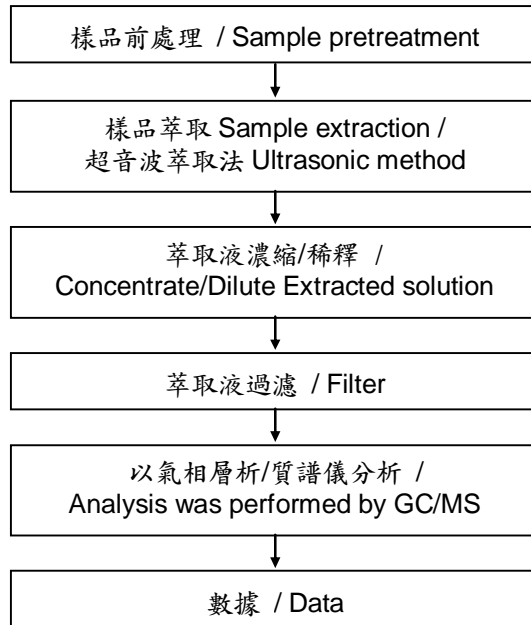
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富馬酸二甲酯分析流程圖 / Dimethyl Fumarate analytical flow chart

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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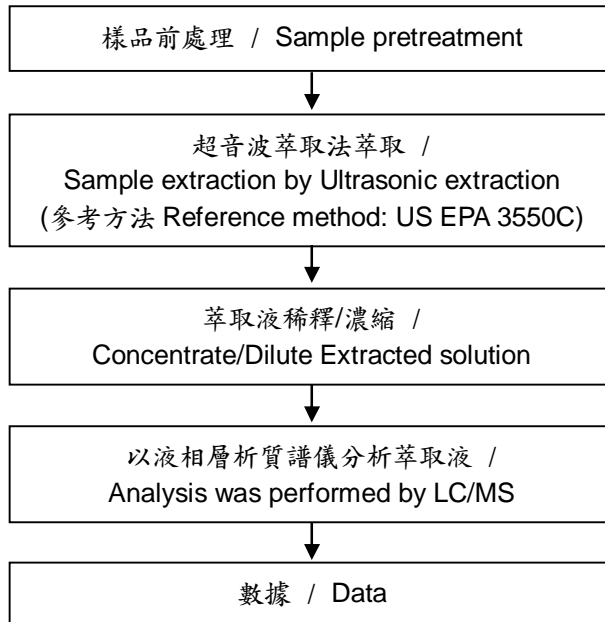
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全氟辛酸/全氟辛烷磺酸分析流程圖 / PFOA/PFOS analytical flow chart

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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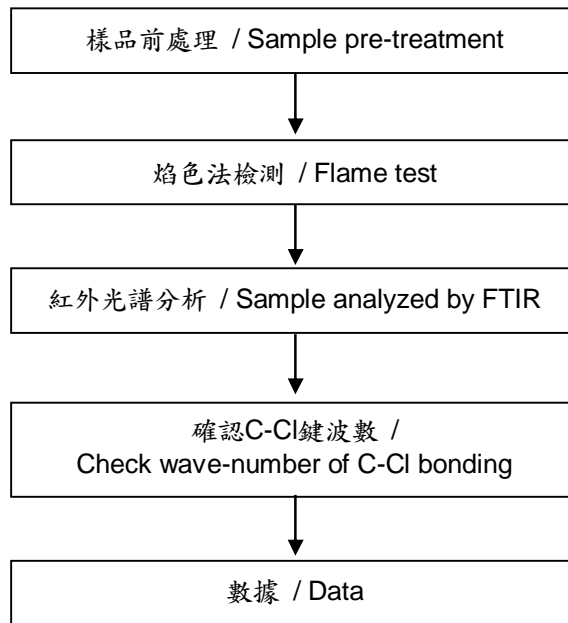
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聚氯乙稀物質判定分析流程圖 /

Analysis flow chart for determination of PVC in material

- 測試人員：林建宇 / Name of the person who made measurement: Roy Lin
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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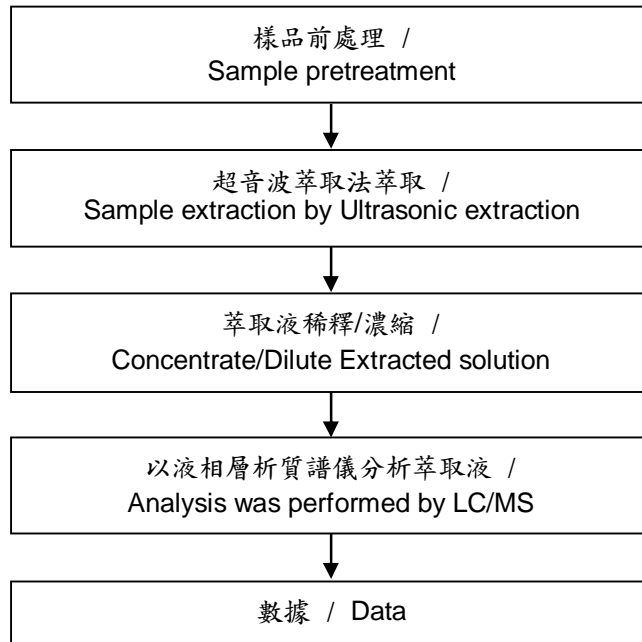
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四溴雙酚-A 分析流程圖 / TBBP-A analytical flow chart

- 測試人員：林建宇 / Name of the person who made measurement: Roy Lin
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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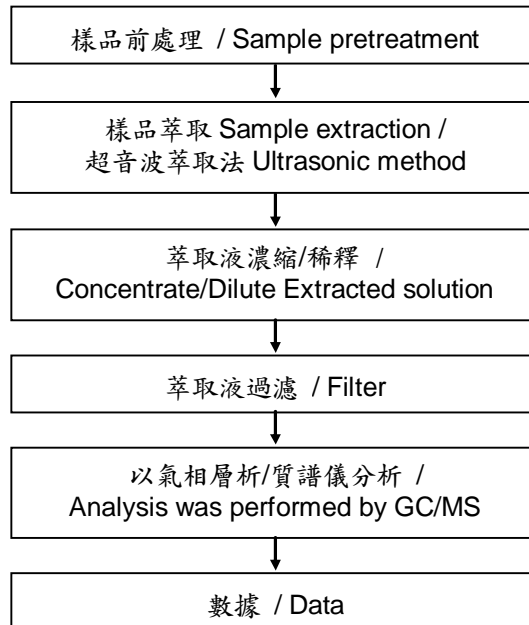
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六溴環十二烷分析流程圖 / HBCDD analytical flow chart

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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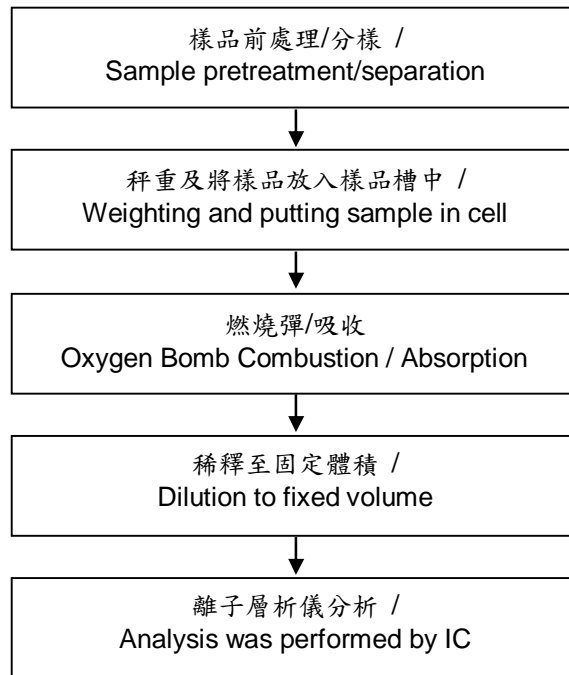
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鹵素分析流程圖 / Analytical flow chart of halogen content

- 測試人員：陳恩臻 / Name of the person who made measurement: Rita Chen
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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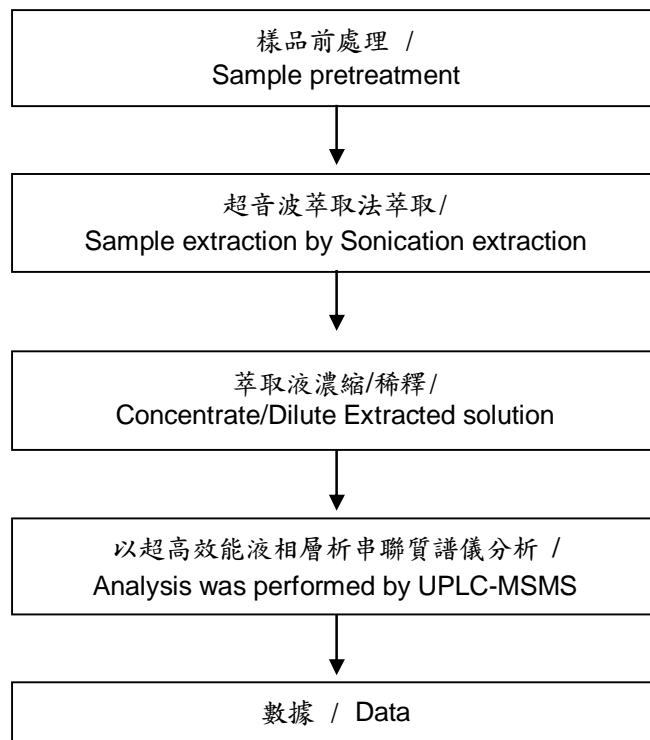
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雙酚A分析流程圖 / Bisphenol A analytical flow chart

- 測試人員：林建宇 / Name of the person who made measurement: Roy Lin
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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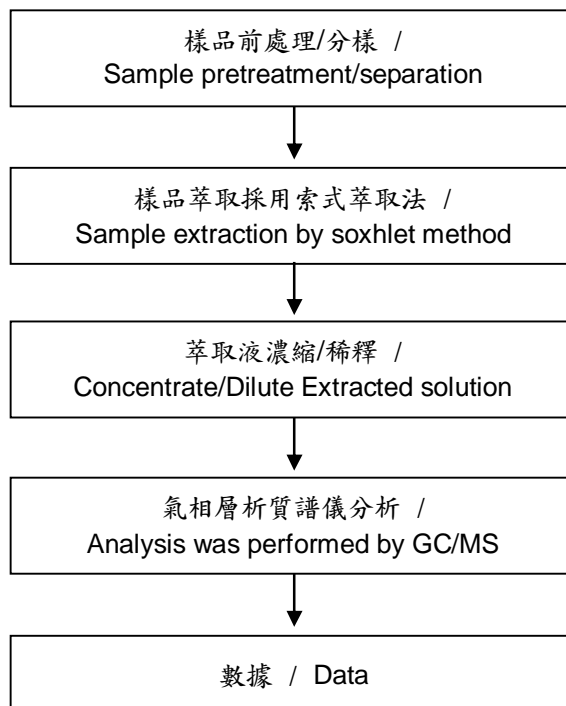
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可塑劑分析流程圖 / Analytical flow chart of phthalate content

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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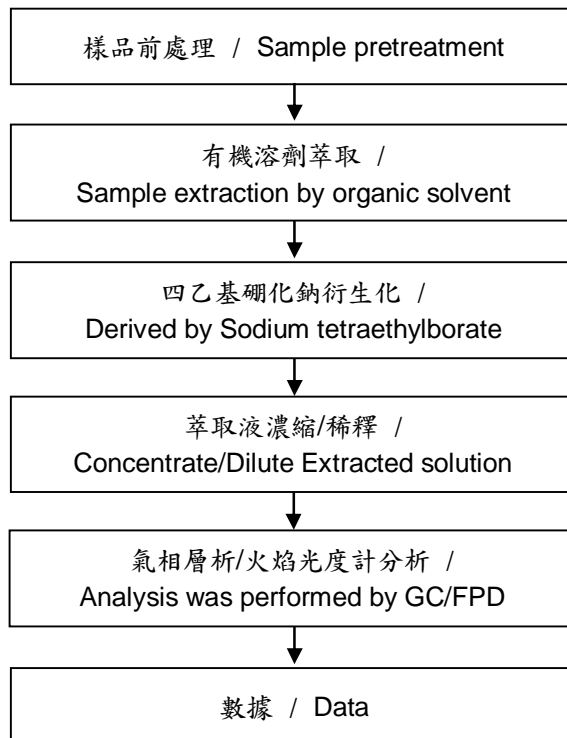
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有機錫分析流程圖 / Analytical flow chart of Organic-Tin content

- 測試人員：林建宇 / Name of the person who made measurement: Roy Lin
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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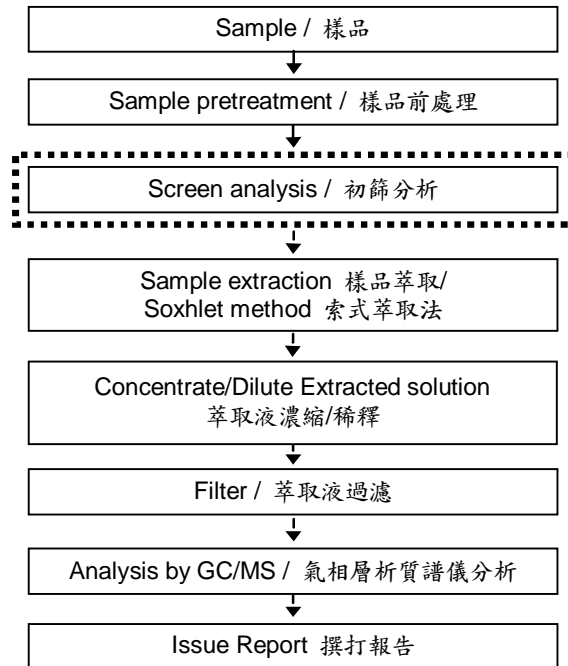
多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang

初次測試程序 / First testing process ———▶

選擇性篩檢程序 / Optional screen process▶

確認程序 / Confirmation process - - - ▶



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聯茂電子股份有限公司

ITEQ CORPORATION

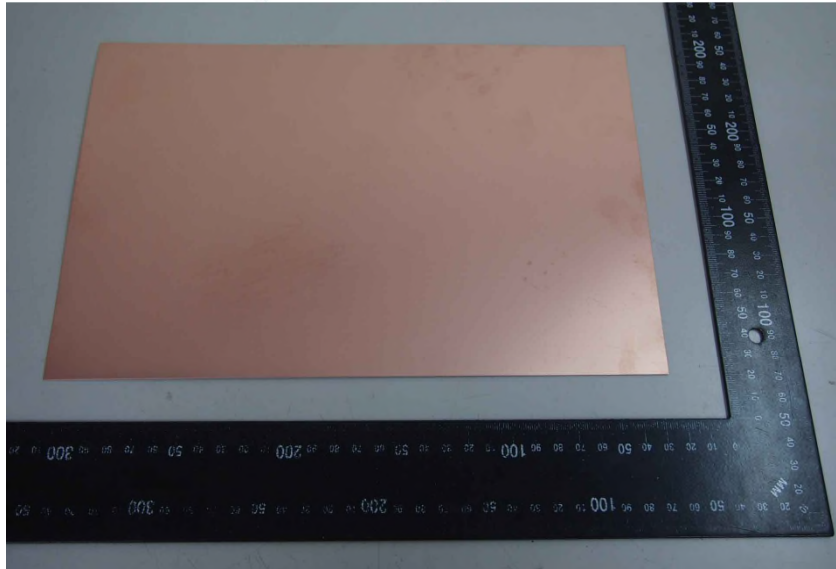
新竹縣新埔鎮內立里大魯閣路17號

NO.17, DALUGE RD., XINPU TOWNSHIP, HSINCHU COUNTY 305, TAIWAN R.O.C.



* 照片中如有箭頭標示，則表示為實際檢測之樣品/部位。
(The tested sample / part is marked by an arrow if it's shown on the photo.)

CE/2014/83428



** 報告結尾 (End of Report) **

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ITEQ

ITEQ CORPORATION

22, Kung Yeh 1st Rd. Ping Chen Industrial Zone. Ping Chen, Taoyuan, Taiwan, R.O.C.

Tel: 886-3-4192345

Fax: 886-3-4192382

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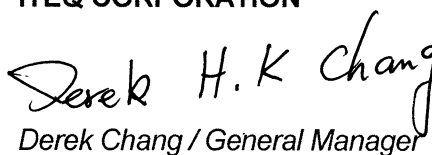
Report on Environmental Impact Substances Contained in Products
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To: Customer

Our company hereby warrants that the following environmental impact substances are not contained (or contained by less than the Restriction of Hazardous substances(RoHS) (2002/95/EWG)) in any of products shipped from ITEQ CORPORATION to the customers.

Corporate name: **ITEQ CORPORATION**

Responsible Person:


Derek Chang / General Manager

(person responsible for environmental control)

Presence of banned substances in the products

No.	Substances	Details (Criteria)	CAS Number
1	Lead (Pb) / Lead Compounds	<1000 ppm	7439-92-21
2	Cadmium (Cd) / Cadmium Compounds	<100 ppm	7440-43-9
3	Mercury (Hg) / Mercury Compounds	<1000 ppm	7439-97-6
4	Hexavalent-Chromium(Cr6+) Compounds	<1000 ppm	18540-29-9
5	Polybrominated biphenyls (PBB)	<1000 ppm	13654-09-6
6	PBDEs (Polybrominated diphenylenters) (including Mono to Deca BDE)	<1000 ppm	32534-81-9

Halogen-Free products (IEC 61249:2-21 defines Halogen-Free)

No.	Substances	Details (Criteria)	CAS Number
1	Bromine (Br)	<900 ppm	7726-95-6
2	Chlorine (Cl)	<900 ppm	7782-50-5
3	Total concentration of Bromine (Br)+ Chlorine (Cl)	<1500 ppm	----

PROPRIETARY MATERIAL

| 銅與銅合金 | | 鋁與鋁合金 | | 不銹鋼 | | 鋼帶 | | 特殊金屬 | | 銅排 |

銅及銅合金

Copper and copper alloy

品名 Trade Name	種類 Alloy Number	化學成份 Chemical Composition (%)									
		Cu	Pb	Fe	Sn	Zn	Be	Mn	Ni	P	Cu+Sn+P
韌煉銅 Tough-pitch Copper	C1020	99.96以上	—	—	—	—				—	—
	C1100	99.90以上	—	—	—	—				—	—
磷脫酸銅 Phosphorus Deoxidized Copper	C1201	99.90以上	—	—	—	—				0.004~0.015	
	C1220	99.90以上	—	—	—	—				0.015~0.040	—
黃銅 Brass	C2600	68.5~71.5	0.07以下	0.05以下	—	剩餘				—	—
	C2680	64.0~68.0	0.07以下	0.05以下	—	剩餘				—	—
	C2801	59.0~62.0	0.10以下	0.07以下	—	剩餘				—	—
磷青銅 Phosphor Bronze	C5191	—	—	—	5.5~7.0	—	—			0.03~0.35	99.5以上
	C5210	—	0.05以下	0.10以下	7.0~9.0	0.2以下	—	—	—	0.03~0.35	99.7以上
洋白板 Nickel Silver	C7521	61.0~67.0	0.10以下	0.25以下	—	剩餘		0~0.5	16.5~19.5	—	—
	C7701	54.0~58.0	0.10以下	0.25以下	—	剩餘		0~0.5	16.5~19.5	—	—
鈹銅 Copper-Beryllium Alloy								Ni+Co	Ni+Co+Fe		Cu+Be+Ni+Co+Fe
	C1720	—	—	—	—	—	1.8~2.0	0.2以上	0.6以下	—	99.5以上

測試報告 Test Report

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大同股份有限公司桃園電線電纜事業部
TATUNG CO.WIRE AND CABLE BUSINESS UNIT
桃園縣大園鄉內海村民生路106號



106, MIN-SHENG RD., NEIHAI VILLAGE, TA-YUAN, TAOYUAN COUNTY, TAIWAN, 337, R. O. C.

以下測試樣品係由客戶送樣，且由客戶聲稱並經客戶確認如下 (The following samples was/were submitted and identified by/on behalf of the client as) :

樣品名稱(Sample Description)	: COPPER WIRE (銅線)
樣品型號(Style/Item No.)	: COPPER WIRE (銅線)
買主/訂單號碼(Buyer/Order No.)	: 大同股份有限公司桃園電線電纜事業部 (TATUNG CO.WIRE AND CABLE BUSINESS UNIT)
生產或供應廠商(Manufacturer/Vendor)	: 大同股份有限公司桃園電線電纜事業部 (TATUNG CO.WIRE AND CABLE BUSINESS UNIT)
生產或供應廠商(Manufacturer/Vendor)	: 大同股份有限公司桃園電線電纜事業部 (TATUNG CO.WIRE AND CABLE BUSINESS UNIT)
收件日期(Sample Receiving Date)	: 2012/01/10
測試期間(Testing Period)	: 2012/01/10 TO 2012/01/19

=====
測試結果(Test Results) : 請見下一頁 (Please refer to next pages).


James Lu / Supervisor
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory – Taipei



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測試報告 Test Report

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大同股份有限公司桃園電線電纜事業部
TATUNG CO.WIRE AND CABLE BUSINESS UNIT
桃園縣大園鄉內海村民生路106號



106, MIN-SHENG RD., NEIHAI VILLAGE, TA-YUAN, TAOYUAN COUNTY, TAIWAN, 337, R. O. C.

測試結果(Test Results)

測試部位(PART NAME) No.1 : 銅色金屬 (COPPER COLORED METAL)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)
				No.1
銅 / Copper (Cu)	%	餘量 / Balance	-	99.99
硫 / Sulfur (S)	%	參考ASTM E1019方法, 以碳硫分析儀檢測. / With reference to ASTM E1019 method and performed by Carbon and Sulfur analyzer.	0.0009	n.d.
碳 / Carbon (C)	%	參考ASTM E1019方法, 以碳硫分析儀檢測. / With reference to ASTM E1019 method and performed by Carbon and Sulfur analyzer.	0.005	n.d.
銀 / Silver (Ag)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分 析 / ICP-AES after as per acid digestion.	2	10
鋁 / Aluminum (Al)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分 析 / ICP-AES after as per acid digestion.	2	n.d.
砷 / Arsenic (As)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分 析 / ICP-AES after as per acid digestion.	2	n.d.
金 / Gold (Au)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分 析 / ICP-AES after as per acid digestion.	2	n.d.
硼 / Boron (B)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分 析 / ICP-AES after as per acid digestion.	2	n.d.
鋇 / Barium (Ba)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分 析 / ICP-AES after as per acid digestion.	2	n.d.
鈹 / Beryllium (Be)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分 析 / ICP-AES after as per acid digestion.	2	n.d.
鉍 / Bismuth (Bi)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分 析 / ICP-AES after as per acid digestion.	2	n.d.
鈣 / Calcium (Ca)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分 析 / ICP-AES after as per acid digestion.	2	n.d.
鎘 / Cadmium (Cd)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分 析 / ICP-AES after as per acid digestion.	2	n.d.
鈷 / Cobalt (Co)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分 析 / ICP-AES after as per acid digestion.	2	n.d.

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測試報告 Test Report

號碼(No.) : CM/2012/10132 日期(Date) : 2012/01/19 頁數(Page) : 3 of 6

大同股份有限公司桃園電線電纜事業部
TATUNG CO.WIRE AND CABLE BUSINESS UNIT
桃園縣大園鄉內海村民生路106號



106, MIN-SHENG RD., NEIHAI VILLAGE, TA-YUAN, TAOYUAN COUNTY, TAIWAN, 337, R. O. C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)
				No.1
鉻 / Chromium (Cr)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鐳 / Dysprosium (Dy)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鐵 / Iron (Fe)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	6
鎵 / Gallium (Ga)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鍺 / Germanium (Ge)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
汞 / Mercury (Hg)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
銦 / Indium (In)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鉀 / Potassium (K)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鋰 / Lithium (Li)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鎂 / Magnesium (Mg)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
錳 / Manganese (Mn)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鉬 / Molybdenum (Mo)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鈉 / Sodium (Na)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	4
鈮 / Niobium (Nb)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
釹 / Neodymium (Nd)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鎳 / Nickel (Ni)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.

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測試報告 Test Report

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大同股份有限公司桃園電線電纜事業部
TATUNG CO. WIRE AND CABLE BUSINESS UNIT
桃園縣大園鄉內海村民生路106號



106, MIN-SHENG RD., NEIHAI VILLAGE, TA-YUAN, TAOYUAN COUNTY, TAIWAN, 337, R. O. C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)
				No.1
磷 / Phosphorus (P)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鉛 / Lead (Pb)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鈹 / Palladium (Pd)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鉑 / Platinum (Pt)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
銦 / Rhodium (Rh)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鈳 / Ruthenium (Ru)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
銻 / Antimony (Sb)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
釷 / Scandium (Sc)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
硒 / Selenium (Se)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
矽 / Silicon (Si)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	3
錫 / Tin (Sn)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
銣 / Strontium (Sr)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鉭 / Tantalum (Ta)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
銻 / Tellurium (Te)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鈦 / Titanium (Ti)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鉈 / Thallium (Tl)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.

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測試報告

Test Report

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大同股份有限公司桃園電線電纜事業部
TATUNG CO.WIRE AND CABLE BUSINESS UNIT
桃園縣大園鄉內海村民生路106號



106, MIN-SHENG RD., NEIHAI VILLAGE, TA-YUAN, TAoyUAN COUNTY, TAIWAN, 337, R. O. C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)
				No.1
釩 / Vanadium (V)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鎢 / Tungsten (W)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鈮 / Yttrium (Y)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鋅 / Zinc (Zn)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	8
鋯 / Zirconium (Zr)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.
鐳 / Lanthanum (La)	mg/kg	以酸液消化以感應耦合電漿原子發射光譜儀做分析 / ICP-AES after as per acid digestion.	2	n.d.

備註(Note) :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected (未檢出)
3. MDL = Method Detection Limit (方法偵測極限值)
4. "-" = Not Regulated (無規格值)

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測試報告 Test Report

號碼(No.) : CM/2012/10132 日期(Date) : 2012/01/19 頁數(Page) : 6 of 6

大同股份有限公司桃園電線電纜事業部
TATUNG CO.WIRE AND CABLE BUSINESS UNIT
桃園縣大園鄉內海村民生路106號



106, MIN-SHENG RD., NEIHAI VILLAGE, TA-YUAN, TAoyUAN COUNTY, TAIWAN, 337, R. O. C.

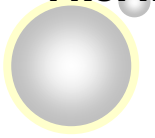
* 照片中如有箭頭標示，則表示為實際檢測之樣品/部位。*
(The tested sample / part is marked by an arrow if it's shown on the photo.)

CM/2012/10132



** 報告結尾(End of Report) **

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PROPRIETARY MATERIAL

Champs Technologies

Payton P.N. 23-160-0120

One Component, Low Temperature Curing High strength Epoxy adhesive

Product Description

23-160-0120 is a one component, slightly thixotropic, solventless epoxy adhesive, It develops high bond strength when curing at temperature as low as 100 degree C to 130 degree C.

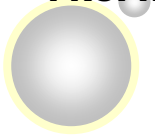
This epoxy combines flexibility at low temperature (-30 degree C) plus high peel and tensile shear strength over a very broad temperature range.

Application

Ferrite gluing for Planar transformer.

Properties of Material

Property	Test Method	Unit	Value
Chemistry			Epoxy
Appearance	Visual		Black
Density	ASTM-D-792	G/cm**3	1,17 – 1,23
Viscosity at 25 degree C	ASTM-D-2393	Pa.s	95-120



PROPRIETARY MATERIAL

Champs Technologies

Cure Schedule

Cure Temperature (degree C)	Cure Time (Min)
100	90
120	30
150	20

Properties of Material after Application

Property	Test Method	Unit	Value
Hardness	ASTM-D-2240 at 25 degree C	Shore D	75 minimum
	at 120 degree C	Shore D	30 minimum
Volume Resistivity	ASTM-D-257 at 25 degree C	Ohm.cm	6 x 10 **14
Tensile Lap Shear Strength	ASTM-D-1002 at 25 degree C (Al/Al)	MPa	20 minimum
Mandrel Bend Test at -30 degree C, 180 degree C Bend on 2,5 cm Mandrel, 0.2 mm film	ASTM-D-4338	Pa.s	Adhesive does not crack or separate from substrate

**Service Temperature -40 degree ~ 150 degree

Storage and Handling

Store the epoxy in a cool area to maintain initial sag resistance and flow properties as mentioned herewith. Store in unopened containers for maximum shelf life, shelf life, Shelf life is extended at lower temperature prior to use.

Storage Temperature 0 to 8 degree C

Usable Shelf Life : 6 month

Test Report

No. SH8032388/CHEM

Date: Mar. 19, 2008

Page 1 of 4

ABLESTIK (SHANGHAI) LTD.
NO.332 MEIGUI SOUTH RD. WAIGAOQIAO FREE TRADE ZONE, SHANGHAI

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

Sample Name : ECCOBOND 2332
SGS Ref No. : 10891497-33
Main substance : EPOXY RESIN
Supplier : EMERSON & CUMING

Sample Receiving Date : Mar.14, 2008
Testing Period : Mar.14 – 18, 2008

Test Requested : In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.

Test Method : (1) With reference to IEC 62321/2nd CDV (111/95/CDV) for Cadmium content.
Analysis was performed by ICP.
(2) With reference to IEC 62321/2nd CDV (111/95/CDV) for Lead content.
Analysis was performed by ICP.
(3) With reference to IEC 62321/2nd CDV (111/95/CDV) for Mercury content.
Analysis was performed by ICP.
(4) With reference to IEC 62321/2nd CDV (111/95/CDV) for Hexavalent Chromium by Colorimetric Method.
(5) With reference to IEC 62321/2nd CDV (111/95/CDV) for PBBs / PBDEs content.
Analysis was performed by GC/MS.

Test Results : Please refer to next pages

Signed for and on behalf of
SGS-CSTC Chemical Laboratory



Ella Zhang
Section Manager

Signed for and on behalf of
SGS-CSTC Chemical Laboratory



Sandy Hao
Lab Manager

Test Report

No. SH8032388/CHEM

Date: Mar. 19, 2008

Page 2 of 4

Test results by chemical method (Unit: mg/kg)

Test Item(s):	Method (refer to)	1	MDL	RoHS Limit
Cadmium(Cd)	(1)	ND	2	100
Lead (Pb)	(2)	ND	2	1000
Mercury (Hg)	(3)	ND	2	1000
Hexavalent Chromium (CrVI)	(4)	ND	2	1000
Sum of PBBs	(5)	ND	-	1000
Monobromobiphenyl		ND	5	-
Dibromobiphenyl		ND	5	-
Tribromobiphenyl		ND	5	-
Tetrabromobiphenyl		ND	5	-
Pentabromobiphenyl		ND	5	-
Hexabromobiphenyl		ND	5	-
Heptabromobiphenyl		ND	5	-
Octabromobiphenyl		ND	5	-
Nonabromobiphenyl		ND	5	-
Decabromobiphenyl		ND	5	-
Sum of PBDEs (Note 4)		ND	-	1000
Monobromodiphenyl ether		ND	5	-
Dibromodiphenyl ether		ND	5	-
Tribromodiphenyl ether		ND	5	-
Tetrabromodiphenyl ether		ND	5	-
Pentabromodiphenyl ether		ND	5	-
Hexabromodiphenyl ether		ND	5	-
Heptabromodiphenyl ether		ND	5	-
Octabromodiphenyl ether		ND	5	-
Nonabromodiphenyl ether	ND	5	-	
Decabromodiphenyl ether	ND	5	-	
Sum of PBDEs (Mono to Deca)	ND	-	-	

(Result shown is of the total weight of dried sample)

Test Part Description:

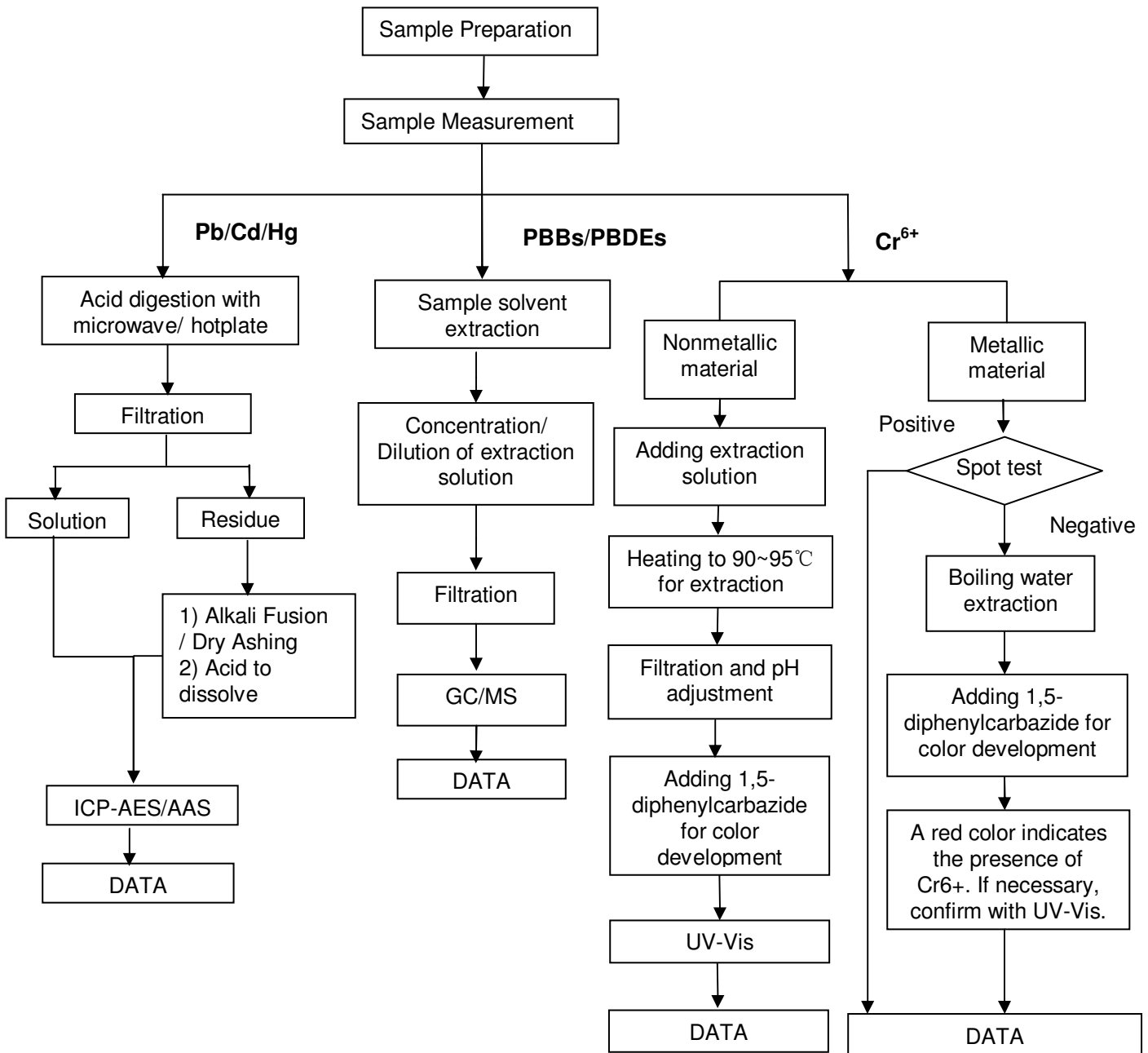
1. Black mud

Note:

- (1) mg/kg = ppm
- (2) ND = Not Detected
- (3) MDL = Method Detection Limit
- (4) Sum of Mono to NonaBDE & according to 2005/717/EC DecaBDE is exempt.
- (5) "-" = Not Regulated
- (6) The maximum permissible limit is quoted from the document 2005/618/EC amending RoHS directive 2002/95/EC

ATTACHMENTS

- 1) Name of the person who made measurement: Cathy Cai/George Xu/Diane Wang
- 2) Name of the person in charge of measurement: Terry Wang/Tracy Yue
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ and PBBs/PBDEs test method excluded)



Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

Sn/Ag/Cu 焊錫棒

出版日期: 2001.11.21.

- 一. 品名: Sn/Ag/Cu 焊錫棒, 包括 SAC305(Sn96.5/Ag3.0/Cu0.5)及 SAC405(Sn95.5/Ag4.0/Cu0.5)。
- 二. 適用範圍: 本產品為 Sn/Ag/Cu 合金製品, 適用於電子產品無鉛焊接製程。
- 三. 合金成份:

	SAC305 Sn96.5/Ag3.0/Cu0.5	SAC405 Sn95.5/Ag4.0/Cu0.5
Sn	餘量(96.5%)	餘量(95.5%)
Ag	3.0%± 0.2%	4.0%± 0.2%
Cu	0.5%± 0.1%	0.5%± 0.1%
Bi	≤0.10%	
Pb	≤0.10%	
Sb	≤0.10%	
Zn	≤0.001%	
Al	≤0.001%	
As	≤0.030%	
Cd	≤0.002%	
In	≤0.050%	
Fe	≤0.020%	
Ni	≤0.010%	
其它雜質總合	≤0.080%	

四. 合金特性:

	SAC305	SAC405
熔點	215°C~218°C	215°C~218°C
比重	7.42	7.44
TCE	23 μ m/m°C	23 μ m/m°C

五. 單品尺寸:

1. 形狀: 棒狀
2. 尺寸: 寬約 2.4cm, 長約 33.5cm
3. 重量: 每支約 1kg

六. 包裝與識別:

1. 材料: 紙盒
2. 尺寸: 38cm× 18cm× 7cm
3. 淨重: 20kg(± 0.05kg)
4. 標示: 品名、批號、淨重、料號

七. 保存期限: 以 0°C ~43°C 儲存, 保存期限為三年。

八. 安全注意事項: 作業後、飲食前須用肥皂水洗手。其他安全相關事項請參考物質安全資料表。

測試報告 Test Report

號碼(No.): CE/2010/23245

日期(Date): 2010/02/25

頁數(Page): 1 of 4

阿爾發金屬化工股份有限公司

ALPHA METALS TAIWAN INC.

桃園縣蘆竹鄉南山路二段100巷4號

NO. 4, LANE 100, SEC. 2, NAN SHAN RD., LU-CHU HSIANG, 338 TAOYUAN, TAIWAN



以下測試樣品係由客戶送樣，且由客戶聲稱並經客戶確認如下 (The following samples was/were submitted and identified by/on behalf of the client as):

樣品名稱(Sample Description) : Sn/Ag/Cu SOLDER, INCLUDING SAC305、SAC405、SAC0307、SAC0507、SAC387、Sn98.5/Ag1/Cu0.5、Sn97/Ag1/Cu2、Sn95/Ag1/Cu4、Sn97.5/Ag2/Cu0.5、Sn95.8/Ag3.5/Cu0.7、FLO-TEMP CAST BAR、FLO-TEMP LOW Cu/Ag BAR, LOT:00205063T
錫/銀/銅 焊錫, 包括: SAC305、SAC405、SAC0307、SAC0507、SAC387、Sn98.5/Ag1/Cu0.5、Sn97/Ag1/Cu2、Sn95/Ag1/Cu4、Sn97.5/Ag2/Cu0.5、Sn95.8/Ag3.5/Cu0.7、FLO-TEMP CAST BAR、FLO-TEMP LOW Cu/Ag BAR, LOT:00205063T

收件日期(Sample Receiving) : 2010/02/12
測試期間(Testing Period) : 2010/02/12 TO 2010/02/25

=====
測試需求(Test Requested) : 參照 RoHS 2002/95/EC 及其修定指令要求。(In accordance with the RoHS Directive 2002/95/EC, and its amendment directives).
測試方法(Test Method) : 參考 IEC 62321: 2008 方法檢測。(With reference to IEC 62321: 2008. Procedures for the Determination of Levels of Regulated Substances in Electrotechnical Products).
(1) 以感應耦合電漿原子發射光譜儀檢測鎘含量。 / Determination of Cadmium by ICP-AES.
(2) 以感應耦合電漿原子發射光譜儀檢測鉛含量。 / Determination of Lead by ICP-AES.
(3) 以感應耦合電漿原子發射光譜儀檢測汞含量。 / Determination of Mercury by ICP-AES.
(4) 以 Spot test / boiling water extraction 方法檢測六價鉻含量。 / Determination of Hexavalent Chromium by Spot test / boiling water extraction Method.

測試結果(Test Results) : 請見下一頁 (Please refer to next pages).

結論(Conclusion) : 根據客戶所提供的樣品，其鎘、鉛、汞及六價鉻的測試結果符合RoHS(2002/95/EC)及其修定指令之要求 (Based upon the performed tests by submitted samples, the test results of Cadmium, Lead, Mercury and Hexavalent Chromium Cr(VI) **comply with** the limits of RoHS Directive 2002/95/EC and its subsequent amendments).


Nicole Chien / Supervisor
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

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測試報告 Test Report

號碼(No.): CE/2010/23245

日期(Date): 2010/02/25

頁數(Page): 2 of 4

阿爾發金屬化工股份有限公司

ALPHA METALS TAIWAN INC.

桃園縣蘆竹鄉南山路二段100巷4號

NO. 4, LANE 100, SEC. 2, NAN SHAN RD., LU-CHU HSIANG, 338 TAOYUAN, TAIWAN



測試結果(Test Results) 單位(Unit): mg/kg

測試項目 (Test Items)	測試方法 Method (Refer to)	結果 (Result)	方法偵測 極限值 (MDL)	RoHS 限值 (Limit)
		No.1		
鎘 / Cadmium (Cd)	(1)	n.d.	2	100
鉛 / Lead (Pb)	(2)	41	2	1000
汞 / Mercury (Hg)	(3)	n.d.	2	1000
六價鉻 / Hexavalent Chromium Cr(VI) by Spot test / boiling water extraction	(4)	Negative	See Note 4	#

測試部位描述 (TEST PART DESCRIPTION):

NO.1 : 銀色金屬 (SILVER COLORED METAL)

備註(Note):

1. mg/kg = ppm; 0.1wt% = 1000ppm
2. n.d. = Not Detected (未檢出)
3. MDL = Method Detection Limit (方法偵測極限值)
4. Spot-test:

Negative = Absence of Cr(VI) coating / surface layer(鍍層中偵測不到六價鉻),
Positive = Presence of Cr(VI) coating / surface layer(鍍層中偵測到六價鉻);
The tested sample should be further verified by boiling-water-extraction method if the spot test result cannot be confirmed.

(當該測項無法確認時, 測試樣品可藉由boiling-water-extraction測試方法進一步確認)

Boiling-water-extraction:

Negative = Absence of Cr(VI) coating / surface layer(鍍層中偵測不到六價鉻),
Positive = Presence of Cr(VI) coating / surface layer(鍍層中偵測到六價鉻);
the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² sample surface area.
該溶液濃度 ≥ 0.02 mg/kg with 50 cm² (sample surface area)

5. # = Positive indicates the presence of Cr(VI) on the tested areas and result be regarded as not comply with RoHS requirement. (Positive表示測試區域之六價鉻不符合RoHS要求)
Negative indicates the absence of Cr(VI) on the tested areas and result be regarded as comply with RoHS requirement. (Negative表示測試區域之六價鉻符合RoHS要求)

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號碼(No.): CE/2010/23245

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阿爾發金屬化工股份有限公司

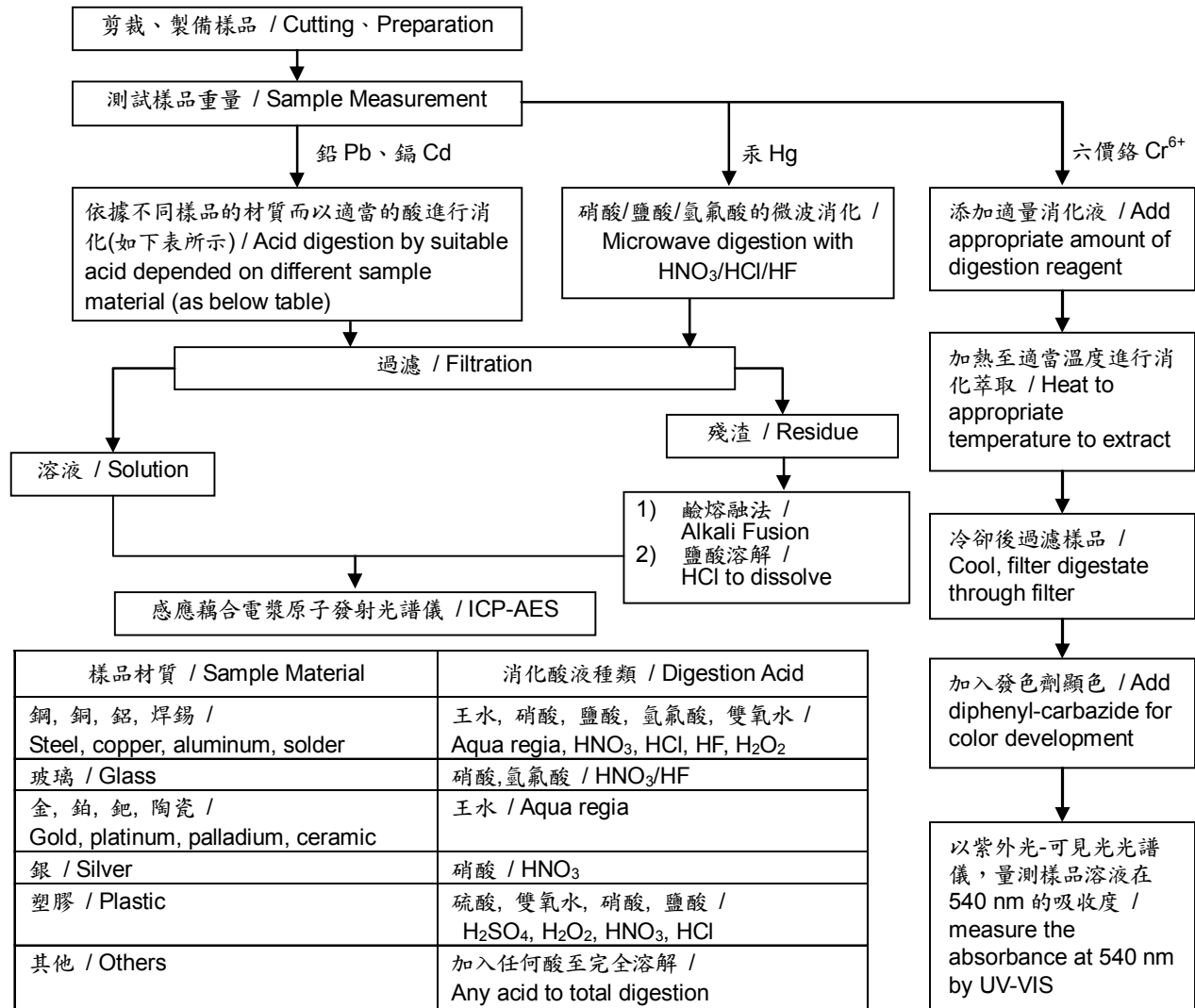
ALPHA METALS TAIWAN INC.

桃園縣蘆竹鄉南山路二段100巷4號

NO. 4, LANE 100, SEC. 2, NAN SHAN RD., LU-CHU HSIANG, 338 TAOYUAN, TAIWAN



- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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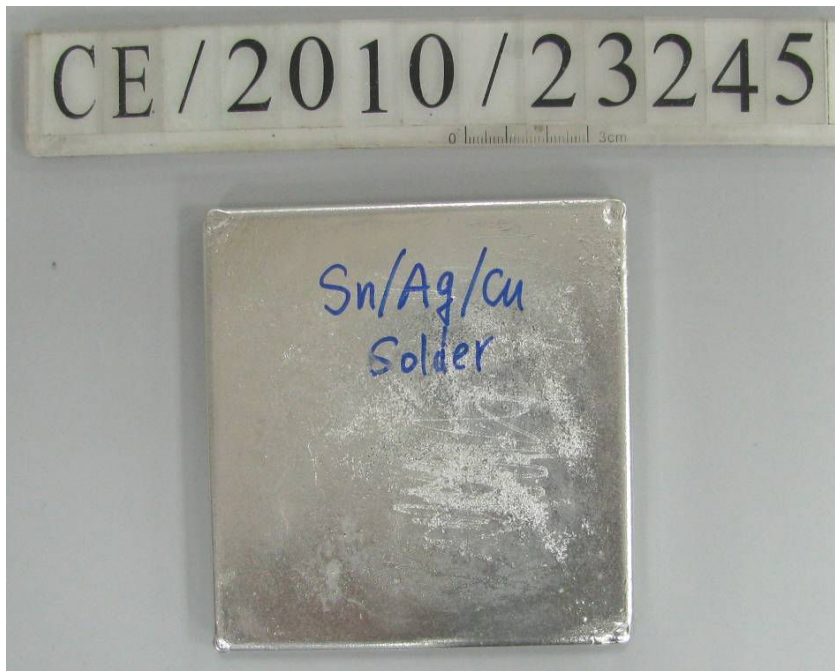
頁數(Page): 4 of 4

阿爾發金屬化工股份有限公司

ALPHA METALS TAIWAN INC.

桃園縣蘆竹鄉南山路二段100巷4號

NO. 4, LANE 100, SEC. 2, NAN SHAN RD., LU-CHU HSIANG, 338 TAOYUAN, TAIWAN



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Champs Technology

ECO-Declaration

Directive on the Restriction of the uses of certain Hazardous Substances in electrical and electronic equipment. The RoHS directive (RoHS 2002/95/EC) will be valid in the EC from July 1st, 2006
Lead (Pb), Hg, Cd, Cr and flame retardants PBBs, PBDEs, PBDEs in all electrical and Electronics equipment will be prohibited from July 1st, 2006.

Champs Technologies Co. fully understands international environmental policies and principles, and hereby declares that we will will make every effort to comply with international environmental laws and regulations, , monitor carefully our products and manufacturing processes, use no restricted or banned materials or chemical substances, and provide lead-free and Eco-label materials, components, products and packing which meet the standards set up by laws, regulations and other organizations . If our company acts contrary to the above declaration.

Currently, our company is following the EU ECO-LAW, which requires the body of components contains less than 100 ppm lead, 5 ppm cadmium, mercury, Hexavalent chromium, PBB, PBDE, and the solder contains less than 1000 ppm lead

為符合國際環保政策及對環境保護的原則，赫能暢電股份有限公司(以下簡稱“本公司”)基於此職責 環境保護的重視下，本公司的各項產品及製造過程方面，均遵守國際環境保護法律的規範，努力達成國際環保要求之標準，並有效管理本公司自我生產品質及製程，保證所提供之環保材料及零件，符合法規及其他社團要求。

因應歐盟要求，就零件本體，鉛含量低於 100ppm，鎘、汞、六價鉻、聚溴聯苯及聚溴聯苯醚含量低於 5ppm，及焊錫鉛含量低於 1000ppm 以上的要求為標準，本公司希望提供符合客戶所需的環保產品。

James Lee

President

Champs Technologies Co. Ltd.



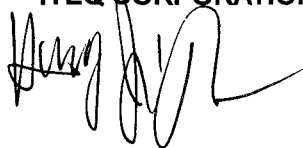
**Report on Environmental Impact Substances
Contained in Products (for REACH Regulation)**

To: Customer

ITEQ CORPORATION confirms that its products does not contain substance on 139Candidate List (SVHC, 2013/06/20). Furthermore, the concentration of 5 new Substance of Very High Concern (SVHC, MAR 2010) exists less than 0.1%(w/w) in our products. The substances refer to the current SVHC candidate list being published by ECHA (European Chemicals Agency)

Corporate name: ITEQ CORPORATION

Responsible Person:



(person responsible for environmental control)

REACH candidate list of 139 SVHC substance

Item	高關注物質 SVHC	CAS No.	EC No.
1	蒽 Anthracene	120-12-7	204-371-1
2	4,4'-二氨基二苯甲烷 4,4'-Diaminodiphenylmethane	101-77-9	202-974-4
3	氯化鈷 Cobalt dichloride	7646-79-9	231-589-4
4	五氧化二砷 Diarsenic pentaoxide	1303-28-2	215-116-9
5	三氧化二砷 Diarsenic trioxide	1327-53-3	215-481-4
6	重鉻酸鈉 . 二倍結晶水 Sodium dichromate	7789-12-0	234-190-3
7	5-叔丁基-2,4,6-三硝基間二甲苯 5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	201-329-4
8	鄰苯二甲酸二丁酯 Dibutyl Phthalate (DBP)	84-74-2	201-557-4
9	鄰苯二甲酸二(2-乙基己基)酯 Bis (2-ethyl(hexyl))phthalate) (DEHP)	117-81-7	204-211-0
10	鄰苯二甲酸丁酯苯甲酯 Benzyl butyl phthalate (BBP)	85-68-7	201-622-7
11	六溴環十二烷&環十二烷 Hexabromocyclododecane (HBCDD) & Cyclododecane	25637-99-4/294-62-2	247-148-4
12	短鏈氯化石蠟 Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (SCCPs)	85535-84-8	287-476-5
13	氧化三丁錫 Bis(tributyltin) oxide (TBTO)	56-35-9	200-268-0
14	砷酸氫鉛 Lead hydrogen arsenate	7784-40-9	232-064-2
15	三乙基砷酸酯 Triethyl arsenate	15606-95-8	427-700-2
16	蒽油 Anthracene oil	90640-80-5	292-602-7
17	蒽油, 蒽糊, 輕油 Anthracene oil, anthracene paste, distn. Lights	91995-17-4	295-278-5

18	蒽油, 蒽糊, 輕餾分離液 Anthracene oil, anthracene paste, anthracene fraction	91995-15-2	295-275-9
19	蒽油, 含蒽量少 Anthracene oil, anthracene-low	90640-82-7	292-604-8
20	蒽油, 蒽糊 Anthracene oil, anthracene paste	90640-81-6	292-603-2
21	煤瀝青, 高溫 Coal tar pitch, high temperature	65996-93-2	266-028-2
22	丙烯醯胺 Acrylamide	79-06-1	201-173-1
23	矽酸鋁, 陶瓷耐火纖維 Aluminosilicate, Refractory Ceramic Fibres	-	Index no. / 650-017-00-8
24	矽酸鋁, 氧化鋯, 陶瓷耐火纖維 Zirconia Aluminosilicate, Refractory Ceramic Fibres	-	Index no. / 650-017-00-8
25	2,4-二硝基甲苯 2,4-Dinitrotoluene	121-14-2	204-450-0
26	鄰苯二甲酸二異丁酯 Diisobutyl phthalate (DIBP)	84-69-5	201-553-2
27	鉻酸鉛 Lead chromate	7758-97-6	231-846-0
28	紅色鉬鉻鉛硫酸鹽 Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	12656-85-8	235-759-9
29	黃色硫化鉻酸鉛 Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	215-693-7
30	三-(2-(氯乙基)磷酸酯) Tris(2-chloroethyl)phosphate	115-96-8	204-118-5
31	三氯乙烯 Trichloroethylene	79-01-6	201-167-4
32	鉻酸鈉 Sodium chromate	7775-11-3	231-889-5
33	鉻酸鉀 Potassium chromate	7789-00-6	232-140-5
34	重鉻酸銨 Ammonium dichromate	7789-09-5	232-143-1
35	重鉻酸鉀 Potassium dichromate	7778-50-9	231-906-6
36	2-乙氧基乙醇(乙二醇乙醚; 乙二醇 monoethyl ether)	110-80-5	203-804-1
37	甲氧基乙醇 2-Methoxyethanol (ethylene glycol monomethyl ether)	109-86-4	203-713-7
38	鉻酸及鉻酸低聚物 Acids generated from chromium trioxide and their oligomers (Chromic acid)	7738-94-5	231-801-5
39	三氧化鉻 Chromium trioxide (Chromium (VI) trioxide)	1333-82-0	215-607-8
40	碳酸鈷 Cobalt(II) carbonate	513-79-1	208-169-4
41	乙酸鈷 Cobalt(II) diacetate	71-48-7	200-755-8
42	硝酸鈷 Cobalt(II) dinitrate	10141-05-6	233-402-1
43	硫酸鈷 Cobalt(II) sulphate (Cobalt sulphate)	10124-43-3	233-334-2
44	乙酸-2-乙氧基乙酯 2-ethoxyethyl acetate	111-15-9	203-839-2
45	鉻酸鋇 Strontium chromate	7789/6/2	232-142-6
46	鄰苯二甲酸二(C7-11 支鏈與直鏈)烷基酯 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNU)	68515-42-4	271-084-6
47	肼 Hydrazine	7803-57-8 / 302-01-2	206-114-9
48	N-甲基吡咯烷酮 1-methyl-2-pyrrolidone	872-50-4	212-828-1
49	1,2,3-三氯丙烷 1,2,3-trichloropropane	96-18-4	202-486-1
50	鄰苯二甲酸二(C6-8 支鏈與直鏈)烷基酯 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	276-158-1

51	氫氧化鉻酸鋅鉀 (Potassium hydroxyoctaoxodizincatedi-chromate)	11103-86-9	234-329-8
52	氫氧化鉻酸鋅 (Pentazinc chromate octahydroxide (C.I.顏料黃 36))	49663-84-5	256-418-0
53	甲醛和苯胺的寡聚反應物 (Formaldehyde, oligomeric reaction products with aniline (technical MDA))	25214-70-4	500-036-1
54	鄰苯二甲酸雙(2-甲氧基乙基)酯 (Bis(2-methoxyethyl) phthalate)	117-82-8	204-212-6
55	鄰甲氧基苯胺 (2-Methoxyaniline; o-Anisidine)	90-04-0	201-963-1
56	對特辛基苯酚/辛基酚 (4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol))	140-66-9	205-426-2
57	1,2-二氯乙烷 (1,2-Dichloroethane)	107-06-2	203-458-1
58	雙(2-甲氧基乙基)醚 (Bis(2-methoxyethyl) ether)	111-96-6	203-924-4
59	砷酸 (Arsenic acid)	7778-39-4	231-901-9
60	砷酸鈣 (Calcium arsenate)	7778-44-1	231-904-5
61	砷酸鉛 (Trilead diarsenate)	3687-31-8	222-979-5
62	N,N-二甲基乙醯胺 (N,N-dimethylacetamide (DMAC))	127-19-5	204-826-4
63	2,2'-二氯-4,4'-二氨基二苯基甲烷 (2,2'-dichloro-4,4'-methylenedianiline (MOCA))	101-14-4	202-918-9
64	酚酞 (Phenolphthalein)	77-09-8	201-004-7
65	疊氮化鉛 (Lead azide Lead diazide)	13424-46-9	236-542-1
66	收斂酸鉛 斯蒂酚酸鉛 (Lead styphnate)	15245-44-0	239-290-0
67	苦味酸鉛 (Lead dipicrate)	6477-64-1	229-335-2
68	鉻酸鉻 (Dichromium tris(chromate))	24613-89-6	246-356-2
69	三甘醇二甲醚 (1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme))	112-49-2	203-977-3
70	乙二醇二甲醚 (1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME))	110-71-4	203-794-9
71	甲醯胺 (Formamide)	75-12-7	200-842-0
72	甲基磺酸鉛 (Lead(II) bis(methanesulfonate))	17570-76-2	401-750-5
73	異氰尿酸三縮水甘油酯 (TGIC(1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione))	2451-62-9	219-514-3
74	異氰尿酸 β-三縮水甘油酯 (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
75	4,4'-二(N,N-二甲氨基)二苯甲酮 (米氏酮) (4,4'-bis(dimethylamino)benzophenone (Michler's ketone))	90-94-8	202-027-5
76	4,4'-(對二甲氨基)二苯基甲烷 (米氏鹼) (N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base))	101-61-1	202-959-2
77	鹼性紫 3 ([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
78	鹼性藍 26 (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
79	溶劑藍 4 (a,a-Bis[4-(dimethylamino)phenyl]-4-(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4))	6786-83-0	229-851-8
80	a,a-二[(二甲氨基)苯基]-4-甲氨基苯甲醇 (4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol)	561-41-1	209-218-2
81	十溴二苯醚 Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	214-604-9
82	全氟十三酸 Pentacosafuorotridecanoic acid	72629-94-8	276-745-2

83	全氟十二酸 Tricosaf luorododecanoic acid	307-55-1	206-203-2
84	全氟十一酸 Henicosaf luoroundecanoic acid	2058-94-8	218-165-4
85	全氟十四酸 Heptacosaf luorotetradecanoic acid	376-06-7	206-803-4
86	乙氧化 4-(1,1,3,3-四甲基丁基)苯酚 涵蓋明確定義物質及 UVCB 物質、聚合物及同系物 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated -covering well-defined substances and UVCB substances, polymers and homologues	-	-
87	支鏈和直鏈-4-壬基酚, 有烷基直鏈及/或支鏈以 9 個碳共價於酚的對位, 含蓋所有由單一或多種異構物組合的明確定義物質及 UVCB 物質 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	-	-
88	1,1'-偶氮雙甲醯胺 Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	204-650-8
89	六氫鄰苯二甲酐 Cyclohexane-1,2-dicarboxylic anhydride (Hexahydrophthalic anhydride - HHPA)	85-42-7	201-604-9
90	甲基六氫鄰苯二甲酐, 4-甲基六氫鄰苯二甲酐, 1-甲基六氫鄰苯二甲酐, 3-甲基六氫鄰苯二甲酐 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	247-094-1 243-072-0 256-356-4 260-566-1
91	甲氧基乙酸 Methoxy acetic acid	625-45-6	210-894-6
92	支鏈和直鏈 1,2-苯二甲酸二戊酯 1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	284-032-2
93	鄰苯二甲酸二異戊酯 Diisopentylphthalate (DIPP)	605-50-5	210-088-4
94	鄰苯二甲酸正戊基異戊基酯 N-pentyl-isopentylphthalate	-	-
95	乙二醇二乙醚 1,2-Diethoxyethane	629-14-1	211-076-1
96	二氯化二丁錫 Dibutyltin dichloride (DBT)	683-18-1	211-670-0
97	鹼式乙酸鉛 Acetic acid, lead salt, basic	51404-69-4	257-175-3
98	鹼式碳酸鉛 Basic lead carbonate (trilead bis(carbonate)dihydroxide)	1319-46-6	215-290-6
99	鹼式硫酸鉛 Lead oxide sulfate (basic lead sulfate)	12036-76-9	234-853-7
100	二鹼式鄰苯二甲酸鉛 [Phthalato(2-)]dioxotrilead (dibasic lead phthalate)	69011-06-9	273-688-5
101	雙(十八酸基)二氧三鉛 Dioxobis(stearato)trilead	12578-12-0	235-702-8
102	C16-18-脂肪酸鉛鹽 Fatty acids, C16-18, lead salts	91031-62-8	292-966-7
103	二(四氟硼酸)鉛 Lead bis(tetrafluoroborate)	13814-96-5	237-486-0
104	氰胺化鉛 Lead cyanamidate	20837-86-9	244-073-9
105	硝酸鉛 Lead dinitrate	10099-74-8	233-245-9
106	一氧化鉛 Lead oxide (lead monoxide)	1317-36-8	215-267-0
107	四氧化三鉛(鉛丹) Lead tetroxide (orange lead)	1314-41-6	215-235-6
108	鈦酸鉛(II) Lead titanium trioxide	12060-00-3	235-038-9
109	鉛鈦鉛氧化物 Lead Titanium Zirconium Oxide	12626-81-2	235-727-4
110	硫酸四氧化五鉛 Pentalead tetraoxide sulphate	12065-90-6	235-067-7
111	燒綠石銻鉛黃 Pyrochlore, antimony lead yellow	8012-00-8	232-382-1
112	摻雜鉛的矽酸鋇 Silicic acid, barium salt, lead-doped	68784-75-8	272-271-5
113	矽酸鉛 Silicic acid, lead salt	11120-22-2	234-363-3
114	亞硫酸鉛 Sulfurous acid, lead salt, dibasic	62229-08-7	263-467-1
115	四乙基鉛 Tetraethyllead	78-00-2	201-075-4

116	三鹼式硫酸鉛 Tetralead trioxide sulphate	12202-17-4	235-380-9
117	二鹼式亞磷酸鉛 Trilead dioxide phosphonate	12141-20-7	235-252-2
118	呋喃 Furan	110-00-9	203-727-3
119	環氧丙烷 Propylene oxide; 1,2-epoxypropane; methyloxirane	75-56-9	200-879-2
120	硫酸二乙酯 Diethyl sulphate	64-67-5	200-589-6
121	硫酸二甲酯 Dimethyl sulphate	77-78-1	201-058-1
122	3-乙基-2-甲基-2-(3-甲丁基)-1,3-【口粵】啞 3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	421-150-7
123	達諾殺 Dinoseb	88-85-7	201-861-7
124	4,4'-亞甲基二-鄰-甲苯胺 4,4'-methylenedi-o-toluidine	838-88-0	212-658-8
125	4,4'-氧二苯胺及其鹽類 4,4'-oxydianiline and its salts	101-80-4	202-977-0
126	4-胺基偶氮苯 4-Aminoazobenzene; 4-Phenylazoaniline	60-09-3	200-453-6
127	4-甲基-間-苯二胺 (2,4-二胺基甲苯)	95-80-7	202-453-1
128	6-甲氧基-間-甲苯胺 6-methoxy-m-toluidine (p-cresidine)	120-71-8	204-419-1
129	4-胺基聯苯 Biphenyl-4-ylamine	92-67-1	202-177-1
130	鄰-胺基偶氮甲苯 o-aminoazotoluene	97-56-3	202-591-2
131	鄰-甲苯胺 o-Toluidine; 2-Aminotoluene	95-53-4	202-429-0
132	N-甲基乙醯胺 N-methylacetamide	79-16-3	201-182-6
133	1-溴丙烷 1-bromopropane; n-propyl bromide	106-94-5	203-445-0
134	鎘 Cadmium	7440-43-9	231-152-8
135	氧化鎘 Cadmium oxide	1306-19-0	215-146-2
136	鄰苯二甲酸二正戊酯 Dipentyl phthalate (DPP)	131-18-0	205-017-9
137	乙氧基化的支鏈和直鏈的 4-壬基酚(直鏈和/或支鏈的具有 9 個碳原子的 烷基鏈共價鍵合在 4 位的乙氧基酚, 囊括了 UVCB 和定義明確的物質, 聚合物及同系物, 其中包括任何單獨的異構體和/或它們的組合) 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]		
138	全氟辛酸銨(APFO) Ammonium pentadecafluorooctanoate	3825-26-1	223-320-4
139	全氟辛酸(PFOA) Pentadecafluorooctanoic acid	335-67-1	206-397-9

REACH list of 5 SVHC substances (exists less than 0.1%(w/w) in our products)

1	硼酸 Boric acid	10043-35-3 / 11113-50-1	233-139-2/ 234-343-4
2	無水四硼酸二鈉 Disodium tetraborate anhydrous	1303-96-4/1330-43-4 /12179-04-3	215-540-4
3	水合七氧四硼酸二鈉 Tetraboron disodium heptaoxide, hydrate	12267-73-1	235-541-3
4	三氧化二硼 (Diboron trioxide)	1303-86-2	215-125-8
5	二甲基甲醯胺 N,N-dimethylformamide; dimethyl formamide	68-12-2	200-679-5