YOKE®

APPROVAL SHEET

億威電子(股)公司

Item : S3215C Crystal

Spec. no : S3215C-032768-12-20-EA

Freq : 32.768 KHz

Customer Approved	Checked By	Issued By
		

友桂電子股份有限公司

YOKETAN CORPORATION

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RoHS Compliant

YOKE®

REVISION HISTORY

Rev	Revise page	Revise Contents	Date	Ref.No.	Reviser
A	N/A	INITIAL ISSUE	2011/9/15	N/A	Liz Chu

SPECIFICATION OF CRYSTAL UNITS YOKETAN CORP.

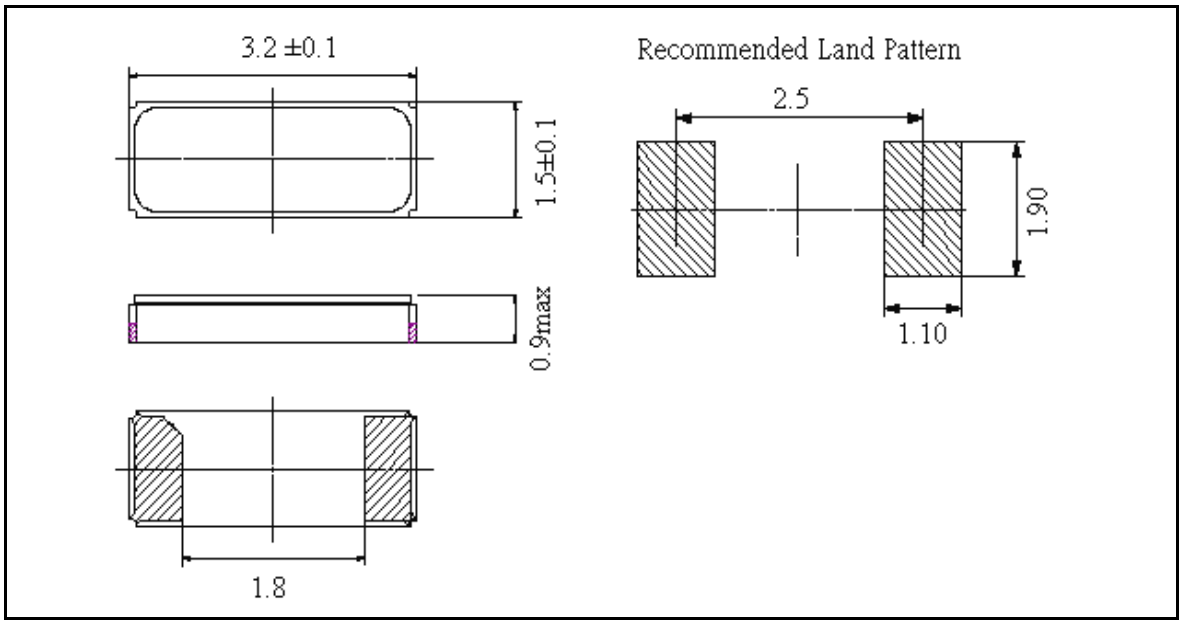
Customer ：億威

SPEC NO : S3215C-032768-12-20-EA
(Lead Free Parts)
Date : 15-Sep-11

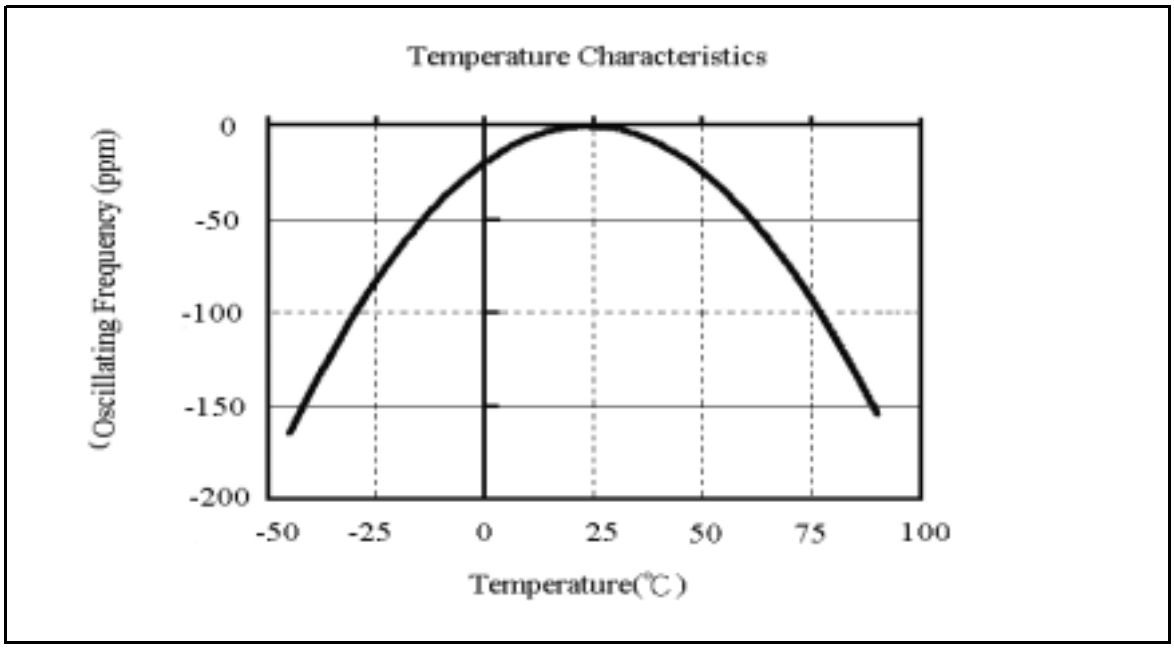
SPECIFICATION OF CRYSTAL UNITS

1	Nominal frequency	32.768 KHz
2	Frequency tolerance	±20ppm at 25 ± 2 ℃
3	Temperature characteristics	
	-Turnover temperature	25± 5 ℃
	-Temperature Coefficient	$-0.045\times10^{-6}/℃^2$ Max
4	Operating temperature	-40 to 85 degrees
5	Equiverent series resistance	70k ohms Max.
6	Load capacitance	12.5pF
7	Shunt capacitance	2.0pF Max.
8	Drive level	1.0uW Max
9	Storage temperature	-55 to 125 degrees
10	Aging(First year)	±3ppm Max.
11	Marking	Standard
12	Unit Net of Weight:	0.012g ± 0.0006g

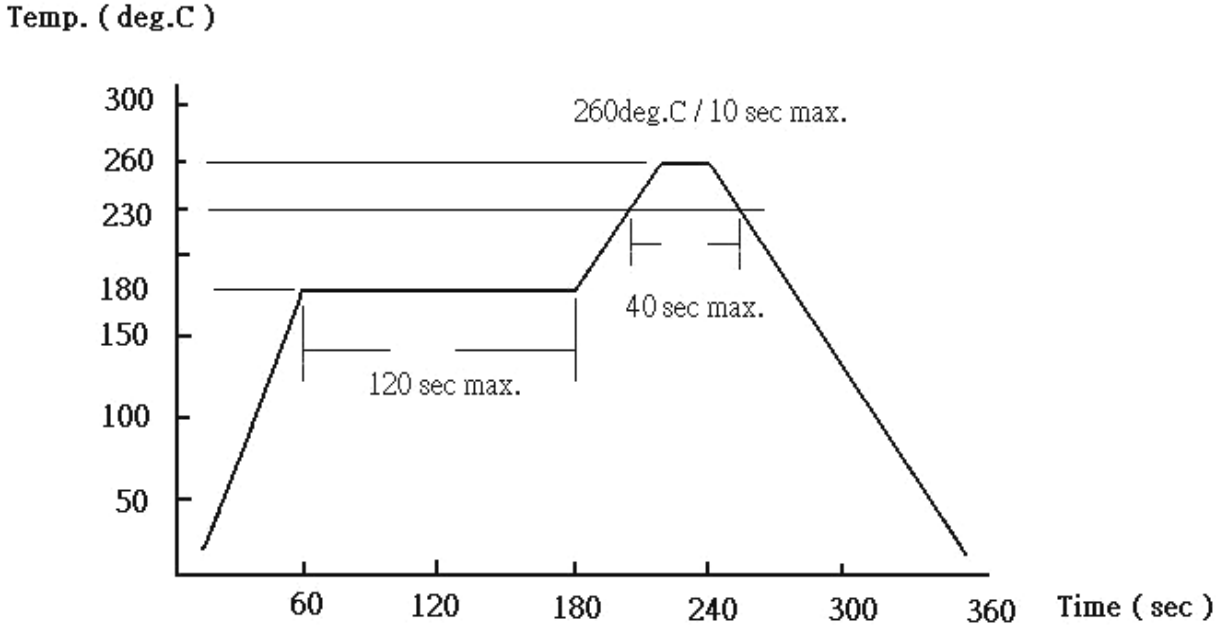
13 Dimension (unit: mm)



14 Frequency VS Temperature



15 Soldering Reflow



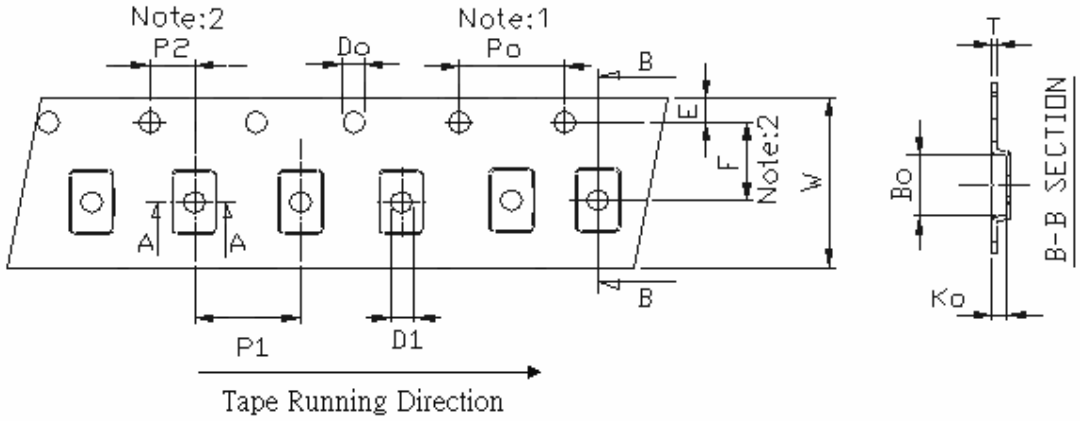
SPECIFICATION OF CRYSTAL UNITS YOKETAN CORP.

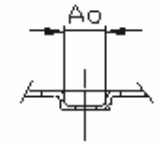
Reliability Test (applicable to 49(50) type .U type and Tuning Fork X'tal)

Test Items	Test Condition	Specification	
		Dip	SMD
1. Gross Leak Test	FC-40 125°C/30sec	No continuous bubble	
2. Fine Leak Test	Bombing of He 4kg/cm^2 for 2 hours	Less than 5*10^-8atm.c.c./sec, Helium	
3. Drop Test	a ~19.999MHz(Fund.) →100 cm height b. 20~29.999MHz(Fund.) →50 cm height c. 30~ MHz(Fund.) →20 cm height on hard wooden surface / 3 times (thickness more than 30 mm)	△F≦± 10PPM , C.I within spec.	△F≦±10PPM , C.I within spec.
4. Vibration Test	Freq. range: 10~55Hz Peak to peak amplitude:1.5mm 3 direction(X,Y,Z), each 60min.	△F≦± 10PPM , C.I within spec.	△F≦±10PPM , C.I within spec.
5. Resistance to Soldering Test	a. IR Reflow furnace with the condition 2 times. Peak temp.260±3°C, 10±1 sec.	NA	△F≦±10PPM , C.I within spec. For SMD type only.
	b. Dip terminals in a 245±5°C solder station(pool) Dipping depth 0.5mm(Min) Dipping time 5±0.5 sec.	At least 90% by 30X magnification of each dipped area shall be covered by fresh solder. For DIP type only.	NA
6. Bending Test	Bending cycle : 1 cycle 0° - > 45° -> 0° -> 45° - > 0°	△F≦±5PPM , C.I within spec. For DIP type only.	NA
7. Shearing Test	Weight : 5N, Test duration : 10±1 sec	NA	△F≦±10PPM , C.I within spec. For SMD type only.
8. Low Temp. Exposure Test	-40±3°C, 240±12 hrs	△F≦± 10PPM , C.I within spec.	△F≦±10PPM , C.I within spec.
9. Aging Test	85±3°C, 240±12hrs	△F≦± 10PPM , C.I within spec.	△F≦±10PPM , C.I within spec.
10. High Temp. & Humidity Test	+85°C±5°C& 85%±5% R.H. , 240±12 hrs	△F≦± 10PPM , C.I within spec.	△F≦±10PPM , C.I within spec.
11. Temperature Cycling Test	-25±3°C/15±3min ~ +85±3°C/15±3min 15cycles	△F≦± 10PPM , C.I within spec.	△F≦±10PPM , C.I within spec.

SPECIFICATION OF TAPE & REEL YOKETAN CORP.

Taping





Ao= 1.90± 0.10 mm

Bo= 3.60± 0.10 mm

Ko= 1.0± 0.10 mm

Unit: mm

Symbol	Spec.
K1	–
Po	4.0± 0.10
P1	4.0± 0.10
P2	2.0± 0.05
Do	1.50± 0.10
D1	$1.0^{+0.2}_{-0}$
E	1.75± 0.10
F	5.50± 0.05
10Po	40.0± 0.10
W	12.0± 0.2
T	0.30± 0.05

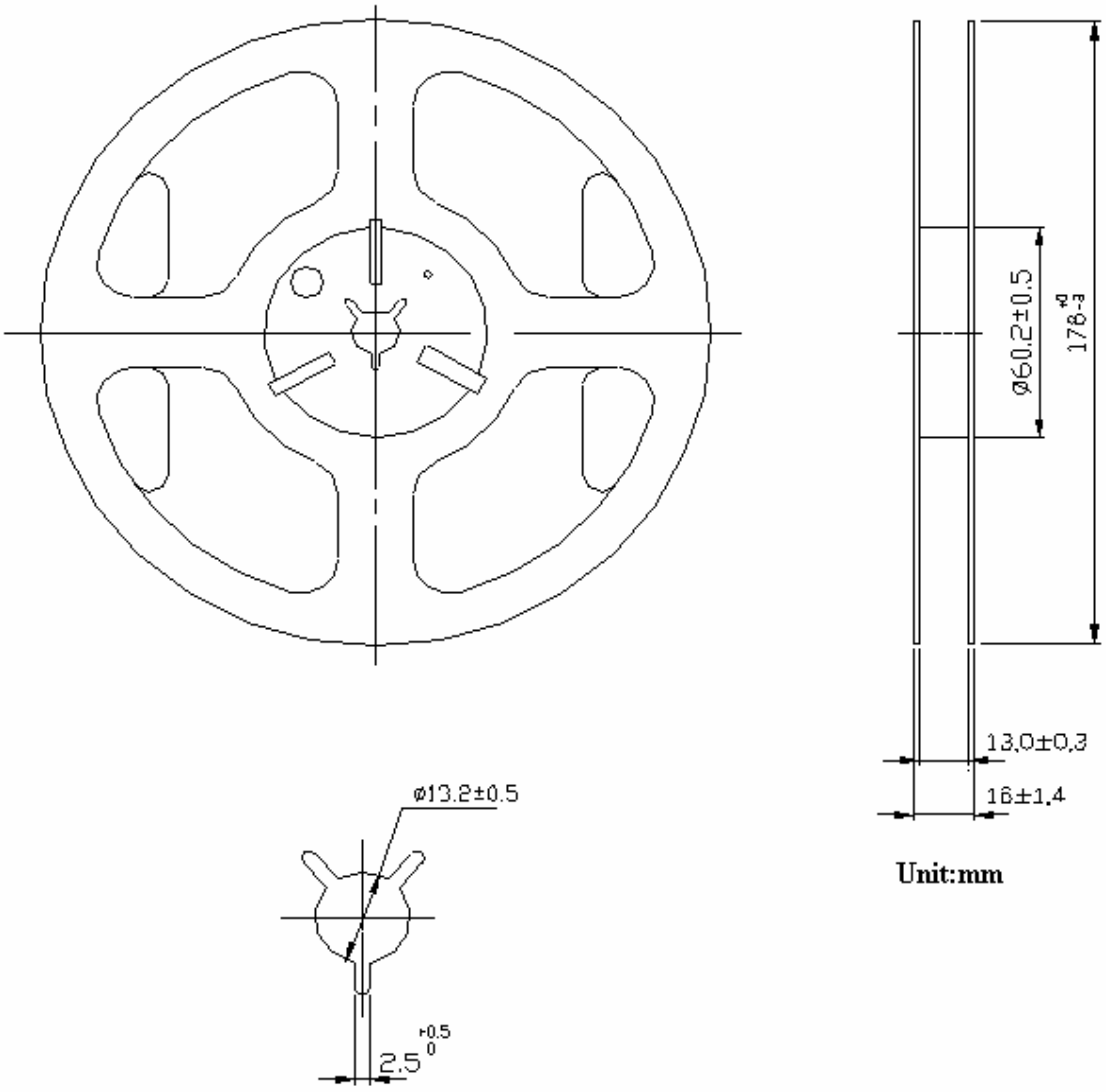
Notice:

1. 10 Sprocket hole pitch cumulative tolerance is ±0.1mm
2. Pocket position relative to sprocket hole measured as true position of pocket not pocket hole.
3. Ao & Bo measured on a place 0.3mm above the bottom of the pocket to top surface of the carrier.
4. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier
5. Carrier camber shall be not than 1mm per 100mm through a length of 250mm.

	Date	Name	Unit : mm	
Drawn	**18.Jan.2007**	Leo	Title	Drawing No.
Checked	**18.Jan.2007**	Iris	**Tape & Reel Dimension**	**C009-010310-X-1001**
Approved	**18.Jan.2007**	Wan		

SPECIFICATION OF TAPE & REEL YOKETAN CORP.

Reel



Unit:mm

Q'ty:3000pcs/reel

	Date	Name	Unit : mm	
Drawn	**18.Jan.2007**	Leo	Title	Drawing No.
Checked	**18.Jan.2007**	Iris	**Tape & Reel Dimension**	**C009-0713-X-1001**
Approved	**18.Jan.2007**	Wan		

ETC Cert
數位簽署者：ETC Cert
DN：cn=ETC Cert, o=ETC, ou=Q00, email=ccwen@etc.org.tw, c=TW
日期：2011.07.18 16:50:40 +08'00'

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測試報告/ Test Report

工服編號/ Application No	11-07-QAC-064
承辦日期/ Date of Receipt	2011/07/12
測試日期/ Date of Performance	2011/07/13
報告日期/ Date of Issue	2011/07/18
委託機構/ Manufacturer	友桂電子股份有限公司 YOKETAN CORPORATION
地　　址/ Address	台中市潭子區台中加工出口區南二路 28 號-2 28-2, Nan 2nd Road, T.E.P.Z Taichung, (42760) Taiwan, R.O.C.
樣品名稱/ Sample Description	SMD TURNING FORK
樣品型號/ Model No.	S4918. S4115. S3215. S2012
測試內容/ Report Content	A. 樣品敘述與測試結果/ Sample Information & Results B. 樣品圖片/ Sample Photo C. 流程圖/ Flow Chart

1. 送測樣品及其相關訊息均由客戶提供並已經由客戶確認無誤。/ Any sample(s) and its information listed in this document are provided and identified by clients.

2. 本報告僅對測試樣品負責。/ This report only refers to the specimen(s); it does not imply the result of production to tested sample(s).

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報告簽署人/ Approved by: Chun-Ching, Wen
Laboratory Representative

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A 樣品敘述/ Sample Information

	NO.1
樣品編號/ Sample No.	11-07-QAC-064
樣品名稱/ Sample Description	SMD TURNING FORK
樣品型號/ Model No.	S4918. S4115. S3215. S2012

測試結果/ Test Results

測試項目 Test Item(s)	儀器設備 Instruments	參考測試方法 Reference Method	測試結果/ Test Results (單位/ Unit : ppm)	
			NO.1	方法偵測極限 MDL
鉛/ Pb (CAS NO.7439-92-1)	ICP-OES	IEC 62321 Ed1: 2008 Totally Dissolved	N.D.	2.0
鎘/ Cd (CAS NO.7440-43-9)	ICP-OES	IEC 62321 Ed1: 2008 Totally Dissolved	N.D.	2.0
汞/ Hg (CAS NO.7439-97-6)	ICP-OES	IEC 62321 Ed1: 2008 Totally Dissolved	N.D.	2.0
六價鉻/ Cr^{6+} (CAS NO.1333-82-0)	UV-VIS	IEC 62321 Ed1: 2008 Annex C	N.D.	2.0
多溴聯苯/ PBBs (CAS NO.059536-65-1)				
Monobromobiphenyl	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Dibromobiphenyl	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Tribromobiphenyl	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Tetrabromobiphenyl	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Pentabromobiphenyl	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0

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測試項目 Test Item(s)	儀器設備 Instruments	參考測試方法 Reference Method	測試結果/ Test Results (單位/ Unit : ppm)	
			NO.1	方法偵測極限 MDL
Hexabromobiphenyl	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Heptabromobiphenyl	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Octabromobiphenyl	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Nonabromobiphenyl	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Decabromobiphenyl	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
多溴聯苯醚/ PBDEs (CAS NO.1163-19-5)				
Monobromodiphenyl ether	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Dibromodiphenyl ether	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Tribromodiphenyl ether	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Tetrabromodiphenyl ether	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Pentabromodiphenyl ether	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Hexabromodiphenyl ether	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Heptabromodiphenyl ether	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Octabromodiphenyl ether	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Nonabromodiphenyl ether	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0
Decabromodiphenyl ether	GC-MS	IEC 62321 Ed1: 2008	N.D.	5.0

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測試項目 Test Item(s)	儀器設備 Instruments	參考測試方法 Reference Method	測試結果/ Test Results (單位/ Unit : ppm)	
			NO.1	方法偵測極限 MDL
全氟辛烷酸/ PFOS				
$C_8F_{17}KO_3S$ (CAS NO. 2795-39-3)	LC-MS/MS	US EPA 3550C & US EPA 8321B	N.D.	1.0
全氟辛烷磺酸鹽/ PFOA				
$C_4HF_7O_2$ (CAS NO. 375-22-4)	LC-MS/MS	US EPA 3550C & US EPA 8321B	N.D.	1.0
$C_5HF_9O_2$ (CAS NO. 2706-90-3)	LC-MS/MS	US EPA 3550C & US EPA 8321B	N.D.	1.0
$C_6HF_{11}O_2$ (CAS NO. 307-24-4)	LC-MS/MS	US EPA 3550C & US EPA 8321B	N.D.	1.0
$C_7HF_{13}O_2$ (CAS NO. 375-85-9)	LC-MS/MS	US EPA 3550C & US EPA 8321B	N.D.	1.0
$C_8HF_{15}O_2$ (CAS NO. 335-67-1)	LC-MS/MS	US EPA 3550C & US EPA 8321B	N.D.	1.0
$C_9HF_{17}O_2$ (CAS NO. 375-95-1)	LC-MS/MS	US EPA 3550C & US EPA 8321B	N.D.	1.0
鹵素/ Halogen				
F (CAS NO.7782-41-4)	I.C.	EN 14582	N.D.	50.0
Cl (CAS NO.7782-50-5)	I.C.	EN 14582	N.D.	50.0
Br (CAS NO.7726-95-6)	I.C.	EN 14582	N.D.	50.0
I (CAS NO.7553-56-2)	I.C.	EN 14582	N.D.	50.0

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備註/ Note :

1. N.D. : 即為偵測不到/ Not Detected.
2. MDL : 方法偵測極限/ Method Detection Limitation.
3. ppm : = mg/kg (0.1% = 1000 ppm)
4. 測試儀器中英文對照/ Sino-British Contrast of the instrument
   a. ICP-OES 感應耦合電漿原子發射光譜儀
   b. UV-VIS 分光光度計
   c. GC-MS 氣相層析質譜儀
   d. IC 離子層析儀
   e. LC-MS/MS 液相層析串聯式質譜儀
5. 測試人員/ Tested by : Ellen、ZIV
6. 檢閱人員/ Reviewed by : sujane

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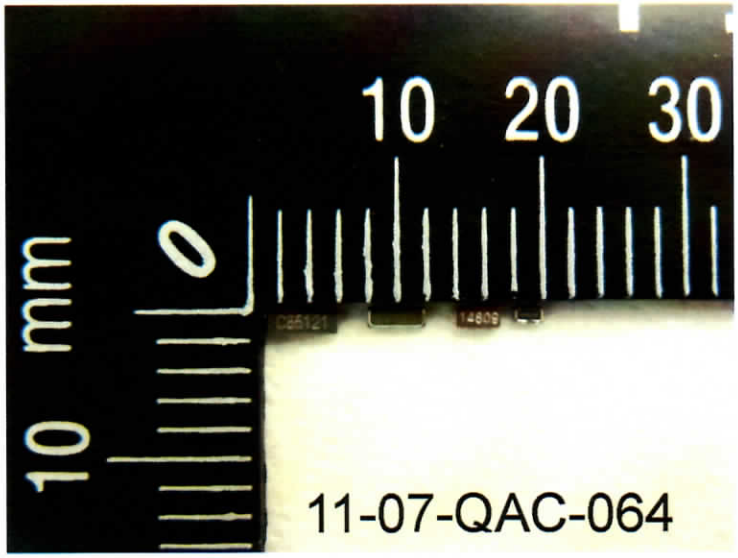
B. 樣品照片 / Sample Photo



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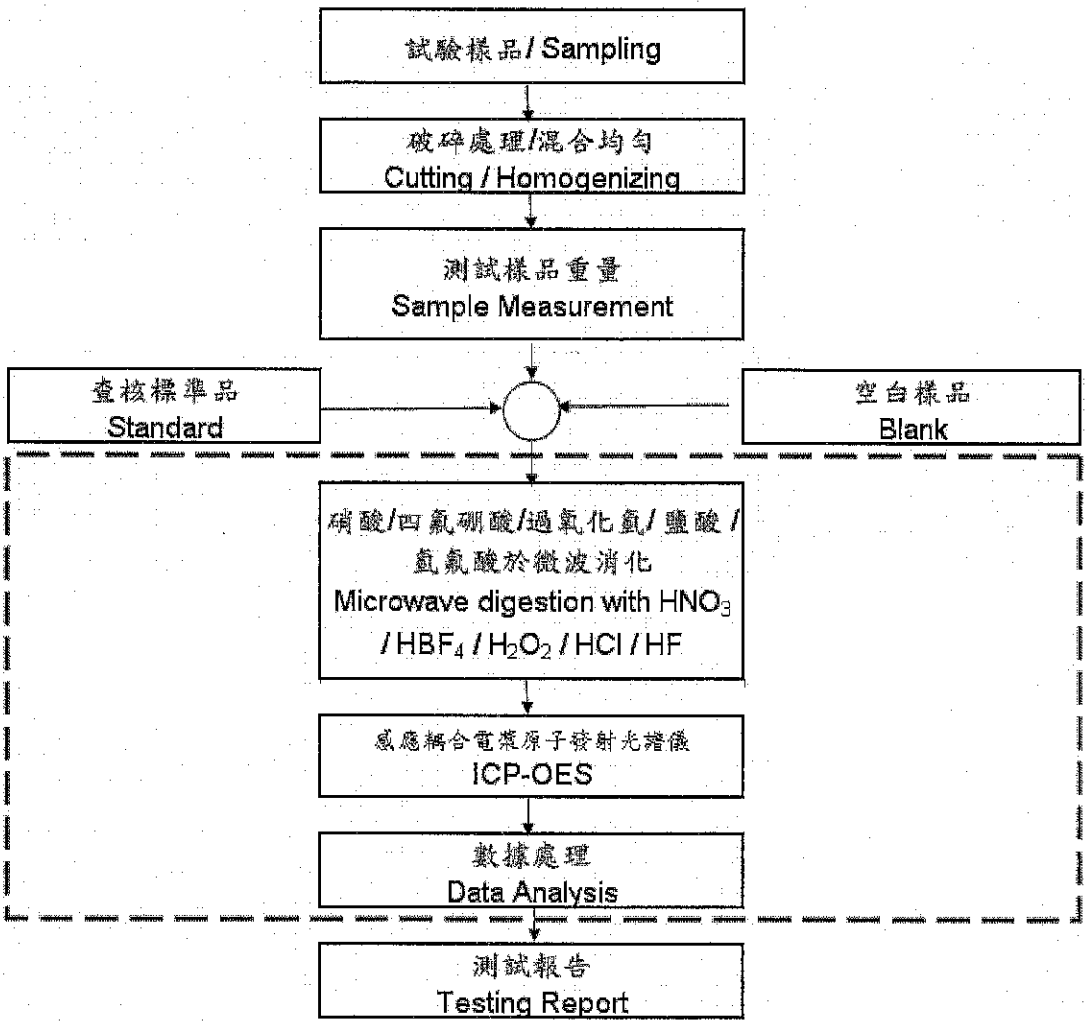
C. 流程圖/ Flow Chart



Flow Chart of Digestion-IEC 62321 for Pb、Cd、Hg (完全溶解/ Totally Dissolved)

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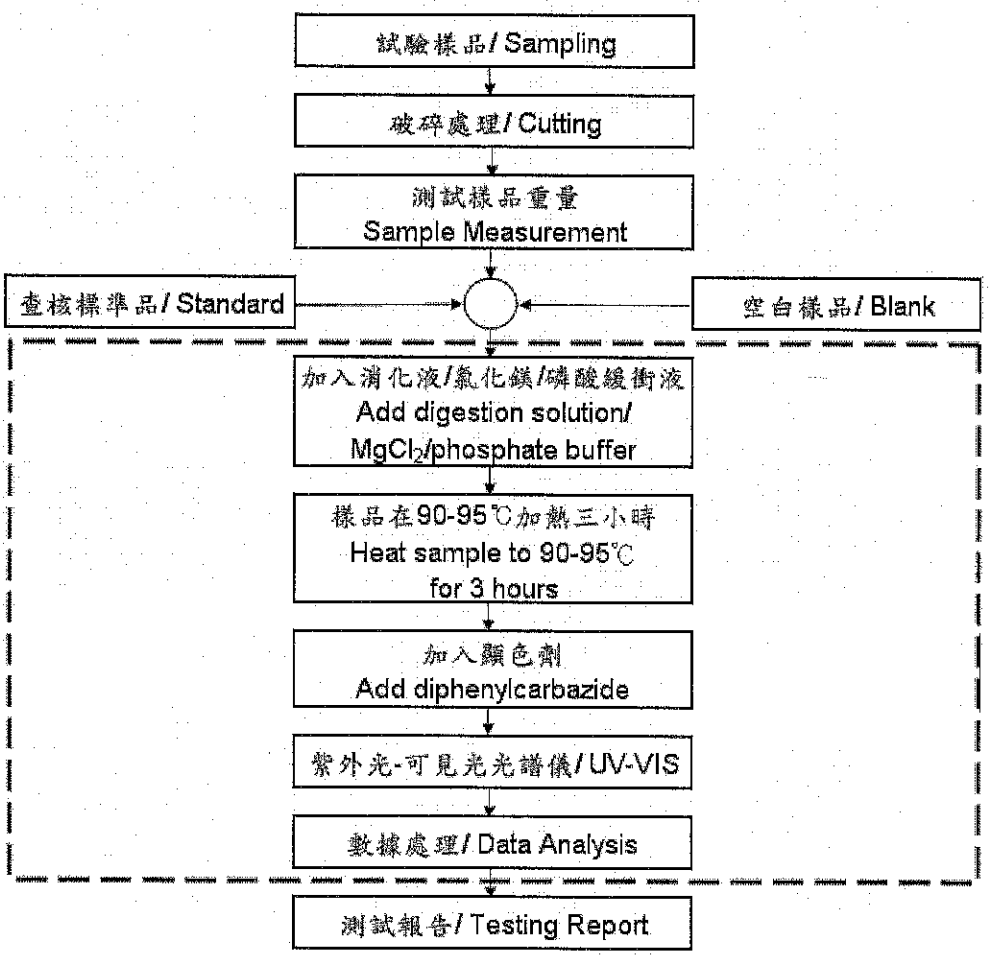

Flow Chart of Extraction-IEC 62321 for Cr^{6+}

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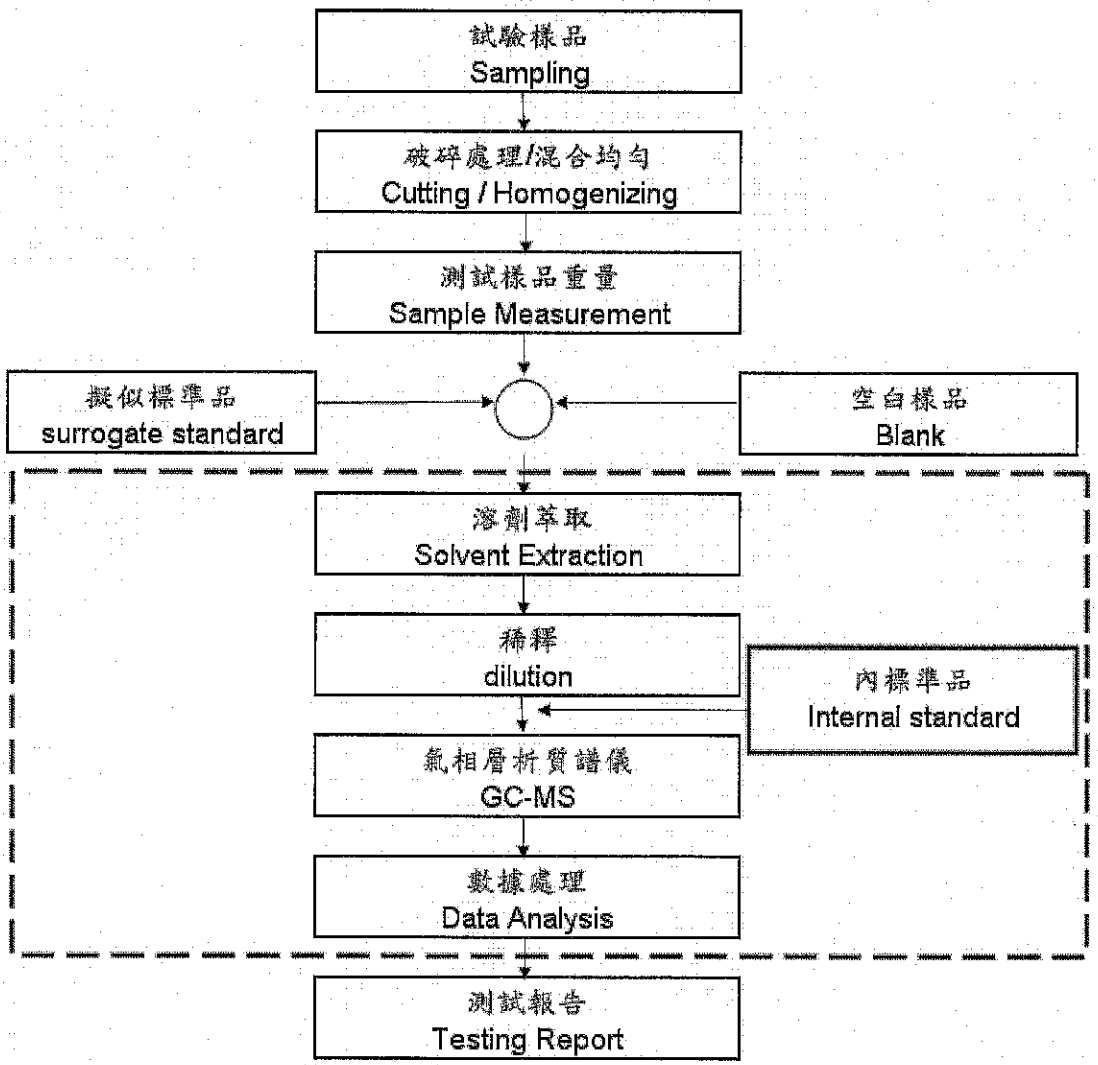

Flow Chart of Extraction-IEC 62321 for PBB、PBDE

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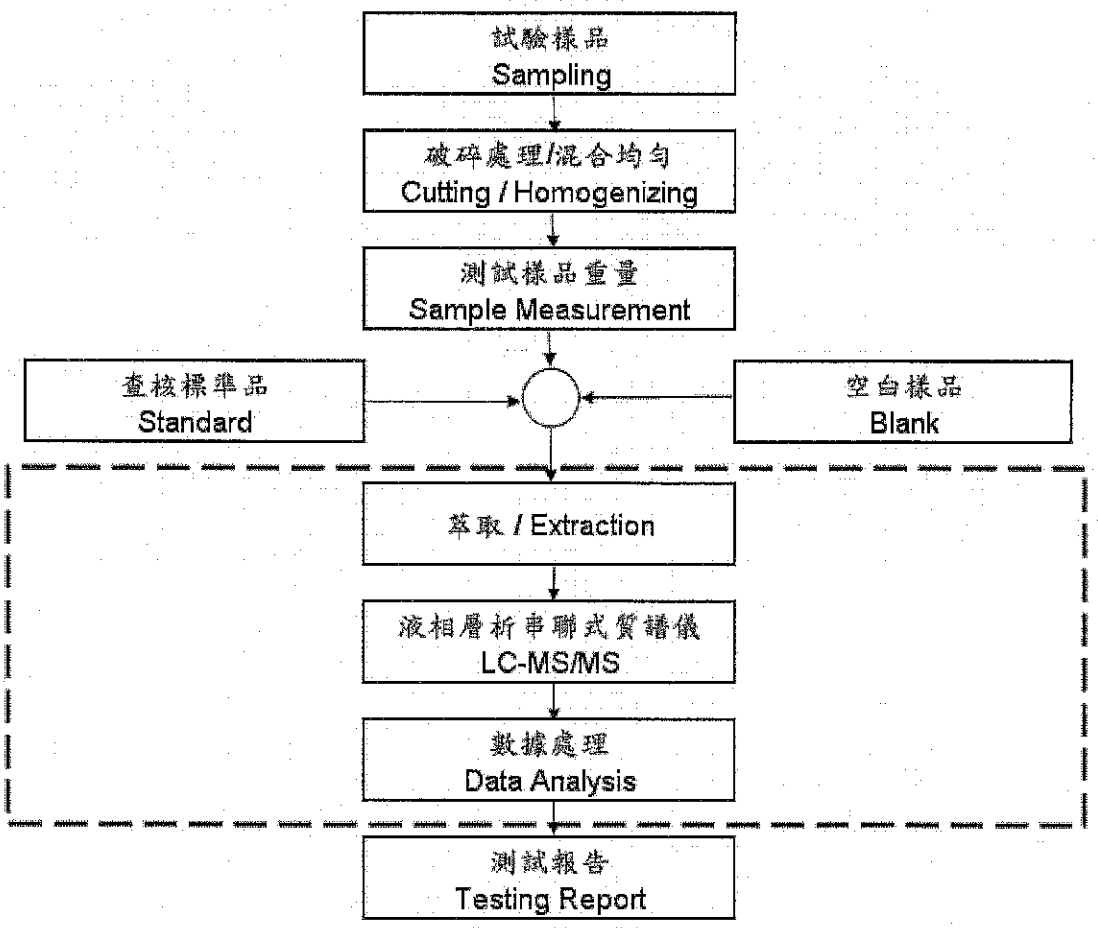

Flow Chart of Extraction for PFOS/PFOA

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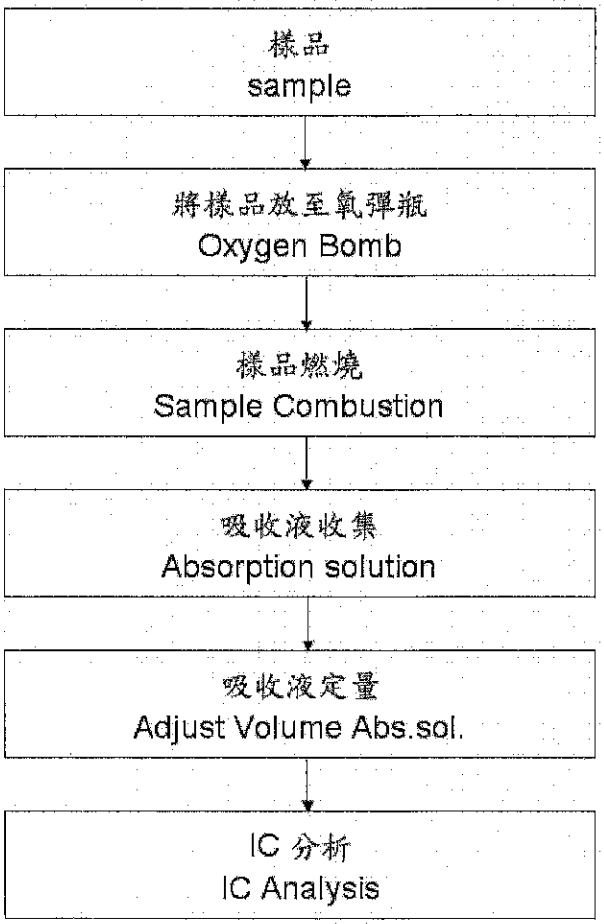

Flow Chart of Extraction for Halogen

---報告結尾/ End of Report ---

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