TXC CORPORATION

5F, NO. 16, Sec. 2 Chung Yang S Rd., Peitou, Taipei, Taiwan.
TEL : 886-2-2894-1202 , 886-2-2895-2201 FAX : 886-2-2894-1206 , 886-2-2895-6207 www.txccorp.com

SPECIFICATION FOR APPROVAL

CUSTOMER	:	
PRODUCT TYPE	:	SMD SEAM SEALING XTAL 7.0*5.0
NOMINAL FREQ.	:	11.059200MHz
TXC P/N	:	6P11000049
REVISION	:	A3
CUSTOMER P/N	:	
PM / SALES	:	
DATE	:	

CUSTOMER SIGNATURE & Date

(1) TXC requires one copy returned with signature and title of authorized individual that signifies acceptance of the attached specifications.

(2) Orders received and accepted by TXC after return of signed copy of specification will be produced per these specifications.

(3) Any changes to these specifications must be agreed upon by both parties and new revision of the Product Specification Sheet will be issued.

(4) Any issuance of purchase order prior to consigning back the Approval page of "Specification Sheets" from customers will be regarded as the agreement on the contents of these specifications.

Attachment: Product Specification Sheet

1
2
3
4
5

RoHS Compliant

TXC CORPORATION

5F, NO. 16, Sec. 2 Chung Yang S Rd., Peitou, Taipei, Taiwan.
TEL : 886-2-2894-1202 , 886-2-2895-2201 FAX : 886-2-2894-1206 , 886-2-2895-6207 www.txccorp.com

PRODUCT SPECIFICATION SHEET

PRODUCT TYPE	:	SMD SEAM SEALING XTAL 7.0*5.0
NOMINAL FREQ.	:	11.059200MHz
TXC P/N	:	6P11000049
REVISION	:	A3

PE/RD	QA	MFG
Scott Chen	Randy Chang	
12-Jul-06	*12-Jul-06*	*12-Jul-06*

NOTE:

(1)Lead Free Products are "Directive 2002/95/EC of The European Parliament of 27 January 2003 on the restriction of the use of certain hazardous substances (RoHS) in electrical and electronic equipment" Compliant (Attachment: SGS Test Report).

(2)Revision "Sx" is for engineering samples only. PE/RD's approval required.

(3)Revision "Ax" is production ready. PE, QA and MFG's approval required.

RoHS Compliant

Rev	Revise page	Revise contents	Date	Ref.No.	Reviser
A1	N/A	Initial released	11-Mar-05	N/A	Yachuan Miao
A2	3	Suggested Reflow Profile Change	15-Jul-05	ECN-05P050501	Yachuan Miao
A3	-	Document version chang C to D	12-Jul-06	DCN-06P030701	Yachuan Miao

■ ELECTRICAL SPECIFICATIONS

Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurement and tests are as follow:

Ambient temperature : 25±5℃

Relative humidity : 40%~70%

If there is any doubt about the results, measurement shall be made within the following limits:

Ambient temperature : 25±3℃

Relative humidity : 40%~70%

Measure equipment

Electrical characteristics measured by HP E5100A or equivalent.

Crystal cutting type

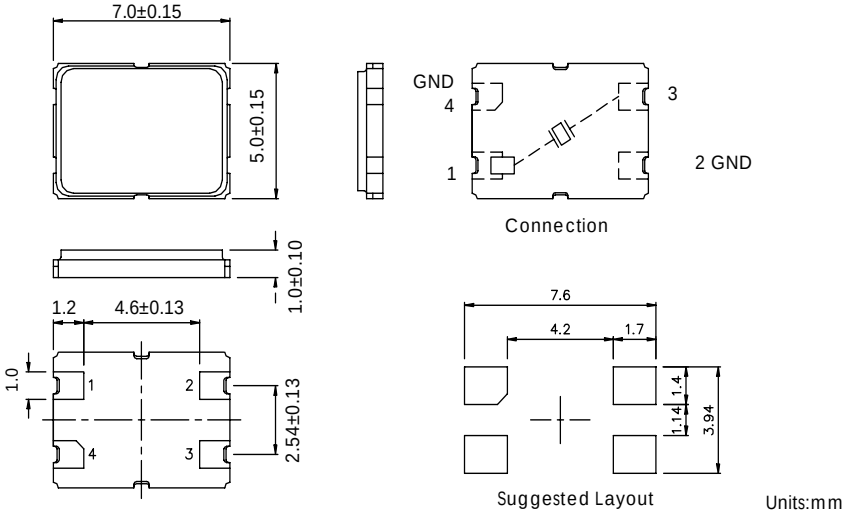
The crystal is using AT CUT (thickness shear mode).

Unit Weight:

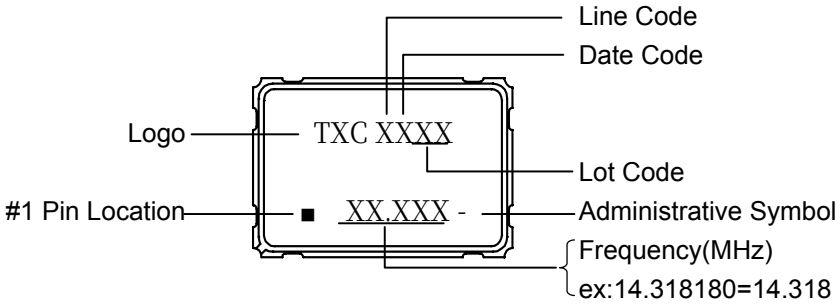
0.112±0.001 g/pcs

	Parameters	SYM.	Electrical Spec.				Notes
			MIN	TYPE	MAX	UNITS	
1	Nominal Frequency	FL		11.059200		MHz	-
2	Oscillation Mode	-		Fundamental		-	-
3	Load Capacitance	CL		16		pF	-
4	Frequency Tolerance	-		±30		ppm	at 25 ℃ ± 3 ℃
5	Frequency Tolerance	-		±30		ppm	Over Operating Temp. Range (Reference 25℃)
6	Operating Temperature	-	-10	~	70	℃	-
7	Aging	-		±3		ppm	1st Year
8	Drive Level	DL	-	100	-	uW	-
9	Effective Resistance Rr	Rr	-	-	40	Ω	-
10	Shunt Capacitance C0	C0	-	-	5	pF	-
11	Insulation Resistance	-	500	-	-	MΩ	at DC 100V
12	Storage Temperature Range	-	-40	~	85	℃	-

■ DIMENSIONS



■ MARKING



Production location:China

Date Code

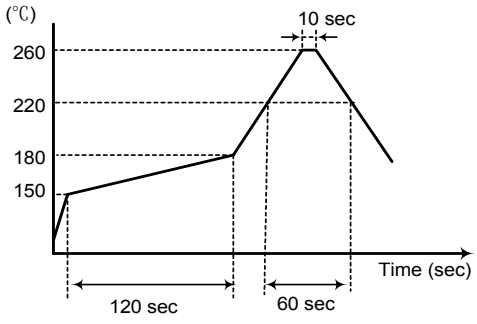
YEAR \ MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2001 2005 2009 2013 2017	A	B	C	D	E	F	G	H	J	K	L	M
2002 2006 2010 2014 2018	N	P	Q	R	S	T	U	V	W	X	Y	Z
2003 2007 2011 2015 2019	a	b	c	d	e	f	g	h	j	k	l	m
2004 2008 2012 2016 2020	n	p	q	r	s	t	u	v	w	x	y	z

This date code will be cycled every four years

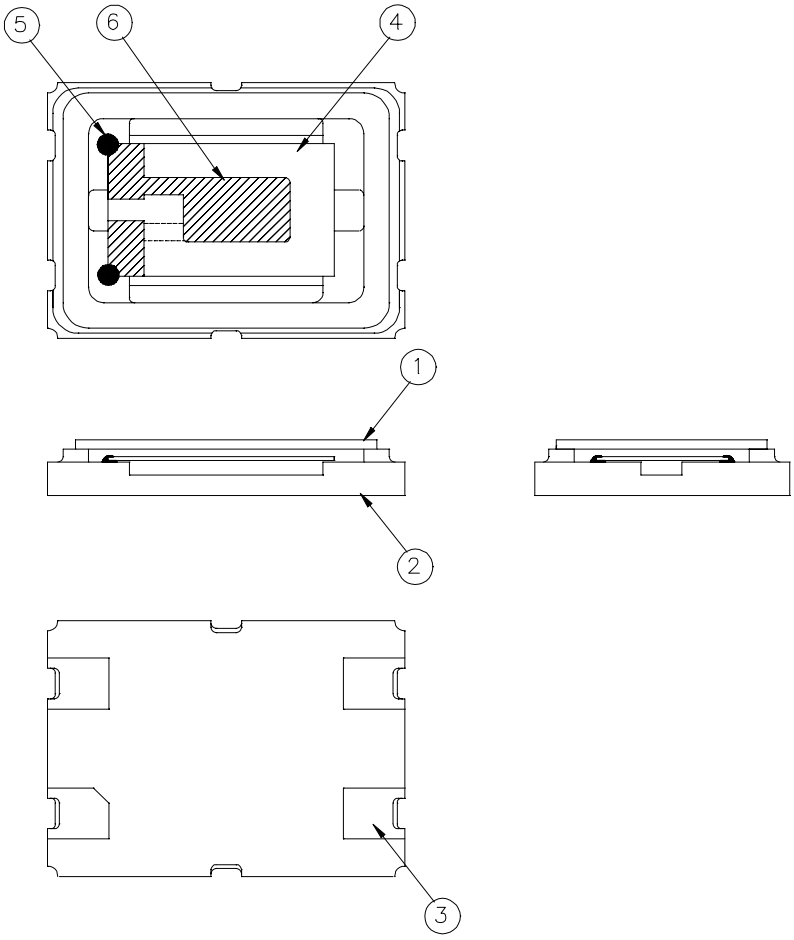
■ SUGGESTED REFLOW PROFILE

Total time : 200 sec. Max.

Solder melting point :220 ℃

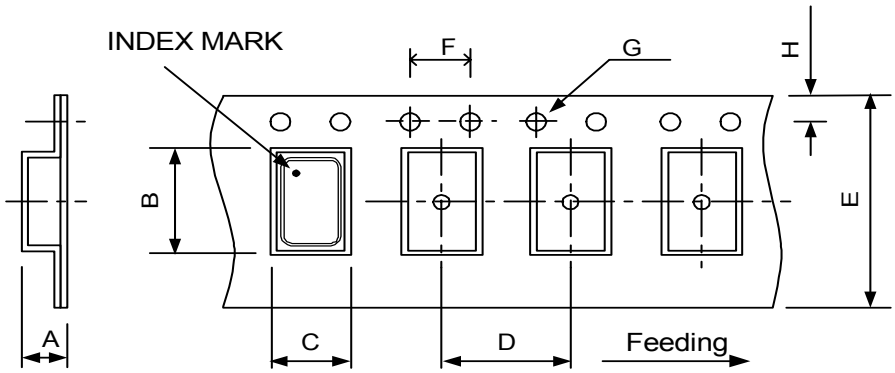


■ STRUCTURE ILLUSTRATION



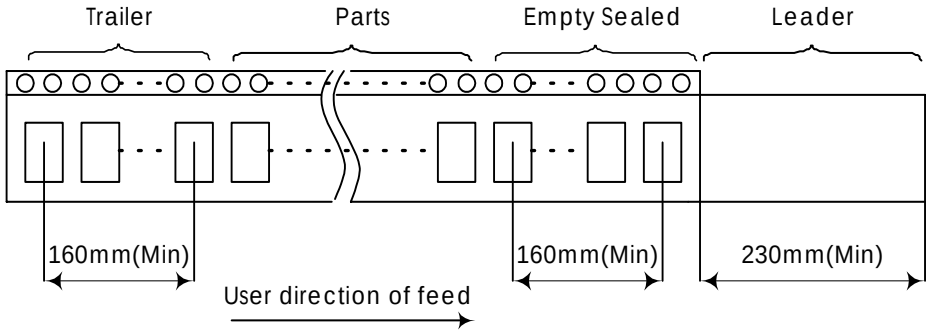
NO	COMPONENTS	MATERIALS	QTY	FINISH/SPECIFICATIONS
1	Lid	Kovar (Fe/Co/Ni)	1	-
2	Base(Package)	Ceramic (Al_2O_3) + Kovar (Fe/Co/Ni)+ Ag/Cu	1	-
3	PAD	Au	4	Tungsten metalize + Ni plating + Au plating
4	Crystal blank	SiO_2	1	-
5	Conductive adhesive	Ag	4	Silicon resin
6	Electrode	Ag + Cr	2	-

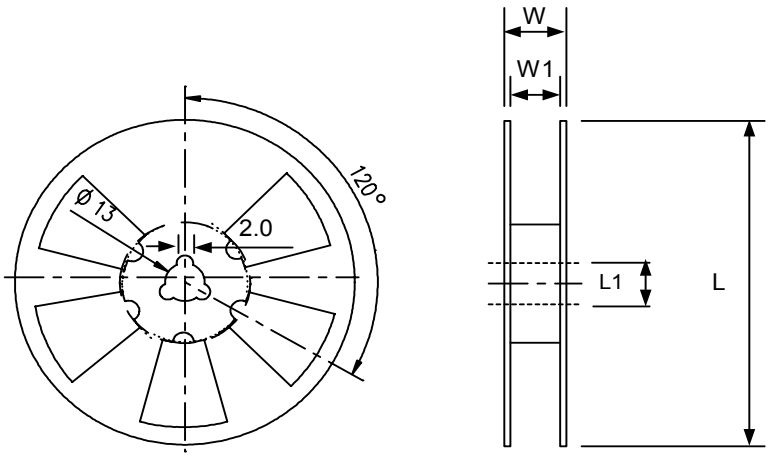
■ **PACKING : (EIA-481-2)**



DIMENSIONS	A	B	C	D	E	F	G	H	
	2.00	7.90	5.45	8.00	16.00	4.00	1.50	1.75	(UNIT : mm)

REMARK :





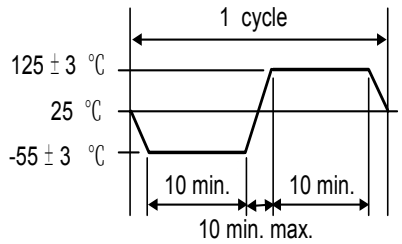
DIMENSIONS	L	L1	W	W1	pcs / Reel (UNIT : mm)
	180	13	20.5	16	Standard Reel Quantity is 1,000 pcs per reel

■ RELIABILITY SPECIFICATIONS

1.Mechanical Endurance

No.	Test Item	Test Methods		REF.DOC
1.1	Drop Test	75 cm height,3 times on concrete floor .		JIS C6701
1.2	Mechanical Shock	Device are shocked to half sine wave (1000 G) three mutually perpendicular axes each 3 times. 0.5m sec. duration time		MIL-STD-202F
1.3	Vibration	Frequency range Amplitude Sweep time Perpendicular axes each test time	10 ~ 2000 Hz 1.52 mm/20G 20 minute 4 hours (Total test time 12 hours)	MIL-STD-883E
1.4	Gross Leak	Standard Sample For Automatic Gross Leak Detector, Test Pressure: 2Kg / cm^2		MIL-STD-883E
1.5	Fine Leak	Helium Bombing 4.5 Kgf / cm^2 for 2 hr		
1.6	Solderability	Temperature Immersing depth Immersion time Flux	260 ℃ ± 5℃ 0.5 mm minimum 5 ± 1 seconds Rosin resin methyl alcohol solvent (1 : 4)	MIL-STD-883E

2.Environmental Endurance

No.	Test Item	Test Methods		REF. DOC
2.1	Resistance To Soldering Heat	Pre-heat temperature Pre-heat time Test temperature Test time	125 ℃ 60 ~ 120 sec. 260 ± 5 ℃ 10 ± 1 sec.	MIL-STD-202F
2.2	High Temp. Storage	+ 125 ℃ ± 3 ℃ for 1000 ± 12 hours		MIL-STD-883E
2.3	Low Temp. Storage	- 40 ℃ ± 3 ℃ for 1000 ± 12 hours		
2.4	Thermal Shock	Total 100 cycles of the following temperature cycle 		MIL-STD-883E
2.5	High Temp & Humidity	85℃ ± 3℃ , RH 85% , 1000Hrs		JIS C5023

Test Report

No : CE/2006/A6071 Date : 20061103 Page: 1 of 4

TXC CORPORATION
4F, NO. 16, SEC. 2, CHUNG YANG S. RD., PEITOU 112,
TAIPEI, TAIWAN.

Report on the submitted sample said to be SMD CRYSTAL.

Style/Item No	:	6P, 6V, 7B, 7M, 8Z SERIES
Sample Receiving Date	:	2006/10/27
Testing Period	:	2006/10/27 TO 2006/11/03

==========

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

Test Method :

(1) With reference to BS EN 1122:2001, Method B for Cadmium Content. Analysis was performed by ICP-AES.
(2) With reference to US EPA Method 3050B for Lead Content. Analysis was performed by ICP-AES.
(3) With reference to US EPA Method 3052 for Mercury Content. Analysis was performed by ICP-AES.
(4) With reference to IEC 62321, Ed.1 111/54/CDV . Determination of Hexavalent Chromium by UV/Vis Spectrometry.
(5) With reference to US EPA 3540C for PBB/PBDE Content. Analysis was performed by GC/MS and screening via US EPA 3550C with HPLC/DAD/MS.

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

Daniel Yeh, M.R. / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.

Test Report

TXC CORPORATION
4F, NO. 16, SEC. 2, CHUNG YANG S. RD., PEITOU 112,
TAIPEI, TAIWAN.
Test results by chemical method (Unit: mg/kg)

Test Item (s):	Method (Refer to)	Result No.1	MDL
Cadmium (Cd)	(1)	n.d.	2
Lead (Pb)	(2)	n.d.	2
Mercury (Hg)	(3)	n.d.	2
Hexavalent Chromium (CrVI) by alkaline extraction	(4)	n.d.	2
Sum of PBBs	(5)	n.d.	-
Monobromobiphenyl		n.d.	5
Dibromobiphenyl		n.d.	5
Tribromobiphenyl		n.d.	5
Tetrabromobiphenyl		n.d.	5
Pentabromobiphenyl		n.d.	5
Hexabromobiphenyl		n.d.	5
Heptabromobiphenyl		n.d.	5
Octabromobiphenyl		n.d.	5
Nonabromobiphenyl		n.d.	5
Decabromobiphenyl		n.d.	5
Polybrominted biphenyl ethers		n.d.	-
Sum of PBDEs (Mono to Nona) (Note 4)		n.d.	-
Monobromobiphenyl ether		n.d.	5
Dibromobiphenyl ether		n.d.	5
Tribromobiphenyl ether		n.d.	5
Tetrabromobiphenyl ether		n.d.	5
Pentabromobiphenyl ether		n.d.	5
Hexabromobiphenyl ether		n.d.	5
Heptabromobiphenyl ether		n.d.	5
Octabromobiphenyl ether		n.d.	5
Nonabromobiphenyl ether		n.d.	5
Decabromobiphenyl ether		n.d.	5
Sum of PBDEs (Mono to Deca)		n.d.	-

Test Part Description:

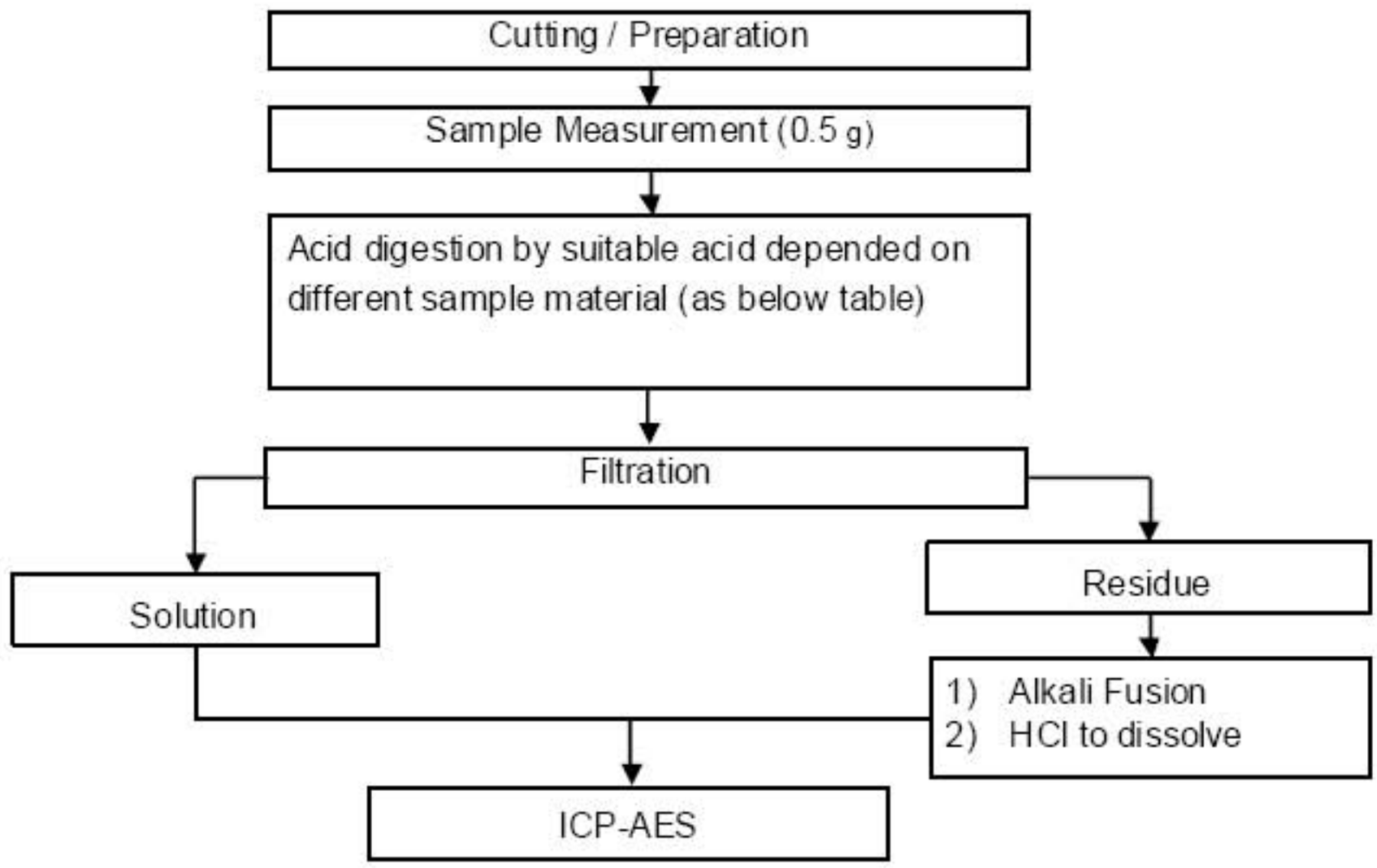
NO.1 : MIXED ALL PARTS

Note : 1. mg/kg = ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. Sum of Mono to NonaBDE & according to 2005/717/EC DecaBDE is exempt.
5. "-" = Not Regulated

TXC CORPORATION
4F, NO. 16, SEC. 2, CHUNG YANG S. RD., PEITOU 112,
TAIPEI, TAIWAN.

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
2) Name of the person who made measurement: Anren Lee
3) Name of the person in charge of measurement: Daniel Yeh

Method 1: Flow Chart of Digestion for Cd、Pb analysis



Steel, copper, aluminum, solder	Aqua regia, HNO_3, HCl, HF, H_2O_2
Glass	HNO_3/HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO_3
Plastic	H_2SO_4, H_2O_2, HNO_3, HCl
Others	Any acid to total digestion

TXC CORPORATION
4F, NO. 16, SEC. 2, CHUNG YANG S. RD., PEITOU 112,
TAIPEI, TAIWAN.

** End of Report **