www.SeCosGmbH.com

Headquarter Address:
8F.No.33, Lane 155, Sec.3, Bei-Shen Rd.,
Shen Keng Dist, New Taipei City, Taiwan
TEL: +886-2-26620988
FAX: +886-2-26620488

Product/Process Change Notification

PCN#	Effective Date	Issue Date
2014-11-15C-01	2015/2/15	2014/11/15

PCN Classification	Product Category
Major	Bridge Diode

Subject

Change assembly factory for DB-1S package

Affected Product(s)

DB101S~DB107S

Description of Change(s)

Original assembly factory EOL, thus we change assembly factory; The new assembly factory Good-ARK electronics CO., LTD, located in the No.31 Tongxi Road, TongAn Economic Development Zone, 215153, Suzhou, Jiangsu, P.R.China.

Content of Change(s)

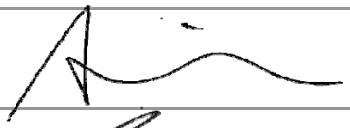
Assembly house.

Impact(s)

None

Attachment(s)

Reliability test report. SGS Report. Packge information. Specification.

Approval		
Issue by	Alice Lai	e-mail: alice@secosgmbh.com
Development Engineer		Alice Lai
QA Manager		Peter Yang
General Manger		Mathew Liu

For more information, please contact us directly or visit our website http://www.secosgmbh.com

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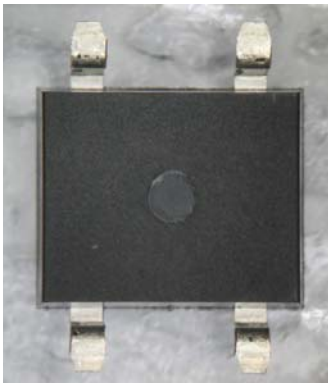
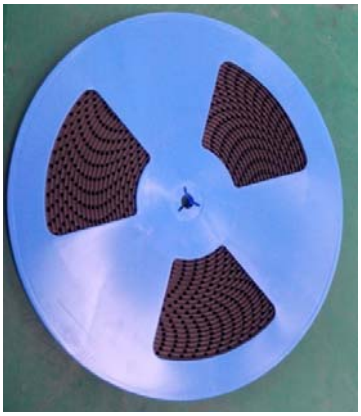
Reference of	
Original	News
 Top View	 Top View
 Back View	 Back View
 Reel	 Reel

Elektronische Bauelemente

DB101S ~ DB107S

VOLTAGE 50 V ~ 1000 V

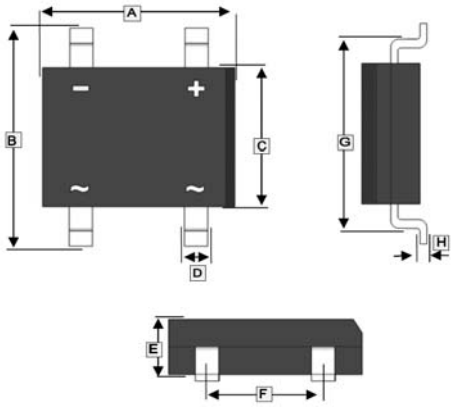
1.0 Amp Surface Mount Bridge Rectifiers

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

- Low forward voltage drop, high current capability
- Rating to 1000V PRV
- Ideal for printed circuit board
- Reliable low cost construction utilizing molded plastic technique results in inexpensive products
- Lead tin Pb / Sn copper
- The plastic material has UL flammability classification 94V-0

DB-1S



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	8.10	8.80	E	3.05	3.40
B	9.80	10.3	F	5.00	5.20
C	6.20	6.50	G	7.60	8.50
D	0.95	1.20	H	0.20	0.35

MECHANICAL DATA

- Polarity: As marked on Body
- Weight:0.02 ounces, 0.38 grams
- Mounting position: Any

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(Rating at 25℃ ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, de-rate current by 20%.)

PARAMETERS		SYMBOL	DB 101S	DB 102S	DB 103S	DB 104S	DB 105S	DB 106S	DB 107S	UNIT
Peak Repetitive Peak Reverse Voltage		V_{RRM}	50	100	200	400	600	800	1000	V
Working Peak Reverse Voltage		V_{RMS}	35	70	140	280	420	560	700	
DC Blocking Voltage		V_{DC}	50	100	200	400	600	800	1000	
Maximum Average Forward Rectified Current @T_A=40℃		$I_{(AV)}$	1							A
Peak Forward Surge Current 8.3 ms Single Half Sine-Wave Super Imposed on Rated Load (JEDEC Method)		I_{FSM}	50							A
Maximum Forward Voltage at 1A DC		V_F	1.1							V
Maximum DC Reverse Current at Rated DC Blocking Voltage	T_J=25℃	I_R	10							uA
	T_J=125℃		500							
I^2t Rating for Fusing (t<8.3ms)		I^2t	10.4							A^2s
Typical Junction Capacitance Per Element (Note1)		C_J	25							pF
Typical Thermal Resistance (Note2)		$R_{\theta JA}$	40							℃/W
Operating and Storage temperature range		T_J, T_{STG}	-55 ~ 150							℃

Note: 1. Measured at 1.0 MHz and applied reverse voltage of 4.0 V DC
2. Thermal resistance from junction to ambient mounted on P.C.B. with 0.5*0.5"(13*13mm) copper pads.

RATINGS AND CHARACTERISTIC CURVES

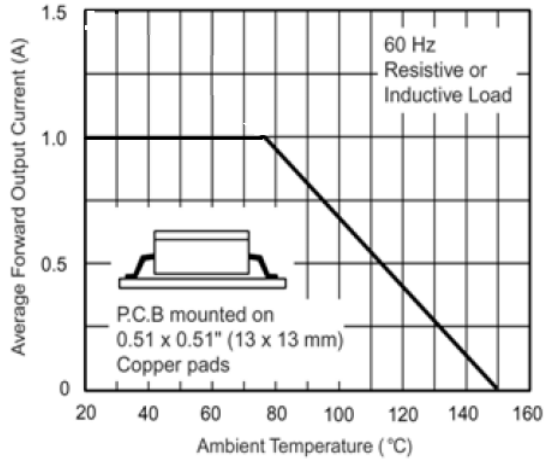


Figure 1. Derating Curve Output Rectified Current

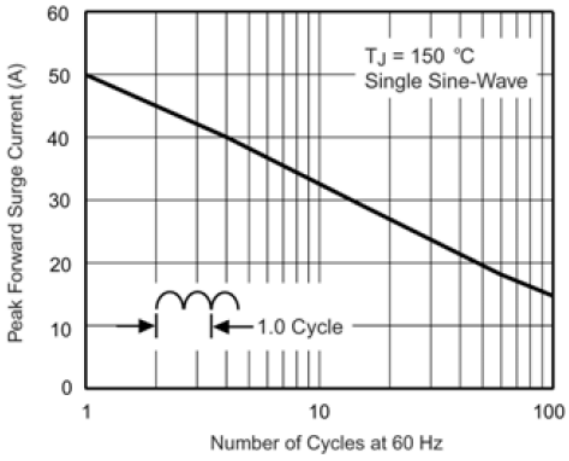


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Leg

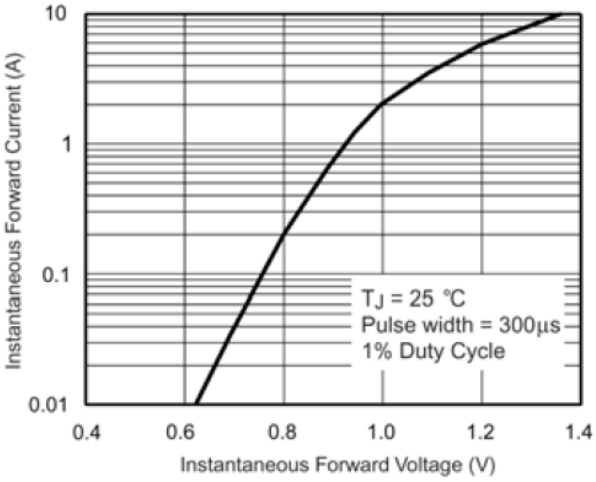


Figure 3. Typical Forward Characteristics Per Leg

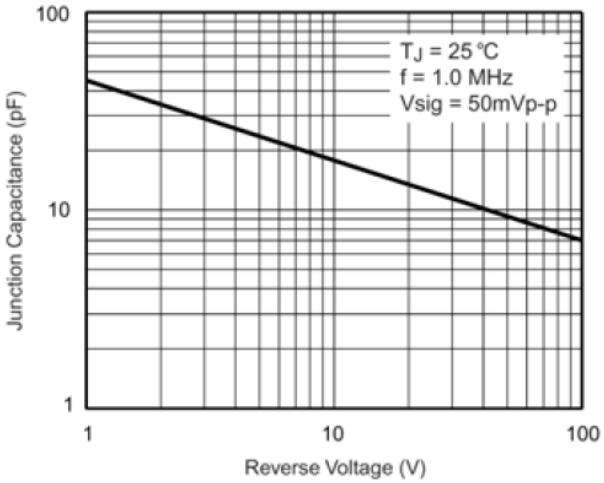


Figure 5. Typical Junction Capacitance Per Leg

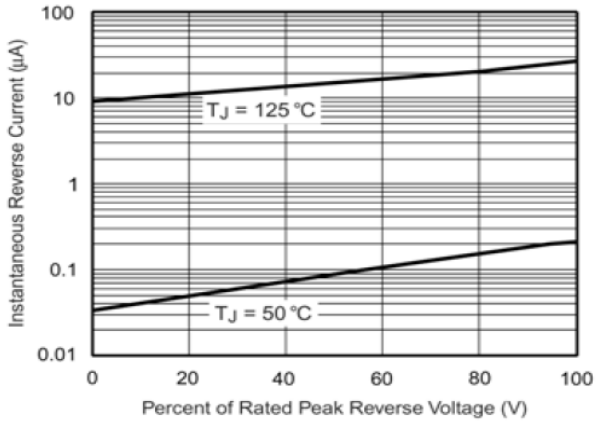


Figure 4. Typical Reverse Leakage Characteristics Per Leg

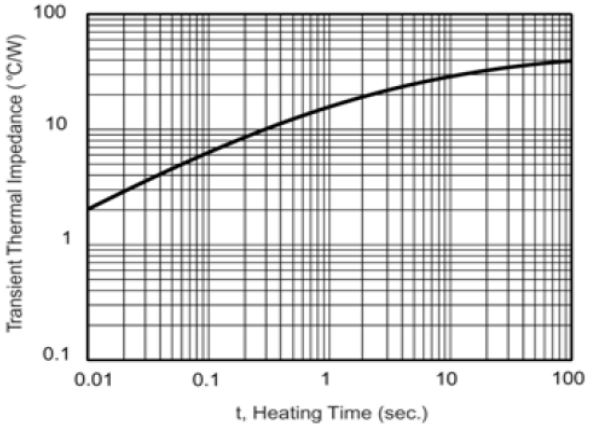


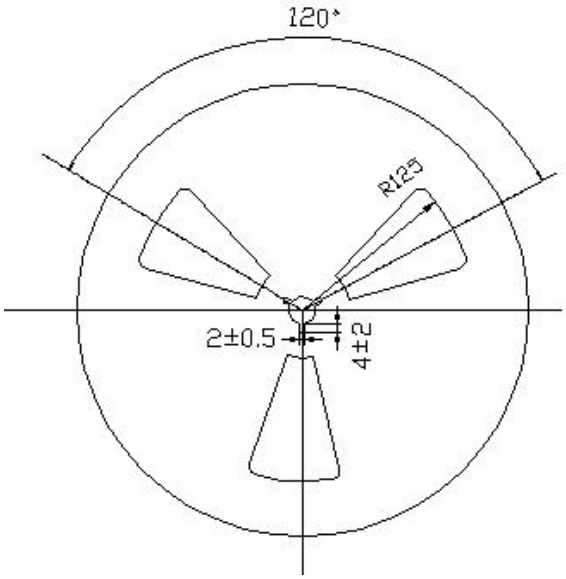
Figure 6. Typical Transient Thermal Impedance

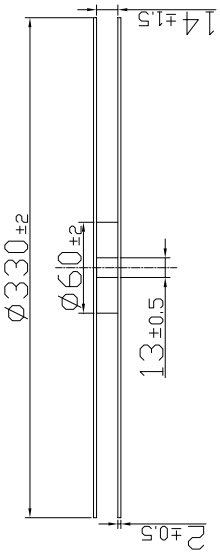
Elektronische Bauelemente

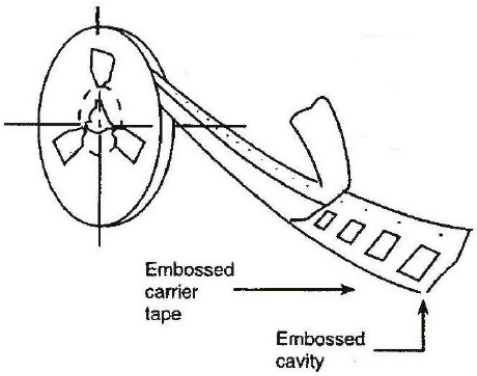
Packaging Information

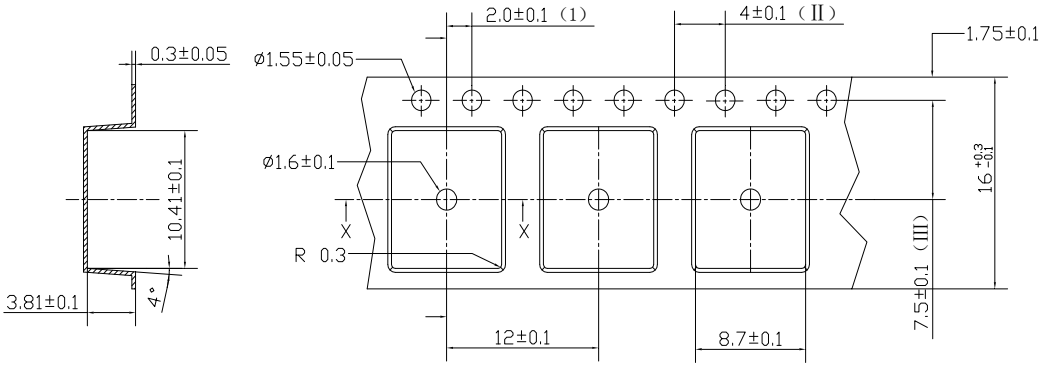
Reel Taping Specifications
Surface Mount Device

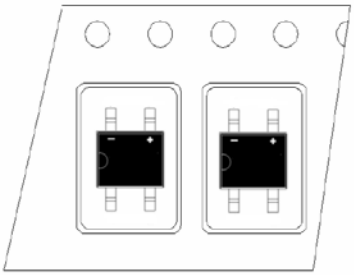
DB-1S











Unit: mm

Reel	Reel Size	Box	Box Size (mm)	Carton	Carton Size (mm)
1,500pcs	13 inch	3,000 pcs	350*350*40	24,000	350*350*350

SeCoS Corporation

Reliability Testing Summary Report

Date: 2014/10/20 Document No.: SH14 -10- 05

Test Item	P/N	Test Condition	(LTPD)	Sample Numbers	Allow Fall Numbers	Fall Numbers	Result
HTRB High Temp Reverse Bias	DB105S	150 ± 10℃, 80%VR, T = 1000hrs		77	0	0	ACC
HTSL High Temperature Storage Life	DB105S	150℃, T = 1000 hrs		77	0	0	ACC
PCT Pressure Cooker Test	DB105S	121℃, 29.7PSIG, 168 hrs		77	0	0	ACC
TCT Temperature Cycle Test	DB105S	-55℃/30min, 150℃/30min, For 1000 Cycle		77	0	0	ACC
THT High Temperature High Humidity Test	DB105S	85 ± 2℃, RH=85±5%, 1000 hrs		77	0	0	ACC
Solderability	DB105S	245 ± 5℃ / 5Sec, The inspected area of each lead must have 95% solder coverage minimum.		10	0	0	ACC

Judgment:

■ **qualified** □ **unqualified**

Testing Start Date: 2014.09.01 **Testing End Date:** 2014.10.20

Tester: Leo Hsia **Approval:** Peter Yang

SeCoS Corporation

Electrical Test Data

Report No : T141020-005
Part No : DB105S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1A, IR<10uA@VR=600V
Test Condition: 25℃
Test Date: 2014.09.01 ~ 2014.09.01
Test Standard : Specifications
Operator: Leo Hsia

Test Result: PASS

No	AC2→＋		−→AC1	
	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	956.1mV	0.080uA	959.4mV	0.058uA
2	957.0mV	0.058uA	940.5mV	0.055uA
3	940.9mV	0.056uA	958.9mV	0.094uA
4	942.8mV	0.061uA	948.7mV	0.088uA
5	940.8mV	0.092uA	939.4mV	0.051uA
6	946.8mV	0.066uA	939.3mV	0.059uA
7	952.3mV	0.054uA	940.2mV	0.102uA
8	960.0mV	0.104uA	944.0mV	0.072uA
9	953.9mV	0.052uA	937.8mV	0.080uA
10	944.5mV	0.095uA	939.1mV	0.074uA
11	951.0mV	0.077uA	949.8mV	0.087uA
12	940.9mV	0.098uA	945.7mV	0.097uA
13	944.5mV	0.050uA	952.0mV	0.106uA
14	944.6mV	0.071uA	947.5mV	0.048uA
15	943.1mV	0.108uA	941.0mV	0.054uA
16	947.5mV	0.058uA	957.8mV	0.103uA
17	954.3mV	0.069uA	940.4mV	0.103uA
18	945.7mV	0.103uA	951.0mV	0.106uA
19	938.6mV	0.074uA	940.4mV	0.073uA
20	950.9mV	0.062uA	958.3mV	0.093uA
21	959.5mV	0.098uA	940.9mV	0.083uA
22	949.0mV	0.103uA	949.4mV	0.047uA
23	954.0mV	0.109uA	939.9mV	0.049uA
24	940.1mV	0.048uA	955.5mV	0.048uA
25	946.5mV	0.056uA	954.6mV	0.082uA
26	947.9mV	0.102uA	955.3mV	0.091uA
27	959.6mV	0.080uA	951.9mV	0.099uA
28	959.2mV	0.081uA	956.3mV	0.103uA
29	956.0mV	0.053uA	959.6mV	0.067uA
30	954.1mV	0.056uA	951.7mV	0.064uA
31	957.7mV	0.107uA	951.6mV	0.062uA
32	941.1mV	0.076uA	953.8mV	0.109uA
33	954.0mV	0.060uA	937.8mV	0.104uA
34	959.0mV	0.094uA	945.0mV	0.078uA
35	957.0mV	0.057uA	941.1mV	0.094uA
36	950.7mV	0.058uA	947.8mV	0.098uA
37	943.0mV	0.080uA	952.9mV	0.082uA
38	953.2mV	0.063uA	942.8mV	0.073uA
39	939.5mV	0.107uA	939.7mV	0.110uA
40	954.0mV	0.049uA	942.3mV	0.060uA

SeCoS Corporation

Electrical Test Data

Report No : T141020-005
Part No : DB105S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1A, IR<10uA@VR=600V
Test Condition: 25℃
Test Date: 2014.09.01 ~ 2014.09.01
Test Standard : Specifications
Operator: Leo Hsia

Test Result: PASS

No	AC2→＋		—→AC1	
	VF (mV)	IR (uA)	VF (mV)	IR (uA)
41	940.4mV	0.074uA	955.9mV	0.069uA
42	951.6mV	0.067uA	951.1mV	0.046uA
43	958.2mV	0.055uA	937.5mV	0.099uA
44	940.1mV	0.091uA	955.2mV	0.101uA
45	939.4mV	0.101uA	949.5mV	0.098uA
46	938.4mV	0.064uA	957.9mV	0.050uA
47	949.7mV	0.105uA	946.6mV	0.064uA
48	958.7mV	0.105uA	951.7mV	0.072uA
49	944.1mV	0.072uA	945.7mV	0.059uA
50	948.4mV	0.090uA	957.3mV	0.051uA
51	956.7mV	0.068uA	952.5mV	0.101uA
52	958.4mV	0.061uA	951.1mV	0.093uA
53	952.8mV	0.074uA	951.9mV	0.110uA
54	957.8mV	0.103uA	951.6mV	0.099uA
55	948.3mV	0.104uA	947.9mV	0.061uA
56	951.7mV	0.058uA	938.7mV	0.097uA
57	943.0mV	0.099uA	951.9mV	0.077uA
58	953.3mV	0.074uA	943.5mV	0.085uA
59	937.5mV	0.060uA	957.7mV	0.084uA
60	940.3mV	0.058uA	945.3mV	0.068uA
61	956.7mV	0.050uA	957.9mV	0.086uA
62	947.7mV	0.061uA	951.9mV	0.046uA
63	950.6mV	0.075uA	942.1mV	0.072uA
64	956.5mV	0.067uA	941.7mV	0.084uA
65	938.6mV	0.062uA	953.3mV	0.088uA
66	951.6mV	0.076uA	953.7mV	0.060uA
67	942.5mV	0.061uA	957.0mV	0.107uA
68	937.1mV	0.093uA	948.1mV	0.069uA
69	947.0mV	0.092uA	937.2mV	0.088uA
70	957.8mV	0.100uA	947.7mV	0.098uA
71	937.4mV	0.087uA	949.5mV	0.107uA
72	949.5mV	0.074uA	945.1mV	0.049uA
73	957.2mV	0.080uA	948.5mV	0.073uA
74	951.2mV	0.107uA	953.8mV	0.106uA
75	949.5mV	0.060uA	943.7mV	0.108uA
76	940.6mV	0.073uA	950.5mV	0.085uA
77	937.6mV	0.084uA	955.1mV	0.083uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

High Temperature Reverse Bias Test Data

Report No : T141020-005
Part No : DB105S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1A, IR<10uA@VR=600V
Test Condition: 150 ± 10℃, 80%VR, T = 1000 hrs
Test Date: 2014.09.01 ~ 2014.10.13
Test Standard : JESD22 STANDER Method-A108
Operator: Leo Hsia
Test Result: PASS

No	Before				After			
	AC2→＋		―→AC1		AC2→＋		―→AC1	
	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	952.9mV	0.071uA	958.7mV	0.109uA	938.6mV	0.076uA	943.9mV	0.105uA
2	940.9mV	0.081uA	954.2mV	0.067uA	937.6mV	0.098uA	957.7mV	0.082uA
3	941.4mV	0.048uA	948.5mV	0.100uA	949.8mV	0.091uA	942.1mV	0.092uA
4	944.2mV	0.092uA	953.8mV	0.092uA	958.0mV	0.102uA	958.0mV	0.073uA
5	945.8mV	0.061uA	948.5mV	0.076uA	955.8mV	0.063uA	943.9mV	0.081uA
6	954.2mV	0.066uA	939.0mV	0.062uA	944.4mV	0.076uA	940.0mV	0.081uA
7	942.1mV	0.050uA	951.7mV	0.060uA	940.2mV	0.054uA	950.7mV	0.064uA
8	954.2mV	0.051uA	955.1mV	0.093uA	958.3mV	0.058uA	954.8mV	0.084uA
9	960.0mV	0.061uA	955.3mV	0.054uA	947.4mV	0.061uA	949.8mV	0.096uA
10	943.2mV	0.080uA	946.5mV	0.050uA	957.5mV	0.078uA	953.4mV	0.083uA
11	958.8mV	0.058uA	958.9mV	0.048uA	954.4mV	0.080uA	960.0mV	0.093uA
12	945.6mV	0.102uA	950.1mV	0.048uA	945.8mV	0.050uA	947.3mV	0.060uA
13	944.4mV	0.070uA	940.6mV	0.082uA	940.3mV	0.050uA	941.5mV	0.047uA
14	942.5mV	0.070uA	954.8mV	0.072uA	944.2mV	0.087uA	956.8mV	0.098uA
15	954.5mV	0.069uA	952.8mV	0.066uA	955.7mV	0.055uA	951.5mV	0.066uA
16	947.6mV	0.050uA	951.6mV	0.093uA	948.2mV	0.061uA	941.5mV	0.060uA
17	958.0mV	0.060uA	958.1mV	0.070uA	944.7mV	0.083uA	940.1mV	0.058uA
18	953.0mV	0.060uA	941.0mV	0.109uA	951.4mV	0.108uA	948.8mV	0.057uA
19	945.5mV	0.080uA	958.0mV	0.081uA	940.9mV	0.066uA	953.8mV	0.102uA
20	948.5mV	0.078uA	947.0mV	0.103uA	949.2mV	0.075uA	957.1mV	0.097uA
21	953.9mV	0.094uA	939.9mV	0.088uA	945.1mV	0.073uA	957.2mV	0.073uA
22	948.9mV	0.109uA	937.3mV	0.086uA	942.8mV	0.093uA	958.5mV	0.055uA
23	951.4mV	0.097uA	957.9mV	0.082uA	950.6mV	0.102uA	948.6mV	0.054uA
24	943.9mV	0.064uA	956.1mV	0.058uA	953.6mV	0.070uA	959.8mV	0.065uA
25	953.7mV	0.075uA	941.8mV	0.091uA	939.4mV	0.054uA	947.4mV	0.059uA
26	952.5mV	0.063uA	946.2mV	0.106uA	951.7mV	0.052uA	955.2mV	0.061uA
27	949.2mV	0.098uA	943.1mV	0.102uA	953.6mV	0.066uA	946.7mV	0.086uA
28	943.9mV	0.065uA	948.7mV	0.093uA	940.0mV	0.076uA	944.8mV	0.055uA
29	946.2mV	0.106uA	940.6mV	0.110uA	946.7mV	0.101uA	956.4mV	0.095uA
30	939.6mV	0.053uA	959.3mV	0.101uA	945.7mV	0.092uA	950.5mV	0.061uA
31	948.6mV	0.076uA	950.4mV	0.090uA	937.4mV	0.063uA	959.2mV	0.092uA
32	952.6mV	0.058uA	937.8mV	0.061uA	937.9mV	0.103uA	959.4mV	0.058uA
33	956.1mV	0.096uA	937.8mV	0.088uA	938.3mV	0.104uA	956.9mV	0.074uA
34	954.6mV	0.088uA	959.2mV	0.079uA	943.6mV	0.048uA	955.3mV	0.102uA
35	939.7mV	0.088uA	940.4mV	0.109uA	950.6mV	0.096uA	958.8mV	0.084uA
36	953.4mV	0.094uA	948.5mV	0.104uA	954.3mV	0.074uA	945.1mV	0.073uA
37	946.8mV	0.049uA	937.6mV	0.094uA	952.5mV	0.110uA	939.0mV	0.085uA
38	946.1mV	0.051uA	952.3mV	0.050uA	952.7mV	0.109uA	945.1mV	0.105uA
39	952.2mV	0.061uA	957.6mV	0.106uA	942.8mV	0.054uA	954.1mV	0.072uA
40	937.1mV	0.096uA	959.3mV	0.065uA	939.6mV	0.101uA	957.3mV	0.046uA

SeCoS Corporation

High Temperature Reverse Bias Test Data

Report No : T141020-005
Part No : DB105S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1A, IR<10uA@VR=600V
Test Condition: 150 ± 10℃, 80%VR, T = 1000 hrs
Test Date: 2014.09.01 ~ 2014.10.13
Test Standard : JESD22 STANDER Method-A108
Operator: Leo Hsia
Test Result: PASS

No	Before				After			
	AC2→＋		―→AC1		AC2→＋		―→AC1	
	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)
41	943.0mV	0.109uA	940.8mV	0.086uA	948.4mV	0.100uA	937.8mV	0.097uA
42	937.9mV	0.055uA	956.9mV	0.088uA	957.0mV	0.048uA	939.6mV	0.109uA
43	939.3mV	0.085uA	942.5mV	0.093uA	938.8mV	0.057uA	954.2mV	0.047uA
44	955.9mV	0.069uA	945.2mV	0.099uA	941.1mV	0.105uA	950.0mV	0.103uA
45	950.2mV	0.051uA	954.1mV	0.099uA	949.5mV	0.074uA	952.6mV	0.102uA
46	939.9mV	0.099uA	954.1mV	0.099uA	944.7mV	0.102uA	952.8mV	0.095uA
47	950.1mV	0.110uA	945.6mV	0.057uA	948.0mV	0.108uA	942.3mV	0.065uA
48	953.7mV	0.075uA	940.3mV	0.106uA	944.5mV	0.093uA	959.6mV	0.103uA
49	939.5mV	0.082uA	937.6mV	0.065uA	946.1mV	0.089uA	941.9mV	0.108uA
50	952.9mV	0.107uA	944.5mV	0.101uA	940.9mV	0.096uA	951.6mV	0.069uA
51	952.5mV	0.047uA	953.9mV	0.098uA	945.1mV	0.088uA	939.4mV	0.064uA
52	949.8mV	0.052uA	948.4mV	0.050uA	957.5mV	0.051uA	958.3mV	0.058uA
53	946.5mV	0.085uA	957.6mV	0.070uA	960.0mV	0.072uA	951.0mV	0.062uA
54	954.0mV	0.047uA	946.3mV	0.057uA	950.0mV	0.105uA	941.3mV	0.082uA
55	937.2mV	0.052uA	944.5mV	0.109uA	938.9mV	0.065uA	940.2mV	0.049uA
56	947.0mV	0.068uA	959.3mV	0.078uA	946.4mV	0.075uA	954.8mV	0.068uA
57	953.1mV	0.054uA	942.5mV	0.070uA	946.1mV	0.103uA	946.2mV	0.068uA
58	942.7mV	0.049uA	959.1mV	0.083uA	950.2mV	0.068uA	955.9mV	0.105uA
59	944.7mV	0.068uA	937.2mV	0.086uA	956.7mV	0.067uA	953.7mV	0.079uA
60	957.8mV	0.070uA	944.5mV	0.045uA	939.9mV	0.074uA	943.9mV	0.106uA
61	948.5mV	0.051uA	948.5mV	0.054uA	939.3mV	0.073uA	951.8mV	0.061uA
62	941.3mV	0.087uA	937.5mV	0.052uA	956.3mV	0.062uA	947.2mV	0.102uA
63	943.9mV	0.086uA	952.8mV	0.086uA	952.8mV	0.061uA	945.4mV	0.049uA
64	958.3mV	0.080uA	948.9mV	0.088uA	947.0mV	0.094uA	948.5mV	0.080uA
65	957.0mV	0.079uA	943.0mV	0.049uA	956.7mV	0.057uA	958.9mV	0.062uA
66	956.0mV	0.052uA	952.9mV	0.056uA	949.6mV	0.088uA	940.3mV	0.079uA
67	955.7mV	0.096uA	954.3mV	0.053uA	940.4mV	0.056uA	957.9mV	0.081uA
68	956.7mV	0.053uA	943.8mV	0.097uA	947.8mV	0.096uA	942.2mV	0.064uA
69	947.4mV	0.059uA	959.3mV	0.108uA	942.4mV	0.059uA	949.9mV	0.050uA
70	951.5mV	0.070uA	950.0mV	0.082uA	937.7mV	0.101uA	943.5mV	0.073uA
71	954.9mV	0.073uA	941.8mV	0.097uA	938.9mV	0.073uA	946.3mV	0.107uA
72	955.3mV	0.087uA	947.4mV	0.058uA	955.4mV	0.086uA	953.0mV	0.095uA
73	958.3mV	0.099uA	945.4mV	0.098uA	959.9mV	0.099uA	952.6mV	0.063uA
74	945.7mV	0.078uA	956.0mV	0.087uA	958.7mV	0.056uA	939.9mV	0.086uA
75	939.4mV	0.085uA	940.4mV	0.077uA	950.5mV	0.076uA	937.5mV	0.056uA
76	959.3mV	0.067uA	949.9mV	0.065uA	938.1mV	0.049uA	941.3mV	0.085uA
77	956.1mV	0.053uA	940.0mV	0.048uA	937.4mV	0.085uA	939.9mV	0.056uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

High Temperature Storage Life Test Data

Report No : T141020-005
Part No : DB105S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1A, IR<10uA@VR=600V
Test Condition: 150℃, 1000Hrs
Test Date: 2014.09.01 ~ 2014.10.13
Test Standard : JESD22 STANDER Method-A103
Operator: Leo Hsia
Test Result: PASS

No	Before				After			
	AC2→+		—→AC1		AC2→+		—→AC1	
	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	953.1mV	0.086uA	950.2mV	0.078uA	946.6mV	0.068uA	955.8mV	0.109uA
2	960.0mV	0.076uA	942.0mV	0.084uA	946.8mV	0.096uA	955.3mV	0.066uA
3	937.2mV	0.047uA	941.9mV	0.101uA	958.9mV	0.106uA	954.8mV	0.045uA
4	939.1mV	0.058uA	939.6mV	0.073uA	944.1mV	0.061uA	949.8mV	0.100uA
5	953.4mV	0.086uA	958.9mV	0.047uA	949.9mV	0.063uA	945.8mV	0.077uA
6	956.0mV	0.056uA	954.2mV	0.072uA	953.4mV	0.072uA	954.7mV	0.089uA
7	953.4mV	0.090uA	958.4mV	0.075uA	939.5mV	0.089uA	946.5mV	0.091uA
8	958.3mV	0.083uA	954.2mV	0.081uA	940.7mV	0.058uA	953.2mV	0.089uA
9	942.8mV	0.090uA	942.5mV	0.056uA	956.5mV	0.065uA	943.5mV	0.079uA
10	937.5mV	0.078uA	937.8mV	0.046uA	945.0mV	0.099uA	937.9mV	0.069uA
11	947.8mV	0.085uA	947.9mV	0.085uA	939.6mV	0.061uA	958.6mV	0.073uA
12	944.2mV	0.105uA	953.9mV	0.080uA	937.9mV	0.053uA	948.3mV	0.062uA
13	959.3mV	0.062uA	938.0mV	0.103uA	955.1mV	0.076uA	956.2mV	0.047uA
14	944.3mV	0.080uA	949.3mV	0.096uA	954.4mV	0.053uA	957.7mV	0.088uA
15	953.1mV	0.108uA	949.4mV	0.058uA	948.3mV	0.073uA	953.8mV	0.100uA
16	956.4mV	0.047uA	941.8mV	0.106uA	940.7mV	0.093uA	951.2mV	0.078uA
17	947.1mV	0.069uA	958.6mV	0.066uA	946.2mV	0.075uA	948.0mV	0.065uA
18	942.9mV	0.096uA	942.1mV	0.052uA	948.9mV	0.087uA	947.1mV	0.061uA
19	942.2mV	0.061uA	958.0mV	0.093uA	958.2mV	0.086uA	955.0mV	0.106uA
20	959.3mV	0.090uA	951.0mV	0.091uA	943.3mV	0.075uA	950.8mV	0.077uA
21	941.0mV	0.072uA	954.2mV	0.108uA	954.7mV	0.094uA	942.9mV	0.104uA
22	959.5mV	0.067uA	940.8mV	0.079uA	943.1mV	0.055uA	951.3mV	0.054uA
23	946.6mV	0.066uA	953.2mV	0.100uA	940.7mV	0.070uA	941.0mV	0.088uA
24	958.9mV	0.063uA	944.7mV	0.087uA	937.5mV	0.085uA	938.0mV	0.070uA
25	959.8mV	0.075uA	959.0mV	0.078uA	940.0mV	0.100uA	957.2mV	0.085uA
26	947.3mV	0.074uA	944.6mV	0.082uA	937.4mV	0.110uA	937.4mV	0.057uA
27	949.9mV	0.050uA	939.3mV	0.071uA	951.2mV	0.065uA	953.7mV	0.051uA
28	937.3mV	0.058uA	952.4mV	0.109uA	955.2mV	0.071uA	940.9mV	0.052uA
29	956.1mV	0.105uA	945.7mV	0.072uA	957.2mV	0.074uA	945.5mV	0.071uA
30	947.5mV	0.087uA	944.1mV	0.052uA	950.0mV	0.090uA	950.4mV	0.047uA
31	958.0mV	0.091uA	944.9mV	0.079uA	957.7mV	0.067uA	938.6mV	0.086uA
32	944.2mV	0.097uA	939.0mV	0.078uA	953.0mV	0.058uA	953.0mV	0.053uA
33	951.8mV	0.086uA	959.0mV	0.073uA	944.4mV	0.097uA	947.7mV	0.052uA
34	942.4mV	0.055uA	955.5mV	0.067uA	953.7mV	0.078uA	947.0mV	0.072uA
35	955.2mV	0.051uA	952.8mV	0.074uA	947.8mV	0.073uA	954.1mV	0.046uA
36	943.5mV	0.049uA	946.0mV	0.054uA	942.4mV	0.083uA	946.1mV	0.079uA
37	951.1mV	0.061uA	954.6mV	0.057uA	957.0mV	0.048uA	959.0mV	0.102uA
38	943.3mV	0.068uA	954.2mV	0.062uA	943.5mV	0.074uA	958.1mV	0.079uA
39	944.9mV	0.085uA	955.6mV	0.106uA	954.3mV	0.074uA	957.0mV	0.048uA
40	938.9mV	0.060uA	938.5mV	0.067uA	941.2mV	0.055uA	949.7mV	0.105uA

SeCoS Corporation

High Temperature Storage Life Test Data

Report No : T141020-005
Part No : DB105S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1A, IR<10uA@VR=600V
Test Condition: 150℃, 1000Hrs
Test Date: 2014.09.01 ~ 2014.10.13
Test Standard : JESD22 STANDER Method-A103
Operator: Leo Hsia
Test Result: PASS

No	Before				After			
	AC2→+		—→AC1		AC2→+		—→AC1	
	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)
41	943.7mV	0.080uA	957.8mV	0.108uA	942.0mV	0.066uA	955.4mV	0.071uA
42	939.0mV	0.102uA	946.7mV	0.073uA	955.9mV	0.083uA	950.5mV	0.055uA
43	957.3mV	0.106uA	951.9mV	0.065uA	956.1mV	0.049uA	940.5mV	0.092uA
44	948.4mV	0.064uA	942.9mV	0.102uA	947.3mV	0.108uA	948.9mV	0.061uA
45	937.9mV	0.048uA	937.3mV	0.088uA	939.6mV	0.106uA	943.8mV	0.093uA
46	947.6mV	0.097uA	938.3mV	0.093uA	946.6mV	0.081uA	952.5mV	0.097uA
47	943.5mV	0.049uA	947.5mV	0.087uA	941.1mV	0.074uA	938.2mV	0.078uA
48	942.1mV	0.101uA	955.2mV	0.047uA	943.3mV	0.107uA	945.4mV	0.088uA
49	948.5mV	0.058uA	957.1mV	0.064uA	957.0mV	0.088uA	944.8mV	0.058uA
50	954.6mV	0.054uA	949.9mV	0.069uA	953.3mV	0.045uA	945.0mV	0.060uA
51	943.8mV	0.098uA	953.5mV	0.055uA	945.3mV	0.046uA	944.3mV	0.084uA
52	952.7mV	0.102uA	950.0mV	0.063uA	952.3mV	0.072uA	949.4mV	0.107uA
53	955.9mV	0.084uA	956.3mV	0.080uA	952.3mV	0.059uA	952.1mV	0.074uA
54	944.0mV	0.081uA	944.6mV	0.065uA	939.0mV	0.104uA	947.7mV	0.068uA
55	953.2mV	0.106uA	939.7mV	0.092uA	949.4mV	0.095uA	943.7mV	0.074uA
56	938.6mV	0.091uA	951.8mV	0.049uA	951.8mV	0.075uA	950.7mV	0.065uA
57	940.7mV	0.048uA	946.7mV	0.060uA	957.9mV	0.054uA	951.6mV	0.049uA
58	941.3mV	0.051uA	952.0mV	0.082uA	948.8mV	0.090uA	945.6mV	0.097uA
59	949.3mV	0.088uA	958.6mV	0.090uA	940.6mV	0.095uA	947.7mV	0.057uA
60	954.9mV	0.102uA	942.2mV	0.081uA	940.4mV	0.048uA	943.0mV	0.053uA
61	944.0mV	0.077uA	950.1mV	0.073uA	947.8mV	0.107uA	959.8mV	0.082uA
62	938.0mV	0.099uA	947.8mV	0.095uA	950.3mV	0.108uA	942.9mV	0.099uA
63	940.9mV	0.048uA	951.2mV	0.072uA	950.1mV	0.052uA	941.7mV	0.060uA
64	957.8mV	0.073uA	952.4mV	0.057uA	942.4mV	0.081uA	938.0mV	0.047uA
65	943.7mV	0.084uA	941.2mV	0.097uA	949.4mV	0.090uA	955.7mV	0.068uA
66	957.2mV	0.094uA	939.5mV	0.067uA	940.5mV	0.059uA	950.6mV	0.096uA
67	947.3mV	0.105uA	943.8mV	0.071uA	953.4mV	0.054uA	956.2mV	0.081uA
68	957.6mV	0.090uA	951.6mV	0.060uA	956.0mV	0.059uA	954.3mV	0.055uA
69	943.2mV	0.070uA	948.0mV	0.068uA	947.4mV	0.065uA	943.9mV	0.101uA
70	947.8mV	0.090uA	939.7mV	0.057uA	944.4mV	0.080uA	947.7mV	0.077uA
71	943.5mV	0.097uA	950.5mV	0.092uA	955.9mV	0.056uA	944.1mV	0.108uA
72	945.7mV	0.076uA	956.0mV	0.079uA	940.6mV	0.104uA	948.9mV	0.090uA
73	943.9mV	0.058uA	956.1mV	0.047uA	947.9mV	0.053uA	938.2mV	0.089uA
74	955.5mV	0.089uA	942.0mV	0.107uA	952.4mV	0.052uA	958.0mV	0.051uA
75	945.0mV	0.058uA	945.3mV	0.102uA	938.4mV	0.078uA	957.2mV	0.101uA
76	941.7mV	0.082uA	939.2mV	0.068uA	957.6mV	0.081uA	957.7mV	0.092uA
77	937.9mV	0.085uA	954.8mV	0.053uA	949.0mV	0.089uA	948.4mV	0.107uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

Pressure Cooker Test Data

Report No : T141020-005
Part No : DB105S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1A, IR<10uA@VR=600V
Test Condition: 121℃, 100%RH, 29.7PSIG, 168Hrs
Test Date: 2014.09.07 ~ 2014.09.15
Test Standard : JESD22 STANDER Method-A102
Operator: Leo Hsia
Test Result: PASS

No	Before				After			
	AC2→+		−→AC1		AC2→+		−→AC1	
	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	944.7mV	0.046uA	948.7mV	0.066uA	947.3mV	0.085uA	949.1mV	0.048uA
2	950.3mV	0.072uA	941.5mV	0.051uA	951.7mV	0.090uA	955.4mV	0.060uA
3	946.6mV	0.046uA	952.5mV	0.061uA	939.4mV	0.104uA	943.3mV	0.087uA
4	959.5mV	0.084uA	937.3mV	0.105uA	946.3mV	0.073uA	939.1mV	0.080uA
5	947.5mV	0.104uA	942.2mV	0.102uA	954.4mV	0.059uA	946.2mV	0.099uA
6	958.3mV	0.095uA	939.8mV	0.078uA	952.7mV	0.057uA	941.1mV	0.087uA
7	940.1mV	0.065uA	950.7mV	0.092uA	955.9mV	0.058uA	950.3mV	0.085uA
8	940.0mV	0.059uA	957.3mV	0.077uA	945.8mV	0.049uA	951.1mV	0.065uA
9	945.8mV	0.080uA	950.4mV	0.084uA	946.0mV	0.074uA	944.3mV	0.105uA
10	944.4mV	0.067uA	942.2mV	0.083uA	955.4mV	0.105uA	951.4mV	0.069uA
11	955.3mV	0.079uA	947.4mV	0.082uA	941.9mV	0.082uA	956.6mV	0.105uA
12	940.4mV	0.080uA	957.5mV	0.076uA	944.9mV	0.080uA	957.0mV	0.095uA
13	938.7mV	0.064uA	944.6mV	0.064uA	951.5mV	0.085uA	949.7mV	0.083uA
14	949.9mV	0.045uA	957.4mV	0.106uA	956.0mV	0.089uA	952.4mV	0.093uA
15	940.5mV	0.048uA	958.5mV	0.073uA	946.7mV	0.051uA	953.8mV	0.102uA
16	946.3mV	0.082uA	941.3mV	0.098uA	947.3mV	0.046uA	954.6mV	0.056uA
17	941.7mV	0.096uA	944.7mV	0.103uA	939.0mV	0.087uA	948.9mV	0.049uA
18	948.2mV	0.072uA	952.0mV	0.052uA	945.5mV	0.060uA	940.6mV	0.092uA
19	949.4mV	0.059uA	951.8mV	0.058uA	954.4mV	0.070uA	952.5mV	0.059uA
20	951.8mV	0.106uA	959.6mV	0.108uA	944.1mV	0.057uA	947.3mV	0.053uA
21	944.3mV	0.067uA	944.6mV	0.046uA	955.3mV	0.099uA	946.0mV	0.077uA
22	953.1mV	0.083uA	947.6mV	0.052uA	949.0mV	0.061uA	955.8mV	0.060uA
23	944.0mV	0.079uA	944.0mV	0.108uA	942.4mV	0.094uA	955.8mV	0.103uA
24	957.5mV	0.074uA	941.7mV	0.069uA	955.5mV	0.099uA	943.4mV	0.048uA
25	957.5mV	0.065uA	938.6mV	0.070uA	943.3mV	0.086uA	957.2mV	0.107uA
26	949.8mV	0.060uA	943.3mV	0.081uA	951.9mV	0.094uA	957.8mV	0.067uA
27	941.9mV	0.092uA	952.2mV	0.072uA	950.4mV	0.046uA	950.0mV	0.065uA
28	937.7mV	0.050uA	945.0mV	0.059uA	945.8mV	0.091uA	949.5mV	0.085uA
29	940.3mV	0.106uA	951.3mV	0.054uA	956.8mV	0.078uA	959.0mV	0.076uA
30	958.6mV	0.100uA	943.3mV	0.055uA	942.0mV	0.085uA	939.8mV	0.102uA
31	944.8mV	0.060uA	944.1mV	0.092uA	956.2mV	0.066uA	937.9mV	0.082uA
32	945.5mV	0.089uA	938.6mV	0.065uA	947.8mV	0.088uA	949.2mV	0.051uA
33	943.4mV	0.059uA	937.1mV	0.097uA	953.1mV	0.056uA	944.2mV	0.109uA
34	951.9mV	0.059uA	949.9mV	0.049uA	950.4mV	0.046uA	942.8mV	0.078uA
35	938.7mV	0.094uA	950.0mV	0.068uA	943.0mV	0.063uA	953.0mV	0.058uA
36	944.9mV	0.107uA	941.1mV	0.046uA	945.4mV	0.064uA	948.7mV	0.060uA
37	948.9mV	0.089uA	950.1mV	0.063uA	938.5mV	0.070uA	947.0mV	0.103uA
38	956.3mV	0.100uA	949.9mV	0.098uA	959.2mV	0.083uA	941.2mV	0.104uA
39	957.9mV	0.083uA	944.2mV	0.067uA	956.3mV	0.102uA	939.8mV	0.071uA
40	957.7mV	0.059uA	941.4mV	0.074uA	941.6mV	0.072uA	953.1mV	0.068uA

SeCoS Corporation

Pressure Cooker Test Data

Report No : T141020-005
Part No : DB105S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1A, IR<10uA@VR=600V
Test Condition: 121℃, 100%RH, 29.7PSIG, 168Hrs
Test Date: 2014.09.07 ~ 2014.09.15
Test Standard : JESD22 STANDER Method-A102
Operator: Leo Hsia
Test Result: PASS

No	Before				After			
	AC2→+		—→AC1		AC2→+		—→AC1	
	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)
41	956.3mV	0.063uA	953.1mV	0.087uA	957.0mV	0.086uA	942.8mV	0.048uA
42	952.3mV	0.046uA	956.5mV	0.063uA	954.9mV	0.078uA	955.6mV	0.090uA
43	951.6mV	0.097uA	940.3mV	0.098uA	948.4mV	0.074uA	949.6mV	0.081uA
44	951.7mV	0.077uA	952.9mV	0.069uA	942.1mV	0.070uA	952.9mV	0.092uA
45	957.4mV	0.091uA	948.7mV	0.068uA	950.9mV	0.054uA	939.8mV	0.108uA
46	958.2mV	0.101uA	938.4mV	0.079uA	957.6mV	0.045uA	947.5mV	0.085uA
47	942.9mV	0.047uA	953.0mV	0.049uA	957.5mV	0.090uA	947.9mV	0.060uA
48	943.7mV	0.071uA	957.6mV	0.063uA	942.8mV	0.104uA	959.2mV	0.101uA
49	944.1mV	0.055uA	955.6mV	0.104uA	942.7mV	0.083uA	948.1mV	0.092uA
50	954.7mV	0.086uA	959.1mV	0.062uA	947.5mV	0.074uA	949.0mV	0.097uA
51	943.8mV	0.062uA	939.6mV	0.063uA	945.2mV	0.051uA	958.3mV	0.102uA
52	942.8mV	0.066uA	938.5mV	0.055uA	945.2mV	0.105uA	959.0mV	0.062uA
53	943.7mV	0.083uA	949.1mV	0.087uA	940.8mV	0.086uA	957.9mV	0.090uA
54	950.4mV	0.056uA	947.1mV	0.109uA	959.1mV	0.046uA	938.2mV	0.090uA
55	950.7mV	0.073uA	952.0mV	0.063uA	938.9mV	0.075uA	958.8mV	0.049uA
56	947.8mV	0.101uA	955.2mV	0.067uA	939.3mV	0.105uA	959.5mV	0.077uA
57	953.2mV	0.063uA	947.9mV	0.096uA	957.9mV	0.109uA	937.5mV	0.080uA
58	952.4mV	0.092uA	943.2mV	0.107uA	949.1mV	0.078uA	939.2mV	0.097uA
59	940.3mV	0.090uA	951.7mV	0.098uA	955.9mV	0.083uA	937.2mV	0.066uA
60	951.4mV	0.068uA	944.4mV	0.084uA	938.2mV	0.055uA	943.6mV	0.055uA
61	947.3mV	0.097uA	944.6mV	0.067uA	958.5mV	0.052uA	949.9mV	0.090uA
62	952.6mV	0.075uA	942.4mV	0.081uA	958.4mV	0.054uA	938.9mV	0.091uA
63	957.7mV	0.090uA	941.9mV	0.081uA	951.2mV	0.077uA	943.5mV	0.081uA
64	943.3mV	0.094uA	943.6mV	0.062uA	940.4mV	0.057uA	951.0mV	0.057uA
65	951.5mV	0.086uA	948.6mV	0.048uA	958.6mV	0.105uA	946.5mV	0.108uA
66	942.0mV	0.060uA	937.6mV	0.062uA	950.4mV	0.073uA	954.2mV	0.096uA
67	959.5mV	0.107uA	955.9mV	0.085uA	938.4mV	0.057uA	941.9mV	0.046uA
68	956.6mV	0.081uA	948.6mV	0.092uA	952.0mV	0.090uA	951.3mV	0.086uA
69	948.6mV	0.046uA	939.4mV	0.106uA	957.5mV	0.093uA	958.8mV	0.107uA
70	945.2mV	0.078uA	948.6mV	0.080uA	955.4mV	0.076uA	943.1mV	0.091uA
71	946.8mV	0.051uA	943.1mV	0.048uA	955.0mV	0.064uA	953.6mV	0.047uA
72	955.1mV	0.062uA	951.0mV	0.088uA	952.5mV	0.068uA	943.9mV	0.047uA
73	938.1mV	0.094uA	959.1mV	0.064uA	944.0mV	0.088uA	957.8mV	0.099uA
74	954.0mV	0.101uA	938.8mV	0.083uA	942.5mV	0.087uA	952.8mV	0.081uA
75	958.7mV	0.060uA	940.7mV	0.095uA	953.3mV	0.045uA	952.3mV	0.093uA
76	947.6mV	0.062uA	954.9mV	0.071uA	958.9mV	0.096uA	958.7mV	0.101uA
77	953.9mV	0.081uA	954.9mV	0.056uA	943.1mV	0.059uA	938.3mV	0.087uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

Temperature Cycle Test Data

Report No : T141020-005
Part No : DB105S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1A, IR<10uA@VR=600V
Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle
Test Date: 2014.09.01 ~ 2014.10.20
Test Standard : JESD22 STANDER Method-A104
Operator: Leo Hsia
Test Result: PASS

No	Before				After			
	AC2→＋		―→AC1		AC2→＋		―→AC1	
	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	955.5mV	0.056uA	947.5mV	0.080uA	949.1mV	0.078uA	951.5mV	0.077uA
2	953.7mV	0.078uA	944.5mV	0.092uA	943.6mV	0.106uA	944.8mV	0.107uA
3	937.2mV	0.088uA	953.4mV	0.078uA	946.6mV	0.058uA	939.0mV	0.090uA
4	958.8mV	0.063uA	957.9mV	0.073uA	959.0mV	0.063uA	948.1mV	0.104uA
5	954.5mV	0.107uA	940.6mV	0.076uA	944.8mV	0.049uA	951.8mV	0.057uA
6	957.1mV	0.053uA	957.6mV	0.092uA	939.8mV	0.075uA	942.4mV	0.052uA
7	955.4mV	0.069uA	950.1mV	0.107uA	948.2mV	0.056uA	949.5mV	0.107uA
8	948.0mV	0.101uA	945.9mV	0.075uA	951.6mV	0.086uA	956.3mV	0.088uA
9	945.2mV	0.055uA	942.6mV	0.108uA	939.3mV	0.073uA	938.4mV	0.048uA
10	946.8mV	0.109uA	951.9mV	0.083uA	948.5mV	0.091uA	949.5mV	0.103uA
11	940.8mV	0.058uA	949.2mV	0.093uA	953.4mV	0.072uA	958.8mV	0.046uA
12	937.2mV	0.069uA	953.0mV	0.050uA	953.1mV	0.081uA	941.2mV	0.095uA
13	953.5mV	0.053uA	939.2mV	0.059uA	952.0mV	0.074uA	942.9mV	0.051uA
14	940.2mV	0.098uA	945.4mV	0.107uA	951.0mV	0.069uA	948.6mV	0.051uA
15	939.9mV	0.103uA	955.8mV	0.099uA	941.4mV	0.081uA	948.0mV	0.059uA
16	952.7mV	0.064uA	937.2mV	0.106uA	949.0mV	0.078uA	957.5mV	0.073uA
17	952.1mV	0.079uA	950.2mV	0.101uA	949.1mV	0.102uA	941.3mV	0.076uA
18	957.0mV	0.055uA	954.8mV	0.072uA	950.5mV	0.107uA	944.7mV	0.048uA
19	942.7mV	0.107uA	959.2mV	0.106uA	953.9mV	0.050uA	937.4mV	0.045uA
20	957.0mV	0.069uA	959.3mV	0.060uA	945.5mV	0.066uA	957.8mV	0.055uA
21	938.2mV	0.099uA	948.2mV	0.083uA	949.1mV	0.073uA	954.7mV	0.062uA
22	943.1mV	0.067uA	956.1mV	0.067uA	953.0mV	0.048uA	942.3mV	0.077uA
23	951.7mV	0.052uA	956.8mV	0.102uA	937.9mV	0.058uA	939.4mV	0.086uA
24	946.0mV	0.107uA	947.4mV	0.067uA	945.4mV	0.077uA	945.4mV	0.076uA
25	946.0mV	0.074uA	944.6mV	0.079uA	943.9mV	0.093uA	941.2mV	0.095uA
26	942.6mV	0.104uA	954.5mV	0.057uA	943.9mV	0.054uA	948.3mV	0.074uA
27	949.0mV	0.079uA	941.5mV	0.069uA	945.7mV	0.082uA	954.1mV	0.069uA
28	959.4mV	0.071uA	938.4mV	0.059uA	947.6mV	0.054uA	952.0mV	0.081uA
29	952.3mV	0.057uA	938.1mV	0.084uA	953.1mV	0.080uA	944.9mV	0.071uA
30	947.8mV	0.080uA	954.8mV	0.065uA	940.0mV	0.080uA	958.7mV	0.098uA
31	955.0mV	0.059uA	954.9mV	0.082uA	945.5mV	0.050uA	944.5mV	0.049uA
32	941.8mV	0.069uA	944.2mV	0.050uA	955.8mV	0.099uA	959.8mV	0.067uA
33	939.7mV	0.080uA	959.6mV	0.078uA	946.1mV	0.082uA	947.1mV	0.100uA
34	952.2mV	0.068uA	953.0mV	0.093uA	947.2mV	0.094uA	943.6mV	0.077uA
35	952.1mV	0.081uA	956.9mV	0.063uA	954.7mV	0.053uA	952.9mV	0.072uA
36	937.5mV	0.052uA	958.6mV	0.096uA	941.5mV	0.087uA	943.3mV	0.105uA
37	959.3mV	0.061uA	944.7mV	0.058uA	947.3mV	0.087uA	937.2mV	0.094uA
38	948.1mV	0.085uA	951.6mV	0.062uA	956.0mV	0.072uA	951.3mV	0.057uA
39	944.0mV	0.086uA	940.4mV	0.054uA	937.3mV	0.076uA	944.8mV	0.080uA
40	951.8mV	0.068uA	937.9mV	0.074uA	940.2mV	0.076uA	940.5mV	0.071uA

SeCoS Corporation

Temperature Cycle Test Data

Report No : T141020-005
Part No : DB105S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1A, IR<10uA@VR=600V
Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle
Test Date: 2014.09.01 ~ 2014.10.20
Test Standard : JESD22 STANDER Method-A104
Operator: Leo Hsia
Test Result: PASS

No	Before				After			
	AC2→＋		―→AC1		AC2→＋		―→AC1	
	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)
41	953.2mV	0.067uA	943.3mV	0.109uA	942.3mV	0.048uA	945.5mV	0.054uA
42	956.9mV	0.081uA	955.0mV	0.050uA	940.0mV	0.102uA	954.0mV	0.089uA
43	954.1mV	0.101uA	944.9mV	0.046uA	939.4mV	0.094uA	945.3mV	0.083uA
44	948.9mV	0.103uA	952.2mV	0.060uA	941.2mV	0.069uA	945.4mV	0.070uA
45	959.5mV	0.084uA	946.8mV	0.090uA	949.9mV	0.065uA	960.0mV	0.068uA
46	951.3mV	0.095uA	953.0mV	0.063uA	944.8mV	0.082uA	940.9mV	0.109uA
47	942.8mV	0.060uA	960.0mV	0.106uA	939.2mV	0.083uA	943.0mV	0.056uA
48	953.4mV	0.047uA	952.0mV	0.105uA	955.1mV	0.102uA	943.5mV	0.072uA
49	950.6mV	0.106uA	937.3mV	0.056uA	946.1mV	0.092uA	946.9mV	0.089uA
50	942.2mV	0.073uA	946.9mV	0.103uA	957.6mV	0.068uA	940.9mV	0.070uA
51	949.8mV	0.063uA	954.8mV	0.094uA	946.6mV	0.088uA	949.9mV	0.075uA
52	952.4mV	0.069uA	957.2mV	0.092uA	939.0mV	0.053uA	947.5mV	0.082uA
53	949.4mV	0.088uA	952.6mV	0.082uA	959.6mV	0.102uA	945.1mV	0.090uA
54	946.8mV	0.070uA	949.3mV	0.070uA	958.4mV	0.090uA	953.0mV	0.085uA
55	947.0mV	0.100uA	957.3mV	0.051uA	955.1mV	0.099uA	949.5mV	0.062uA
56	945.1mV	0.056uA	953.1mV	0.047uA	940.1mV	0.105uA	952.2mV	0.086uA
57	954.5mV	0.071uA	948.8mV	0.075uA	947.9mV	0.092uA	945.1mV	0.091uA
58	958.5mV	0.061uA	943.3mV	0.069uA	937.5mV	0.088uA	951.6mV	0.081uA
59	954.4mV	0.068uA	953.9mV	0.056uA	956.4mV	0.085uA	950.1mV	0.050uA
60	949.2mV	0.074uA	956.3mV	0.070uA	948.7mV	0.076uA	953.1mV	0.075uA
61	959.7mV	0.078uA	952.0mV	0.068uA	940.1mV	0.065uA	950.9mV	0.070uA
62	950.9mV	0.079uA	948.6mV	0.092uA	940.9mV	0.073uA	956.2mV	0.079uA
63	953.8mV	0.078uA	947.5mV	0.106uA	955.9mV	0.078uA	938.6mV	0.084uA
64	959.4mV	0.086uA	942.3mV	0.083uA	940.0mV	0.067uA	950.3mV	0.099uA
65	957.4mV	0.047uA	938.2mV	0.081uA	956.9mV	0.045uA	946.8mV	0.049uA
66	950.6mV	0.090uA	957.1mV	0.076uA	940.8mV	0.101uA	938.3mV	0.061uA
67	953.8mV	0.075uA	944.0mV	0.046uA	937.9mV	0.109uA	946.5mV	0.056uA
68	947.9mV	0.096uA	959.1mV	0.064uA	956.2mV	0.052uA	939.6mV	0.083uA
69	943.8mV	0.055uA	950.0mV	0.063uA	952.4mV	0.071uA	939.3mV	0.096uA
70	953.2mV	0.063uA	953.0mV	0.065uA	957.1mV	0.050uA	940.1mV	0.064uA
71	942.6mV	0.048uA	949.7mV	0.085uA	956.9mV	0.095uA	949.2mV	0.056uA
72	946.5mV	0.085uA	959.3mV	0.052uA	945.5mV	0.106uA	942.2mV	0.046uA
73	947.9mV	0.102uA	942.5mV	0.084uA	956.8mV	0.098uA	954.5mV	0.109uA
74	957.6mV	0.098uA	946.7mV	0.050uA	955.1mV	0.100uA	956.1mV	0.089uA
75	941.5mV	0.100uA	954.4mV	0.101uA	955.6mV	0.093uA	955.8mV	0.092uA
76	952.0mV	0.080uA	937.3mV	0.090uA	944.1mV	0.078uA	939.0mV	0.082uA
77	943.7mV	0.053uA	941.5mV	0.094uA	951.4mV	0.053uA	955.4mV	0.107uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

High Temperature High Humidity Test Data

Report No : T141020-005
Part No : DB105S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1A, IR<10uA@VR=600V
Test Condition: 85±2℃, 85±5%RH, 1000Hrs
Test Date: 2014.09.01 ~ 2014.10.13
Test Standard : JESD22 STANDER Method-A101
Operator: Leo Hsia
Test Result: PASS

No	Before				After			
	AC2→+		—→AC1		AC2→+		—→AC1	
	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	956.2mV	0.079uA	943.3mV	0.069uA	943.1mV	0.072uA	942.6mV	0.076uA
2	941.3mV	0.102uA	948.2mV	0.048uA	958.5mV	0.105uA	937.4mV	0.063uA
3	946.9mV	0.055uA	944.4mV	0.108uA	943.5mV	0.096uA	947.5mV	0.093uA
4	959.4mV	0.047uA	947.0mV	0.056uA	959.6mV	0.092uA	939.7mV	0.105uA
5	942.7mV	0.080uA	955.7mV	0.108uA	952.2mV	0.047uA	953.6mV	0.071uA
6	958.0mV	0.094uA	938.0mV	0.104uA	954.0mV	0.104uA	939.8mV	0.083uA
7	945.2mV	0.088uA	939.3mV	0.088uA	950.5mV	0.100uA	940.4mV	0.093uA
8	950.1mV	0.087uA	938.0mV	0.084uA	946.6mV	0.103uA	959.8mV	0.079uA
9	941.9mV	0.049uA	959.3mV	0.071uA	950.8mV	0.048uA	950.1mV	0.092uA
10	951.6mV	0.052uA	956.6mV	0.100uA	946.9mV	0.098uA	956.9mV	0.046uA
11	950.0mV	0.060uA	948.5mV	0.057uA	951.8mV	0.092uA	949.9mV	0.063uA
12	948.2mV	0.095uA	940.3mV	0.066uA	939.6mV	0.075uA	957.0mV	0.074uA
13	942.7mV	0.073uA	948.8mV	0.105uA	941.4mV	0.048uA	948.0mV	0.078uA
14	941.1mV	0.065uA	943.8mV	0.102uA	957.8mV	0.048uA	949.1mV	0.049uA
15	956.0mV	0.093uA	949.5mV	0.095uA	959.3mV	0.100uA	951.9mV	0.095uA
16	951.5mV	0.108uA	938.3mV	0.077uA	940.1mV	0.105uA	951.9mV	0.078uA
17	939.3mV	0.082uA	941.1mV	0.090uA	945.7mV	0.075uA	941.4mV	0.096uA
18	938.1mV	0.067uA	944.5mV	0.055uA	938.6mV	0.075uA	956.6mV	0.078uA
19	944.7mV	0.102uA	940.0mV	0.080uA	947.1mV	0.057uA	957.4mV	0.096uA
20	947.4mV	0.046uA	959.1mV	0.102uA	958.3mV	0.099uA	947.0mV	0.091uA
21	951.4mV	0.066uA	958.2mV	0.076uA	940.0mV	0.099uA	937.9mV	0.056uA
22	948.2mV	0.090uA	948.0mV	0.103uA	938.7mV	0.070uA	947.5mV	0.074uA
23	937.3mV	0.064uA	959.7mV	0.077uA	954.0mV	0.094uA	946.6mV	0.067uA
24	948.2mV	0.084uA	959.4mV	0.107uA	941.0mV	0.064uA	943.4mV	0.092uA
25	950.0mV	0.084uA	958.6mV	0.104uA	937.2mV	0.045uA	942.3mV	0.080uA
26	948.6mV	0.055uA	953.7mV	0.055uA	939.5mV	0.077uA	955.2mV	0.087uA
27	938.1mV	0.058uA	954.9mV	0.050uA	953.4mV	0.096uA	941.3mV	0.086uA
28	957.0mV	0.066uA	947.2mV	0.059uA	939.8mV	0.109uA	947.7mV	0.051uA
29	939.4mV	0.071uA	947.8mV	0.090uA	959.3mV	0.075uA	958.3mV	0.074uA
30	944.8mV	0.101uA	943.7mV	0.088uA	950.6mV	0.100uA	949.3mV	0.081uA
31	953.6mV	0.100uA	951.4mV	0.056uA	950.8mV	0.057uA	956.1mV	0.081uA
32	944.1mV	0.082uA	955.5mV	0.048uA	957.7mV	0.091uA	956.9mV	0.077uA
33	950.7mV	0.106uA	942.0mV	0.106uA	944.3mV	0.081uA	945.5mV	0.068uA
34	938.9mV	0.071uA	944.5mV	0.085uA	954.8mV	0.066uA	958.1mV	0.103uA
35	939.7mV	0.107uA	959.0mV	0.073uA	944.1mV	0.086uA	948.1mV	0.082uA
36	957.4mV	0.078uA	938.7mV	0.093uA	945.9mV	0.071uA	956.4mV	0.081uA
37	943.5mV	0.068uA	955.5mV	0.102uA	946.1mV	0.052uA	939.3mV	0.107uA
38	940.6mV	0.097uA	939.3mV	0.060uA	945.0mV	0.104uA	945.1mV	0.094uA
39	939.2mV	0.081uA	938.7mV	0.110uA	953.1mV	0.095uA	940.8mV	0.071uA
40	942.4mV	0.105uA	945.0mV	0.057uA	953.9mV	0.103uA	946.9mV	0.071uA

SeCoS Corporation

High Temperature High Humidity Test Data

Report No : T141020-005
Part No : DB105S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1A, IR<10uA@VR=600V
Test Condition: 85±2℃, 85±5%RH, 1000Hrs
Test Date: 2014.09.01 ~ 2014.10.13
Test Standard : JESD22 STANDER Method-A101
Operator: Leo Hsia
Test Result: PASS

No	Before				After			
	AC2→+		—→AC1		AC2→+		—→AC1	
	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)
41	950.1mV	0.066uA	939.0mV	0.103uA	950.4mV	0.073uA	954.7mV	0.063uA
42	954.2mV	0.099uA	948.2mV	0.059uA	953.3mV	0.087uA	952.5mV	0.046uA
43	956.1mV	0.097uA	937.5mV	0.055uA	956.0mV	0.108uA	953.1mV	0.082uA
44	956.2mV	0.048uA	948.9mV	0.073uA	946.3mV	0.090uA	940.1mV	0.103uA
45	959.6mV	0.090uA	959.6mV	0.062uA	938.6mV	0.108uA	949.7mV	0.102uA
46	944.5mV	0.062uA	944.4mV	0.109uA	956.5mV	0.096uA	943.3mV	0.063uA
47	951.1mV	0.074uA	942.7mV	0.097uA	956.2mV	0.051uA	938.2mV	0.086uA
48	946.9mV	0.108uA	956.6mV	0.058uA	937.8mV	0.072uA	954.6mV	0.066uA
49	937.3mV	0.058uA	937.2mV	0.081uA	950.0mV	0.056uA	954.8mV	0.051uA
50	944.3mV	0.058uA	955.9mV	0.070uA	946.2mV	0.075uA	957.9mV	0.048uA
51	955.5mV	0.049uA	941.5mV	0.100uA	953.5mV	0.106uA	958.6mV	0.090uA
52	938.0mV	0.093uA	954.8mV	0.101uA	956.2mV	0.054uA	937.5mV	0.060uA
53	940.3mV	0.063uA	951.3mV	0.062uA	958.6mV	0.071uA	956.1mV	0.065uA
54	956.5mV	0.066uA	946.0mV	0.069uA	950.6mV	0.091uA	959.6mV	0.057uA
55	954.4mV	0.072uA	949.3mV	0.084uA	954.8mV	0.074uA	952.3mV	0.079uA
56	955.4mV	0.062uA	946.8mV	0.106uA	949.4mV	0.085uA	941.6mV	0.059uA
57	958.7mV	0.046uA	942.6mV	0.099uA	952.3mV	0.082uA	937.7mV	0.090uA
58	944.4mV	0.091uA	947.0mV	0.083uA	942.6mV	0.109uA	952.2mV	0.102uA
59	942.9mV	0.108uA	940.2mV	0.088uA	957.8mV	0.064uA	944.6mV	0.070uA
60	937.2mV	0.101uA	940.7mV	0.087uA	958.5mV	0.095uA	943.3mV	0.060uA
61	941.6mV	0.088uA	941.0mV	0.081uA	957.7mV	0.063uA	957.9mV	0.059uA
62	945.4mV	0.055uA	945.1mV	0.107uA	945.1mV	0.086uA	957.2mV	0.075uA
63	954.0mV	0.078uA	952.4mV	0.069uA	959.5mV	0.047uA	958.3mV	0.092uA
64	957.9mV	0.054uA	944.2mV	0.087uA	953.9mV	0.068uA	952.5mV	0.060uA
65	941.6mV	0.088uA	959.0mV	0.091uA	946.2mV	0.060uA	948.2mV	0.083uA
66	938.3mV	0.095uA	954.1mV	0.097uA	954.1mV	0.047uA	938.8mV	0.088uA
67	947.2mV	0.062uA	953.0mV	0.109uA	941.5mV	0.093uA	939.5mV	0.054uA
68	938.7mV	0.097uA	941.2mV	0.068uA	946.1mV	0.062uA	958.1mV	0.070uA
69	942.2mV	0.070uA	953.9mV	0.065uA	937.2mV	0.097uA	949.9mV	0.107uA
70	948.0mV	0.045uA	941.0mV	0.076uA	940.1mV	0.073uA	941.6mV	0.066uA
71	959.3mV	0.045uA	944.3mV	0.089uA	941.9mV	0.098uA	938.3mV	0.075uA
72	947.3mV	0.060uA	949.7mV	0.092uA	943.4mV	0.107uA	939.3mV	0.102uA
73	942.6mV	0.079uA	943.8mV	0.057uA	948.8mV	0.052uA	945.8mV	0.097uA
74	938.7mV	0.103uA	959.6mV	0.066uA	959.2mV	0.110uA	947.4mV	0.087uA
75	945.6mV	0.109uA	950.0mV	0.101uA	954.6mV	0.075uA	957.0mV	0.099uA
76	945.6mV	0.074uA	953.0mV	0.091uA	942.4mV	0.097uA	943.2mV	0.077uA
77	954.6mV	0.065uA	948.7mV	0.101uA	941.4mV	0.059uA	950.2mV	0.056uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

Solderability Test Data

Report No : T141020-005
Part No : DB105S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1A, IR<10uA@VR=600V
Test Condition: 245℃ ± 5℃, 5Sec
Test Date: 2014.10.20 ~ 2014.10.20
Test Standard : JESD22 STANDER Method-B102
Operator: Leo Hsia

Test Result: PASS

No	Before				After			
	AC2→＋		−→AC1		AC2→＋		−→AC1	
	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	959.1mV	0.099uA	942.7mV	0.068uA	954.4mV	0.098uA	959.3mV	0.076uA
2	959.1mV	0.045uA	959.4mV	0.050uA	953.6mV	0.102uA	956.7mV	0.081uA
3	949.8mV	0.108uA	939.1mV	0.050uA	952.0mV	0.069uA	954.0mV	0.102uA
4	950.7mV	0.084uA	955.2mV	0.091uA	958.2mV	0.054uA	951.2mV	0.078uA
5	945.2mV	0.090uA	941.9mV	0.066uA	946.1mV	0.106uA	956.9mV	0.064uA
6	943.9mV	0.086uA	938.5mV	0.103uA	952.7mV	0.072uA	939.8mV	0.096uA
7	951.4mV	0.102uA	943.3mV	0.095uA	959.3mV	0.053uA	947.9mV	0.047uA
8	951.1mV	0.059uA	953.3mV	0.076uA	948.3mV	0.067uA	943.4mV	0.048uA
9	945.9mV	0.057uA	940.8mV	0.087uA	959.3mV	0.081uA	945.4mV	0.046uA
10	949.5mV	0.090uA	941.5mV	0.078uA	945.9mV	0.063uA	937.5mV	0.074uA

Made By: Leo Hsia

Approval: Peter Yang

Test Report

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

Sample Description	:	GLASS PASSIVATED DICE
Sample Receiving Date	:	2014/07/15
Testing Period	:	2014/07/15 TO 2014/07/24

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

Conclusion : Base upon the performed tests by submitted samples, the test results of PAHs comply with the PAHs requirement according to (Category 1) of ZEK 01.4-08 of German ZLS and its amendments.

Troy Chang
Signed for
SGS TAIWAN
Chemical Laboratory – Taipei

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Test Result(s)

PART NAME No.1 : GLASS PASSIVATED DICE

Test Item(s)	Unit	Method	MDL	Result No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	32100
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Beryllium (Be)	mg/kg	With reference to US EPA Method 3050B. Analysis was performed by ICP-AES.	2	n.d.
Beryllium oxide (BeO)***	mg/kg	With reference to US EPA Method 3050B. Analysis was performed by ICP-AES.***	-	n.d.
Antimony (Sb)	mg/kg	With reference to US EPA Method 3050B. Analysis was performed by ICP-AES.	2	n.d.
Arsenic (As)	mg/kg	With reference to US EPA Method 3052. Analysis was performed by ICP-AES.	2	n.d.
Diarsenic pentaoxide*** (CAS No.: 1303-28-2)	mg/kg	With reference to US EPA 3052: 1996. Analyzed by ICP-AES.***	-	n.d.
Diarsenic trioxide*** (CAS No.: 1327-53-3)	mg/kg	With reference to US EPA 3052: 1996. Analyzed by ICP-AES.***	-	n.d.
Boron (B)	mg/kg	With reference to US EPA Method 3052. Analysis was performed by ICP-AES.	2	141
Boric acid*** (CAS No.: 10043-35-3; 11113-50-1)	mg/kg	With reference to US EPA 3052:1996. Analyzed by ICP-AES.***	-	806
Disodium tetraborate, anhydrous*** (CAS No.: 1303-96-4, 1330-43-4, 12179-04-3)	mg/kg	With reference to US EPA 3052:1996. Analyzed by ICP-AES.***	-	656

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Test Item(s)	Unit	Method	MDL	Result
				No.1
Tetraboron disodium heptaoxide, hydrate (CAS No.: 12267-73-1) (∗2)	mg/kg	With reference to US EPA 3052:1996. Analyzed by ICP-AES.	-	-
Polychlorinated Biphenyls (PCBs) (CAS No.: 1336-36-3)	mg/kg	With reference to US EPA 3540C method. Analysis was performed by GC/MS.	0.5	n.d.
Polychlorinated Naphthalene (PCNs)	mg/kg	With reference to US EPA 3540C method. Analysis was performed by GC/MS.	5	n.d.
Polychlorinated Terphenyls (PCTs)	mg/kg	With reference to US EPA 3540C method. Analysis was performed by GC/MS.	0.5	n.d.
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (CAS No.: 85535-84-8)	mg/kg	With reference to US EPA 3540C method. Analysis was performed by GC/MS.	100	n.d.
Formaldehyde (CAS No.: 50-00-0)	mg/kg	With reference to ISO 17226-1(2008). Analysis was performed by HPLC/DAD.	3	n.d.
PVC	**	Analysis was performed by FTIR and FLAME Test.	-	Negative
Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.
PFOA (CAS No.: 335-67-1)	mg/kg	With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.
2- (3,5-di-tert-butyl-2-hydroxyphenyl)-2H-benzotriazole (CAS No.: 3846-71-7)	mg/kg	With reference to US EPA 3540C method. Analysis was performed by GC/MS.	5	n.d.
Cobalt dichloride (CAS No.: 7646-79-9)	mg/kg	SGS In-House method-RSTS-EE-SVHC-007. Analyzed by ICP-AES.	50	n.d.
Bromomethane (CAS No.: 74-83-9)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Sulfur Hexafluoride (SF6) (CAS No.: 2551-62-4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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Test Item(s)	Unit	Method	MDL	Result
				No.1
Dimethyl Fumarate (CAS No.: 624-49-7)	mg/kg	With reference to US EPA 3550C method. Analysis was performed by GC/MS.	0.1	n.d.
Tris (2-chloroethyl) phosphate (TCEP) (CAS No.: 115-96-8)	mg/kg	With reference to US EPA 3550C method. Analysis was performed by GC/MS.	5	n.d.
Tris(1-chloro-2-propyl) phosphate (TCPP) (CAS No.: 13674-84-5)	mg/kg	With reference to US EPA 3550C method. Analysis was performed by GC/MS.	5	n.d.
Tris(1,3-dichloro-2-propyl)phosphate (TDCPP) (CAS No.: 13674-87-8)	mg/kg	With reference to US EPA 3550C method. Analysis was performed by GC/MS.	5	n.d.
Trixylyl phosphate (TXP) (CAS No.: 25155-23-1)	mg/kg	With reference to US EPA 3550C method. Analysis was performed by GC/MS.	25	n.d.
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	With reference to IEC 62321: 2008 method. Analysis was performed by GC/MS.	5	n.d.
4-(1,1,3,3-tetramethylbutyl) phenol, (4-tert-Octylphenol) (CAS No.: 140-66-9)	mg/kg	With reference to US EPA 3550C method. Analysis was performed by LC/MS.	10	n.d.
Bis(2-methoxyethyl) ether (CAS No.: 111-96-6)	mg/kg	With reference to US EPA 3550C method. Analysis was performed by GC/MS.	10	n.d.
N,N-dimethylacetamide (DMAC) (CAS No.: 127-19-5)	mg/kg	With reference to US EPA 3550C method. Analysis was performed by GC/MS.	10	n.d.
DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.

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Test Item(s)	Unit	Method	MDL	Result
				No.1
DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DNHP (Di-n-hexyl phthalate) (CAS No.: 84-75-3)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DIHP (1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich) (CAS No.: 71888-89-6)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
DHNUP (1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters) (CAS No.: 68515-42-4)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
DMEP (Bis (2-methoxyethyl) phthalate) (CAS No.: 117-82-8)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
Di-iso-pentyl phthalate (CAS No.: 605-50-5)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (CAS No.: 84777-06-0)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
N-pentyl-isopentylphthalate	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DPP (Di-pentyl phthalate) (CAS No.: 131-18-0)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
Ethylene glycol dimethyl ether (EGDME) (CAS No.: 110-71-4)	mg/kg	With reference to US EPA 3550C method. Analysis was performed by GC/MS.	10	n.d.
Perchlorate (CAS No.: 14797-73-0)	mg/kg	Analysis was performed by IC.	0.006	n.d.
Red phosphorus	**	Analysis was performed by Pyrolyzer-GC/MS.	-	Negative

Test Report

SECOS CORPORATION CE/ 2014/ 72967B*

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Test Item(s)	Unit	Method	MDL	Result
				No.1
Tetrabromobisphenol A (TBBP-A) (CAS No.: 79-94-7)	mg/kg	With reference to Global SOP RSTS-E&E-121. Analysis was performed by LC/MS.	10	n.d.
TBBP-A-bis (CAS No.: 21850-44-2)	mg/kg	With reference to US EPA 3540C method. Analysis was performed by HPLC/DAD/MS.	5	n.d.
Halons				
Halon-1211 (CAS No.: 353-59-3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Halon-1301 (CAS No.: 75-63-8)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Halon-2402 (CAS No.: 124-73-2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Organic-tin compounds				
Tributyl Tin (TBT) (CAS No.: 688-73-3)	mg/kg	With reference to ISO 17353. Analyzed by GC/FPD.	0.03	n.d.
Triphenyl Tin (TphT)	mg/kg	With reference to ISO 17353. Analysis was performed by GC/FPD.	0.03	n.d.
Dibutyl Tin (DBT)	mg/kg	With reference to ISO 17353. Analysis was performed by GC/FPD.	0.03	n.d.
Dioctyl Tin (DOT)	mg/kg	With reference to ISO 17353. Analysis was performed by GC/FPD.	0.03	n.d.
Asbestos				
Actinolite (CAS No.: 77536-66-4)	%	With reference to EPA 600/R-93/116 method. Analysis was performed by Stereo Microscope (SM), Dispersion Staining Polarized Light Microscope (DS-PLM) and X-ray Diffraction Spectrometer (XRD).	-	Negative
Amosite (CAS No.: 12172-73-5)	%		-	Negative
Anthophyllite (CAS No.: 77536-67-5)	%		-	Negative
Chrysotile (CAS No.: 12001-29-5)	%		-	Negative
Crocidolite (CAS No.: 12001-28-4)	%		-	Negative
Tremolite (CAS No.: 77536-68-6)	%		-	Negative

Test Report

SECOS CORPORATION CE/ 2014/ 72967B*

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Test Item(s)	Unit	Method	MDL	Result No.1
Sum of PBBs	mg/kg	With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
Monobromobiphenyl	mg/kg		5	n.d.
Dibromobiphenyl	mg/kg		5	n.d.
Tribromobiphenyl	mg/kg		5	n.d.
Tetrabromobiphenyl	mg/kg		5	n.d.
Pentabromobiphenyl	mg/kg		5	n.d.
Hexabromobiphenyl	mg/kg		5	n.d.
Heptabromobiphenyl	mg/kg		5	n.d.
Octabromobiphenyl	mg/kg		5	n.d.
Nonabromobiphenyl	mg/kg		5	n.d.
Decabromobiphenyl	mg/kg		5	n.d.
Sum of PBDEs	mg/kg		-	n.d.
Monobromodiphenyl ether	mg/kg		5	n.d.
Dibromodiphenyl ether	mg/kg		5	n.d.
Tribromodiphenyl ether	mg/kg		5	n.d.
Tetrabromodiphenyl ether	mg/kg		5	n.d.
Pentabromodiphenyl ether	mg/kg		5	n.d.
Hexabromodiphenyl ether	mg/kg		5	n.d.
Heptabromodiphenyl ether	mg/kg		5	n.d.
Octabromodiphenyl ether	mg/kg		5	n.d.
Nonabromodiphenyl ether	mg/kg		5	n.d.
Decabromodiphenyl ether	mg/kg		5	n.d.
AZO				
1): 4-AMINODIPHENYL (CAS No.: 92-67-1)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
2): BENZIDINE (CAS No.: 92-87-5)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
3): 4-CHLORO-O-TOLUIDINE (CAS No.: 95-69-2)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
4): 2-NAPHTHYLAMINE (CAS No.: 91-59-8)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
5): O-AMINOAZOTOLUENE (CAS No.: 97-56-3)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
6): 2-AMINO-4-NITROTOLUENE (CAS No.: 99-55-8)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.

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Test Item(s)	Unit	Method	MDL	Result
				No.1
7): P-CHLOROANILINE (CAS No.: 106-47-8)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
8): 2,4-DIAMINOANISOLE (CAS No.: 615-05-4)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
9): 4,4'-DIAMINODIPHENYLMETHANE (CAS No.: 101-77-9)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
10): 3,3'-DICHLOROBENZIDINE (CAS No.: 91-94-1)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
11): 3,3'-DIMETHOXYBENZIDINE (CAS No.: 119-90-4)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
12): 3,3'-DIMETHYLBENZIDINE (CAS No.: 119-93-7)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
13): 3,3'-DIMETHYL-4,4'-DIAMINODIPHENYLMETHANE (CAS No.: 838-88-0)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
14): P-CRESIDINE (2-METHOXY-5-METHYLANILINE) (CAS No.: 120-71-8)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
15): 4,4'-METHYLENE-BIS- (2-CHLOROANILINE) (CAS No.: 101-14-4)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
16): 4,4'-OXYDIANILINE (CAS No.: 101-80-4)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
17): 4,4'-THIODIANILINE (CAS No.: 139-65-1)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
18): O-TOLUIDINE (CAS No.: 95-53-4)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
19): 2,4-TOLUYLENEDIAMINE (CAS No.: 95-80-7)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
20): 2,4,5-TRIMETHYLANILINE (CAS No.: 137-17-7)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
21): O-ANISIDINE (CAS No.: 90-04-0)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
22): 4-AMINOAZOBENZENE (CAS No.: 60-09-3)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.

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Test Item(s)	Unit	Method	MDL	Result
				No.1
23): 2,4-XYLIDINE (CAS No.: 95-68-1)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
24): 2,6-XYLIDINE (CAS No.: 87-62-7)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
HFCs (Hydrofluorocarbon)				
HFC-23 (CHF3) (CAS No.: 75-46-7)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HFC-32 (CH2F2) (CAS No.: 75-10-5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HFC-41 (CH3F) (CAS No.: 593-53-3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HFC-43-10mee (C5H2F10)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HFC-125 (C2HF5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HFC-134 (C2H2F4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HFC-134a (CH2FCF3) (CAS No.: 811-97-2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HFC-143 (CH3F3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HFC-143a (CH3F3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HFC-152a (C2H4F2) (CAS No.: 75-37-6)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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Test Item(s)	Unit	Method	MDL	Result
				No.1
HFC-227ea (C3HF7) (CAS No.: 431-89-0)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HFC-236fa (C3H2F6)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HFC-236ea (C3H2F6) (CAS No.: 431-63-0)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HFC-245ca (C3H3F5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HFC-245fa (C3H3F5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HFC-365mfc (C4H5F5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
PFCs (Perfluorocarbon)				
F14 (CAS No.: 75-73-0)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Fluorocarbon 116 (CAS No.: 76-16-4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Freon 218 (CAS No.: 76-19-7)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Decafluorobutane (CAS No.: 355-25-9)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Freon C318 (CAS No.: 115-25-3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Perfluor-1-butene (CAS No.: 357-26-6)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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Test Item(s)	Unit	Method	MDL	Result
				No.1
perfluorisobutene (CAS No.: 382-21-8)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,4-dihydrooctafluorobutane (CAS No.: 377-36-6)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Nonafluor-2- (trifluoromethyl) butane (CAS No.: 594-91-2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Perfluoro-n-pentane (CAS No.: 678-26-2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
2-perfluoromethylpentane (CAS No.: 355-04-4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Perfluorohexane (CAS No.: 355-42-0)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
CFC's (Chlorofluorocarbons)				
Group I				
Chlorofluorocarbon-11 (CAS No.: 75-69-4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-12 (CAS No.: 75-71-8)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-113 (CAS No.: 76-13-1)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-114 (CAS No.: 76-14-2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-115 (CAS No.: 76-15-3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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Test Item(s)	Unit	Method	MDL	Result
				No.1
Group III				
Chlorofluorocarbon-13 (CAS No.: 75-72-9)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-111 (CAS No.: 354-56-3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-112 (CAS No.: 76-12-0)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-211 (CAS No.: 422-78-6)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-212 (CAS No.: 3182-26-1)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-213 (CAS No.: 2354-06-5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-214 (CAS No.: 29255-31-0)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-215 (CAS No.: 4259-43-2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-216 (CAS No.: 661-97-2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Chlorofluorocarbon-217 (CAS No.: 422-86-6)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFCs (Hydrochlorofluorocarbons)				
HCFC-21 (CAS No.: 75-43-4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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Test Item(s)	Unit	Method	MDL	Result
				No.1
HCFC-22 (CAS No.: 75-45-6)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-31 (CAS No.: 593-70-4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-121 (CAS No.: 354-14-3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-122 (CAS No.: 354-21-2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-123 (CAS No.: 306-83-2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-124 (CAS No.: 2837-89-0)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-131 (CAS No.: 359-28-4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-132b (CAS No.: 1649-08-7)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-133a (CAS No.: 75-88-7)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-141b (CAS No.: 1717-00-6)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-142b (CAS No.: 75-68-3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-221 (CAS No.: 422-26-4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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Test Item(s)	Unit	Method	MDL	Result
				No.1
HCFC-222 (CAS No.: 422-49-1)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-223 (CAS No.: 422-52-6)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-224 (CAS No.: 422-54-8)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-225ca (CAS No.: 422-56-0)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-225cb (CAS No.: 507-55-1)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-226 (CAS No.: 431-87-8)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-231 (CAS No.: 421-94-3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-232 (CAS No.: 460-89-9)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-233 (CAS No.: 7125-84-0)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-234 (CAS No.: 425-94-5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-235 (CAS No.: 460-92-4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-241 (CAS No.: 666-27-3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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Test Item(s)	Unit	Method	MDL	Result
				No.1
HCFC-242 (CAS No.: 460-63-9)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-243 (CAS No.: 460-69-5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-244	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-251 (CAS No.: 421-41-0)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-252 (CAS No.: 819-00-1)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-253 (CAS No.: 460-35-5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-261 (CAS No.: 420-97-3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-262 (CAS No.: 421-02-03)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HCFC-271 (CAS No.: 430-55-7)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFCs (Hydrobromofluorocarbons)				
HBFC-21B2 (CHFBr2) (CAS No.: 1868-53-7)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-22B1 (CHF2Br) (CAS No.: 1511-62-2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

Test Item(s)	Unit	Method	MDL	Result
				No.1
HBFC-31B1 (CH2FBr) (CAS No.: 373-52-4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-121B4 (C2HFBr4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-122B3 (C2HF2Br3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-123B2 (C2HF3Br2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-124B1 (C2HF4Br)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-131B3 (C2H2FBr3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-132B2 (C2H2F2Br2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-133B1 (C2H2F3Br)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-141B2 (C2H3FBr2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-142B1 (C2H3F2Br)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-151B1 (C2H4FBr)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-221B6 (C3HFBr6)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

Test Item(s)	Unit	Method	MDL	Result
				No.1
HBFC-222B5 ($C_3HF_2Br_5$)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-223B4 ($C_3HF_3Br_4$)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-224B3 ($C_3HF_4Br_3$)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-225B2 ($C_3HF_5Br_2$)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-226B1 (C_3HF_6Br)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-231B5 ($C_3H_2FBr_5$)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-232B4 ($C_3H_2F_2Br_4$)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-233B3 ($C_3H_2F_3Br_3$)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-234B2 ($C_3H_2F_4Br_2$)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-235B1 ($C_3H_2F_5Br$)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-241B4 ($C_3H_3FBr_4$)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-242B3 ($C_3H_3F_2Br_3$)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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Test Item(s)	Unit	Method	MDL	Result
				No.1
HBFC-243B2 (C3H3F3Br2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-244B1 (C3H3F4Br)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-251B3 (C3H4FBr3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-252B2 (C3H4F2Br2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-253B1 (C3H4F3Br)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-261B2 (C3H5FBr2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-262B1 (C3H5F2Br)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-271B1 (C3H6FBr)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
CHCs (Chlorinate hydrocarbon)				
1,1,1,2-Tetrachloroethane (CAS No.: 630-20-6)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,1,1-Trichloroethane (CAS No.: 71-55-6)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,1,2,2-Tetrachloroethane (CAS No.: 79-34-5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,1,2-Trichloroethane (CAS No.: 79-00-5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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Test Item(s)	Unit	Method	MDL	Result
				No.1
1,1-Dichloroethane (CAS No.: 75-34-3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,1-Dichloroethene (CAS No.: 75-35-4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,1-Dichloropropene (CAS No.: 563-58-6)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,2,3-Trichloropropane (CAS No.: 96-18-4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,2-Dichloroethane (CAS No.: 107-06-2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,2-Dichloropropane (CAS No.: 78-87-5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,3-Dichloropropane (CAS No.: 142-28-9)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
2,2-Dichloropropane (CAS No.: 594-20-7)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Carbon tetrachloride (CAS No.: 56-23-5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Chloroethane (CAS No.: 75-00-3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Chloroform (CAS No.: 67-66-3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Chloromethane (CAS No.: 74-87-3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

Test Item(s)	Unit	Method	MDL	Result
				No.1
cis-1,2-Dichloroethene (CAS No.: 156-59-2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
cis-1,3-Dichloropropene (CAS No.: 10061-01-5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Hexachlorobutadiene (CAS No.: 87-68-3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Methylene Chloride (CAS No.: 75-09-2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Tetrachloroethene (CAS No.: 127-18-4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
trans-1,2-Dichloroethene (CAS No.: 156-60-5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
trans-1,3-Dichloropropene (CAS No.: 10061-02-6)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Trichloroethylene (CAS No.: 79-01-6)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Halogen				
Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)	mg/kg		50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg		50	n.d.
Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg		50	n.d.

Test Report

SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

Test Item(s)	Unit	Method	MDL	Result
				No.1
Polynuclear Aromatic Hydrocarbons (PAHs)				
Acenaphthene (CAS No.: 83-32-9)	mg/kg	With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
Acenaphthylene (CAS No.: 208-96-8)	mg/kg		0.2	n.d.
Anthracene (CAS No.: 120-12-7)	mg/kg		0.2	n.d.
Benzo[a]anthracene (CAS No.: 56-55-3)	mg/kg		0.2	n.d.
Benzo[a]pyrene (CAS No.: 50-32-	mg/kg		0.2	n.d.
Benzo[b]fluoranthene (CAS No.: 205-99-2)	mg/kg		0.2	n.d.
Benzo[g,h,i]perylene (CAS No.: 191-24-2)	mg/kg		0.2	n.d.
Benzo[k]fluoranthene (CAS No.: 207-08-9)	mg/kg		0.2	n.d.
Chrysene (CAS No.: 218-01-9)	mg/kg		0.2	n.d.
Dibenzo[a,h]anthracene (CAS No.: 53-70-3)	mg/kg		0.2	n.d.
Fluoranthene (CAS No.: 206-44-0)	mg/kg		0.2	n.d.
Fluorene (CAS No.: 86-73-7)	mg/kg		0.2	n.d.
Indeno[1,2,3-c,d] pyrene (CAS No.: 193-39-5)	mg/kg		0.2	n.d.
Naphthalene (CAS No.: 91-20-3)	mg/kg		0.2	n.d.
Phenanthrene (CAS No.: 85-01-8)	mg/kg		0.2	n.d.
Pyrene (CAS No.: 129-00-0)	mg/kg		0.2	n.d.
Benzo[j]fluoranthene (CAS No.: 205-82-3)	mg/kg		0.2	n.d.
Benzo[e]pyrene (CAS No.: 192-97-2)	mg/kg		0.2	n.d.
Sum of 18 PAHs	mg/kg		-	n.d.

SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

Note：

1. mg/kg = ppm；0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated
5. ** = Qualitative analysis (No Unit)
6. Negative = Undetectable / Positive = Detectable
7. Testing range of asbestos qualitative analysis is from less than 0.1% to 100%. The judgment criterion: asbestos fibers being found is shown as "Positive"; asbestos fibers not being found is shown as "Negative".
8. ***: The substance was calculated by the test results of Arsenic, Boron or Beryllium respectively. The MDL was evaluated for Arsenic, Boron or Beryllium respectively.
9. Parameter Conversion Table：Please refer to http://twap.sgs.com/sgsrsts/chn/download-REACH_tw.asp
10. (∗2): Tetraboron disodium heptaoxide, hydrate: Only anhydrous form of disodium tetraborate is relevant and considered according to ECHA explanation (Ref no.: INC 000000032519).
11. Since beryllium copper is a metal alloy of copper and beryllium and the test result is n.d. for beryllium, we can have conclusion that the beryllium copper is n.d..

PFOS Reference Information : POPs - (EU) 757/2010

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 1μg/m².

SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

Reference information for PAHs:

Requirement of 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 toys for children aged < 36 months with intended skin contact.	Materials not falling under category 1 with foreseeable contact to skin for longer than 30 seconds (long-term skin contact).	Materials not falling under category 1 or 2 with foreseeable contact to skin for less than 30 seconds (short-term skin contact).
Benzo[a]pyrene (mg/kg)	<MDL (<0.2)**	1	20
Sum of 18 PAH (mg/kg)*	<MDL (<0.2)**	10	200

Remark :

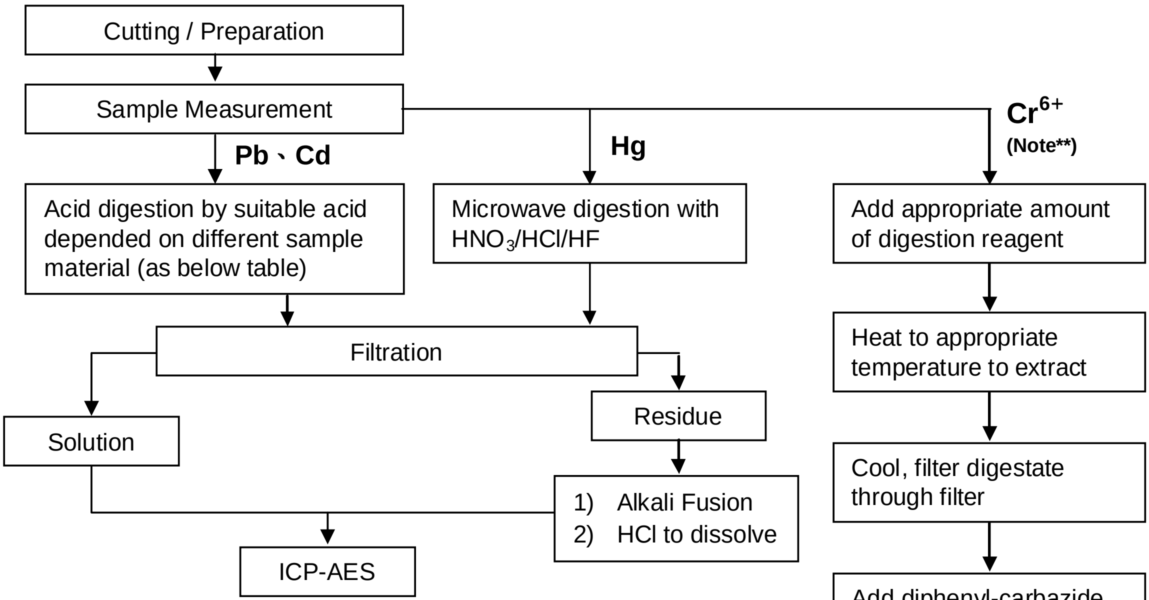
* = Only PAH substances >0.2 mg/kg are taken into account while calculating the sum of PAHs

** = If the limits of category 1 are surpassed but the limits of category 2 still met, the confirmation of suitability of contact with foodstuff or the oral mucosa can be verified by an additional specific migration test of the PAH components according to EN 1186 ff. and § 64 LFBG 80.30-1. The results of the migration test shall be evaluated according to law criteria for foodstuff.

SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

1) These samples were dissolved totally by pre-conditioning method according to below flow chart. （Cr^{6+} test method excluded）
2) Name of the person who made measurement: Climbgreat Yang
3) Name of the person in charge of measurement: Troy Chang



Sample Material	Digestion Acid
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	Added appropriate reagent to total digestion

Note (For IEC 62321)**

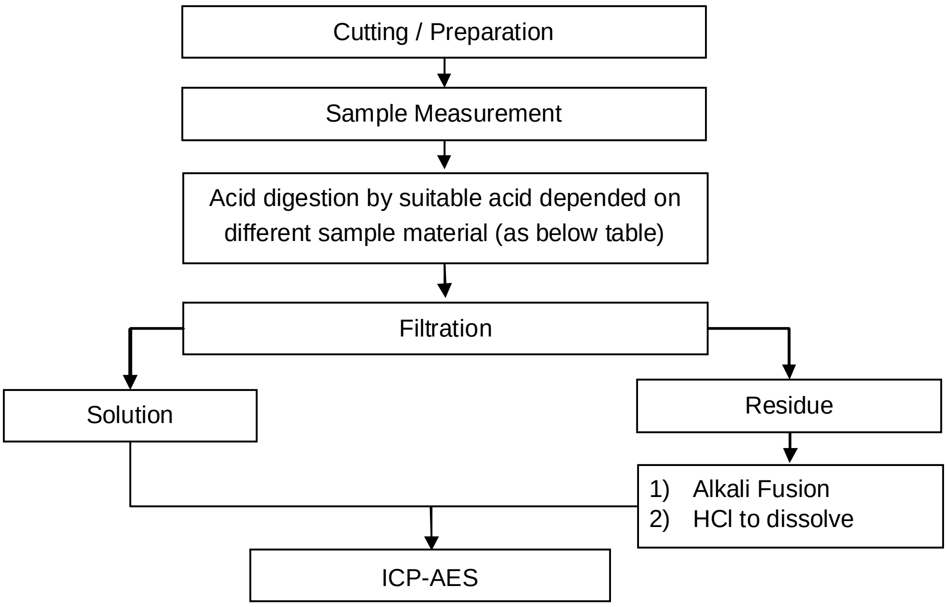
(1) For non-metallic material, add alkaline digestion reagent and heat to 90~95℃.

(2) For metallic material, add pure water and heat to boiling.

SECOS CORPORATION CE/ 2014/ 72967B*
8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
2) Name of the person who made measurement: Climbgreat Yang
3) Name of the person in charge of measurement: Troy Chang

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



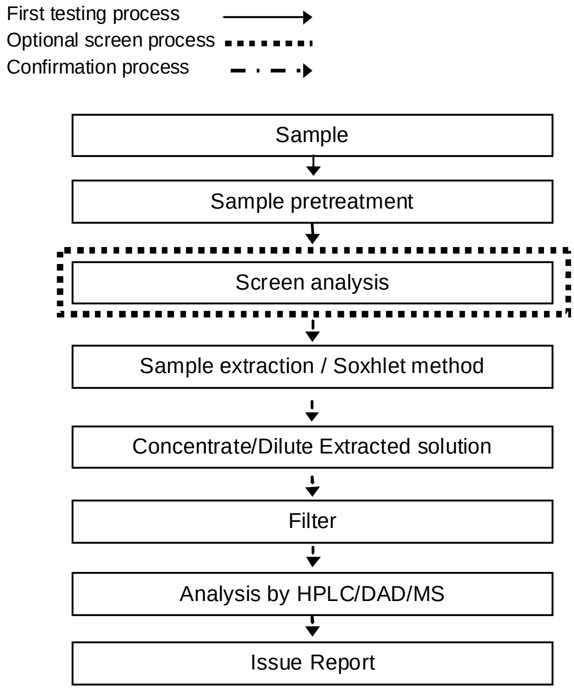
Steel, copper, aluminum, solder	Aqua regia, HNO_3, HCl, HF, H_2O_2
Glass	HNO_3/HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO_3
Plastic	H_2SO_4, H_2O_2, HNO_3, HCl
Others	Added appropriate reagent to total digestion

SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

TBBP-A-bis analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

TBBP-A analytical flow chart

- Name of the person who made measurement: Roy Lin
- Name of the person in charge of measurement: Troy Chang

Sample pretreatment

↓

Sample extraction by Ultrasonic extraction

↓

Concentrate/Dilute Extracted solution

↓

Analysis was performed by LC/MS

↓

Data

SECOS CORPORATION CE/ 2014/ 72967B*
8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

Analytical flow chart of Red phosphorus

- Name of the person who made measurement: Roy Lin
- Name of the person in charge of measurement: Troy Chang

Sample pretreatment

↓

Take sample and put it into sample cup

↓

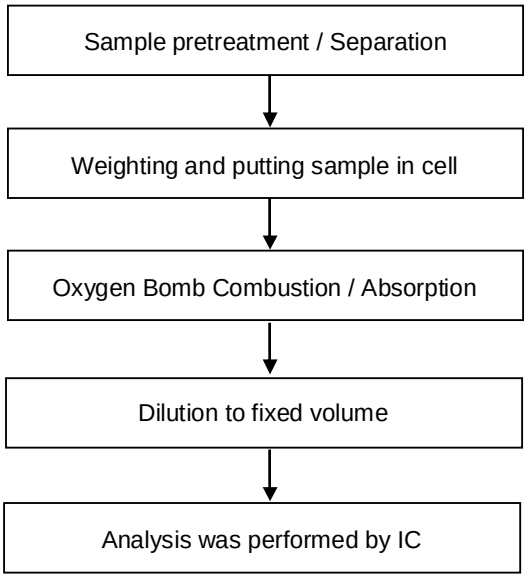
Analysis was performed by py-GC/MS

↓

DATA

Analytical flow chart of halogen content

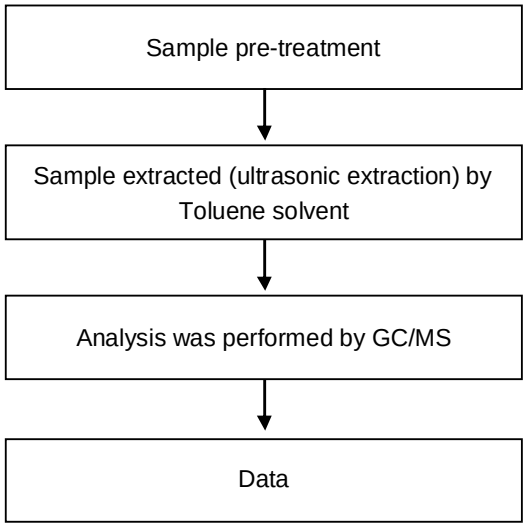
- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang



SECOS CORPORATION CE/ 2014/ 72967B*
8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

PAHs (Polynuclear Aromatic Hydrocarbons) analytical flow chart

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

Ethylene glycol ether analytical flow chart

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang

Sample pretreatment
↓
Sample extraction / Ultrasonic method
↓
Concentrate / Dilute Extracted solution
↓
Filter
↓
Analysis was performed by GC/MS
↓
Data

SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

Analytical flow chart of phthalate content

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang

Sample pretreatment/separation

↓

Sample extraction by soxhlet method

↓

Concentrate/Dilute Extracted solution

↓

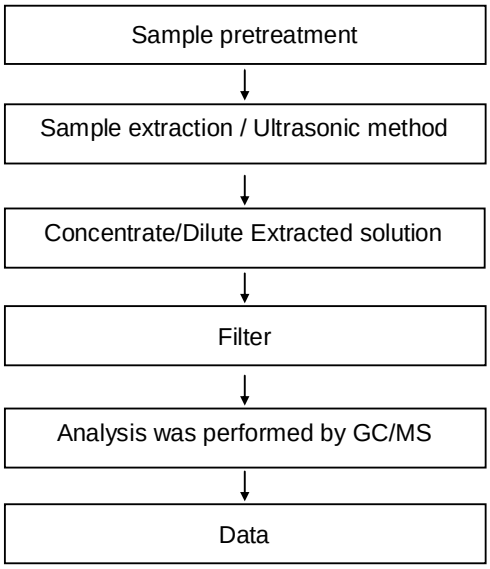
Analysis was performed by GC/MS

↓

Data

HBCDD analytical flow chart

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

Dimethyl Fumarate analytical flow chart

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang

Sample pretreatment

↓

Sample extraction / Ultrasonic method

↓

Concentrate/Dilute Extracted solution

↓

Filter

↓

Analysis was performed by GC/MS

↓

Data

SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

Analytical flow chart of volatile organic compounds (VOCs)

- Name of the person who made measurement：Chun Wu
- Name of the person in charge of measurement：Shinjyh Chen

【Reference method：US EPA 5021】

Sample pretreatment

↓

Take sample and put it into headspace glassware and seal.

↓

Bake the sample in the oven

↓

Emitted gas was performed by GC/MS

↓

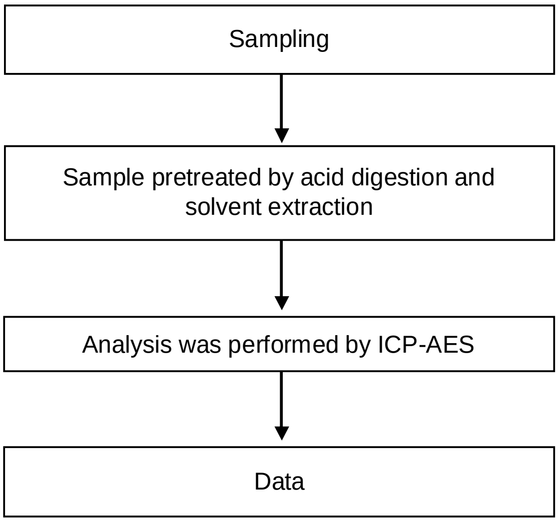
Data

SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

Analytical flow chart of Cobalt dichloride

- Name of the person who made measurement: Climbgreat Yang
- Name of the person in charge of measurement: Troy Chang

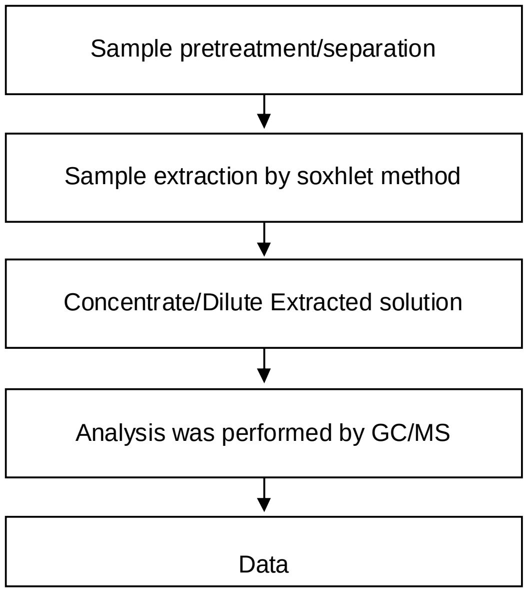


SECOS CORPORATION   CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

Benzotriazole analytical flow chart

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



PFOA/PFOS analytical flow chart of Ultrasonic extraction (LC/MS) procedure

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang

Sample pretreatment

↓

Sample extraction by Ultrasonic extraction
(Reference method: US EPA 3550C)

↓

Concentrate/Dilute Extracted solution

↓

Analysis was performed by LC/MS

↓

Data

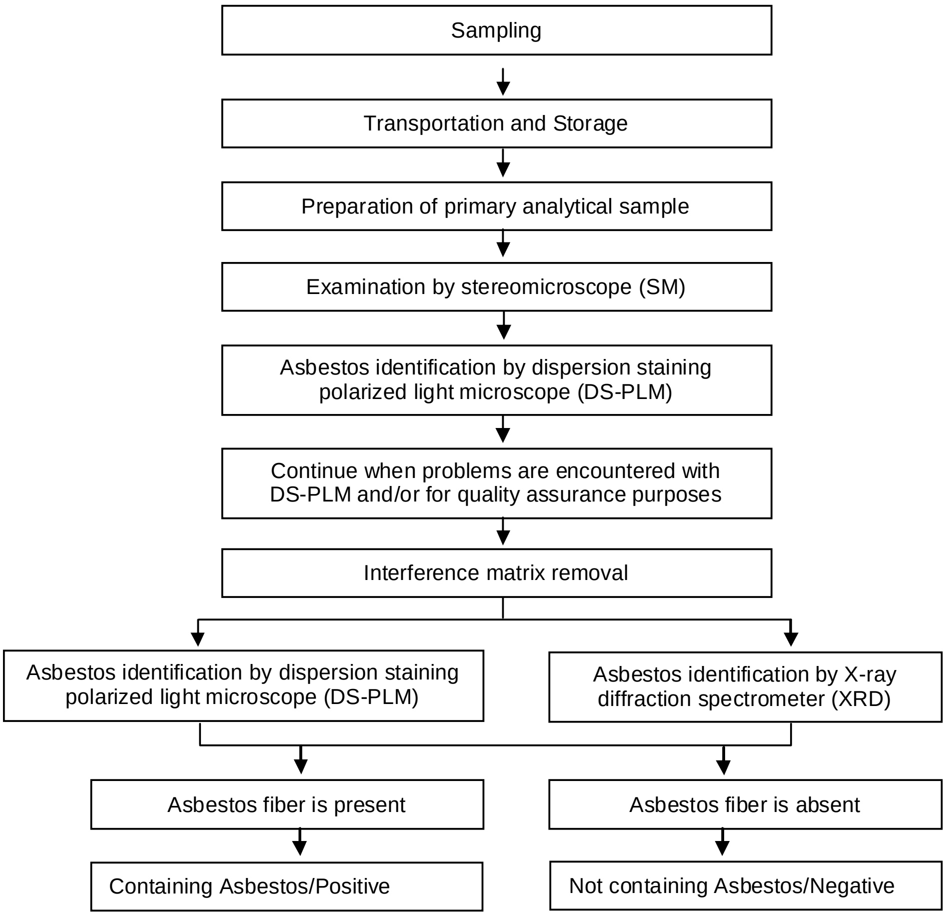
SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

Analysis flow chart for determination of Asbestos

- Name of the person who made measurement: Victor Kao
- Name of the person in charge of measurement: Wendy Wei

【Reference method: EPA 600/R-93/116】



Analytical flow chart of Organic-Tin content

- Name of the person who made measurement: Roy Lin
- Name of the person in charge of measurement: Troy Chang

Sample pretreatment

↓

Sample extraction by organic solvent

↓

Derived by Sodium tetraethylborate

↓

Concentrate/Dilute Extracted solution

↓

Analysis was performed by GC/FPD

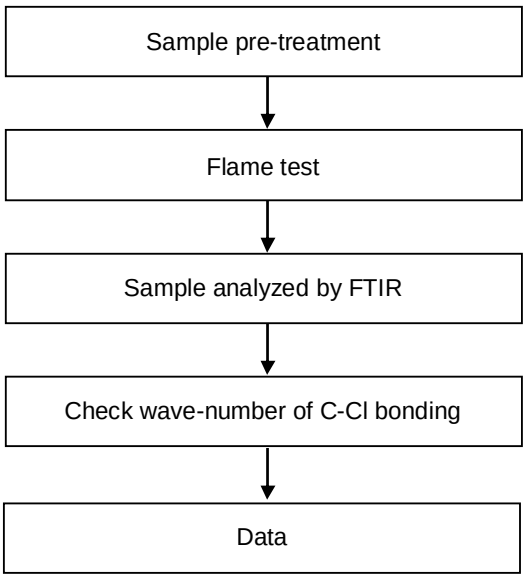
↓

Data

SECOS CORPORATION CE/ 2014/ 72967B*
8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

Analysis flow chart for determination of PVC in material

- Name of the person who made measurement: Roy Lin
- Name of the person in charge of measurement: Troy Chang



SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

Formaldehyde analytical flow chart

- Name of the person who made measurement: Yaling Tu
- Name of the person in charge of measurement: Troy Chang

【 **Test Method：**US EPA 8315A、ISO 17226-1】

Sample pretreatment

↓

Sample extraction

↓

Derived by DNPH Concentrate/Dilute Extracted solution

↓

Analysis was performed by HPLC/DAD

↓

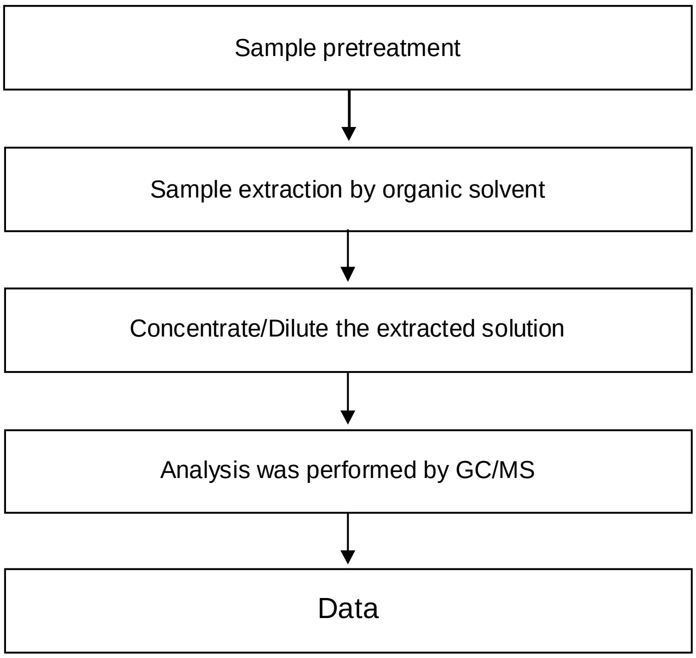
Data

SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

Chlorinated Paraffins analytical flow chart

- Name of the person who made measurement: Barry Tseng
- Name of the person in charge of measurement: Troy Chang



SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

PCTs analytical flow chart

- Name of the person who made measurement: Barry Tseng
- Name of the person in charge of measurement: Troy Chang

Sample pretreatment

↓

Sample extraction by organic solvent

↓

Concentrate/Dilute the extracted solution

↓

Analysis was performed by GC/MS

↓

Data

SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

PCNs analytical flow chart

- Name of the person who made measurement: Barry Tseng
- Name of the person in charge of measurement: Troy Chang

Sample pretreatment

↓

Sample extraction by organic solvent

↓

Concentrate/Dilute the extracted solution

↓

Analysis was performed by GC/MS

↓

Data

SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

PCBs analytical flow chart

- Name of the person who made measurement: Barry Tseng
- Name of the person in charge of measurement: Troy Chang

Sample pretreatment

↓

Sample extraction by organic solvent

↓

Concentrate/Dilute the extracted solution

↓

Analysis was performed by GC/MS

↓

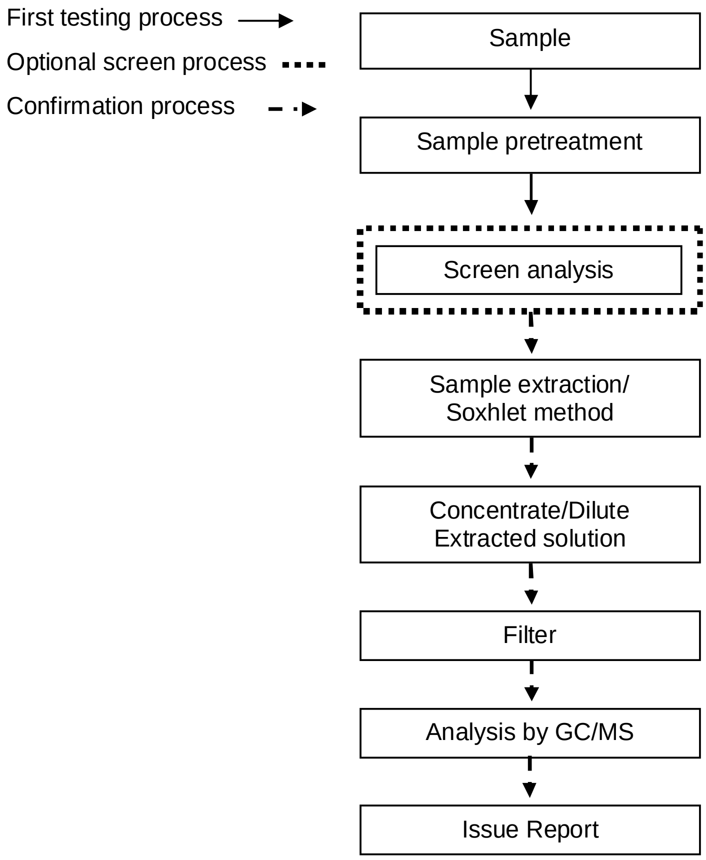
Data

SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

PBB/PBDE analytical FLOW CHART

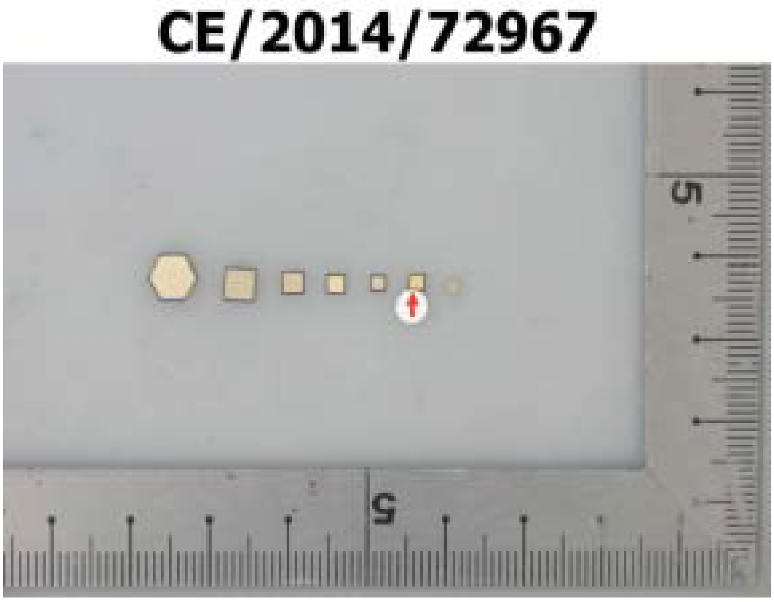
- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



SECOS CORPORATION CE/ 2014/ 72967B*

8F, NO. 33, LANE 155, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY, TAIWAN

*** The tested sample / part is marked by an arrow if it's shown on the photo. ***



** End of Report **

簽名有效

For Question,
Please Contact with SGS
www.tw.sgs.com

Test Report

No. : CE/2013/A0292 Date : 2013/10/09 Page : 1 of 11

EXCEL CELL ELECTRONIC CO., LTD. *CE/2013/A0292*
NO. 23, 20 ROAD., TAICHUNG INDUSTRIAL PARK, TAICHUNG, TAIWAN 40850

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

Sample Submitted By	:	EXCEL CELL ELECTRONIC CO., LTD.
Sample Description	:	C19210 COPPER
Sample Receiving Date	:	2013/10/02
Testing Period	:	2013/10/02 TO 2013/10/09

==========

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

Troy Ch
Signed
SGS TA
Chemical Laboratory – Taipei

EXCEL CELL ELECTRONIC CO., LTD. *CE/2013/A0292*
NO. 23, 20 ROAD., TAICHUNG INDUSTRIAL PARK, TAICHUNG, TAIWAN 40850

Test Result(s)

PART NAME No.1 : COPPER COLORED METAL

Test Item(s)	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)	**	With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.#	#	Negative
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	With reference to IEC 62321: 2008 method. Analysis was performed by GC/MS.	5	n.d.
BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.
PFOA (CAS No.: 335-67-1)	mg/kg	With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.

EXCEL CELL ELECTRONIC CO., LTD.
NO. 23, 20 ROAD., TAICHUNG INDUSTRIAL PARK, TAICHUNG, TAIWAN 40850

CE/2013/A0292

Test Item(s)	Unit	Method	MDL	Result
				No.1
Sum of PBBs	mg/kg	With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
Monobromobiphenyl			5	n.d.
Dibromobiphenyl			5	n.d.
Tribromobiphenyl			5	n.d.
Tetrabromobiphenyl			5	n.d.
Pentabromobiphenyl			5	n.d.
Hexabromobiphenyl			5	n.d.
Heptabromobiphenyl			5	n.d.
Octabromobiphenyl			5	n.d.
Nonabromobiphenyl			5	n.d.
Decabromobiphenyl			5	n.d.
Sum of PBDEs			-	n.d.
Monobromodiphenyl ether			5	n.d.
Dibromodiphenyl ether			5	n.d.
Tribromodiphenyl ether			5	n.d.
Tetrabromodiphenyl ether			5	n.d.
Pentabromodiphenyl ether			5	n.d.
Hexabromodiphenyl ether			5	n.d.
Heptabromodiphenyl ether			5	n.d.
Octabromodiphenyl ether			5	n.d.
Nonabromodiphenyl ether			5	n.d.
Decabromodiphenyl ether			5	n.d.
Halogen				
Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)			50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)			50	n.d.
Halogen-Iodine (I) (CAS No.: 14362-44-8)			50	n.d.

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Note：

1. mg/kg = ppm；0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated
5. ** = Qualitative analysis (No Unit)
6. # = a. Positive means the presence of CrVI on the tested areas
   b. Negative means the absence of CrVI on the tested areas
   The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm^2 tested areas.

PFOS Reference Information : POPs - (EU) 757/2010

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 1μg/m^2.

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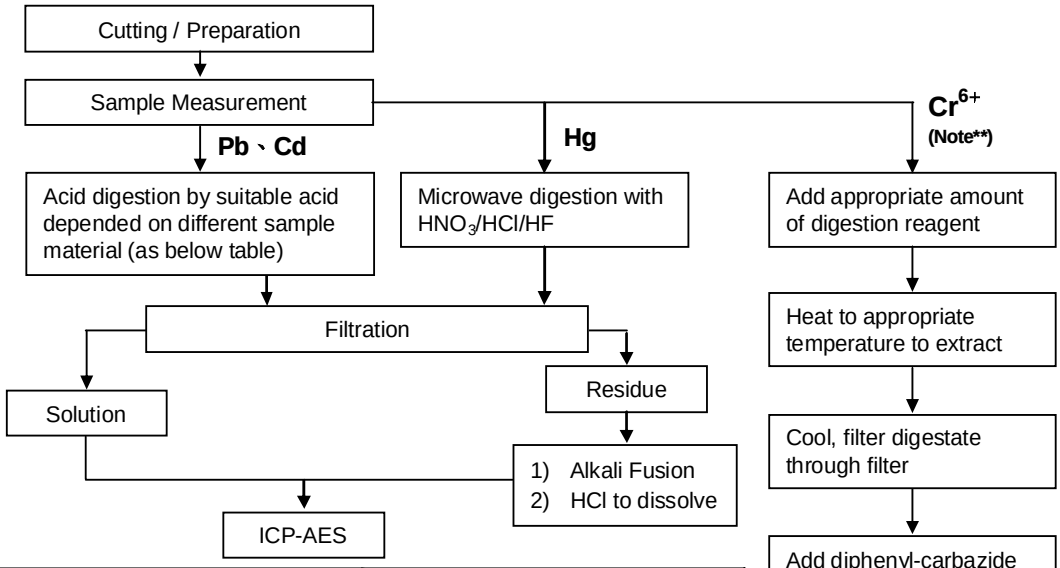
1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} test method excluded)
2) Name of the person who made measurement: Climbgreat Yang
3) Name of the person in charge of measurement: Troy Chang



Sample Material	Digestion Acid
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	Added appropriate reagent to total digestion

Note :** (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95℃.
(2) For metallic material, add pure water and heat to boiling .

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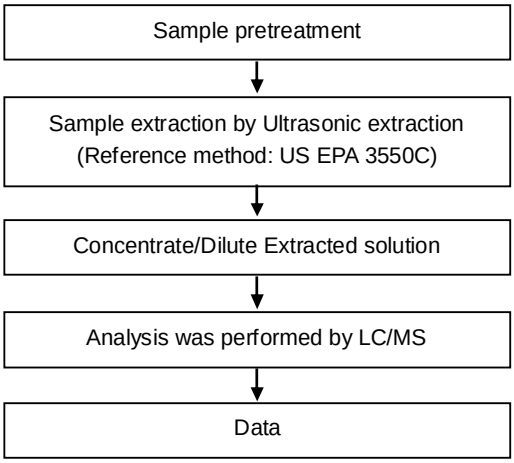
PFOA/PFOS analytical flow chart of Ultrasonic extraction (LC/MS) procedure

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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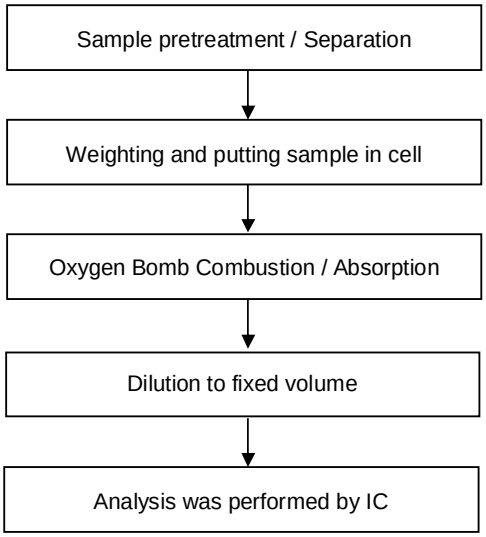
Analytical flow chart of halogen content

- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang



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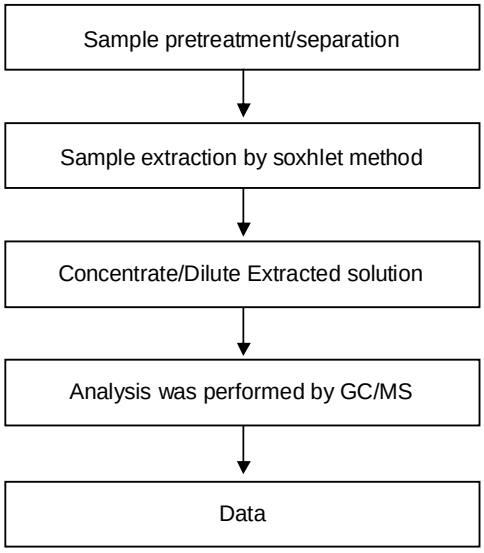
Analytical flow chart of phthalate content

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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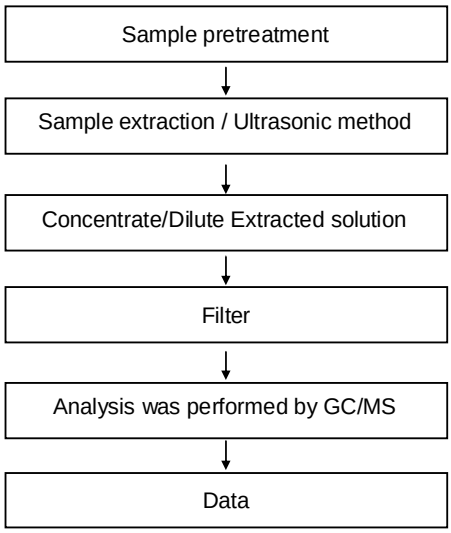
HBCDD analytical flow chart

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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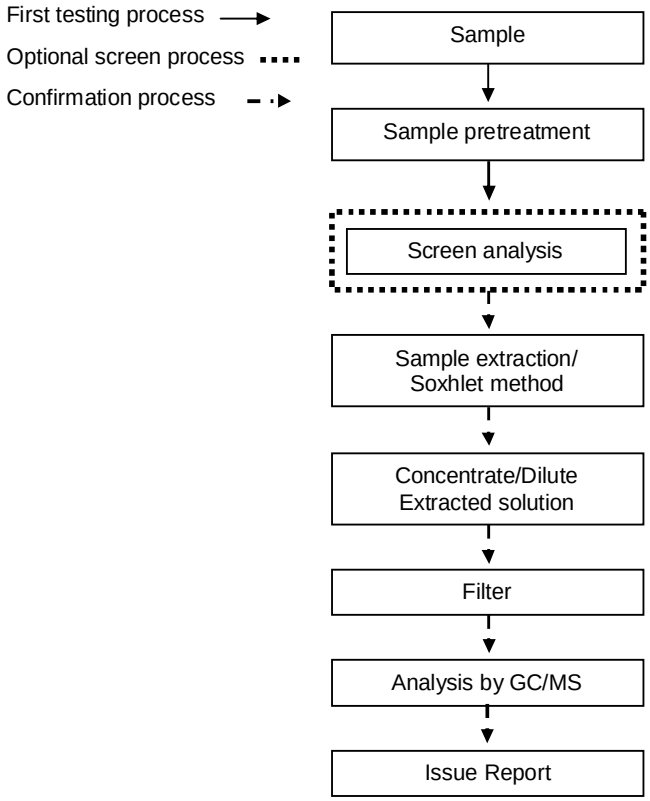
PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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*** The tested sample / part is marked by an arrow if it's shown on the photo. ***

** End of Report **

Test Report

No. SHAEC1415422801 Date: 19 Aug 2014

CHANG CHUN PLASTICS CO.,LTD 、CHANG CHUN SB(CHANG SHU)CO.,LTD

NO.8，CHUNG HWA ROAD,HSINCHU INDUSTRIAL DISTRICT,TAIWAN 、CHANGCHUN RD.,RIVERSIDE INDUSTRIAL PARK,CHANGSHU ECONOMIC DEVELOPMENT ZONE,JIANGSU,CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : Epoxy Molding Compound for semiconductor

SGS Job No. :	SP14-024267 - SUZ
Model No. :	EME-1200
Client Ref. Information :	EME-1100、EME-2100、EME-2500、EME-5000N、EME-5000VR、EME-5051S、EME-5500F、EME-5500FL、EME-5500FR、EME-5961、EME-220L、EC-11、EC-12、ER100、ER200、EME-2050、EME-1250
Date of Sample Received :	12 Aug 2014
Testing Period :	12 Aug 2014 - 18 Aug 2014
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 Ltd.

Marry Ma
Approved Signatory

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA14-154228.001	Black powder

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 ICP-OES.
(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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Test Item(s)	Limit	Unit	MDL	001
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).

Test Item(s)	Unit	MDL	001
Fluorine (F)	mg/kg	50	ND
Chlorine (Cl)	mg/kg	50	140
Bromine (Br)	mg/kg	50	10058
Iodine (I)	mg/kg	50	ND

Element(s)

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

Test Item(s)	Unit	MDL	001
Nickel (Ni)	mg/kg	5	ND
Antimony (Sb)	mg/kg	10	7013
Phosphorus (P)	mg/kg	20	ND

Polychlorinated Naphthalenes (PCNs)

Test Method : With reference to US EPA 8081B: 2007, analysis was performed by GC-MS

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Test Item(s)	Unit	MDL	001
2-Chlorinated Naphthalene	mg/kg	5	ND
1,4-Dichlorinated Naphthalene	mg/kg	5	ND
1,5-Dichlorinated Naphthalene	mg/kg	5	ND
1,2-Dichlorinated Naphthalene	mg/kg	5	ND
1,8-Dichlorinated Naphthalene	mg/kg	5	ND
1,2,3-Trichlorinated Naphthalene	mg/kg	5	ND
1,2,3,4-Tetrachlorinated Naphthalene	mg/kg	5	ND
1,2,3,4,6-Pentachlorinated Naphthalene	mg/kg	5	ND
Octa-chlorinaed Naphthalene	mg/kg	5	ND
1-Chlorinated Naphthalene	mg/kg	5	ND

Phthalates

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

Test Item(s)	CAS NO.	Unit	MDL	001
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 /68515-48-0	%	0.01	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 /68515-49-1	%	0.01	ND
Dimethyl Phthalate (DMP)	131-11-3	%	0.003	ND
Diethyl Phthalate (DEP)	84-66-2	%	0.003	ND
Diisobutyl Phthalate (DIBP)	84-69-5	%	0.003	ND
Di-n-pentyl Phthalates (DnPP)	131-18-0	%	0.003	ND
Dicyclohexyl Phthalate (DCHP)	84-61-7	%	0.003	ND
Diphenyl Phthalate (DPhP)	84-62-8	%	0.003	ND

Test Item(s)	CAS NO.	Unit	MDL	001
Dibenzyl Phthalate (DBzP)	523-31-9	%	0.003	ND
Diisooctyl Phthalate (DiOP)	27554-26-3	%	0.01	ND
Dipropyl Phthalate (DPrP)	131-16-8	%	0.003	ND
Dinonyl Phthalate (DNP)	84-76-4	%	0.003	ND
Di-n-hexyl Phthalate (DnHP)	84-75-3	%	0.003	ND

Notes :

(1) DBP,BBP,DEHP Reference information: Entry 51 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.
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

Short Chained Chlorinated Paraffin (SCCP) and Meduim Chained Chlorinated Paraffin (MCCP)

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

Test Item(s)	Unit	MDL	001
Short Chained Chlorinated Paraffin (SCCP) (C10-C13)	mg/kg	50	ND
Medium Chained Chlorinated Paraffin (MCCP) (C14-C17)	mg/kg	50	ND

Tris(2,3-dibromopropyl) phosphate(TDBPP/TRIS) and Bis (2,3-dibromopropyl) phosphate

Test Method : In-house method (SHTC-CHEM-SOP-102-T), analysis was performed by LC-MS.

Test Item(s)	CAS NO.	Unit	MDL	001
Bis (2,3-dibromopropyl) phosphate	5412-25-9	mg/kg	5	ND
Tris(2,3-dibromopropyl) phosphate(TDBPP/TRIS)	126-72-7	mg/kg	5	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

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.

Tetrabromobisphenol A (TBBP-A)

Test Method : With reference to IEC 62321:2008, analysis was performed by GC-MS.

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

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.

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

Polychlorinated Terphenyls (PCTs)

Test Method : With reference to US EPA 8082A: 2007, analysis was performed by GC-MS

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Test Item(s)	Unit	MDL	001
Aroclor 5432	mg/kg	5	ND
Aroclor 5442	mg/kg	5	ND

Notes :

(1) PCTs Reference Information: Entry 1 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 89/677/EC)
Shall not be placed on the market, or used:
- as substances,
- In mixtures, including waste oils, or in equipment, in concentrations greater than 50 mg/kg (0,005 % by weight).
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.

Test Item(s)	Limit	Unit	MDL	001
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.

Polychlorinated Biphenyls (PCBs)

Test Method : With reference to US EPA 8082A: 2007, analysis was performed by GC-MS

Test Item(s)	CAS NO.	Unit	MDL	001
2,4,4'-Trichlorobiphenyl (PCB 28)	7012-37-5	mg/kg	0.5	ND
2,2',5,5'-Tetrachloro-biphenyl (PCB 52)	35693-99-3	mg/kg	0.5	ND
2,2',4,5,5'-Pentachloro-biphenyl (PCB 101)	37680-73-2	mg/kg	0.5	ND
2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	31508-00-6	mg/kg	0.5	ND
2,2',3,4,4',5'-Hexachloro-biphenyl (PCB 138)	35065-28-2	mg/kg	0.5	ND

Test Item(s)	CAS NO.	Unit	MDL	001
2,2',4,4',5,5'-Hexachloro-biphenyl (PCB 153)	35065-27-1	mg/kg	0.5	ND
2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180)	35065-29-3	mg/kg	0.5	ND

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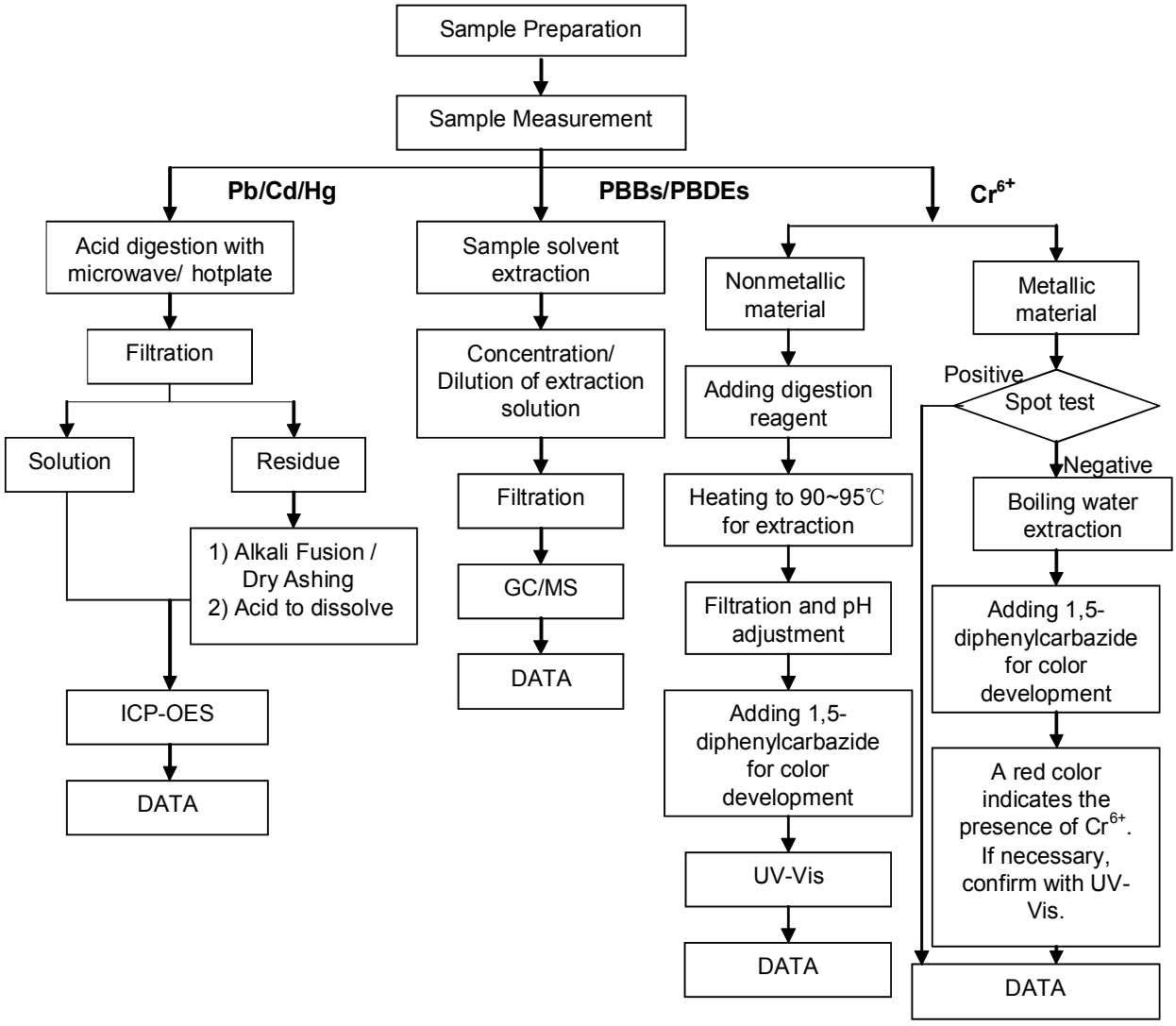
ATTACHMENTS

RoHS Testing Flow Chart

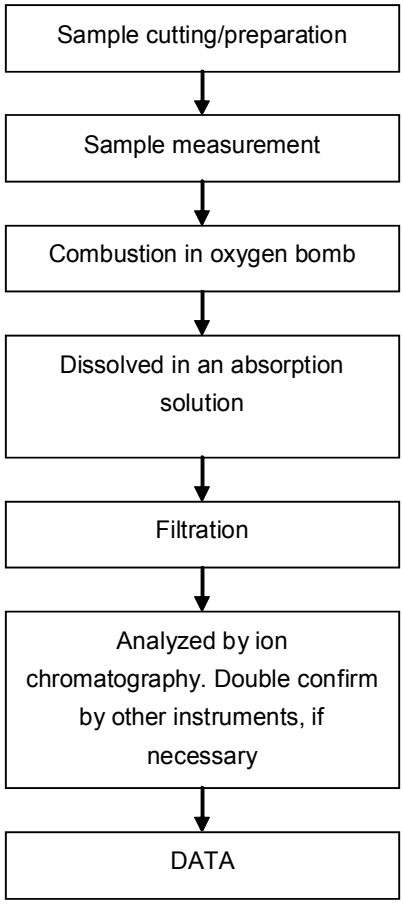
1) Name of the person who made testing: Jan Shi/Star Wang/Stone Chen/Gary Xu
2) Name of the person in charge of testing: Jeff Zhang/ Jessy Huang
3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} and PBBs/PBDEs test method excluded)



ATTACHMENTS

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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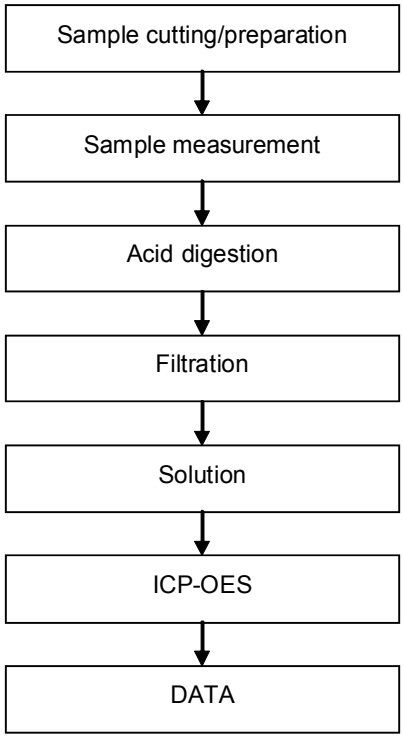
Elements Testing Flow Chart

1) Name of the person who made testing: Star Wang/ Jan Shi
2) Name of the person in charge of testing: Jeff Zhang



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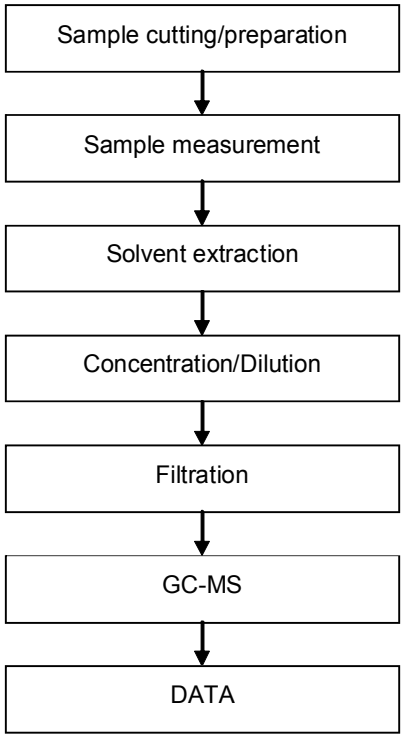
PCB/ PCT/ PCN Testing Flow Chart

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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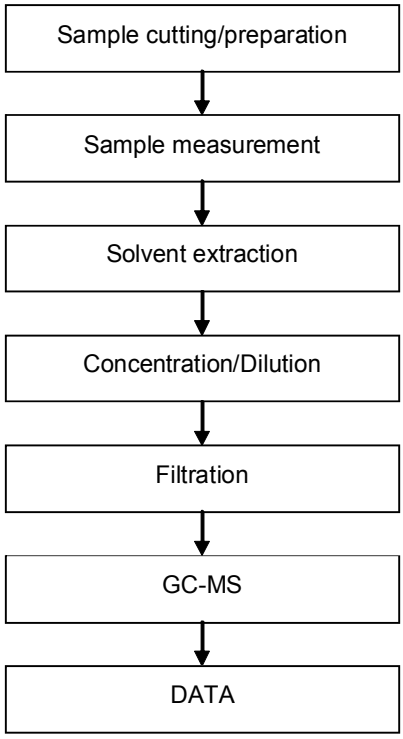
Phthalates Testing Flow Chart

1) Name of the person who made testing: Elyn Yao
2) Name of the person in charge of testing: Myra Ma



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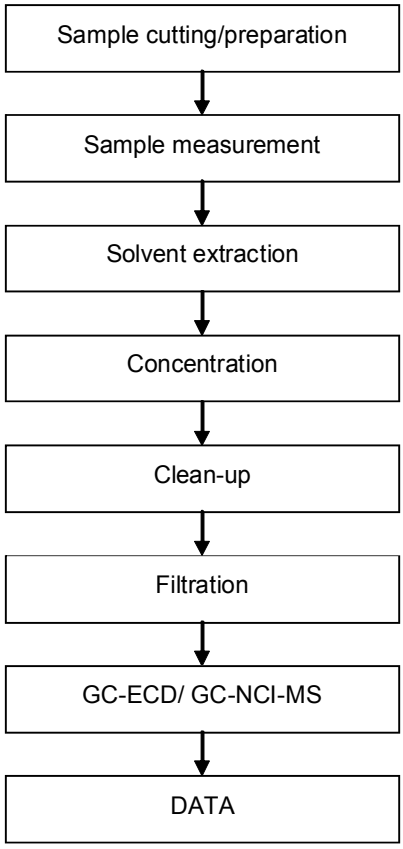
ATTACHMENTS

SCCP/MCCP Testing Flow Chart

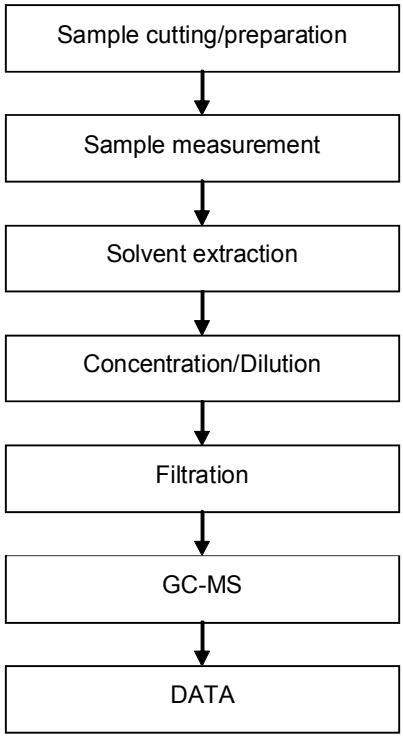
1) Name of the person who made testing: Brin Feng
2) Name of the person in charge of testing: Zirco Yu



ATTACHMENTS

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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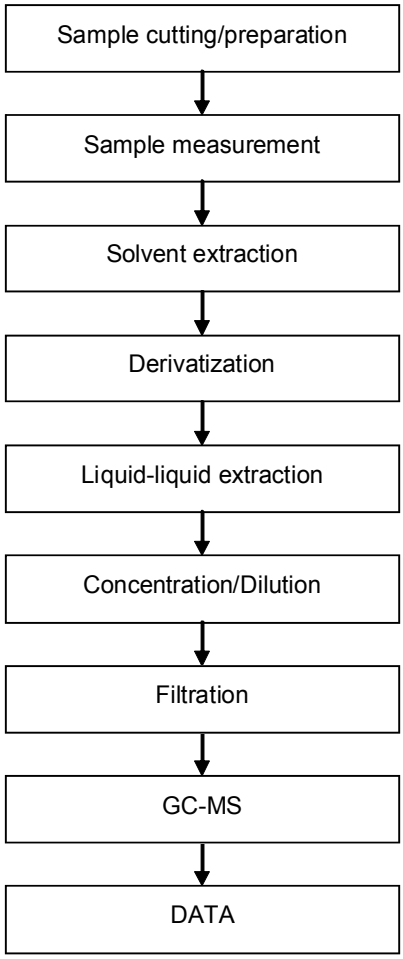
ATTACHMENTS

TBBP-A Testing Flow Chart

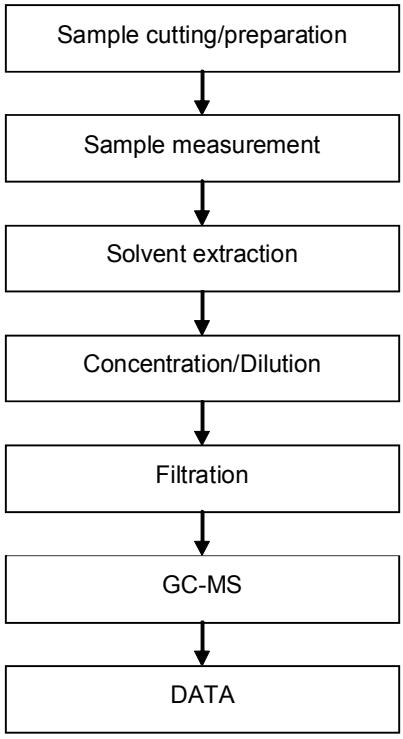
1) Name of the person who made testing: Gary Xu
2) Name of the person in charge of testing: Jessy Huang



ATTACHMENTS

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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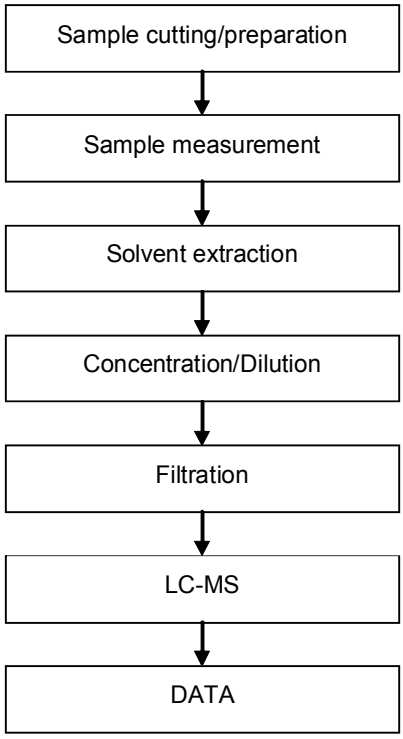
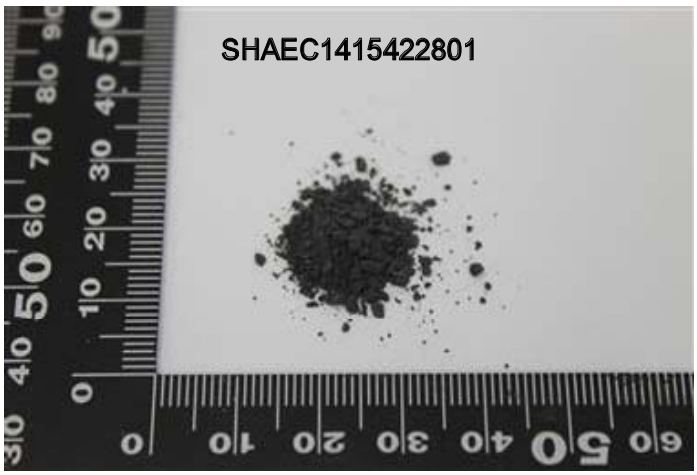
ATTACHMENTS

PFOS/PFOA Testing Flow Chart

1) Name of the person who made testing: Tony Hu
2) Name of the person in charge of testing: Judy Li



Sample photo:



SHA14-154228.001

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*** End of Report ***

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Test Report

No: 10326644(1) Date: 07-Feb-14

Heraeus Materials Singapore Pte Ltd
26 Pioneer Crescent #06-11/12 West Park Bizcentral Singapore 628558

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

Sample Description	:	PbSn5Ag2.5(RM218) Solder Paste
Sample Receiving Date	:	17-Jan-14
Testing Period	:	20-Jan-14 to 07-Feb-14
Test Requested	:	In accordance with the RoHS Directive 2011/65/EU Annex II.

Test Result(s)	:	Please refer to next page(s).
Conclusion	:	Based on the performed tests on submitted sample(s), the results **comply with** the RoHS Directive 2011/65/EU Annex II ; recasting 2002/95/EC.

Signed for and on behalf of
SGS Testing & Control Services Singapore Pte Ltd

Y.C. Tham
Laboratory Manager

Test Result(s):

Sample Description : PbSn5Ag2.5(RM218) Solder Paste

Test Item(s):	Unit	Method	Results	MDL	RoHS Limit
Cadmium(Cd)	mg/kg	With reference to IEC62321-5 :2013. Analysis was performed by ICP/AES	n.d.	2	100
Lead (Pb)	mg/kg	With reference to IEC62321-5 :2013. Analysis was performed by ICP/AES	917050.7+	2	1000
Mercury (Hg)	mg/kg	With reference to IEC62321-4 :2013. Analysis was performed by ICP/AES	n.d.	2	1000
Hexavalent Chromium (CrVI)	mg/kg	With reference to IEC62321, Ed1:2008. Analysis was performed by UV/Vis Spectrometry	n.d.	2	1000
Sum of PBBs	mg/kg	With reference to IEC62321, Ed1:2008. Analysis was performed by GC/MS	**n.d.**	-	1000
Monobromobiphenyl	mg/kg		n.d.	5	-
Dibromobiphenyl	mg/kg		n.d.	5	-
Tribromobiphenyl	mg/kg		n.d.	5	-
Tetrabromobiphenyl	mg/kg		n.d.	5	-
Pentabromobiphenyl	mg/kg		n.d.	5	-
Hexabromobiphenyl	mg/kg		n.d.	5	-
Heptabromobiphenyl	mg/kg		n.d.	5	-
Octabromobiphenyl	mg/kg		n.d.	5	-
Nonabromobiphenyl	mg/kg		n.d.	5	-
Decabromobiphenyl	mg/kg		n.d.	5	-
Sum of PBDEs	mg/kg		**n.d.**	-	1000
Monobromodiphenyl ether	mg/kg		n.d.	5	-
Dibromodiphenyl ether	mg/kg		n.d.	5	-
Tribromodiphenyl ether	mg/kg		n.d.	5	-
Tetrabromodiphenyl ether	mg/kg		n.d.	5	-
Pentabromodiphenyl ether	mg/kg		n.d.	5	-
Hexabromodiphenyl ether	mg/kg		n.d.	5	-
Heptabromodiphenyl ether	mg/kg		n.d.	5	-
Octabromodiphenyl ether	mg/kg		n.d.	5	-
Nonabromodiphenyl ether	mg/kg		n.d.	5	-
Decabromodiphenyl ether	mg/kg		n.d.	5	-

Note: (1) mg/kg = ppm ; 0.1wt% = 1000ppm
(2) n.d.= Not Detected
(3) MDL = Method Detection Limit
(4) "-" = Not regulated
(5) * : Exceeds limit

[+]Exemption: The received sample is exempted under directive 2011/65/EC Annex III Article 4(1): 7(a)lead in high melting temperature solder type solders (i.e. tin-lead solder alloys containing more than 85% of lead).

Remarks: Sample received was totally dissolved by preconditioning method.
Lab Analyst(s): Jojo, Pheng and YC

Sample photo:
Sample Description : PbSn5Ag2.5(RM218) Solder Paste

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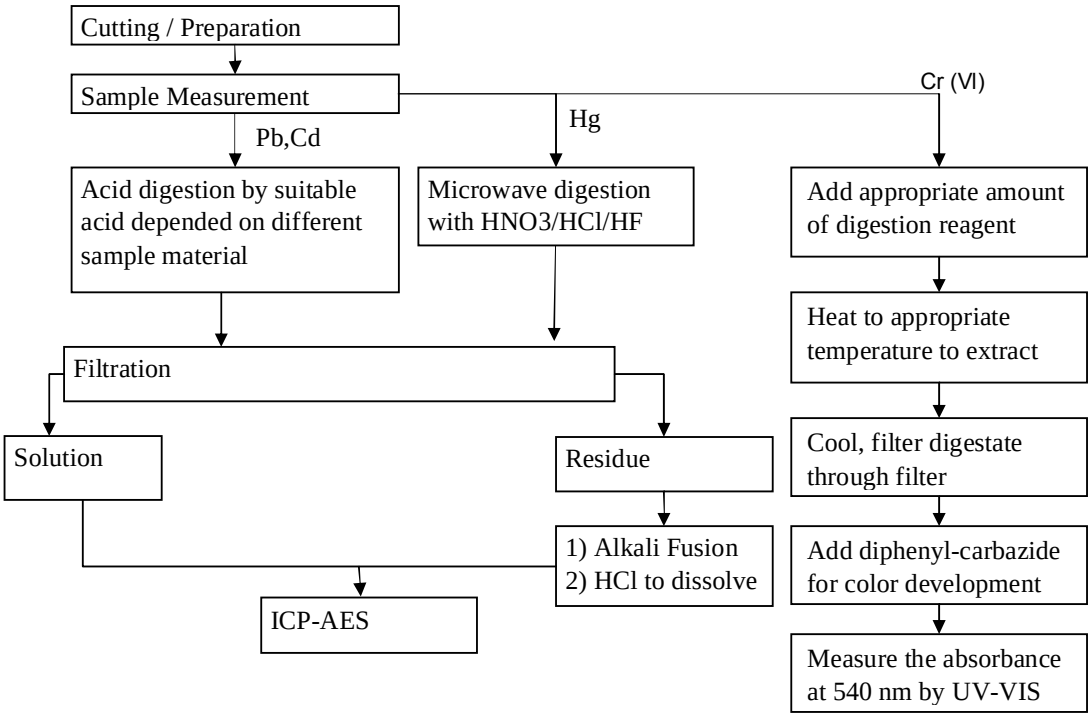
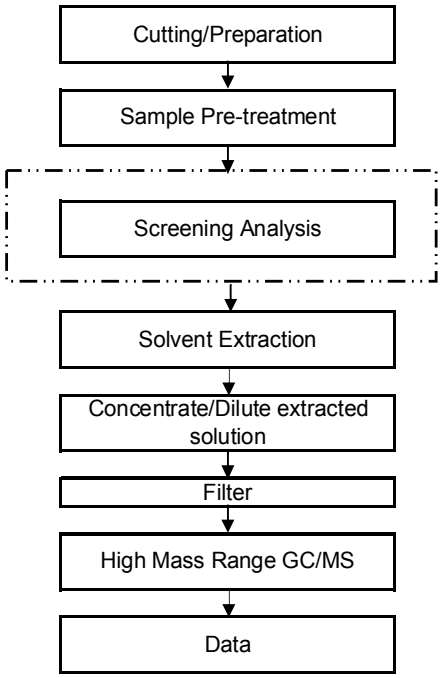
Process Flow of IEC 62321 (Pb, Cd, Hg & Cr^{6+})



Remarks: Sample received was totally dissolved by preconditioning method. (CrVI method excluded)

Process Flow of PBBs and PBDEs by GC/MS (IEC 62321)

First Testing Process → Optional screen process ..... Confirmation process ...→



End of Report

Test Report

YUNNAN TIN CO.,LTD.

49#MIDDLE OF CHANGYUAN ROAD,KUNMING NATIONAL HIGH&NEW TECH INDUSTRY DEVELOPMENT ZONE,KUNMING,YUNNAN
CHINA

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

SGS Job No. :	CP13-066989 - GZ
Model No. :	Sn99.90AA
Client Ref. Info. :	Tin Ingot,Tin Plate,Tin Stick,Tin Wire,Tin Bar,Tin Ball,Tin Hemisphere,Tin Granule,Tin Powder
Date of Sample Received :	27 Dec 2013
Testing Period :	27 Dec 2013 - 07 Jan 2014
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 samples, the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of
SGS-CSTC Ltd.

Merry Lv
Approved Signatory

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
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

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN13-204067.002	Silvery metal

Remarks :

(1) 1 mg/kg = 1 ppm = 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 ICP-OES.
(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 spot test / 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	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	59
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	◇	Negative
Sum of PBBs	1,000	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	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

Test Item(s)	Limit	Unit	MDL	002
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 directive 2011/65/EU, Annex II
(2)◇Spot-test:
Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;
(The tested sample should be further verified by boiling-water-extraction method if the spot test result is Negative or cannot be confirmed.)
◇Boiling-water-extraction:
Negative = Absence of CrVI coating
Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm2 sample surface area.
Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

Halogen

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

Test Item(s)	Unit	MDL	002
Fluorine (F)	mg/kg	50	ND
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

Hexabromocyclododecane (HBCDD)

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

Test Item(s)	Unit	MDL	002
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND

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.

Phthalate

Test Method : Determination of phthalates by GC-MS based on EN 14372:2004.

Test Item(s)	CAS NO.	Unit	MDL	002
Dibutyl Phthalate (DBP)	84-74-2	%(W/W)	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	%(W/W)	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%(W/W)	0.003	ND

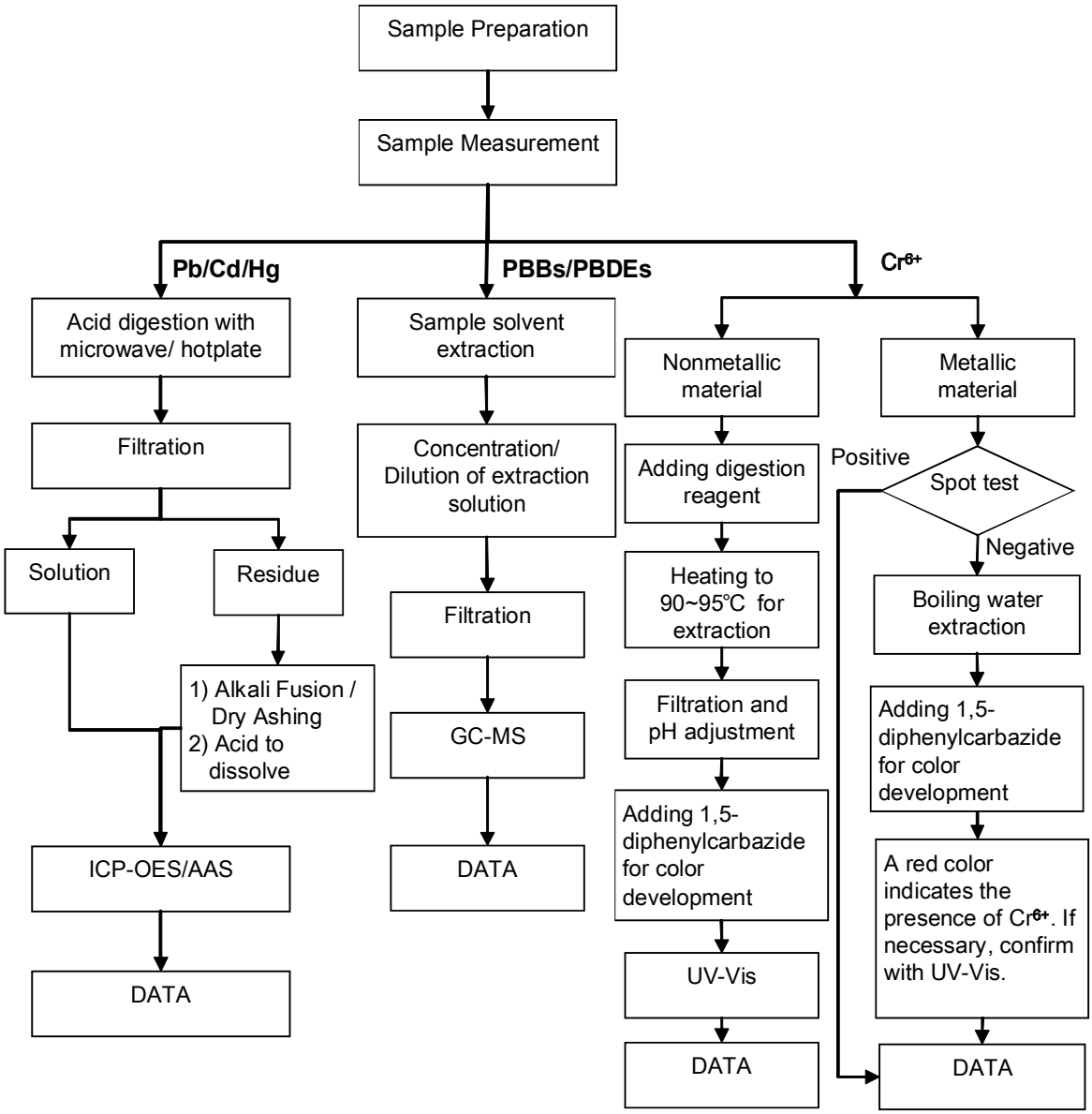
Notes :

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP) and Dibutyl phthalate (DBP) are considered as a priority for risk evaluation and substance restriction.

ATTACHMENTS

RoHS Testing Flow Chart

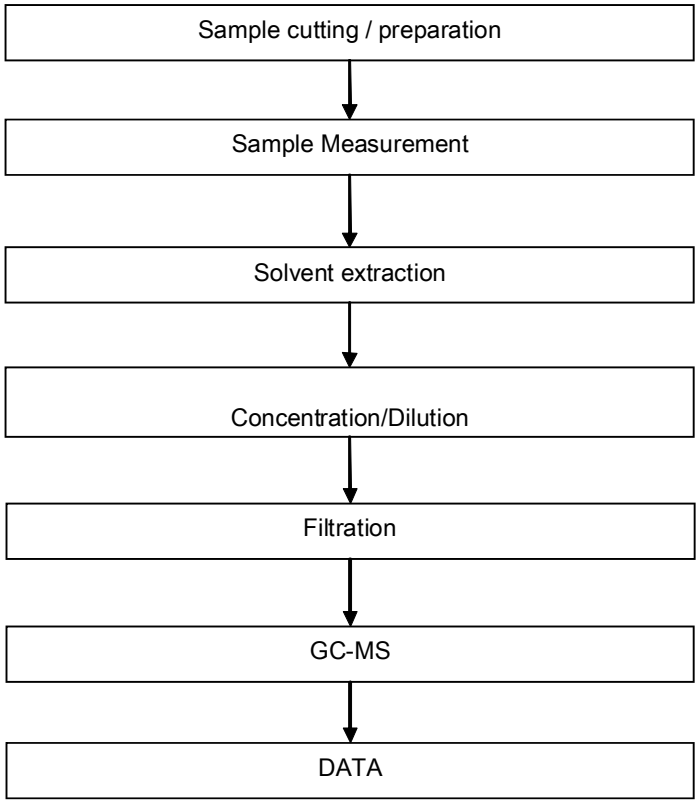
1) Name of the person who made testing: Michael Tso / Cutey Yu
2) Name of the person in charge of testing: Adams Yu / Yolanda Wei
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr^{6+} and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart

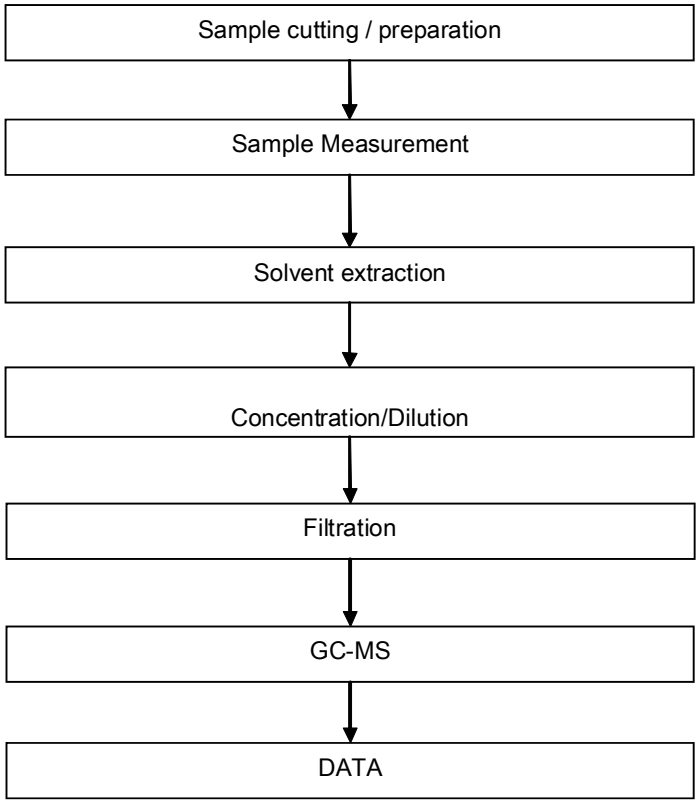
1) Name of the person who made testing: Liu Qiong
2) Name of the person in charge of testing: Yolanda Wei



ATTACHMENTS

HBCDD Testing Flow Chart

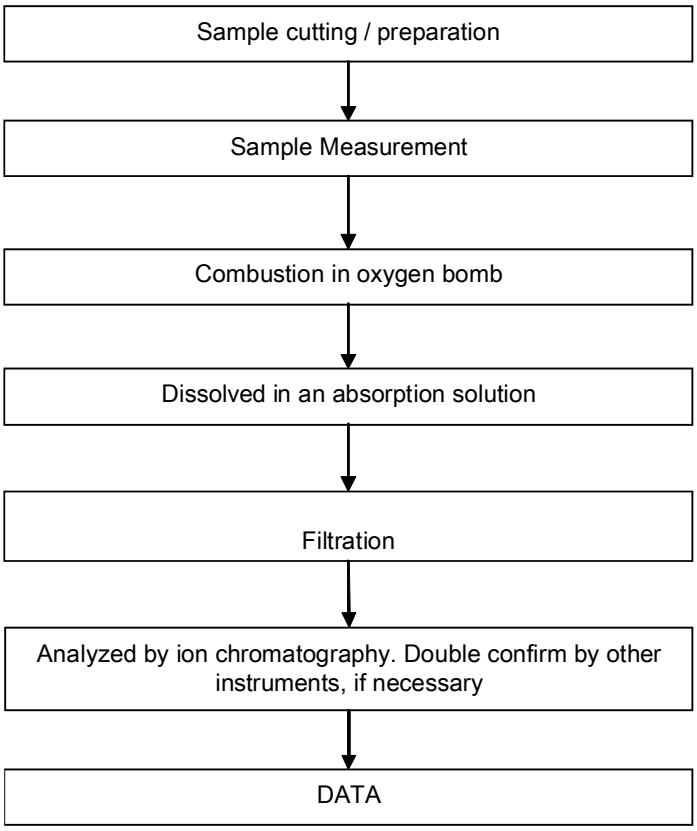
1) Name of the person who made testing: Cutey Yu
2) Name of the person in charge of testing: Yolanda Wei



ATTACHMENTS

Halogen Testing Flow Chart

1) Name of the person who made testing: Bella Wang
2) Name of the person in charge of testing: Adams Yu



Sample photo:

CAN13-204067.002

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