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
2014-08-22C-02	2014/11/22	2014/8/22

PCN Classification	Product Category
Major	Bridge Diode

Subject

Change assembly factory for DB-1S package

Affected Product(s)

DB1501S~DB1507S. DB201S~DB207S.

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)

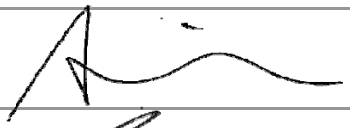
Assembly house.

Impact(s)

None

Attachment(s)

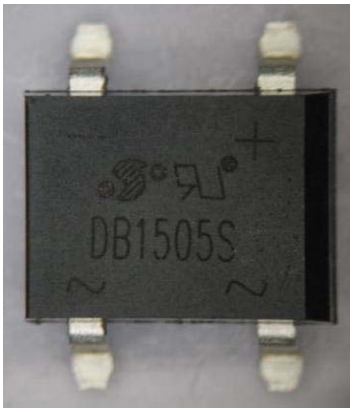
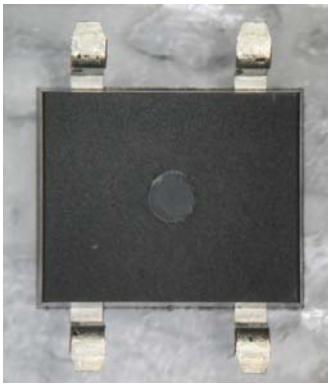
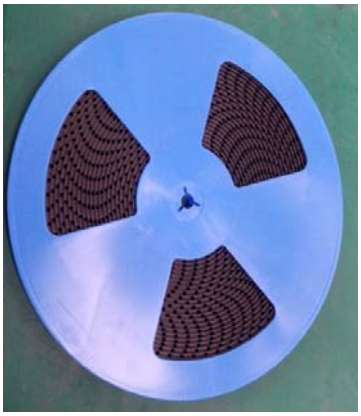
Reliability test report. SGS Report. Packge information. Specification.

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

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

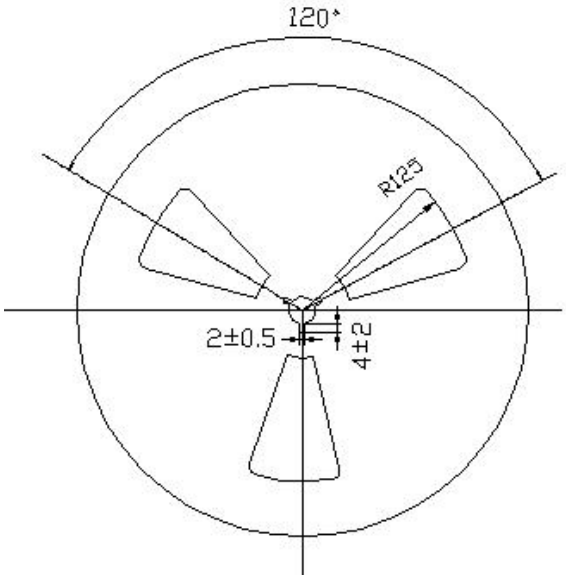
Reference of	
Original	News
 Top View	 Top View
 Back View	 Back View
 Reel	 Reel

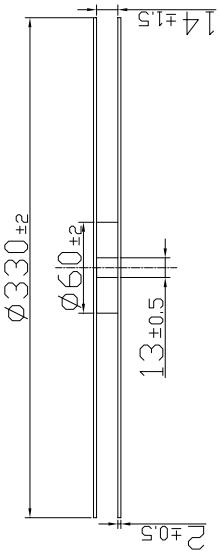
Elektronische Bauelemente

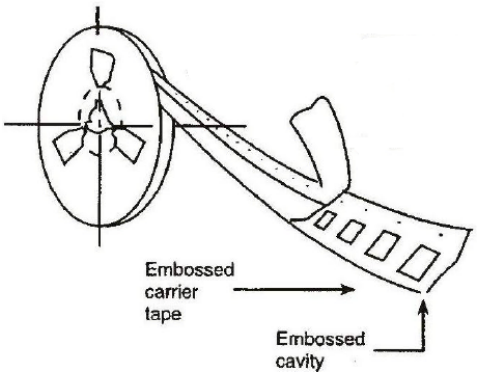
Packaging Information

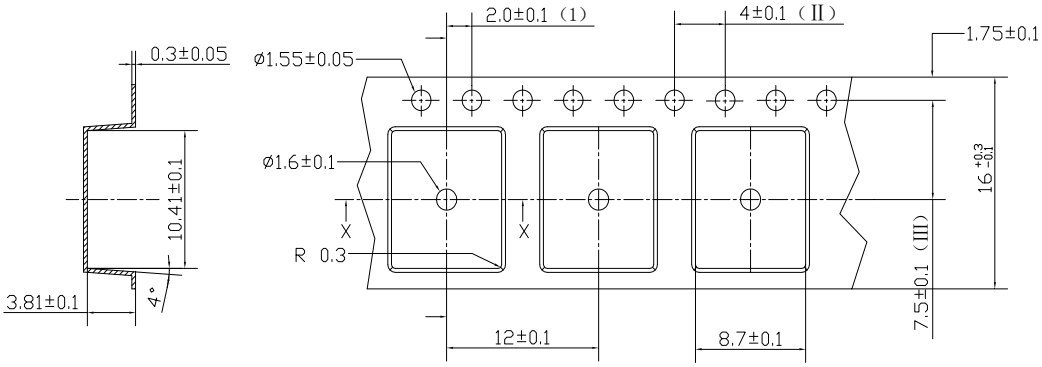
Reel Taping Specifications
Surface Mount Device

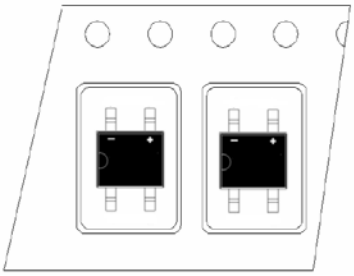
DB-1S











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: 2014/08/20 Document No.: SH14 -08- 01

Test Item	P/N	Test Condition	(LTPD)	Sample Numbers	Allow Fall Numbers	Fall Numbers	Result
HTRB High Temp Reverse Bias	DB1507S	100 ± 10℃, 80%VR, T = 1000hrs		77	0	0	ACC
HTSL High Temperature Storage Life	DB1507S	150℃, T = 1000 hrs		77	0	0	ACC
PCT Pressure Cooker Test	DB1507S	121℃, 29.7PSIG, 168 hrs		77	0	0	ACC
TCT Temperature Cycle Test	DB1507S	-55℃/30min, 150℃/30min, For 1000 Cycle		77	0	0	ACC
THT High Temperature High Humidity Test	DB1507S	85 ± 2℃, RH=85±5%, 1000 hrs		77	0	0	ACC
Solderability	DB1507S	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: 2014.07.01 **Testing End Date:** 2014.08.20

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

SeCoS Corporation

Electrical Test Data

Report No : T140820-001
Part No : DB1507S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1.5A, IR<10uA@VR=1000V
Test Condition: 25℃
Test Date: 2014.07.01 ~ 2014.07.01
Test Standard : Specifications
Operator: Leo Hsia

Test Result: PASS

No	VF (mV)	IR (uA)
1	938.0mV	0.098uA
2	935.0mV	0.032uA
3	941.1mV	0.085uA
4	942.1mV	0.043uA
5	935.3mV	0.088uA
6	943.3mV	0.094uA
7	937.4mV	0.093uA
8	938.4mV	0.042uA
9	939.9mV	0.041uA
10	937.2mV	0.069uA
11	940.3mV	0.096uA
12	934.2mV	0.033uA
13	938.6mV	0.072uA
14	942.1mV	0.037uA
15	935.3mV	0.043uA
16	938.5mV	0.057uA
17	940.6mV	0.072uA
18	936.8mV	0.044uA
19	941.6mV	0.088uA
20	938.9mV	0.059uA
21	939.9mV	0.054uA
22	940.2mV	0.035uA
23	943.5mV	0.084uA
24	942.0mV	0.054uA
25	936.2mV	0.069uA
26	935.8mV	0.038uA
27	941.0mV	0.045uA
28	941.4mV	0.041uA
29	938.0mV	0.042uA
30	943.0mV	0.050uA
31	941.2mV	0.041uA
32	943.1mV	0.079uA
33	943.0mV	0.086uA
34	941.4mV	0.092uA
35	940.7mV	0.073uA
36	939.7mV	0.050uA
37	938.8mV	0.081uA
38	941.9mV	0.058uA
39	939.5mV	0.096uA
40	943.8mV	0.077uA
41	943.1mV	0.044uA

SeCoS Corporation

Electrical Test Data

Report No : T140820-001
Part No : DB1507S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1.5A, IR<10uA@VR=1000V
Test Condition: 25℃
Test Date: 2014.07.01 ~ 2014.07.01
Test Standard : Specifications
Operator: Leo Hsia

Test Result: PASS

No	VF (mV)	IR (uA)
42	939.0mV	0.032uA
43	940.7mV	0.032uA
44	939.4mV	0.091uA
45	937.2mV	0.046uA
46	944.0mV	0.086uA
47	937.5mV	0.047uA
48	937.8mV	0.091uA
49	935.9mV	0.056uA
50	941.6mV	0.063uA
51	934.5mV	0.065uA
52	935.2mV	0.031uA
53	934.3mV	0.035uA
54	940.6mV	0.033uA
55	940.8mV	0.068uA
56	940.4mV	0.080uA
57	941.1mV	0.046uA
58	943.0mV	0.093uA
59	934.8mV	0.049uA
60	936.8mV	0.044uA
61	940.9mV	0.043uA
62	938.9mV	0.088uA
63	940.6mV	0.082uA
64	940.1mV	0.087uA
65	939.9mV	0.052uA
66	934.8mV	0.034uA
67	938.2mV	0.095uA
68	936.4mV	0.046uA
69	938.9mV	0.039uA
70	943.4mV	0.082uA
71	936.5mV	0.046uA
72	937.5mV	0.069uA
73	936.4mV	0.091uA
74	943.0mV	0.073uA
75	943.6mV	0.044uA
76	938.7mV	0.049uA
77	941.5mV	0.037uA

Made By: Leo Hsia Approval: Peter Yang

SeCoS Corporation

High Temperature Reverse Bias Test Data

Report No : T140820-001
Part No : DB1507S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1.5A, IR<10uA@VR=1000V
Test Condition: 100 ± 10℃, 80%VR, T = 1000 hrs
Test Date: 2014.07.01 ~ 2014.08.13
Test Standard : JESD22 STANDER Method-A108
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	936.7mV	0.092uA	941.2mV	0.082uA
2	942.0mV	0.066uA	935.0mV	0.047uA
3	941.0mV	0.052uA	941.9mV	0.076uA
4	941.1mV	0.040uA	942.3mV	0.036uA
5	941.0mV	0.098uA	936.0mV	0.072uA
6	937.5mV	0.071uA	936.4mV	0.090uA
7	936.7mV	0.081uA	942.2mV	0.055uA
8	937.3mV	0.038uA	941.7mV	0.049uA
9	936.9mV	0.075uA	940.7mV	0.043uA
10	935.9mV	0.048uA	939.2mV	0.079uA
11	935.0mV	0.098uA	939.6mV	0.096uA
12	939.6mV	0.095uA	938.5mV	0.090uA
13	943.1mV	0.066uA	943.6mV	0.097uA
14	940.8mV	0.071uA	939.6mV	0.062uA
15	937.5mV	0.042uA	942.0mV	0.030uA
16	936.5mV	0.035uA	943.0mV	0.050uA
17	940.2mV	0.047uA	938.2mV	0.048uA
18	935.6mV	0.052uA	943.9mV	0.045uA
19	937.7mV	0.091uA	935.6mV	0.069uA
20	941.8mV	0.094uA	936.7mV	0.061uA
21	940.7mV	0.084uA	937.5mV	0.062uA
22	937.5mV	0.075uA	944.1mV	0.070uA
23	943.0mV	0.038uA	944.1mV	0.094uA
24	941.2mV	0.080uA	939.4mV	0.055uA
25	934.8mV	0.093uA	938.2mV	0.076uA
26	937.5mV	0.092uA	939.5mV	0.083uA
27	936.6mV	0.070uA	935.4mV	0.035uA
28	938.2mV	0.068uA	934.9mV	0.091uA
29	936.7mV	0.094uA	937.6mV	0.043uA
30	943.4mV	0.066uA	934.9mV	0.078uA
31	943.5mV	0.081uA	935.1mV	0.042uA
32	937.7mV	0.078uA	937.2mV	0.080uA
33	943.8mV	0.088uA	941.2mV	0.077uA
34	937.8mV	0.082uA	934.6mV	0.085uA
35	939.3mV	0.061uA	937.7mV	0.080uA
36	935.3mV	0.079uA	938.7mV	0.082uA
37	939.8mV	0.066uA	941.9mV	0.058uA
38	943.4mV	0.092uA	941.6mV	0.086uA
39	935.2mV	0.059uA	941.2mV	0.060uA
40	941.9mV	0.054uA	942.0mV	0.075uA

SeCoS Corporation

High Temperature Reverse Bias Test Data

Report No : T140820-001
Part No : DB1507S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1.5A, IR<10uA@VR=1000V
Test Condition: 100 ± 10℃, 80%VR, T = 1000 hrs
Test Date: 2014.07.01 ~ 2014.08.13
Test Standard : JESD22 STANDER Method-A108
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
41	936.4mV	0.044uA	937.4mV	0.093uA
42	938.5mV	0.098uA	939.1mV	0.048uA
43	935.7mV	0.030uA	943.2mV	0.047uA
44	943.7mV	0.088uA	943.8mV	0.072uA
45	936.8mV	0.042uA	938.6mV	0.073uA
46	942.9mV	0.050uA	939.4mV	0.070uA
47	939.3mV	0.099uA	935.0mV	0.090uA
48	936.6mV	0.079uA	939.9mV	0.038uA
49	938.3mV	0.097uA	942.8mV	0.049uA
50	936.9mV	0.040uA	934.2mV	0.098uA
51	943.3mV	0.077uA	938.3mV	0.040uA
52	943.1mV	0.043uA	937.0mV	0.051uA
53	942.2mV	0.077uA	941.8mV	0.077uA
54	939.5mV	0.035uA	942.1mV	0.069uA
55	943.1mV	0.034uA	937.1mV	0.080uA
56	936.6mV	0.093uA	939.6mV	0.062uA
57	935.4mV	0.092uA	943.8mV	0.078uA
58	937.9mV	0.088uA	942.1mV	0.042uA
59	940.0mV	0.030uA	942.2mV	0.059uA
60	941.0mV	0.094uA	942.5mV	0.079uA
61	941.0mV	0.040uA	942.6mV	0.073uA
62	941.6mV	0.050uA	934.9mV	0.054uA
63	942.2mV	0.071uA	943.4mV	0.070uA
64	936.4mV	0.090uA	935.1mV	0.080uA
65	941.9mV	0.039uA	943.6mV	0.074uA
66	935.2mV	0.082uA	937.8mV	0.072uA
67	942.1mV	0.070uA	934.9mV	0.092uA
68	943.8mV	0.060uA	942.4mV	0.046uA
69	941.6mV	0.039uA	942.7mV	0.096uA
70	935.2mV	0.038uA	944.0mV	0.077uA
71	935.1mV	0.064uA	939.1mV	0.087uA
72	940.8mV	0.049uA	943.4mV	0.043uA
73	937.8mV	0.048uA	937.1mV	0.058uA
74	940.9mV	0.096uA	939.8mV	0.045uA
75	935.5mV	0.070uA	940.5mV	0.062uA
76	938.3mV	0.036uA	942.2mV	0.069uA
77	937.4mV	0.099uA	934.5mV	0.085uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

High Temperature Storage Life Test Data

Report No : T140820-001
Part No : DB1507S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1.5A, IR<10uA@VR=1000V
Test Condition: 150℃, 1000Hrs
Test Date: 2014.07.01 ~ 2014.08.13
Test Standard : JESD22 STANDER Method-A103
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	934.9mV	0.041uA	941.4mV	0.043uA
2	942.4mV	0.096uA	941.7mV	0.055uA
3	942.4mV	0.071uA	943.3mV	0.045uA
4	936.4mV	0.095uA	941.9mV	0.096uA
5	941.0mV	0.094uA	938.9mV	0.057uA
6	937.0mV	0.082uA	936.1mV	0.073uA
7	942.1mV	0.080uA	943.7mV	0.061uA
8	944.1mV	0.037uA	939.3mV	0.063uA
9	937.3mV	0.095uA	939.5mV	0.089uA
10	939.6mV	0.038uA	940.5mV	0.094uA
11	942.8mV	0.092uA	938.5mV	0.043uA
12	936.2mV	0.066uA	943.6mV	0.077uA
13	936.8mV	0.068uA	940.5mV	0.091uA
14	943.9mV	0.061uA	938.8mV	0.082uA
15	938.8mV	0.053uA	941.3mV	0.061uA
16	942.8mV	0.066uA	939.4mV	0.080uA
17	940.1mV	0.056uA	935.8mV	0.077uA
18	940.4mV	0.074uA	943.5mV	0.085uA
19	934.3mV	0.075uA	940.2mV	0.038uA
20	936.2mV	0.094uA	938.8mV	0.057uA
21	935.0mV	0.067uA	937.0mV	0.078uA
22	942.8mV	0.096uA	940.5mV	0.040uA
23	939.2mV	0.052uA	944.0mV	0.061uA
24	935.9mV	0.085uA	936.2mV	0.065uA
25	937.1mV	0.054uA	941.5mV	0.081uA
26	942.4mV	0.034uA	937.6mV	0.072uA
27	936.5mV	0.059uA	939.1mV	0.043uA
28	937.4mV	0.094uA	940.5mV	0.038uA
29	943.8mV	0.041uA	938.8mV	0.077uA
30	943.3mV	0.096uA	942.4mV	0.074uA
31	941.5mV	0.076uA	938.7mV	0.061uA
32	939.7mV	0.044uA	939.9mV	0.075uA
33	934.3mV	0.041uA	936.5mV	0.052uA
34	941.7mV	0.044uA	936.8mV	0.041uA
35	936.3mV	0.043uA	943.8mV	0.031uA
36	938.7mV	0.069uA	936.2mV	0.057uA
37	938.0mV	0.049uA	941.0mV	0.034uA
38	935.4mV	0.093uA	940.7mV	0.095uA
39	935.4mV	0.086uA	942.2mV	0.047uA
40	937.3mV	0.093uA	939.9mV	0.096uA

SeCoS Corporation

High Temperature Storage Life Test Data

Report No : T140820-001
Part No : DB1507S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1.5A, IR<10uA@VR=1000V
Test Condition: 150℃, 1000Hrs
Test Date: 2014.07.01 ~ 2014.08.13
Test Standard : JESD22 STANDER Method-A103
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
41	942.7mV	0.054uA	935.4mV	0.031uA
42	943.2mV	0.069uA	941.5mV	0.045uA
43	935.4mV	0.090uA	942.6mV	0.068uA
44	940.7mV	0.056uA	944.1mV	0.057uA
45	943.4mV	0.030uA	943.0mV	0.062uA
46	936.7mV	0.058uA	936.8mV	0.098uA
47	936.8mV	0.033uA	938.0mV	0.045uA
48	938.6mV	0.062uA	937.9mV	0.095uA
49	939.5mV	0.045uA	941.0mV	0.045uA
50	942.5mV	0.055uA	939.9mV	0.036uA
51	938.4mV	0.081uA	936.2mV	0.056uA
52	942.5mV	0.073uA	942.4mV	0.035uA
53	943.2mV	0.044uA	940.9mV	0.081uA
54	940.5mV	0.053uA	936.1mV	0.067uA
55	936.1mV	0.088uA	936.5mV	0.090uA
56	935.2mV	0.042uA	935.8mV	0.064uA
57	944.0mV	0.077uA	934.3mV	0.069uA
58	942.3mV	0.068uA	939.4mV	0.082uA
59	940.7mV	0.037uA	938.1mV	0.076uA
60	943.9mV	0.090uA	940.4mV	0.069uA
61	943.1mV	0.037uA	937.9mV	0.064uA
62	941.6mV	0.086uA	937.4mV	0.055uA
63	936.4mV	0.085uA	936.5mV	0.096uA
64	936.0mV	0.090uA	943.8mV	0.087uA
65	943.7mV	0.034uA	939.8mV	0.099uA
66	935.1mV	0.098uA	942.4mV	0.040uA
67	939.5mV	0.081uA	939.3mV	0.078uA
68	939.3mV	0.031uA	943.0mV	0.053uA
69	936.3mV	0.091uA	942.1mV	0.097uA
70	940.3mV	0.090uA	937.8mV	0.081uA
71	941.3mV	0.075uA	943.2mV	0.057uA
72	943.4mV	0.085uA	940.1mV	0.090uA
73	940.7mV	0.032uA	938.3mV	0.048uA
74	942.4mV	0.088uA	942.3mV	0.061uA
75	943.4mV	0.047uA	934.2mV	0.090uA
76	937.3mV	0.038uA	938.9mV	0.042uA
77	942.5mV	0.086uA	942.2mV	0.032uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

Pressure Cooker Test Data

Report No : T140820-001
Part No : DB1507S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1.5A, IR<10uA@VR=1000V
Test Condition: 121℃, 100%RH, 29.7PSIG, 168Hrs
Test Date: 2014.07.07 ~ 2014.07.15
Test Standard : JESD22 STANDER Method-A102
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	941.0mV	0.070uA	943.9mV	0.066uA
2	940.8mV	0.086uA	935.6mV	0.089uA
3	934.6mV	0.043uA	935.7mV	0.093uA
4	943.9mV	0.092uA	938.2mV	0.080uA
5	941.4mV	0.097uA	941.9mV	0.042uA
6	936.9mV	0.062uA	939.0mV	0.044uA
7	943.2mV	0.063uA	940.5mV	0.083uA
8	941.1mV	0.052uA	944.1mV	0.068uA
9	939.5mV	0.061uA	942.5mV	0.051uA
10	936.1mV	0.059uA	938.2mV	0.085uA
11	940.0mV	0.060uA	938.2mV	0.082uA
12	937.0mV	0.065uA	938.5mV	0.058uA
13	935.9mV	0.058uA	942.9mV	0.061uA
14	941.9mV	0.097uA	943.2mV	0.037uA
15	943.8mV	0.081uA	942.3mV	0.042uA
16	937.9mV	0.089uA	943.2mV	0.059uA
17	936.6mV	0.041uA	942.2mV	0.094uA
18	939.9mV	0.093uA	935.1mV	0.079uA
19	937.3mV	0.098uA	939.8mV	0.082uA
20	935.8mV	0.080uA	938.7mV	0.042uA
21	941.5mV	0.054uA	942.0mV	0.032uA
22	939.6mV	0.080uA	937.9mV	0.036uA
23	941.7mV	0.068uA	935.4mV	0.092uA
24	935.4mV	0.083uA	935.6mV	0.076uA
25	936.2mV	0.084uA	935.9mV	0.087uA
26	942.7mV	0.036uA	941.2mV	0.082uA
27	940.7mV	0.054uA	938.6mV	0.065uA
28	939.1mV	0.086uA	940.9mV	0.082uA
29	935.3mV	0.053uA	934.7mV	0.040uA
30	937.2mV	0.043uA	936.4mV	0.052uA
31	942.9mV	0.082uA	936.4mV	0.060uA
32	940.8mV	0.064uA	944.0mV	0.091uA
33	935.2mV	0.076uA	939.9mV	0.068uA
34	943.6mV	0.090uA	934.7mV	0.065uA
35	940.1mV	0.084uA	936.8mV	0.093uA
36	940.9mV	0.090uA	934.6mV	0.059uA
37	934.8mV	0.036uA	936.9mV	0.092uA
38	938.2mV	0.084uA	941.7mV	0.030uA
39	937.1mV	0.078uA	936.9mV	0.056uA
40	936.9mV	0.051uA	937.7mV	0.071uA

SeCoS Corporation

Pressure Cooker Test Data

Report No : T140820-001
Part No : DB1507S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1.5A, IR<10uA@VR=1000V
Test Condition: 121℃, 100%RH, 29.7PSIG, 168Hrs
Test Date: 2014.07.07 ~ 2014.07.15
Test Standard : JESD22 STANDER Method-A102
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
41	936.9mV	0.093uA	941.4mV	0.060uA
42	937.1mV	0.064uA	939.9mV	0.055uA
43	936.6mV	0.040uA	940.6mV	0.058uA
44	936.7mV	0.039uA	936.7mV	0.080uA
45	937.4mV	0.074uA	938.0mV	0.084uA
46	941.9mV	0.067uA	940.8mV	0.071uA
47	934.4mV	0.097uA	934.9mV	0.092uA
48	943.1mV	0.085uA	938.9mV	0.081uA
49	943.7mV	0.053uA	942.1mV	0.070uA
50	944.0mV	0.041uA	936.1mV	0.075uA
51	936.2mV	0.072uA	943.8mV	0.039uA
52	934.6mV	0.033uA	942.1mV	0.076uA
53	939.5mV	0.057uA	943.5mV	0.087uA
54	938.9mV	0.037uA	937.6mV	0.064uA
55	936.7mV	0.081uA	938.6mV	0.088uA
56	941.5mV	0.055uA	942.0mV	0.077uA
57	941.4mV	0.051uA	942.3mV	0.042uA
58	936.2mV	0.088uA	943.4mV	0.045uA
59	938.2mV	0.060uA	938.9mV	0.039uA
60	940.5mV	0.097uA	934.7mV	0.078uA
61	934.4mV	0.079uA	935.9mV	0.057uA
62	939.1mV	0.082uA	943.9mV	0.056uA
63	942.8mV	0.041uA	934.7mV	0.087uA
64	936.8mV	0.059uA	936.0mV	0.033uA
65	936.2mV	0.089uA	937.2mV	0.061uA
66	941.3mV	0.065uA	935.7mV	0.038uA
67	942.6mV	0.047uA	936.5mV	0.097uA
68	943.1mV	0.056uA	941.1mV	0.070uA
69	935.8mV	0.062uA	942.5mV	0.093uA
70	939.7mV	0.074uA	937.3mV	0.033uA
71	941.7mV	0.051uA	938.6mV	0.090uA
72	936.0mV	0.080uA	935.3mV	0.094uA
73	941.4mV	0.081uA	934.8mV	0.089uA
74	937.9mV	0.056uA	938.0mV	0.081uA
75	940.7mV	0.067uA	938.9mV	0.089uA
76	935.7mV	0.034uA	936.6mV	0.062uA
77	941.5mV	0.091uA	937.8mV	0.083uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

Temperature Cycle Test Data

Report No : T140820-001
Part No : DB1507S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1.5A, IR<10uA@VR=1000V
Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle
Test Date: 2014.07.01 ~ 2014.08.20
Test Standard : JESD22 STANDER Method-A104
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	943.0mV	0.067uA	935.6mV	0.043uA
2	936.4mV	0.039uA	936.2mV	0.037uA
3	941.8mV	0.048uA	940.5mV	0.057uA
4	939.3mV	0.081uA	942.0mV	0.053uA
5	943.9mV	0.091uA	940.9mV	0.088uA
6	938.6mV	0.095uA	944.0mV	0.057uA
7	939.1mV	0.038uA	942.2mV	0.091uA
8	942.5mV	0.098uA	938.7mV	0.040uA
9	939.4mV	0.037uA	936.3mV	0.070uA
10	936.7mV	0.061uA	937.1mV	0.064uA
11	934.9mV	0.069uA	943.3mV	0.084uA
12	941.6mV	0.092uA	942.1mV	0.056uA
13	938.6mV	0.059uA	937.5mV	0.075uA
14	940.0mV	0.086uA	937.1mV	0.046uA
15	938.9mV	0.041uA	943.4mV	0.093uA
16	940.7mV	0.072uA	934.3mV	0.069uA
17	943.3mV	0.030uA	937.4mV	0.051uA
18	942.8mV	0.075uA	938.9mV	0.071uA
19	943.5mV	0.069uA	938.9mV	0.058uA
20	935.1mV	0.077uA	939.0mV	0.061uA
21	936.1mV	0.090uA	934.8mV	0.048uA
22	942.2mV	0.071uA	936.3mV	0.099uA
23	936.1mV	0.049uA	938.5mV	0.036uA
24	937.6mV	0.052uA	940.8mV	0.096uA
25	936.3mV	0.093uA	942.4mV	0.095uA
26	942.1mV	0.060uA	938.3mV	0.087uA
27	939.0mV	0.098uA	938.1mV	0.053uA
28	938.5mV	0.098uA	941.4mV	0.060uA
29	934.9mV	0.034uA	937.9mV	0.079uA
30	938.3mV	0.071uA	941.5mV	0.091uA
31	942.0mV	0.074uA	944.0mV	0.037uA
32	935.2mV	0.043uA	941.5mV	0.058uA
33	942.1mV	0.091uA	938.8mV	0.074uA
34	939.2mV	0.093uA	936.5mV	0.030uA
35	937.1mV	0.071uA	941.6mV	0.057uA
36	936.9mV	0.030uA	941.7mV	0.094uA
37	938.5mV	0.085uA	934.5mV	0.081uA
38	937.5mV	0.096uA	935.7mV	0.089uA
39	934.9mV	0.097uA	942.0mV	0.066uA
40	938.0mV	0.093uA	936.6mV	0.076uA

SeCoS Corporation

Temperature Cycle Test Data

Report No : T140820-001
Part No : DB1507S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1.5A, IR<10uA@VR=1000V
Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle
Test Date: 2014.07.01 ~ 2014.08.20
Test Standard : JESD22 STANDER Method-A104
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
41	941.9mV	0.040uA	934.4mV	0.067uA
42	941.8mV	0.047uA	942.4mV	0.094uA
43	942.9mV	0.032uA	938.3mV	0.095uA
44	934.3mV	0.038uA	934.4mV	0.098uA
45	944.1mV	0.094uA	934.9mV	0.096uA
46	940.0mV	0.037uA	942.5mV	0.096uA
47	940.5mV	0.094uA	934.8mV	0.047uA
48	943.0mV	0.055uA	937.7mV	0.086uA
49	935.1mV	0.063uA	936.6mV	0.047uA
50	935.0mV	0.044uA	940.5mV	0.038uA
51	940.1mV	0.069uA	936.1mV	0.064uA
52	939.8mV	0.083uA	942.9mV	0.047uA
53	942.5mV	0.087uA	938.1mV	0.064uA
54	943.4mV	0.056uA	938.6mV	0.034uA
55	939.7mV	0.093uA	938.7mV	0.077uA
56	941.4mV	0.032uA	943.8mV	0.078uA
57	940.0mV	0.092uA	939.3mV	0.035uA
58	938.1mV	0.071uA	940.2mV	0.090uA
59	940.4mV	0.069uA	940.2mV	0.093uA
60	942.5mV	0.057uA	943.2mV	0.079uA
61	942.8mV	0.075uA	939.9mV	0.050uA
62	934.7mV	0.085uA	941.0mV	0.073uA
63	939.6mV	0.037uA	937.6mV	0.054uA
64	942.5mV	0.093uA	943.3mV	0.074uA
65	941.7mV	0.069uA	934.5mV	0.074uA
66	943.5mV	0.084uA	943.0mV	0.047uA
67	936.5mV	0.061uA	940.3mV	0.094uA
68	942.0mV	0.049uA	935.0mV	0.050uA
69	940.3mV	0.076uA	942.6mV	0.061uA
70	940.6mV	0.080uA	942.7mV	0.089uA
71	940.0mV	0.085uA	940.4mV	0.051uA
72	942.0mV	0.086uA	934.2mV	0.032uA
73	936.6mV	0.069uA	938.4mV	0.058uA
74	940.6mV	0.074uA	936.7mV	0.061uA
75	944.1mV	0.057uA	934.5mV	0.083uA
76	939.2mV	0.096uA	935.4mV	0.053uA
77	941.6mV	0.066uA	937.4mV	0.082uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

High Temperature High Humidity Test Data

Report No : T140820-001
Part No : DB1507S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1.5A, IR<10uA@VR=1000V
Test Condition: 85±2℃, 85±5%RH, 1000Hrs
Test Date: 2014.07.01 ~ 2014.08.13
Test Standard : JESD22 STANDER Method-A101
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	938.5mV	0.099uA	937.7mV	0.089uA
2	934.9mV	0.073uA	936.4mV	0.059uA
3	940.1mV	0.065uA	937.6mV	0.088uA
4	940.6mV	0.082uA	938.9mV	0.086uA
5	941.2mV	0.048uA	942.1mV	0.063uA
6	942.8mV	0.083uA	936.9mV	0.055uA
7	941.7mV	0.033uA	937.3mV	0.072uA
8	937.9mV	0.060uA	942.3mV	0.074uA
9	943.9mV	0.044uA	939.1mV	0.053uA
10	938.3mV	0.030uA	938.1mV	0.045uA
11	942.7mV	0.062uA	940.9mV	0.091uA
12	940.4mV	0.076uA	937.4mV	0.042uA
13	944.1mV	0.041uA	936.0mV	0.072uA
14	936.4mV	0.090uA	936.8mV	0.082uA
15	939.4mV	0.032uA	942.3mV	0.076uA
16	942.5mV	0.081uA	937.0mV	0.047uA
17	936.9mV	0.061uA	939.9mV	0.068uA
18	943.4mV	0.070uA	936.3mV	0.059uA
19	941.8mV	0.098uA	938.8mV	0.098uA
20	941.7mV	0.058uA	942.1mV	0.061uA
21	938.8mV	0.082uA	942.8mV	0.037uA
22	938.7mV	0.074uA	943.2mV	0.077uA
23	938.1mV	0.051uA	940.5mV	0.034uA
24	934.9mV	0.080uA	937.0mV	0.049uA
25	939.3mV	0.087uA	943.2mV	0.059uA
26	940.0mV	0.083uA	940.6mV	0.081uA
27	938.6mV	0.047uA	936.2mV	0.033uA
28	943.3mV	0.087uA	941.9mV	0.036uA
29	934.4mV	0.031uA	943.7mV	0.073uA
30	940.7mV	0.054uA	940.2mV	0.057uA
31	943.5mV	0.037uA	939.9mV	0.065uA
32	939.8mV	0.094uA	938.5mV	0.057uA
33	943.1mV	0.036uA	940.0mV	0.073uA
34	934.2mV	0.065uA	936.6mV	0.031uA
35	935.5mV	0.044uA	937.3mV	0.079uA
36	941.0mV	0.046uA	937.0mV	0.042uA
37	941.7mV	0.070uA	940.5mV	0.034uA
38	937.7mV	0.046uA	943.2mV	0.037uA
39	938.6mV	0.062uA	942.7mV	0.068uA
40	937.7mV	0.037uA	944.0mV	0.039uA

SeCoS Corporation

High Temperature High Humidity Test Data

Report No : T140820-001
Part No : DB1507S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1.5A, IR<10uA@VR=1000V
Test Condition: 85±2℃, 85±5%RH, 1000Hrs
Test Date: 2014.07.01 ~ 2014.08.13
Test Standard : JESD22 STANDER Method-A101
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
41	940.2mV	0.090uA	935.3mV	0.033uA
42	940.7mV	0.092uA	935.3mV	0.092uA
43	935.4mV	0.068uA	934.6mV	0.055uA
44	943.7mV	0.047uA	934.9mV	0.080uA
45	941.1mV	0.076uA	937.5mV	0.066uA
46	943.4mV	0.057uA	937.2mV	0.069uA
47	942.2mV	0.090uA	936.6mV	0.089uA
48	944.0mV	0.080uA	939.1mV	0.036uA
49	942.3mV	0.086uA	934.8mV	0.097uA
50	940.0mV	0.078uA	941.5mV	0.045uA
51	939.8mV	0.064uA	938.6mV	0.080uA
52	940.4mV	0.045uA	937.7mV	0.091uA
53	937.3mV	0.055uA	940.0mV	0.075uA
54	942.3mV	0.055uA	938.8mV	0.043uA
55	936.6mV	0.096uA	942.8mV	0.072uA
56	941.5mV	0.044uA	942.5mV	0.063uA
57	935.8mV	0.057uA	941.4mV	0.059uA
58	937.4mV	0.044uA	934.6mV	0.037uA
59	937.7mV	0.043uA	944.0mV	0.066uA
60	935.4mV	0.071uA	942.6mV	0.084uA
61	936.2mV	0.044uA	943.4mV	0.084uA
62	942.0mV	0.097uA	944.1mV	0.038uA
63	936.3mV	0.093uA	937.7mV	0.048uA
64	942.1mV	0.054uA	934.9mV	0.061uA
65	940.0mV	0.084uA	941.2mV	0.070uA
66	941.1mV	0.067uA	938.1mV	0.037uA
67	937.0mV	0.097uA	937.5mV	0.076uA
68	942.0mV	0.034uA	940.8mV	0.047uA
69	940.4mV	0.055uA	942.9mV	0.053uA
70	942.7mV	0.040uA	935.9mV	0.039uA
71	938.3mV	0.082uA	941.5mV	0.044uA
72	938.6mV	0.079uA	943.7mV	0.049uA
73	938.4mV	0.059uA	939.7mV	0.090uA
74	935.0mV	0.051uA	935.6mV	0.048uA
75	934.3mV	0.037uA	935.4mV	0.051uA
76	942.2mV	0.093uA	936.4mV	0.039uA
77	936.5mV	0.055uA	934.8mV	0.077uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

Solderability Test Data

Report No : T140820-001
Part No : DB1507S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1100mV@IF=1.5A, IR<10uA@VR=1000V
Test Condition: 245℃ ± 5℃, 5Sec
Test Date: 2014.08.20 ~ 2014.08.20
Test Standard : JESD22 STANDER Method-B102
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	944.0mV	0.058uA	942.6mV	0.046uA
2	937.8mV	0.057uA	936.1mV	0.093uA
3	943.7mV	0.049uA	941.8mV	0.088uA
4	935.8mV	0.053uA	941.0mV	0.053uA
5	943.7mV	0.062uA	934.8mV	0.083uA
6	937.6mV	0.035uA	940.0mV	0.089uA
7	942.2mV	0.034uA	941.9mV	0.099uA
8	941.6mV	0.078uA	934.4mV	0.084uA
9	938.4mV	0.044uA	935.4mV	0.096uA
10	940.4mV	0.096uA	942.4mV	0.047uA

Made By: Leo Hsia

Approval: Peter Yang

簽名有效
)RU4XHVWLRQ
3OHDVH&RQWDFWZLWK6*6
ZZZWZVJVFRP

Test Report

No. : CE/2014/72967B   Date : 2014/08/04   Page : 1 of 48

SECOS CORPORATION   CE/ 2014/ 72967B*

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

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

==

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 Chan
Signed for
SGS TAIW
Chemical Laboratory – Taipei

Test Report

No. : CE/2014/72967B Date : 2014/08/04 Page : 2 of 48

SECOS CORPORATION CE/ 2014/ 72967B*

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

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

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
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.

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
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.

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
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

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
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

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
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.

Test Report

No. : CE/2014/72967B   Date : 2014/08/04

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
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.

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
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.

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
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.

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
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.

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.

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
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.

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
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.

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
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 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
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.

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
HBFC-222B5 (C3HF2Br5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-223B4 (C3HF3Br4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-224B3 (C3HF4Br3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-225B2 (C3HF5Br2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-226B1 (C3HF6Br)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-231B5 (C3H2FBr5)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-232B4 (C3H2F2Br4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-233B3 (C3H2F3Br3)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-234B2 (C3H2F4Br2)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-235B1 (C3H2F5Br)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-241B4 (C3H3FBr4)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
HBFC-242B3 (C3H3F2Br3)	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
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.

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.

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
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.

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.

Test Report

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 :

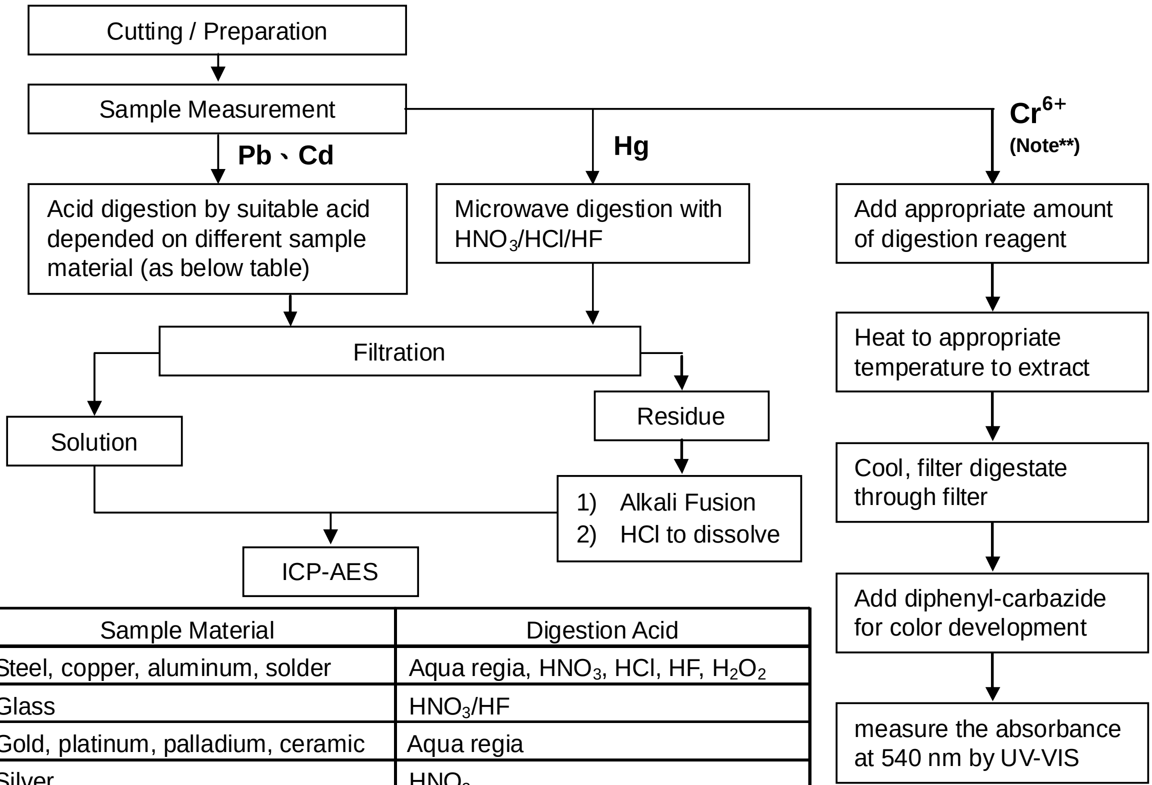
* = Only PAH substances >0.2 mg/kg are taken into account while calculating the sum of PAHs

** = 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℃.

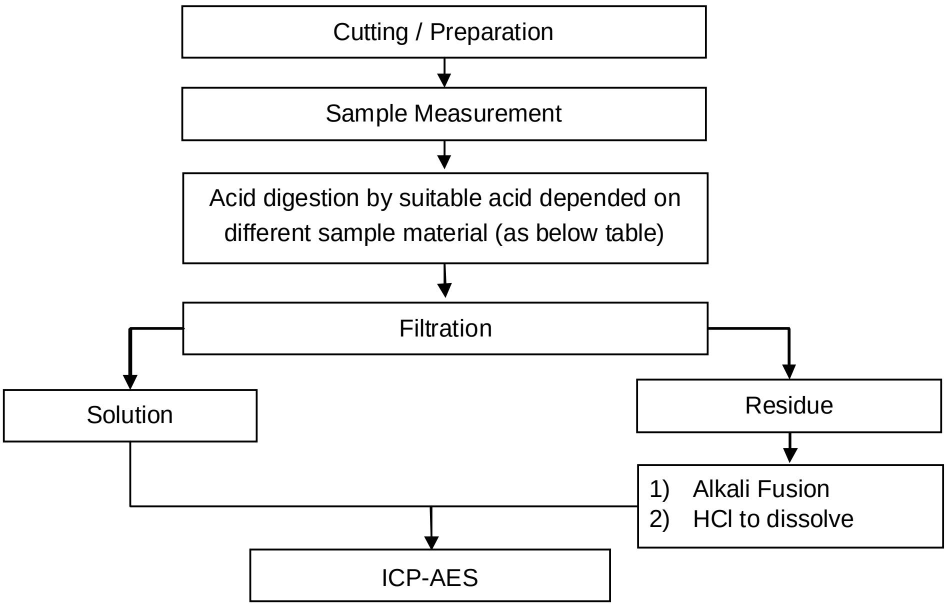
(2) For metallic material, add pure water and heat to boiling.

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



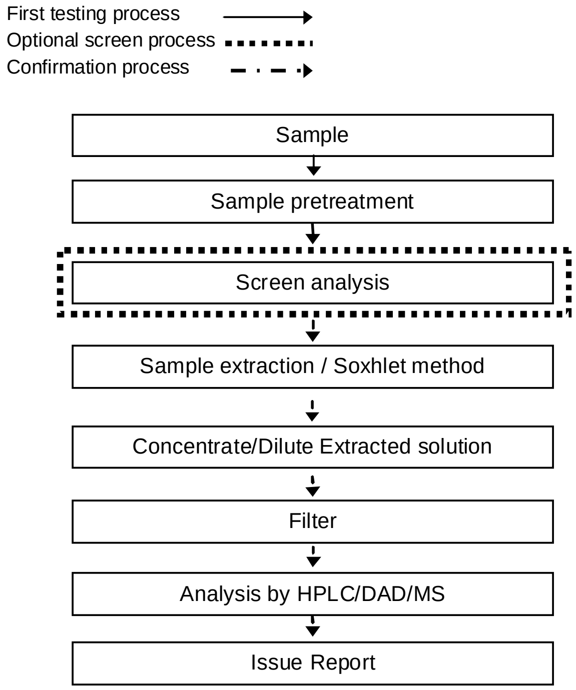
Steel, copper, aluminum, solder	Aqua regia, HNO_3, HCl, HF, H_2O_2
Glass	HNO_3/HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO_3
Plastic	H_2SO_4, H_2O_2, HNO_3, HCl
Others	Added appropriate reagent to total digestion

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

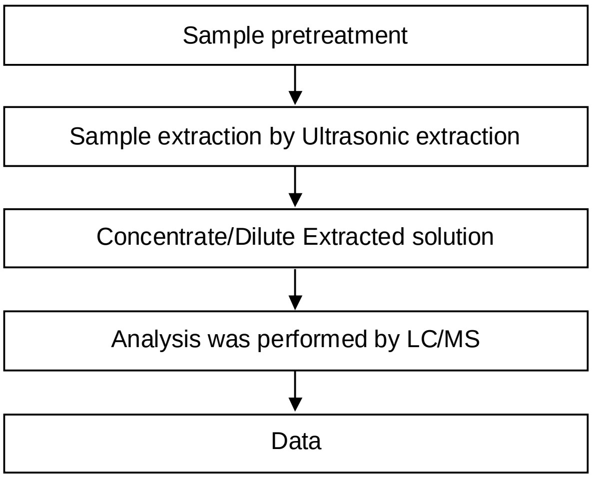


SECOS CORPORATION CE/ 2014/ 72967B*

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

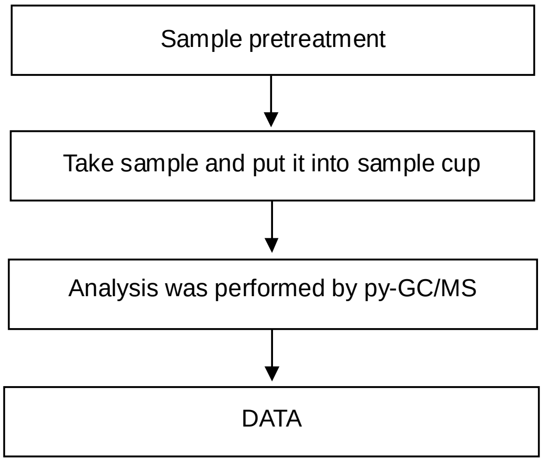


SECOS CORPORATION CE/ 2014/ 72967B*

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



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 halogen content

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

Sample pretreatment / Separation

↓

Weighting and putting sample in cell

↓

Oxygen Bomb Combustion / Absorption

↓

Dilution to fixed volume

↓

Analysis was performed by IC

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

Sample pre-treatment

↓

Sample extracted (ultrasonic extraction) by Toluene solvent

↓

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

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

Sample pretreatment

↓

Sample extraction / Ultrasonic method

↓

Concentrate/Dilute Extracted solution

↓

Filter

↓

Analysis was performed by GC/MS

↓

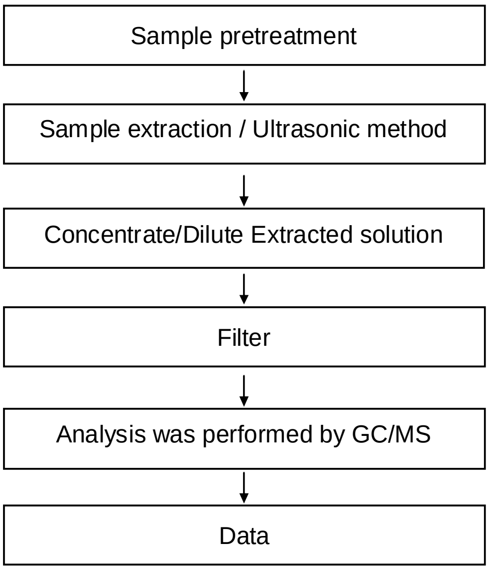
Data

SECOS CORPORATION CE/ 2014/ 72967B*

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

Dimethyl Fumarate 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

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

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

Sampling

↓

Sample pretreated by acid digestion and solvent extraction

↓

Analysis was performed by ICP-AES

↓

Data

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

Sample pretreatment/separation

↓

Sample extraction by soxhlet method

↓

Concentrate/Dilute 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

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

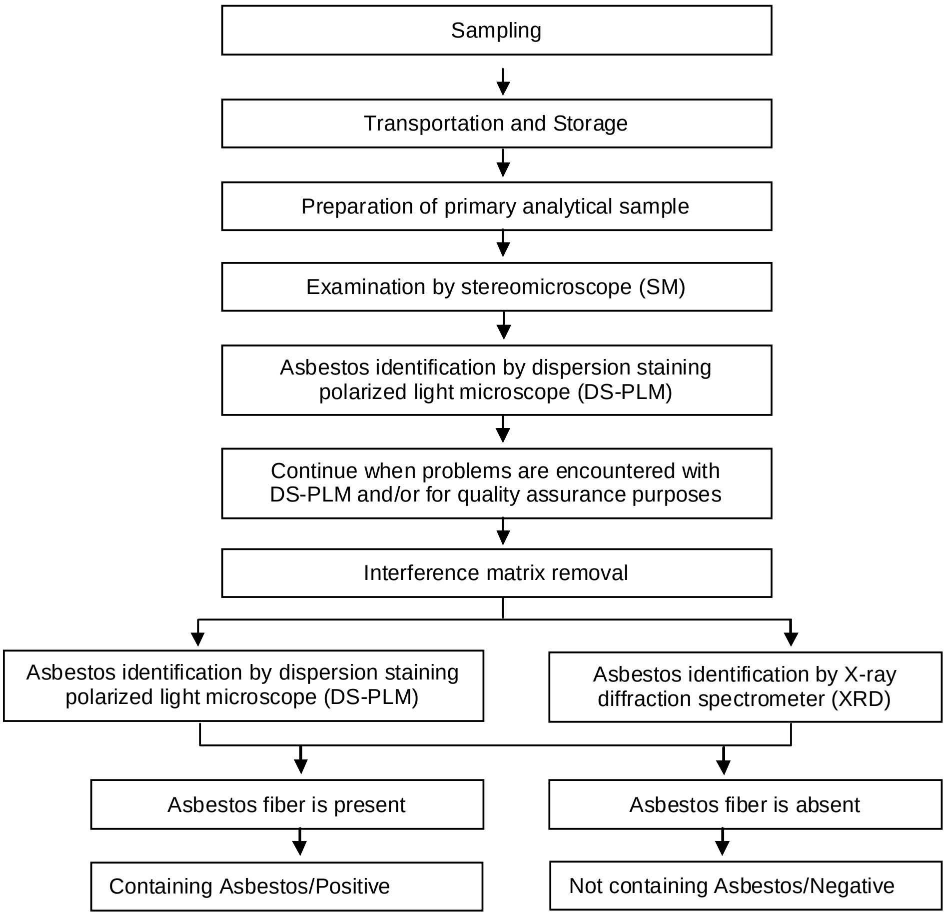
SECOS CORPORATION CE/ 2014/ 72967B*

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】

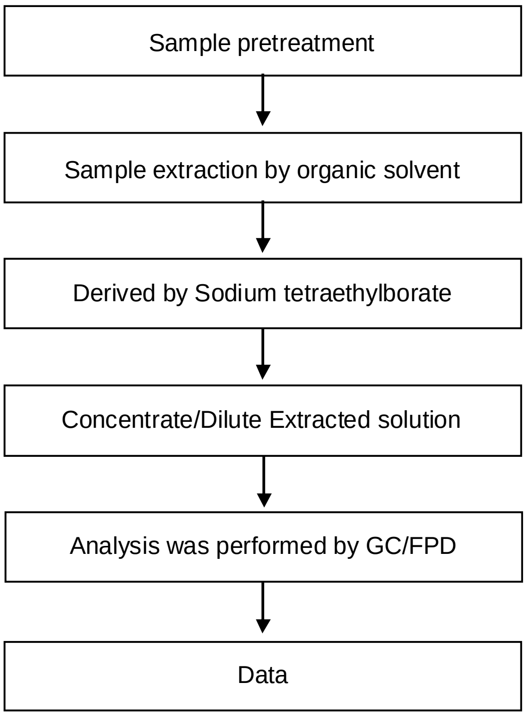


SECOS CORPORATION CE/ 2014/ 72967B*

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

Analytical flow chart of Organic-Tin content

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

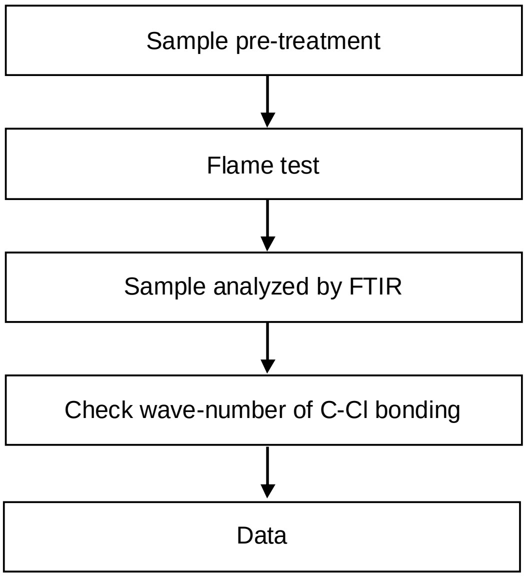


SECOS CORPORATION CE/ 2014/ 72967B*

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

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



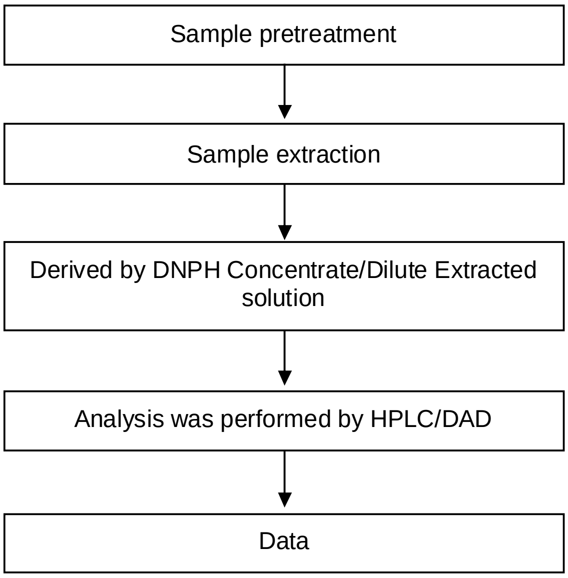
SECOS CORPORATION CE/ 2014/ 72967B*

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】

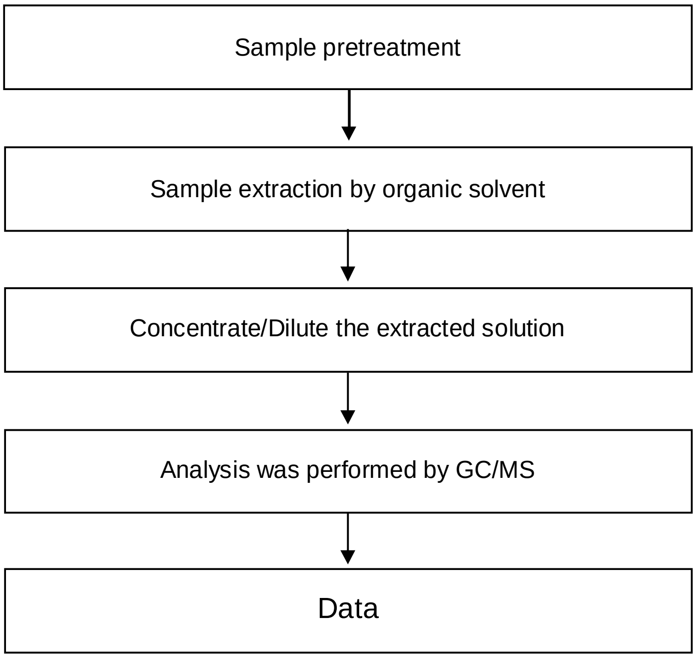


SECOS CORPORATION CE/ 2014/ 72967B*

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

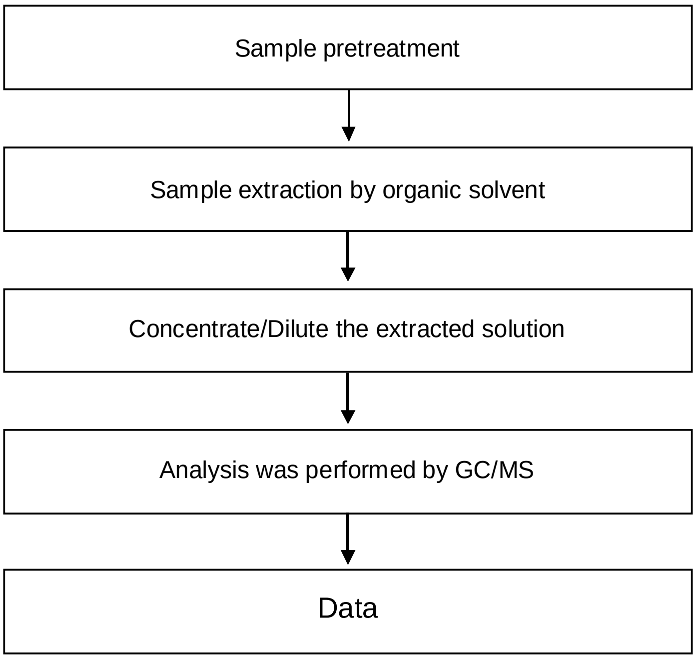


SECOS CORPORATION CE/ 2014/ 72967B*

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

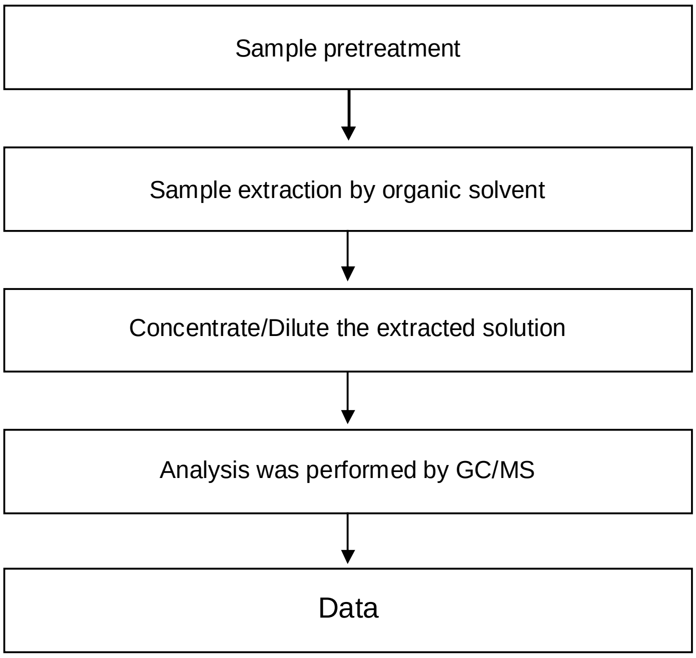


SECOS CORPORATION CE/ 2014/ 72967B*

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

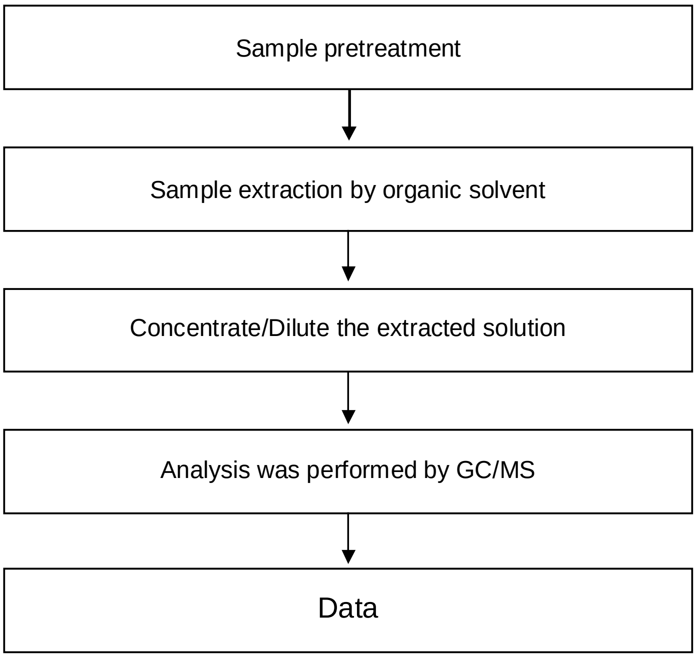
PCNs analytical flow chart

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



PCBs analytical flow chart

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

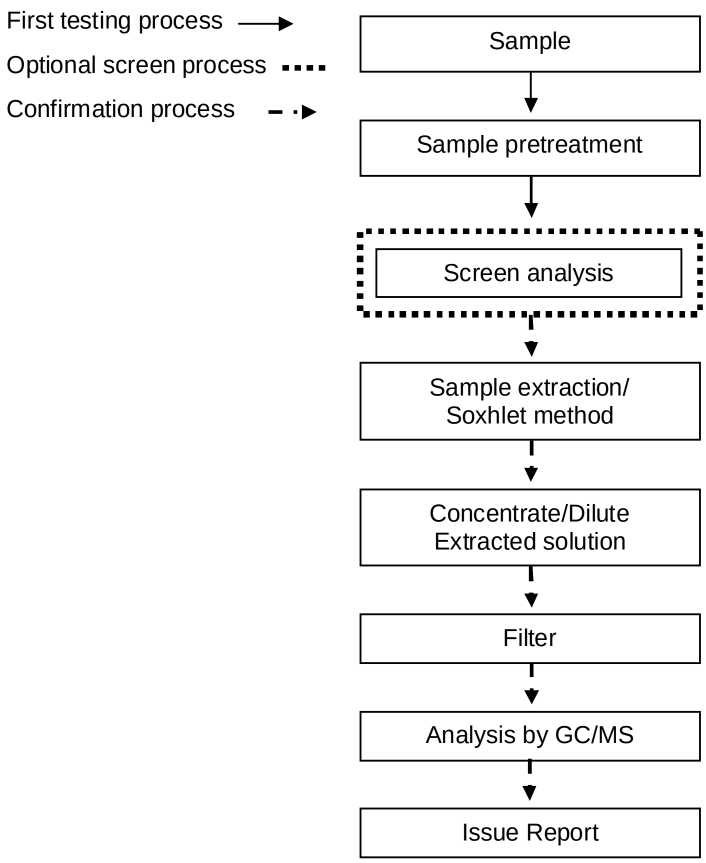


SECOS CORPORATION CE/ 2014/ 72967B*

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

PBB/PBDE analytical FLOW CHART

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

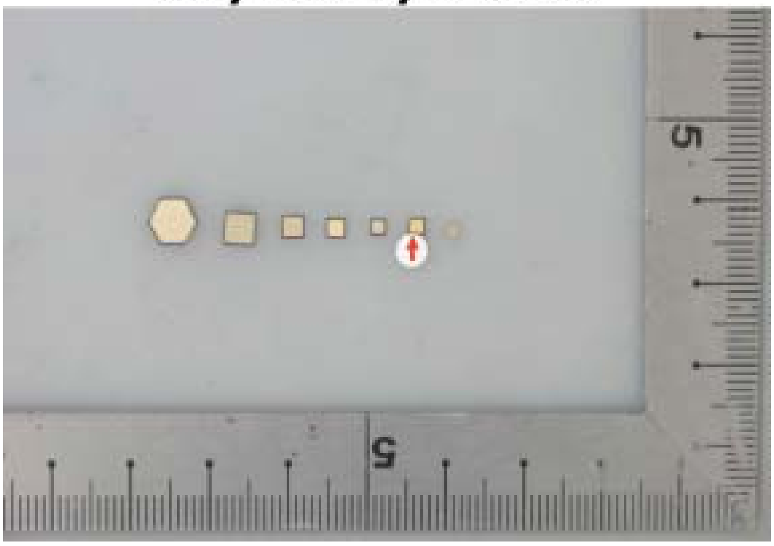


SECOS CORPORATION CE/ 2014/ 72967B*

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. ***

CE/2014/72967



** 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.

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

Note：

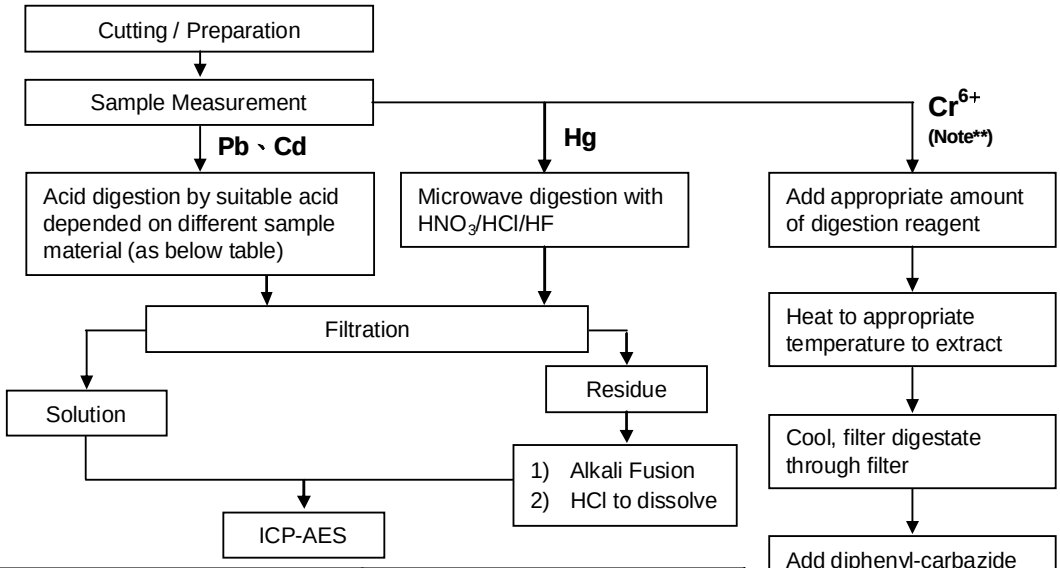
1. mg/kg = ppm；0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated
5. ** = Qualitative analysis (No Unit)
6. # = a. Positive means the presence of CrVI on the tested areas
   b. Negative means the absence of CrVI on the tested areas
   The detected concentration 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.

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

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



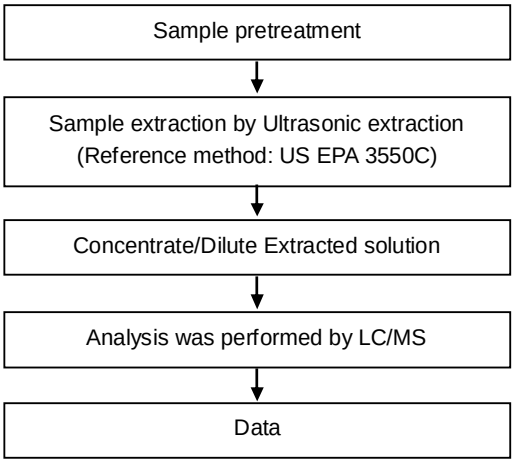
Sample Material	Digestion Acid
Steel, copper, aluminum, solder	Aqua regia, HNO_3, HCl, HF, H_2O_2
Glass	HNO_3/HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO_3
Plastic	H_2SO_4, H_2O_2, HNO_3, HCl
Others	Added appropriate reagent to total digestion

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 .

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

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

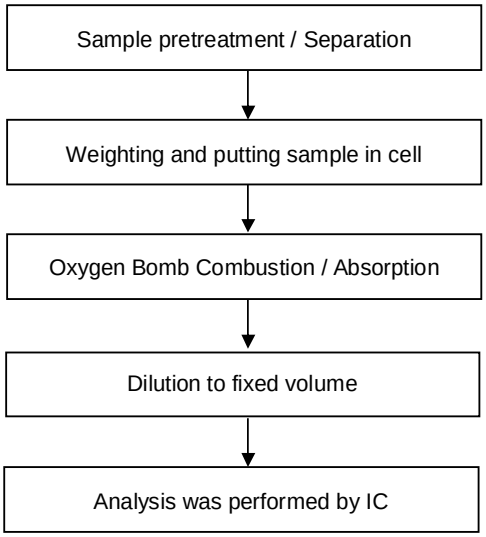
- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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

Analytical flow chart of halogen content

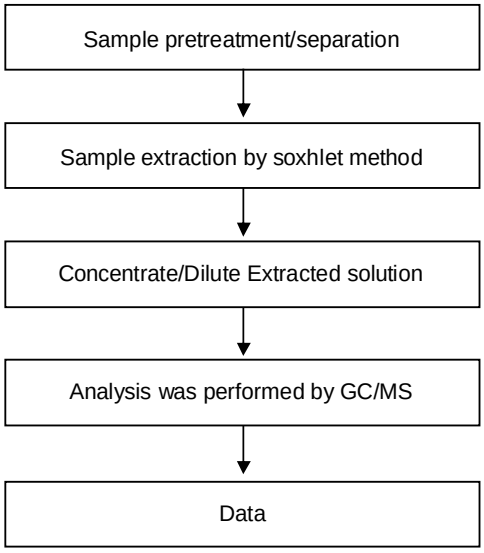
- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang



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

Analytical flow chart of phthalate content

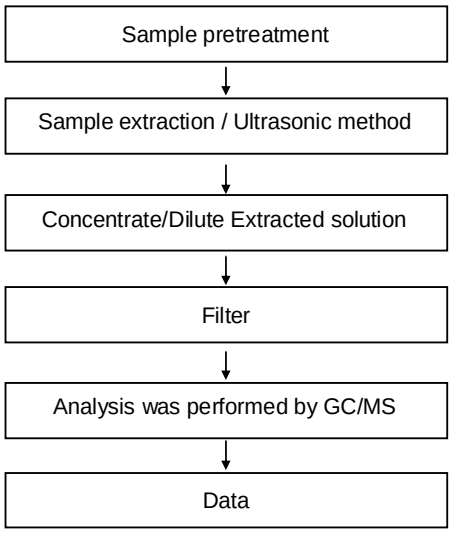
- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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

HBCDD analytical flow chart

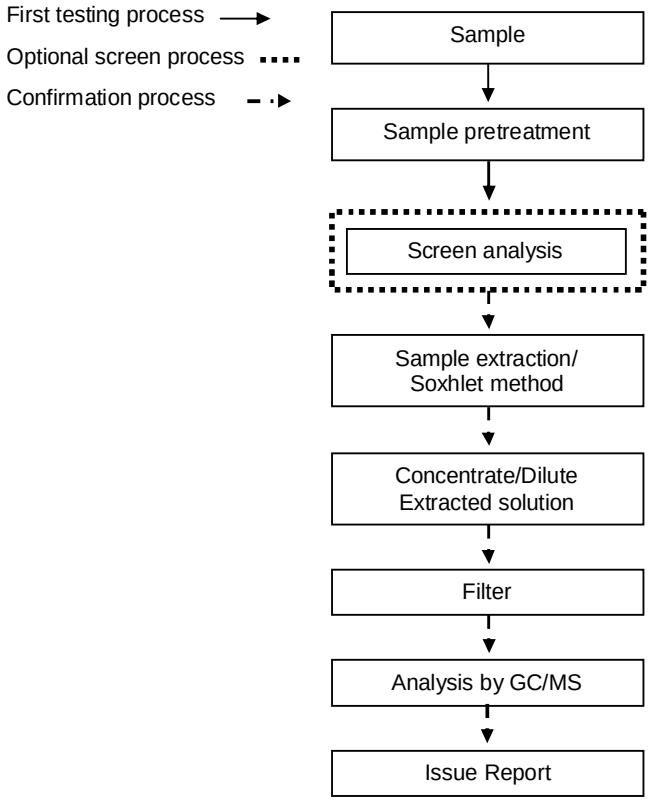
- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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

PBB/PBDE analytical FLOW CHART

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



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

*** 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

3/F,Building No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 HL: (86-21) 61402594 HL: (86-21)54500353 e sgs.china@sgs.com

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

3/F,Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t/t: (86-21) 61402594 f/f: (86-21)64953679 e sgs.china@sgs.com

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

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t/f: (86-21) 61402594 f/f: (86-21)64953679 e sgs.china@sgs.com

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

3/F,Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t/t: (86-21) 61402594 f/t: (86-21)64953679 e sgs.china@sgs.com

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

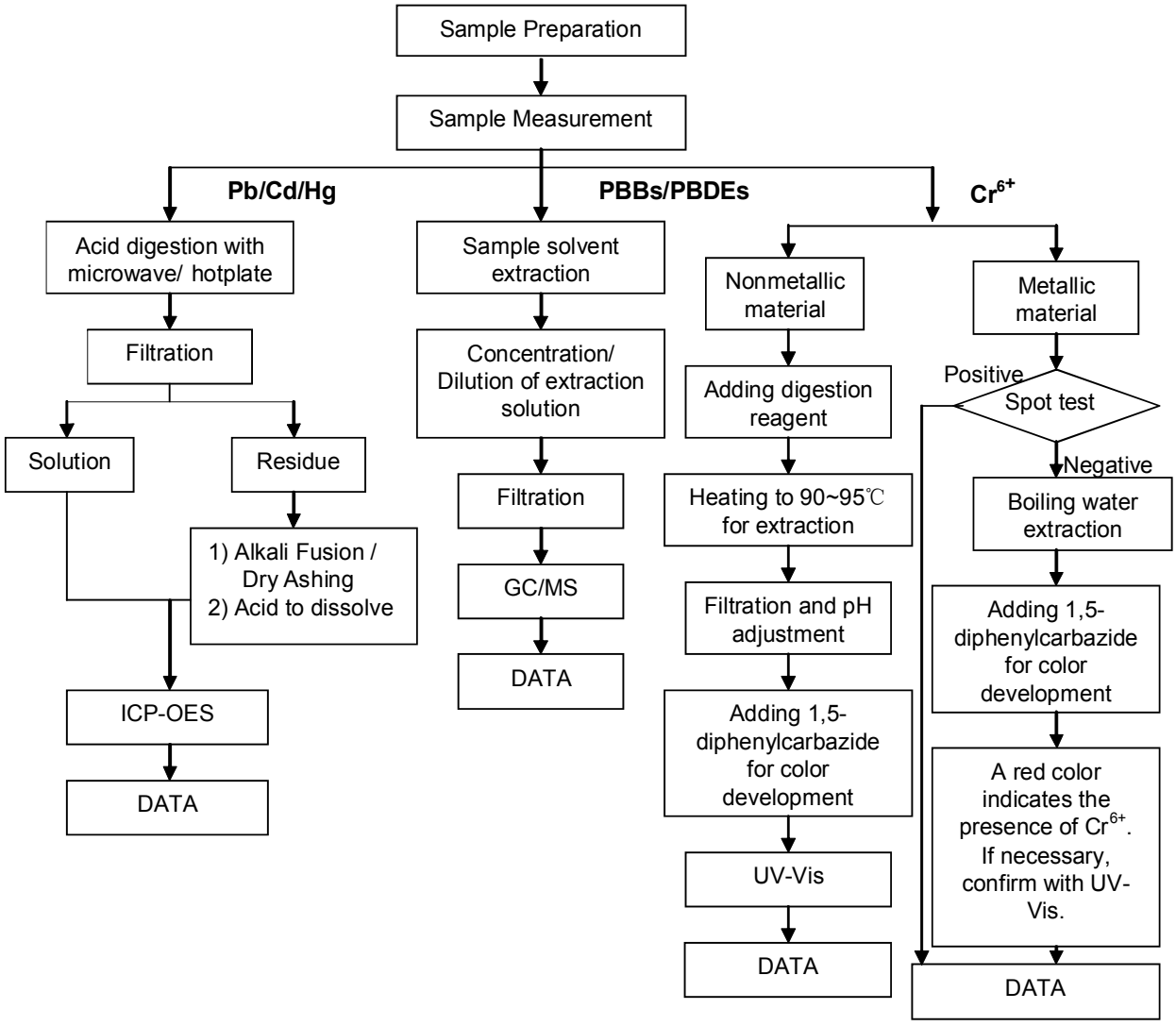
Test Item(s)	CAS NO.	Unit	MDL	001
2,2',4,4',5,5'-Hexachloro-biphenyl (PCB 153)	35065-27-1	mg/kg	0.5	ND
2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180)	35065-29-3	mg/kg	0.5	ND

3/F,Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 T E&E (86-21) 61402553 F E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 T/L: (86-21) 61402594 F/L: (86-21)64953679 e sgs.china@sgs.com

ATTACHMENTS

RoHS Testing Flow Chart

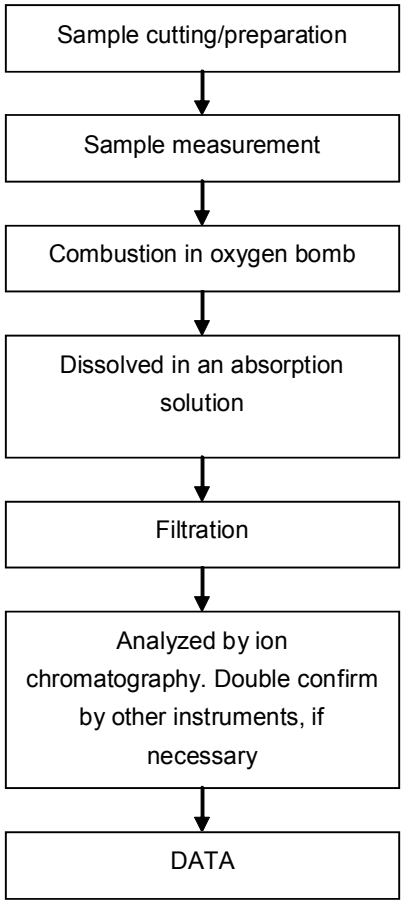
1) Name of the person who made testing: Jan Shi/Star Wang/Stone Chen/Gary Xu
2) Name of the person in charge of testing: Jeff Zhang/ Jessy Huang
3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} and PBBs/PBDEs test method excluded)



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

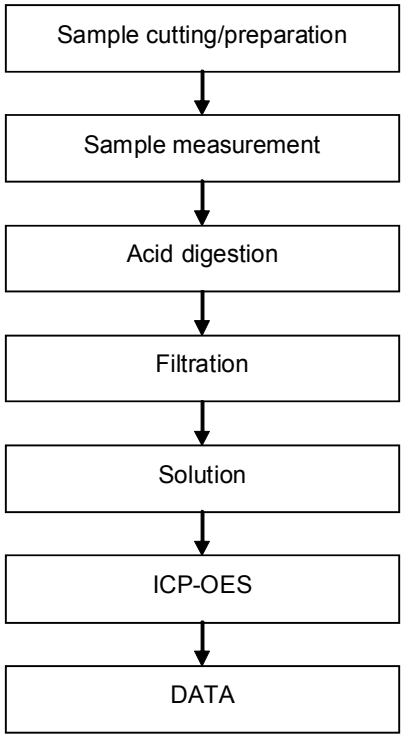


3/F,Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t/L: (86-21) 61402594 f/L: (86-21)64953679 e sgs.china@sgs.com

ATTACHMENTS

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

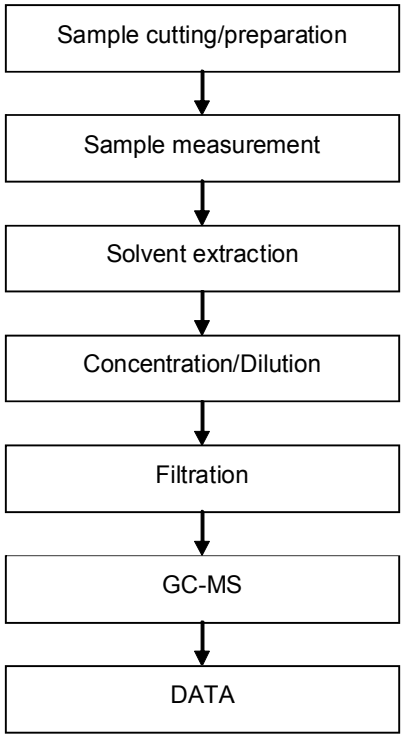


3/F,Building No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t/f: (86-21) 61402594 f/f: (86-21)64953679 e sgs.china@sgs.com

ATTACHMENTS

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

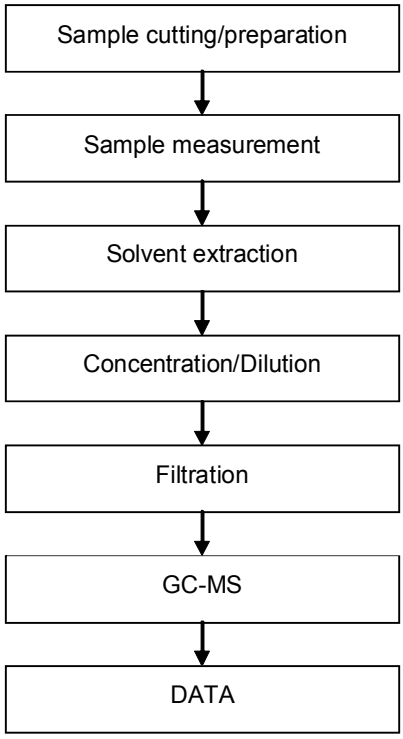


3/F,Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t/L: (86-21) 61402594 f/L: (86-21)64953679 e sgs.china@sgs.com

ATTACHMENTS

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

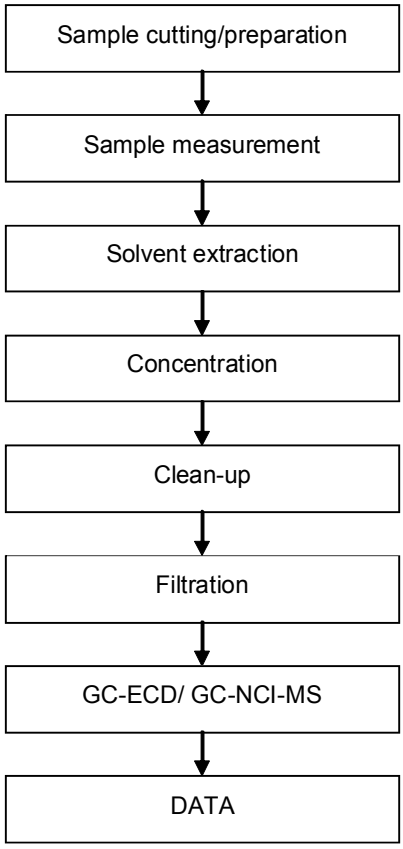


3/F,Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t/f: (86-21) 61402594 f/f: (86-21)64953679 e sgs.china@sgs.com

ATTACHMENTS

SCCP/MCCP Testing Flow Chart

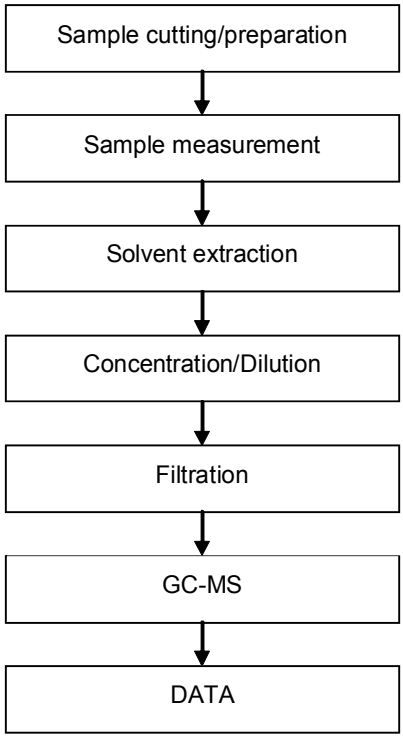
1) Name of the person who made testing: Brin Feng
2) Name of the person in charge of testing: Zirco Yu



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

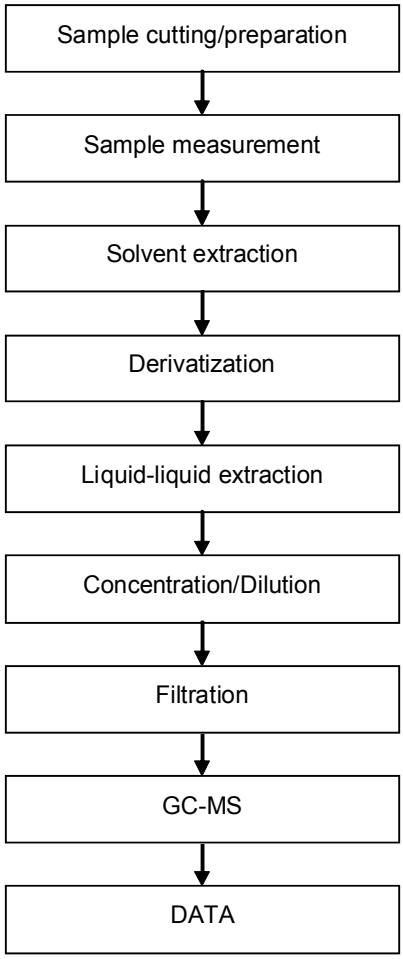


3/F,Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t/L: (86-21) 61402594 f/L: (86-21)64953679 e sgs.china@sgs.com

ATTACHMENTS

TBBP-A Testing Flow Chart

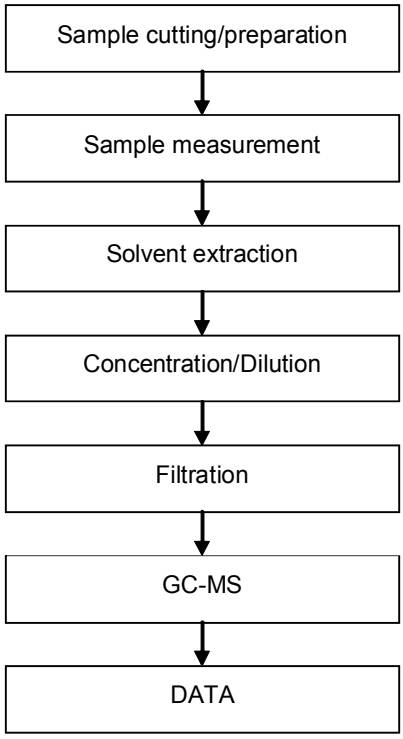
1) Name of the person who made testing: Gary Xu
2) Name of the person in charge of testing: Jessy Huang



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

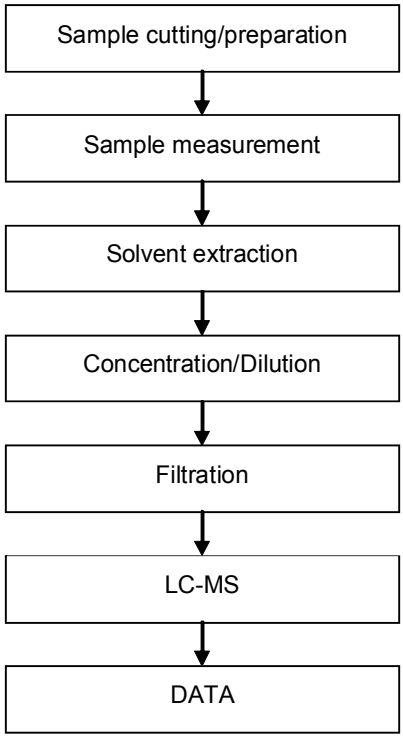


3/F,Building No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t/f: (86-21) 61402594 f/f: (86-21)64953679 e sgs.china@sgs.com

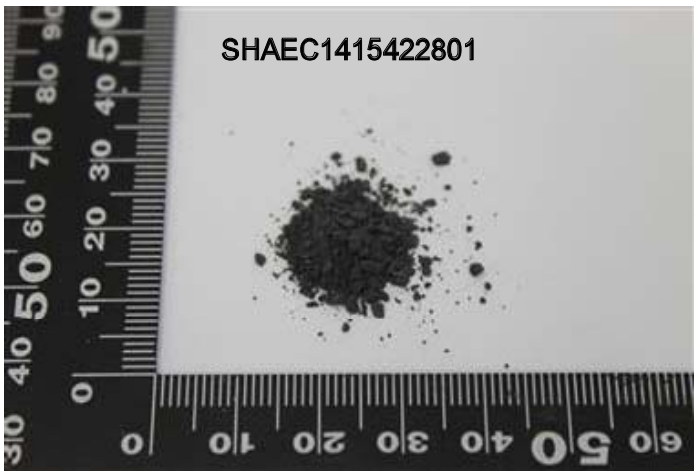
ATTACHMENTS

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

SGS authenticate the photo on original report only

*** End of Report ***

3/F,Building No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t/t: (86-21) 61402594 f/f: (86-21)64953679 e sgs.china@sgs.com

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

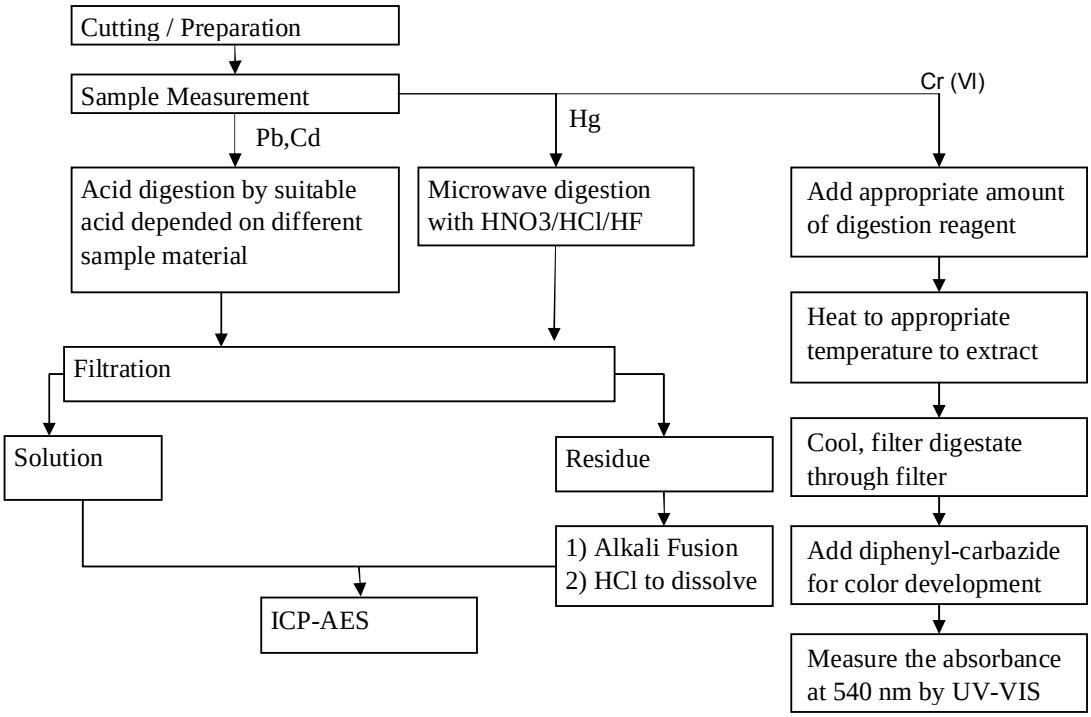
[+]Exemption: The received sample is exempted under directive 2011/65/EC Annex III Article 4(1): 7(a)lead in high melting temperature solder type solders (i.e. tin-lead solder alloys containing more than 85% of lead).

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

SGS authenticate the photo on original report only

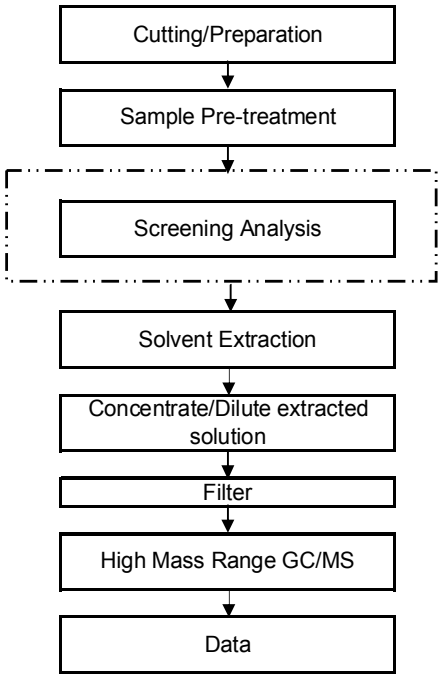
Process Flow of IEC 62321 (Pb, Cd, Hg & Cr^{6+})



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

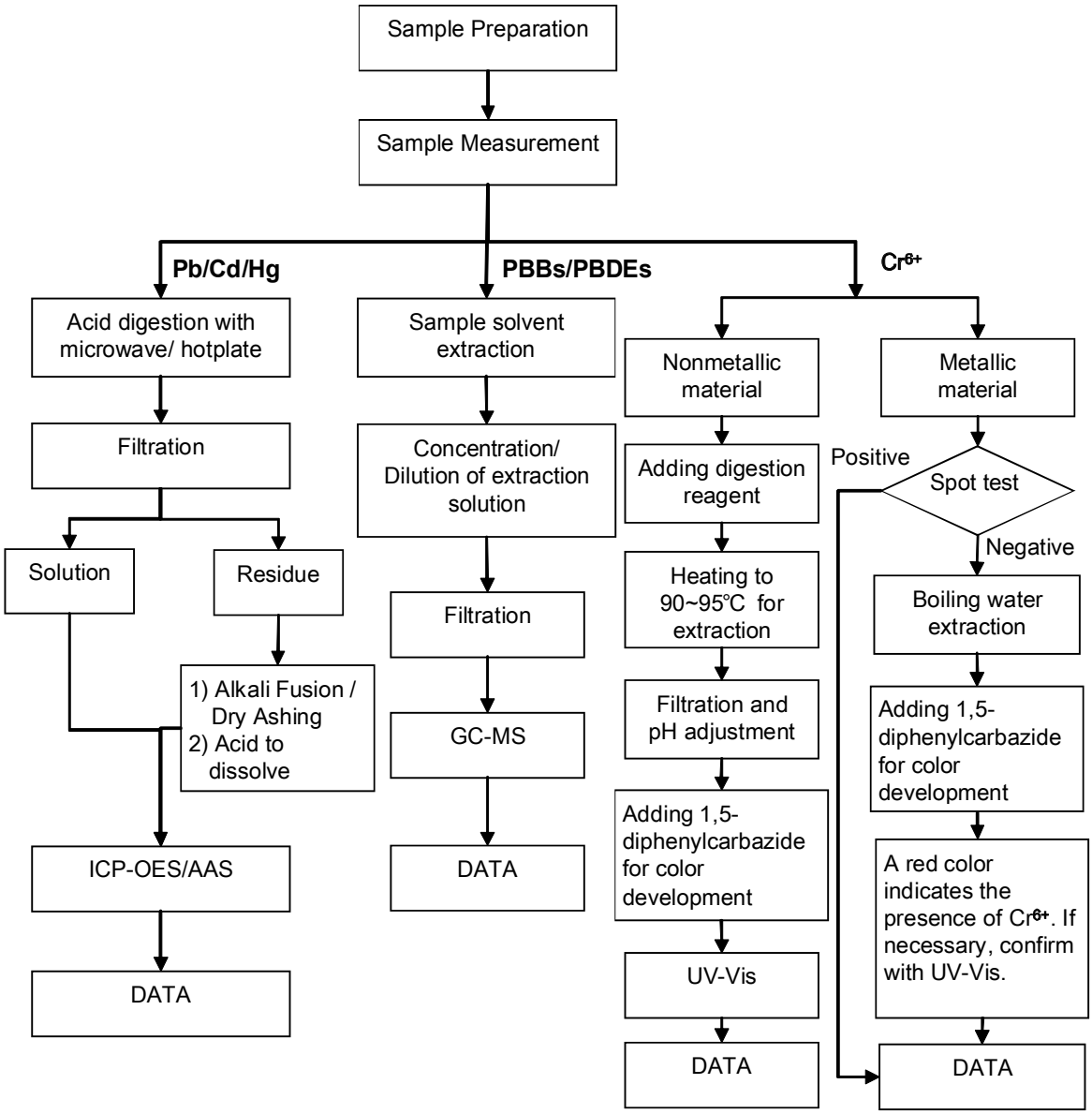
Notes :

(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

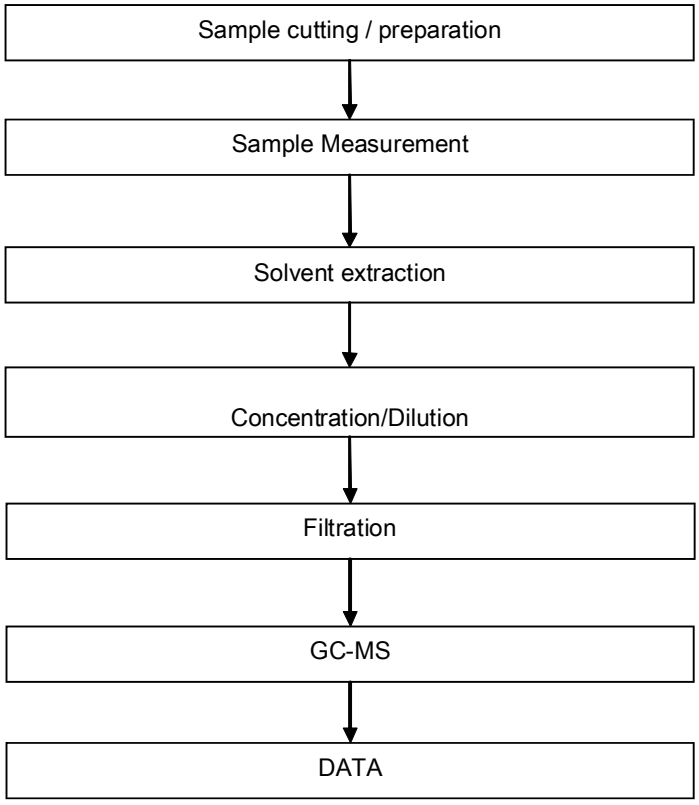
1) Name of the person who made testing: Michael Tso / Cutey Yu
2) Name of the person in charge of testing: Adams Yu / Yolanda Wei
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr^{6+} and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart

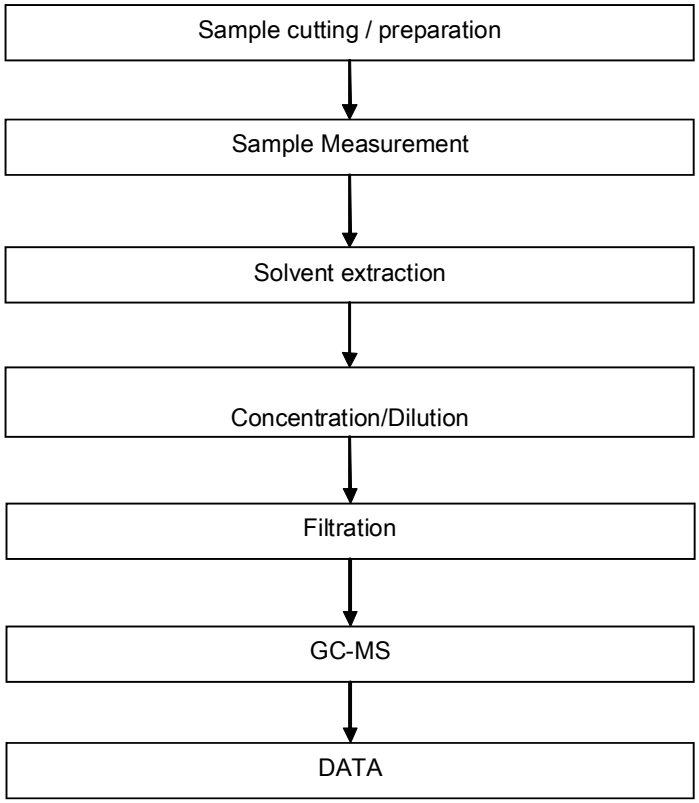
1) Name of the person who made testing: Liu Qiong
2) Name of the person in charge of testing: Yolanda Wei



ATTACHMENTS

HBCDD Testing Flow Chart

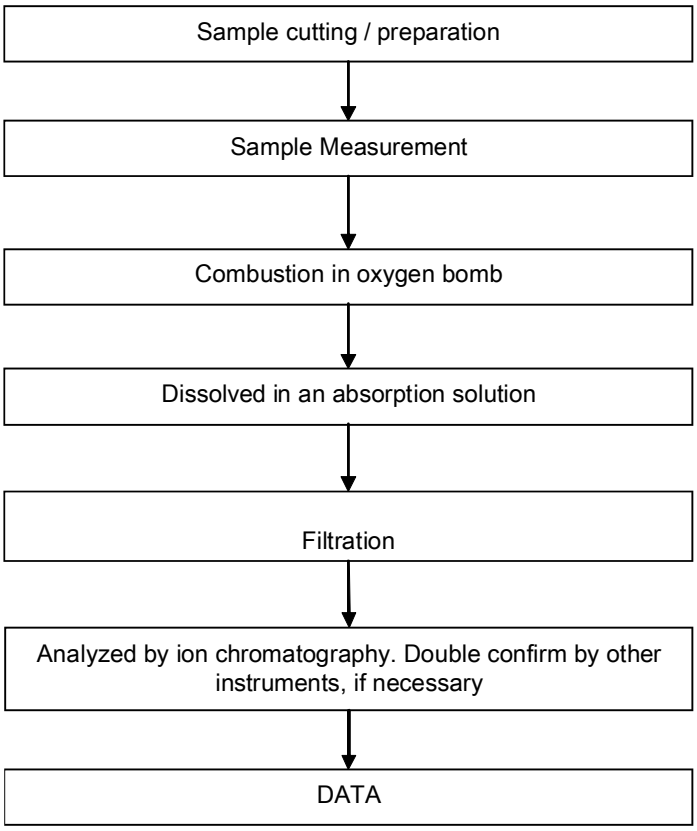
1) Name of the person who made testing: Cutey Yu
2) Name of the person in charge of testing: Yolanda Wei



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

SGS authenticate the photo on original report only

*** End of Report ***