

Test Report

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SIRECTIFIER GLOBAL CORPORATION., DELAWARE, U. S. A.
113 BARKSDALE PROFESSIONAL CENTER IN THE CITY OF NEWARK, COUNTY OF NEW
CASTLE



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

Sample Description : SCHOTTKY, FRED, TVS, ZENER, SWITCHING DIODE, REGULATOR,
MOSFET
Style/Item No. : MBR, SBL, MUR, SB, MR, SERIALS, TO-220, ITO-220 ECT DIP PACKAGE
Sample Receiving Date : 2011/06/21
Testing Period : 2011/06/21 TO 2011/06/29

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



Chenyu Kung / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory – Taipei

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Test Result(s)

PART NAME No.1 : BODY
 PART NAME No.2 : SILVER COLORED METAL PIN (INCLUDING THE PLATING LAYER)

Test Item (s):	Unit	Method	MDL	Result	
				No.1	No.2
Cadmium (Cd)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	2940	12
Mercury (Hg)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.	n.d.
Hexavalent Chromium Cr(VI) by alkaline extraction	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.	---
Hexavalent Chromium Cr(VI) by Boiling water extraction	**	With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.#	#	---	Negative
Antimony (Sb)	mg/kg	With reference to US EPA Method 3050B for Antimony Content. Analysis was performed by ICP-AES.	2	n.d.	---
Phosphorus (P)	mg/kg	With reference to US EPA Method 3052 for Phosphorus Content. Analysis was performed by ICP-AES.	2	357	---
Arsenic (As)	mg/kg	With reference to US EPA Method 3052 for Arsenic Content. Analysis was performed by ICP-AES.	2	n.d.	---
Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	With reference to US EPA 3540C: 1996 method for PFOS Content. Analysis was performed by LC/MS.	10	n.d.	---
PFOA (CAS No.: 335-67-1)	mg/kg	With reference to US EPA 3540C: 1996 method for PFOA Content. Analysis was performed by LC/MS.	10	n.d.	---

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

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Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated
5. "----" = Not Conducted
6. ** = Qualitative analysis (No Unit)
7. # = 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 cm² tested areas.
8. The sample(s) was/were analyzed on behalf of the applicant as mixing sample in one testing. The above result(s) was/were only given as the informality value.

PFOS Reference Information : Directive 2006/122/EC

(1) May not be placed on the market or used as a substance or constituent of preparations in a concentration equal to or higher than 0.005 % by mass.

(2) May not be placed on the market in semi-finished products or articles, or parts thereof, if the concentration of PFOS is equal to or higher than 0.1 % by mass calculated with reference to the mass of structurally or microstructurally distinct parts that contain PFOS or, for textiles or other coated materials, if the amount of PFOS is equal to or higher than 1µg/m² of the coated material.

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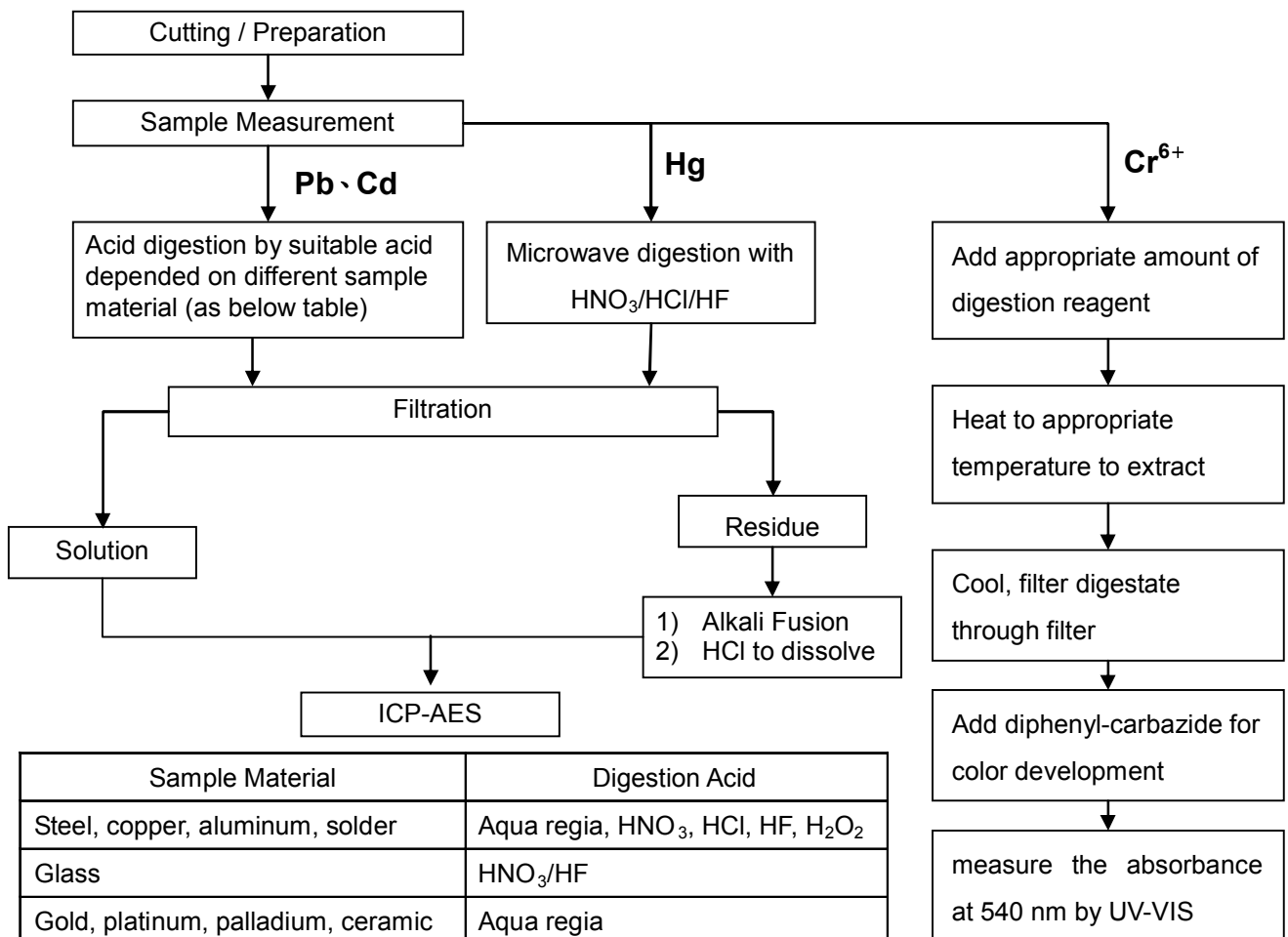
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- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



Sample Material	Digestion Acid
Steel, copper, aluminum, solder	Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂
Glass	HNO ₃ /HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO ₃
Plastic	H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCl
Others	Any acid to total digestion

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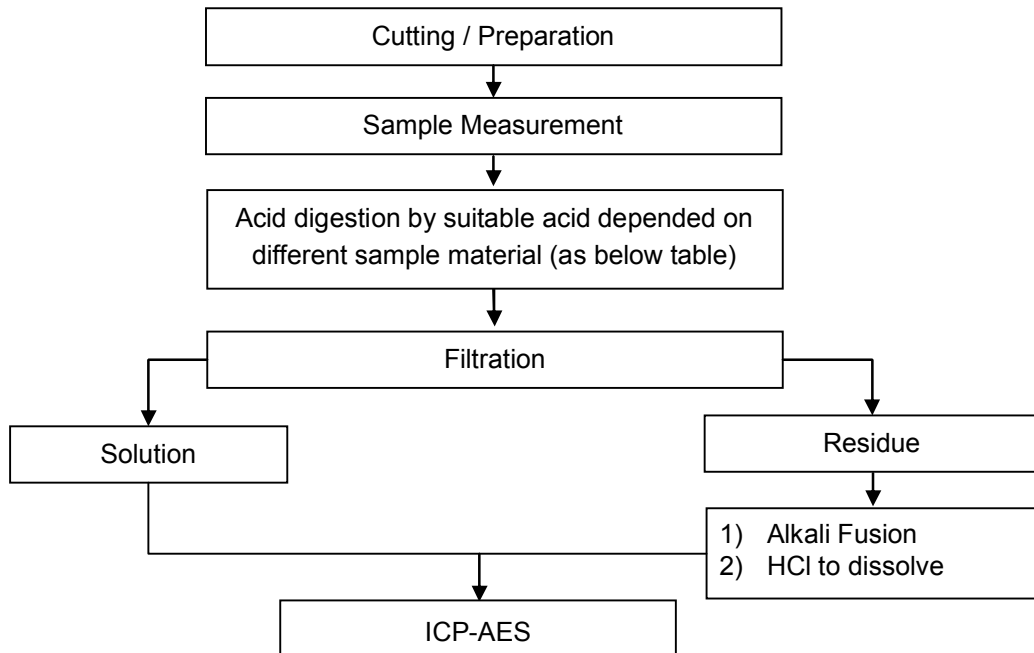
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- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang

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



Steel, copper, aluminum, solder	Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂
Glass	HNO ₃ /HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO ₃
Plastic	H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCl
Others	Any acid to total digestion

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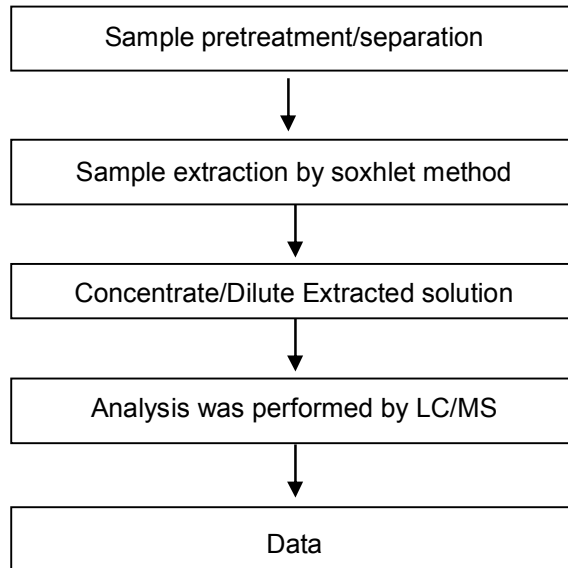
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Analytical flow chart of Soxhlet extraction (LC/MS) procedure

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

[Test Items: PFOS/PFOA 、 Benzotriazole]



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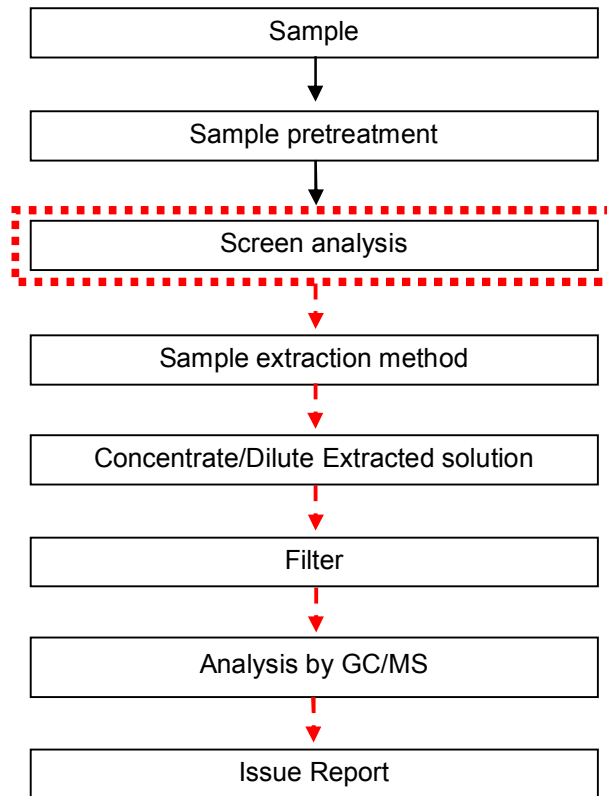


Analytical flow chart

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

【 Test Items: PBB/PBDE, TBBP-A-bis 】

First testing process —> Optional screen process Confirmation process - ->



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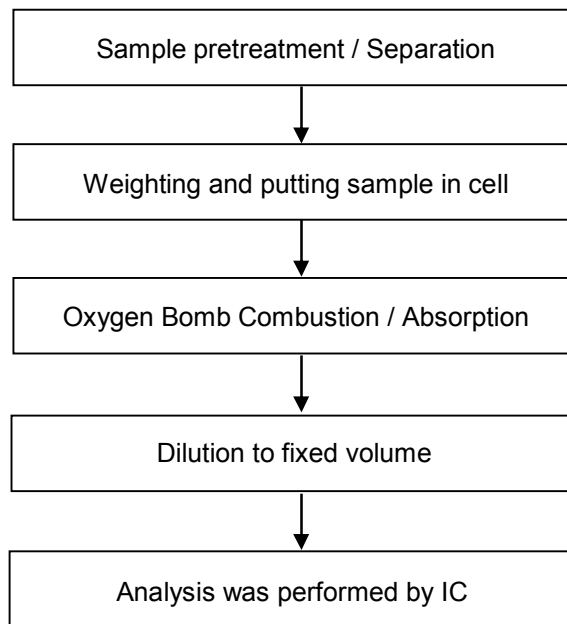
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Analytical flow chart of halogen content

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



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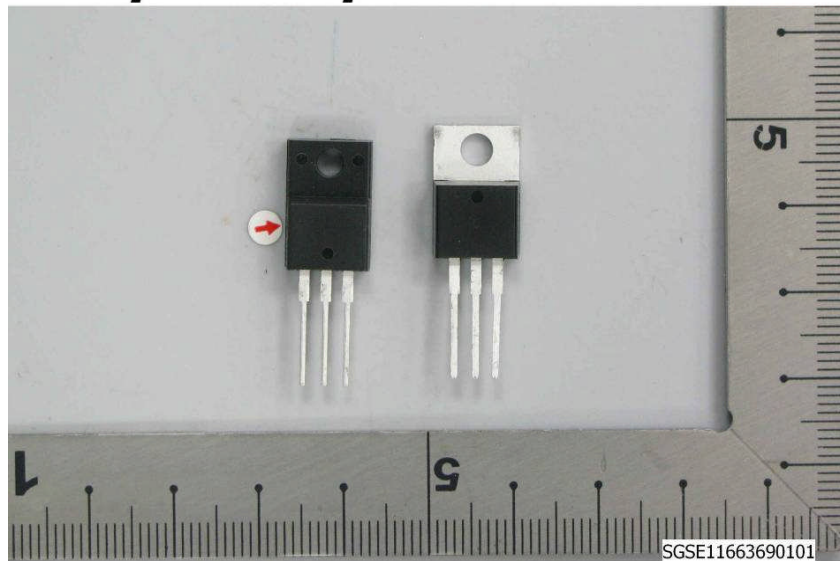
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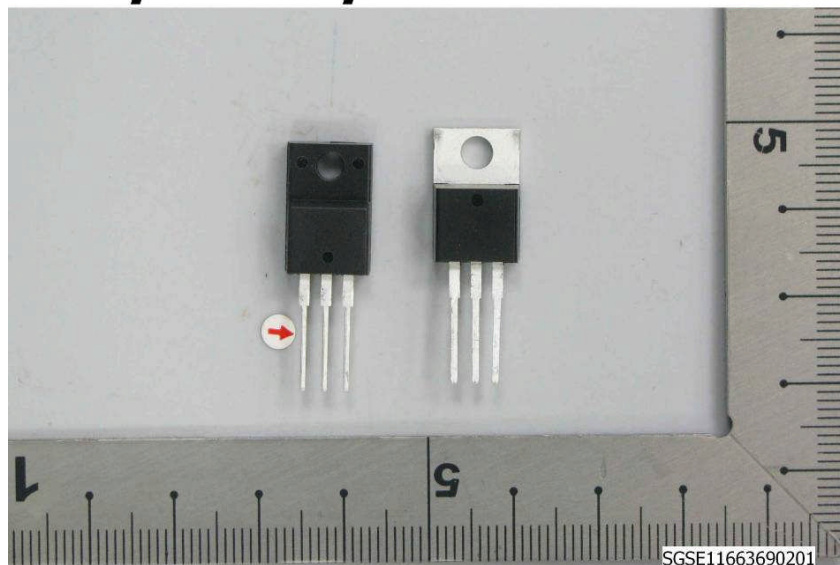
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CE/2011/66369 NO.1



CE/2011/66369 NO.2



**** End of Report ****

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