

## Test Report No. : CE/2010/12263B Date : 2010/03/05 Page : 1 of 12

BOURNS INC.  
1200 COLUMBIA AVE., RIVERSIDE, CA 92507-2114, U.S.A.



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

Sample Description : METAL OXIDE VARISTORS  
Style/Item No. : MOV SERIES  
Sample Receiving Date : 2010/01/12  
Testing Period : 2010/01/12 TO 2010/01/19

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

\* This report is combined with reports of CE/2010/12258, CE/2010/12259, CE/2010/12260, CE/2010/12261, CE/2010/12262 and CE/2010/12263 \*

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

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BOURNS INC.  
1200 COLUMBIA AVE., RIVERSIDE, CA 92507-2114, U.S.A.



## Test Result(s)

PART NAME NO.1 : REDDISH ORANGE POWDER (CE/2010/12258)  
 PART NAME NO.2 : GREEN POWDER (CE/2010/12259)  
 PART NAME NO.3 : BLUE POWDER (CE/2010/12260)  
 PART NAME NO.4 : BLUE POWDER (CE/2010/12261)  
 PART NAME NO.5 : BLACK CERAMIC / SILVER COLORED METAL (4 TYPES) (CE/2010/12262)  
 PART NAME NO.6 : SILVER COLORED METAL WIRE (INCLUDING THE PLATING LAYER) (CE/2010/12263)

Test Item (s):	Unit	Method	MDL	Result				
				NO.1	NO.2	NO.3	NO.4	NO.5
Cadmium (Cd)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.	n.d.	n.d.	n.d.	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.	n.d.	14	8	12
Mercury (Hg)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.	n.d.	n.d.	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.	n.d.	n.d.	n.d.	n.d.
Perfluorooctane sulfonates (PFOS) PFOS – Acid PFOS – Metal Salt PFOS – Amide	mg/kg	With reference to US EPA 3540C: 1996 method for PFOS Content. Analysis was performed by LC/MS.	10	n.d.	n.d.	n.d.	n.d.	n.d.
PFOA (CAS No.: 000335-67-1)	mg/kg	With reference to US EPA 3540C: 1996 method for PFOA Content. Analysis was performed by LC/MS.	10	n.d.	n.d.	n.d.	n.d.	n.d.
<b>Sum of PBBs</b>			-	n.d.	n.d.	n.d.	n.d.	n.d.
Monobromobiphenyl			5	n.d.	n.d.	n.d.	n.d.	n.d.
Dibromobiphenyl			5	n.d.	n.d.	n.d.	n.d.	n.d.
Tribromobiphenyl			5	n.d.	n.d.	n.d.	n.d.	n.d.
Tetrabromobiphenyl			5	n.d.	n.d.	n.d.	n.d.	n.d.
Pentabromobiphenyl			5	n.d.	n.d.	n.d.	n.d.	n.d.
Hexabromobiphenyl			5	n.d.	n.d.	n.d.	n.d.	n.d.
Heptabromobiphenyl			5	n.d.	n.d.	n.d.	n.d.	n.d.
Octabromobiphenyl			5	n.d.	n.d.	n.d.	n.d.	n.d.
Nonabromobiphenyl			5	n.d.	n.d.	n.d.	n.d.	n.d.
Decabromobiphenyl			5	n.d.	n.d.	n.d.	n.d.	n.d.
	mg/kg	With reference to IEC 62321: 2008 and performed by GC/MS.						

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BOURNS INC.

1200 COLUMBIA AVE., RIVERSIDE, CA 92507-2114, U.S.A.



Test Item (s):	Unit	Method	MDL	Result				
				NO.1	NO.2	NO.3	NO.4	NO.5
<b>Sum of PBDEs</b>	mg/kg	With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.	n.d.	n.d.	n.d.	n.d.
Monobromodiphenyl ether			5	n.d.	n.d.	n.d.	n.d.	n.d.
Dibromodiphenyl ether			5	n.d.	n.d.	n.d.	n.d.	n.d.
Tribromodiphenyl ether			5	n.d.	n.d.	n.d.	n.d.	n.d.
Tetrabromodiphenyl ether			5	n.d.	n.d.	n.d.	n.d.	n.d.
Pentabromodiphenyl ether			5	n.d.	n.d.	n.d.	n.d.	n.d.
Hexabromodiphenyl ether			5	n.d.	n.d.	n.d.	n.d.	n.d.
Heptabromodiphenyl ether			5	n.d.	n.d.	n.d.	n.d.	n.d.
Octabromodiphenyl ether			5	n.d.	n.d.	n.d.	n.d.	n.d.
Nonabromodiphenyl ether			5	n.d.	n.d.	n.d.	n.d.	n.d.
Decabromodiphenyl ether			5	n.d.	n.d.	n.d.	n.d.	n.d.

Test Item (s):	Unit	Method	MDL	Result
				NO.6
Cadmium (Cd)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI) by Spot test / boiling water extraction	**	With reference to IEC 62321: 2008 and performed by Spot test / boiling water extraction Method. (See Note 7)	0.02mg/kg with 50 cm <sup>2</sup> surface area	Negative
Perfluorooctane sulfonates (PFOS) PFOS – Acid PFOS – Metal Salt PFOS – 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.: 000335-67-1)	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.6
<b>Sum of PBBs</b>	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.
<b>Sum of PBDEs</b>			-	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.

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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. Spot-test:

Negative = Absence of Cr(VI) coating / surface layer; Positive = Presence of Cr(VI) coating / surface layer;  
(The tested sample should be further verified by boiling-water-extraction method if the spot test result cannot be confirmed.)

#### Boiling-water-extraction:

Negative = Absence of Cr(VI) coating / surface layer; Positive = Presence of Cr(VI) coating / surface layer;  
The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> sample surface area.

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/m<sup>2</sup> of the coated material.

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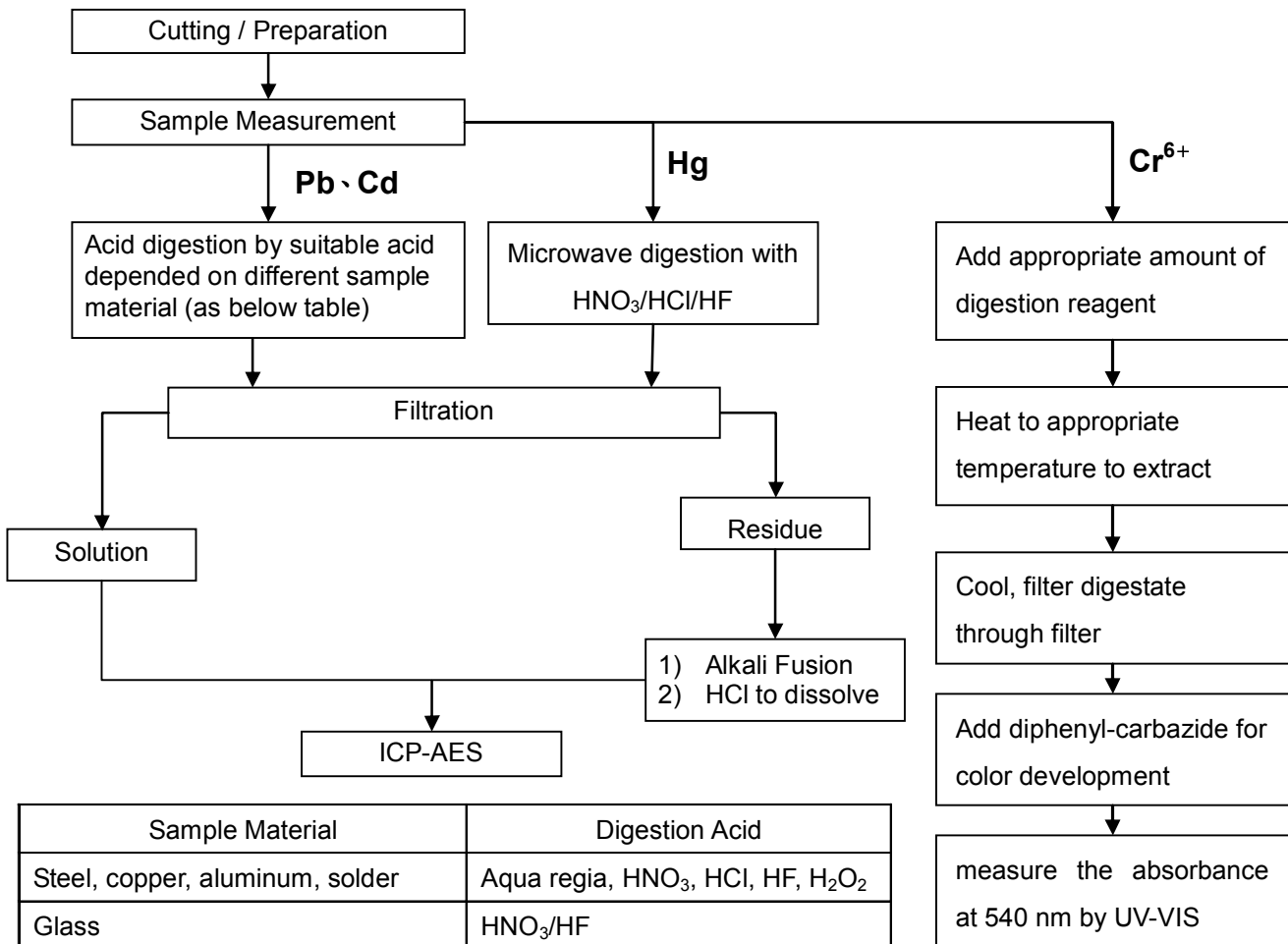
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- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.  
(Cr<sup>6+</sup> test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: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



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

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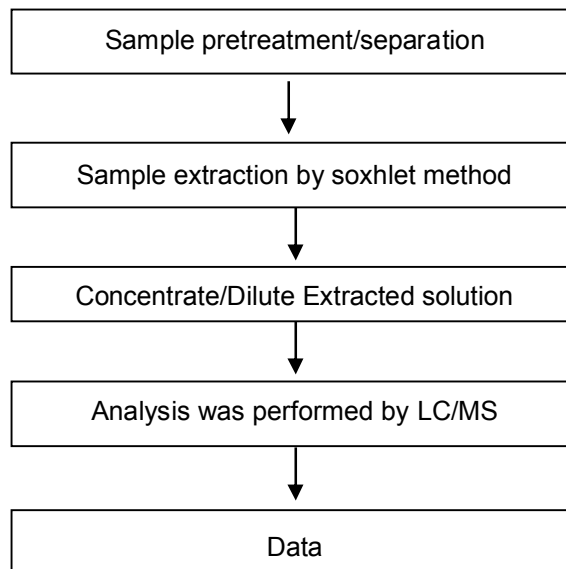
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## Analytical flow chart of Soxhlet extraction (LC/MS) procedure

- 1) Name of the person who made measurement: Lydia Fu
- 2) Name of the person in charge of measurement: Shinjyh Chen

■ Test Items: PFOS/PFOA、Benzotriazole



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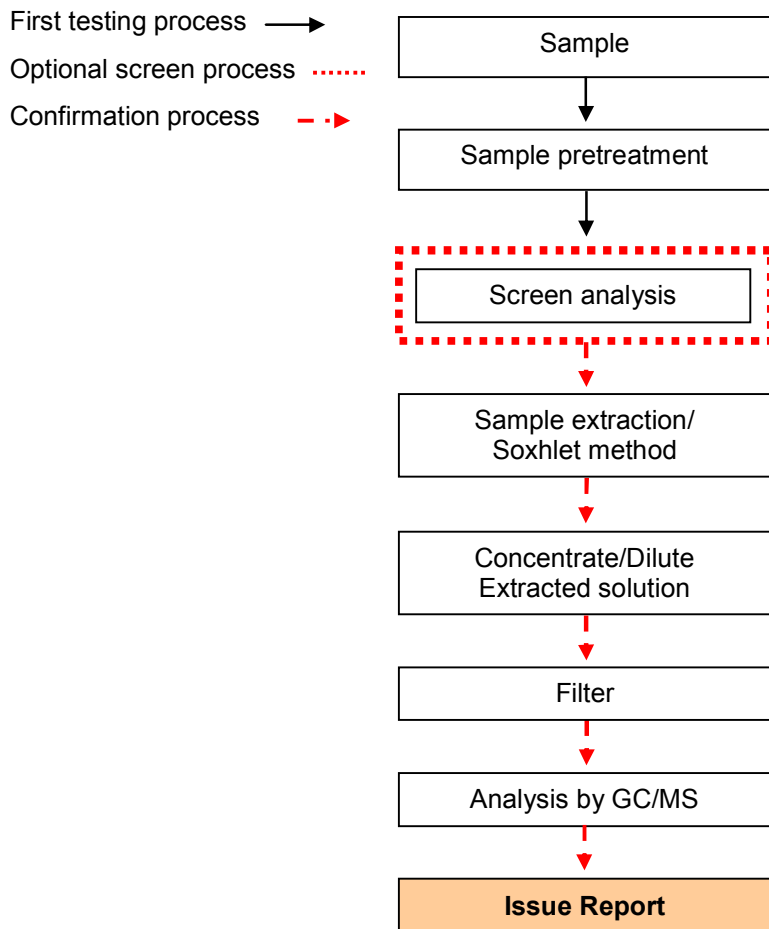
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### PBB/PBDE analytical FLOW CHART

- 1) Name of the person who made measurement: Roman Wong
- 2) Name of the person in charge of measurement: Shinjyh Chen

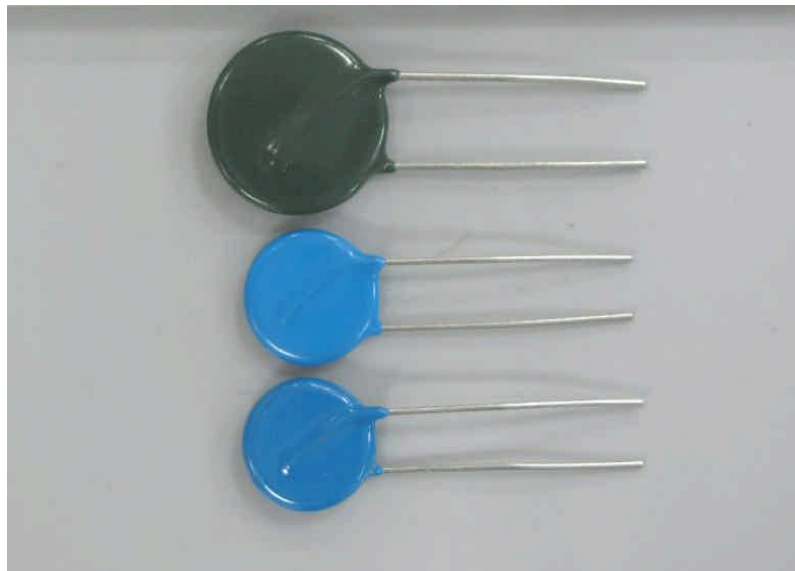


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PART NAME NO.1



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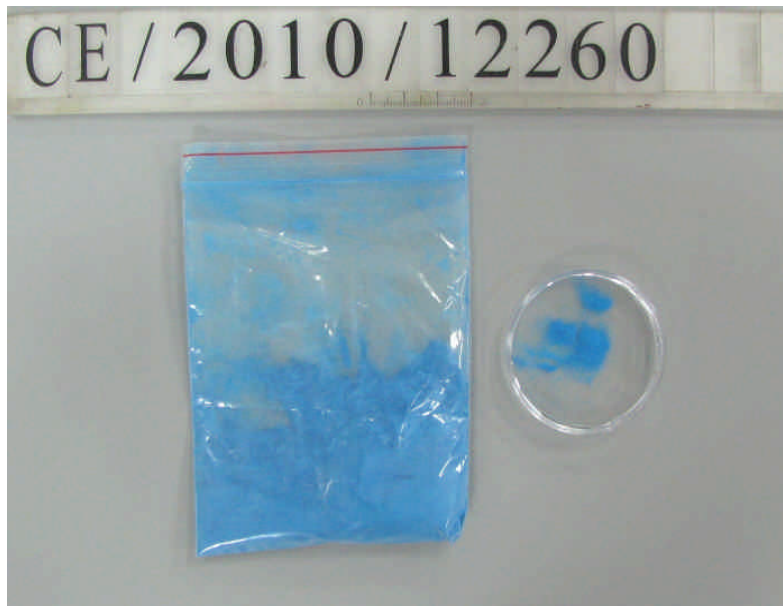
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PART NAME NO.2



PART NAME NO.3



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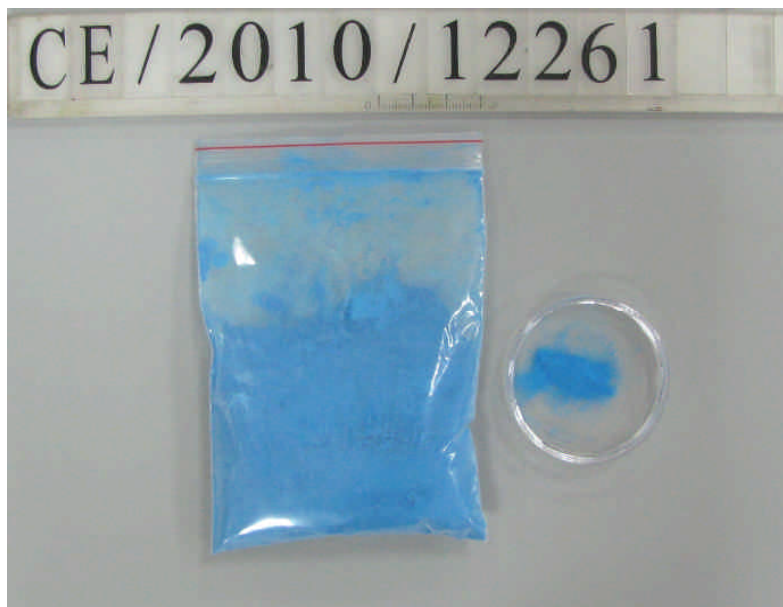
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PART NAME NO.4



PART NAME NO.5



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PART NAME NO.6



\*\* End of Report \*\*

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