

Test Report

號碼(No.): CE/2013/13752A 日期(Date): 2013/02/22 頁數(Page): 1 of 13

BOURNS, INC.

1200 COLUMBIA AVE. RIVERSIDE, CA 92507, USA

以下測試樣品係由客户送樣,且由客户聲稱並經客户確認如下 (The following samples was/were submitted and identified by/on behalf of the client as):

樣品名稱(Sample Description) : VARISTOR 突波吸收器

收件日期(Sample Receiving Date) : 2013/01/17

測試期間(Testing Period) : 2013/01/17 TO 2013/01/23

測試結果(Test Results) : 請見下一頁 (Please refer to next pages).





Test Report

號碼(No.) : CE/2013/13752A 日期(Date) : 2013/02/22 頁數(Page) : 2 of 13

BOURNS, INC.

1200 COLUMBIA AVE. RIVERSIDE, CA 92507, USA

測試結果(Test Results)

測試部位(PART NAME)No.1 : 黑色陶瓷/銀色金屬(銀片)(BLACK CERAMIC/SILVER COLORED METAL (ELECTRODE))

測試部位(PART NAME)No.2 銀色金屬線 (含鍍層) (銅線) (0.8mm) (SILVER COLORED METAL WIRE (INCLUDING THE

PLATING LAYER) (CONUNSTRUCTION ELEMENT)(0.8mm))

測試部位(PART NAME)No.3 : 銀色金屬 (焊錫) (SILVER COLORED METAL (SOLDER))

測試部位(PART NAME)No.4 藍色粉末 (藍色塗裝粉) (BLUE POWDER (POWDER))

測試部位(PART NAME)No.5 墨綠色粉末 (墨綠色塗裝粉) (BLACKISH GREEN POWDER (POWDER))

測試部位(PART NAME)No.6 桔色粉末 (橘色塗裝粉) (ORANGE POWDER (POWDER))

| 測試項目 (Test Items) | 單位 | 測試方法 (Method) | 方法偵測 極限値 (MDL) | 結果 (Result) | | | |
|-------------------------------------|--------|---|----------------------|-------------|----------|----------|--|
| | (Unit) | | | No.1 | No.2 | No.3 | |
| 鎬 / Cadmium (Cd) | mg/kg | 参考IEC 62321: 2008方法,以 感應耦合電漿原子發射光譜儀檢 測. / With reference to IEC 62321: 2008 and performed by ICP-AES. | 2 | n.d. | n.d. | n.d. | |
| 鋁 / Lead (Pb) | mg/kg | | 2 | 9 | n.d. | 62 | |
| 汞 / Mercury (Hg) | mg/kg | | 2 | n.d. | n.d. | n.d. | |
| 六價鉻 / Hexavalent Chromium Cr(VI) | mg/kg | 參考IEC 62321: 2008方法,以 UV-VIS檢測. / With reference to IEC 62321: 2008 and performed by UV-VIS. | 2 | n.d. | | | |
| | ** | 参考IEC 62321: 2008方法,以 沸水萃取法檢測./With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.# | # | | Negative | Negative | |



Test Report

號碼(No.) : CE/2013/13752A 日期(Date) : 2013/02/22 頁數(Page) : 3 of 13

BOURNS, INC.

1200 COLUMBIA AVE. RIVERSIDE, CA 92507, USA

| 測試項目 (Test Items) | 單位 (Unit) (Method) | 方法偵測 | 結果 (Result) | | | |
|----------------------------------|--------------------------|------------------------------|--------------|------|------|------|
| | | | 極限値 (MDL) | No.1 | No.2 | No.3 |
| 多溴聯苯總和 / Sum of PBBs | mg/kg | | - | n.d. | n.d. | n.d. |
| 一溴聯苯 / Monobromobiphenyl | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 二溴聯苯 / Dibromobiphenyl | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 三溴聯苯 / Tribromobiphenyl | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 四溴聯苯 / Tetrabromobiphenyl | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 五溴聯苯 / Pentabromobiphenyl | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 六溴聯苯 / Hexabromobiphenyl | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 七溴聯苯 / Heptabromobiphenyl | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 八溴聯苯 / Octabromobiphenyl | mg/kg | 1 | 5 | n.d. | n.d. | n.d. |
| 九溴聯苯 / Nonabromobiphenyl | mg/kg | 參考IEC 62321: 2008方法,以 | 5 | n.d. | n.d. | n.d. |
| 十溴聯苯 / Decabromobiphenyl | mg/kg | 氣相層析/質譜儀檢測. / With | 5 | n.d. | n.d. | n.d. |
| 多溴聯苯醚總和 / Sum of PBDEs | mg/kg | reference to IEC 62321: 2008 | - | n.d. | n.d. | n.d. |
| 一溴聯苯醚 / Monobromodiphenyl ether | mg/kg | and performed by GC/MS. | 5 | n.d. | n.d. | n.d. |
| 二溴聯苯醚 / Dibromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 三溴聯苯醚 / Tribromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 四溴聯苯醚 / Tetrabromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 五溴聯苯醚 / Pentabromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 六溴聯苯醚 / Hexabromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 七溴聯苯醚 / Heptabromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 八溴聯苯醚 / Octabromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 九溴聯苯醚 / Nonabromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 十溴聯苯醚 / Decabromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |



Test Report

號碼(No.) : CE/2013/13752A 日期(Date) : 2013/02/22 頁數(Page) : 4 of 13

BOURNS, INC.

1200 COLUMBIA AVE. RIVERSIDE, CA 92507, USA

| | 單位 | 測試方法 | 方法偵測 極限値 | 結果 (Result) | | |
|---|----------|--|-------------|-------------|------|------|
| | (Method) | 他MDL) | No.1 | No.2 | No.3 | |
| 鹵素 / Halogen | | | | | | |
| 鹵素 (氟) / Halogen-Fluorine (F) (CAS No.: 14762-94-8) | mg/kg | 参考BS EN 14582:2007, 以離子 層析儀分析. / With reference to BS EN 14582:2007. Analysis was performed by IC. | 50 | n.d. | n.d. | n.d. |
| 鹵素 (氣) / Halogen-Chlorine (C1) (CAS No.: 22537-15-1) | mg/kg | | 50 | n.d. | n.d. | n.d. |
| 鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2) | mg/kg | | 50 | n.d. | n.d. | n.d. |
| 鹵素 (碘) / Halogen-Iodine (I) (CAS No.: 14362-44-8) | mg/kg | 10. | 50 | n.d. | n.d. | n.d. |

| 測試項目 (Test Items) | 單位 (Unit) | 測試方法 (Method) | 方法偵測 極限値 (MDL) | 結果 (Result) | | |
|-------------------------------------|--------------|---|----------------------|-------------|------|------|
| | | | | No.4 | No.5 | No.6 |
| 鎬 / Cadmium (Cd) | mg/kg | 参考IEC 62321: 2008方法,以 感應耦合電漿原子發射光譜儀檢 測./With reference to IEC 62321: 2008 and performed by ICP-AES. | 2 | n.d. | n.d. | n.d. |
| 鉛 / Lead (Pb) | | | 2 | n.d. | n.d. | n.d. |
| 汞 / Mercury (Hg) | mg/kg | | 2 | n.d. | n.d. | n.d. |
| 六價鉻 / Hexavalent Chromium Cr(VI) | | 参考IEC 62321: 2008方法,以 UV-VIS檢測. / With reference to IEC 62321: 2008 and performed by UV-VIS. | 2 | n.d. | n.d. | n.d. |



Test Report

號碼(No.) : CE/2013/13752A 日期(Date) : 2013/02/22 頁數(Page) : 5 of 13

BOURNS, INC.

1200 COLUMBIA AVE. RIVERSIDE, CA 92507, USA

| 測試項目 (Test Items) | 單位 | | 方法偵測 極限値 (MDL) | 結果 (Result) | | |
|----------------------------------|--------|------------------------------|----------------------|-------------|------|------|
| | (Unit) | | | No.4 | No.5 | No.6 |
| 多溴聯苯總和 / Sum of PBBs | mg/kg | | - | n.d. | n.d. | n.d. |
| 一溴聯苯 / Monobromobiphenyl | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 二溴聯苯 / Dibromobiphenyl | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 三溴聯苯 / Tribromobiphenyl | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 四溴聯苯 / Tetrabromobiphenyl | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 五溴聯苯 / Pentabromobiphenyl | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 六溴聯苯 / Hexabromobiphenyl | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 七溴聯苯 / Heptabromobiphenyl | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 八溴聯苯 / Octabromobiphenyl | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 九溴聯苯 / Nonabromobiphenyl | mg/kg | 參考IEC 62321: 2008方法,以 | 5 | n.d. | n.d. | n.d. |
| 十溴聯苯 / Decabromobiphenyl | mg/kg | 氣相層析/質譜儀檢測. / With | 5 | n.d. | n.d. | n.d. |
| 多溴聯苯醚總和 / Sum of PBDEs | mg/kg | reference to IEC 62321: 2008 | - | n.d. | n.d. | n.d. |
| 一溴聯苯醚 / Monobromodiphenyl ether | mg/kg | and performed by GC/MS. | 5 | n.d. | n.d. | n.d. |
| 二溴聯苯醚 / Dibromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 三溴聯苯醚 / Tribromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 四溴聯苯醚 / Tetrabromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 五溴聯苯醚 / Pentabromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 六溴聯苯醚 / Hexabromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 七溴聯苯醚 / Heptabromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 八溴聯苯醚 / Octabromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 九溴聯苯醚 / Nonabromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |
| 十溴聯苯醚 / Decabromodiphenyl ether | mg/kg | | 5 | n.d. | n.d. | n.d. |



Test Report

號碼(No.) : CE/2013/13752A 日期(Date) : 2013/02/22 頁數(Page) : 6 of 13

BOURNS, INC.

1200 COLUMBIA AVE. RIVERSIDE, CA 92507, USA

| 測試項目 | 單位 | 測試方法 | 方法偵測 極限値 (MDL) | 結果 (Result) | | |
|---|--------|--|----------------------|-------------|------|------|
| (Test Items) | (Unit) | | | No.4 | No.5 | No.6 |
| 鹵素 / Halogen | | | | | | |
| 鹵素(氟)/ Halogen-Fluorine (F) (CAS No.: 14762-94-8) | mg/kg | 参考BS EN 14582:2007, 以離子 層析儀分析. / With reference to BS EN 14582:2007. Analysis was performed by IC. | 50 | n.d. | n.d. | n.d. |
| 鹵素 (氣) / Halogen-Chlorine (C1) (CAS No.: 22537-15-1) | mg/kg | | 50 | 264 | 339 | 319 |
| 鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2) | mg/kg | | 50 | n.d. | n.d. | n.d. |
| 鹵素(碘)/ Halogen-Iodine(I) (CAS No.: 14362-44-8) | mg/kg | | 50 | n.d. | n.d. | n.d. |

備註(Note):

- 1. mg/kg = ppm ; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected (未檢出)
- 3. MDL = Method Detection Limit (方法偵測極限値)
- 4. "-" = Not Regulated (無規格值)
- 5. "---" = Not Conducted (未測項目)
- 6. **= Qualitative analysis (No Unit) 定性分析(無單位)
- 7. # = a. Positive means the presence of CrVI on the tested areas (Positive表示測試區域偵測到六價鉻)
 - b. Negative means the absence of CrVI on the tested areas (Negative表示測試區域未偵測到六價鉻)

The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² tested areas. / 該溶液濃度≥0.02 mg/kg with 50 cm² (tested areas)

- 8. 樣品的測試是基於申請人要求混合測試,報告中的混合測試結果不代表其中個别單一材質的含量. (The samples was/were analyzed on behalf of the applicant as mixing sample in one testing. The above results was/were only given as the informality value.)
- 9. 此份報告取代簽署人爲Chenyu Kung之CE/2013/13752A報告. (This report supersedes the previous document bearing the test report number CE/2013/13752A which signed by Chenyu Kung.)



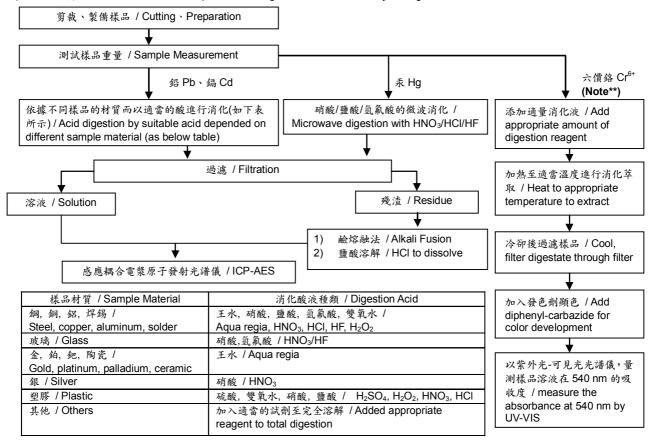
Test Report

號碼(No.) : CE/2013/13752A 日期(Date) : 2013/02/22 頁數(Page) : 7 of 13

BOURNS, INC.

1200 COLUMBIA AVE. RIVERSIDE, CA 92507, USA

- 根據以下的流程圖之條件,樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} test method excluded)
- 測試人員:楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang



Note**: (1) 針對非金屬材料加入鹼性消化液,加熱至 90~95℃萃取. / For non-metallic material, add alkaline digestion reagent and heat to 90~95°C

(2) 針對金屬材料加入純水,加熱至沸騰萃取. / For metallic material, add pure water and heat to boiling.



Test Report

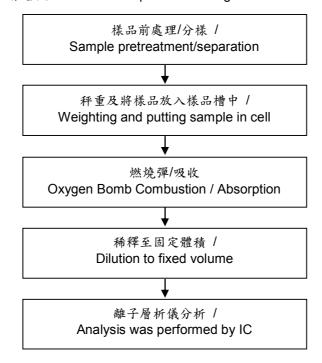
號碼(No.) : CE/2013/13752A 日期(Date) : 2013/02/22 頁數(Page) : 8 of 13

BOURNS, INC.

1200 COLUMBIA AVE. RIVERSIDE, CA 92507, USA

鹵素分析流程圖 / Analytical flow chart of halogen content

- 1) 測試人員:陳恩臻 / Name of the person who made measurement: Rita Chen
- 2) 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





Test Report

號碼(No.) : CE/2013/13752A 日期(Date) : 2013/02/22 頁數(Page) : 9 of 13

BOURNS, INC.

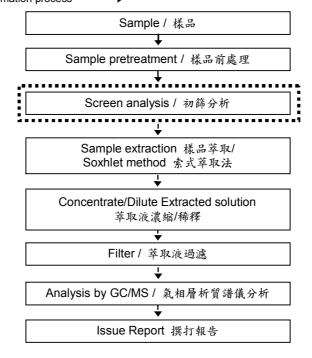
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多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang

初次測試程序 / First testing process -選擇性篩檢程序 / Optional screen process ••••

確認程序 / Confirmation process - · - · ▶





Test Report

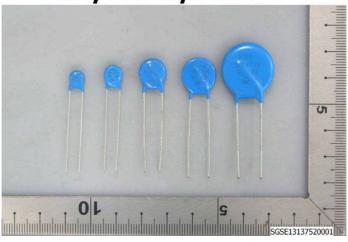
號碼(No.) : CE/2013/13752A 日期(Date) : 2013/02/22 頁數(Page) : 10 of 13

BOURNS, INC.

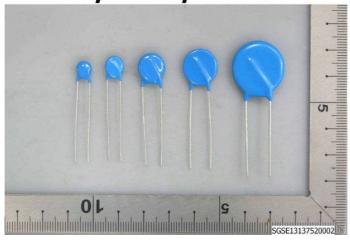
1200 COLUMBIA AVE. RIVERSIDE, CA 92507, USA

* 照片中如有箭頭標示,則表示為實際檢測之樣品/部位. * (The tested sample / part is marked by an arrow if it's shown on the photo.)

CE/2013/13752



CE/2013/13752





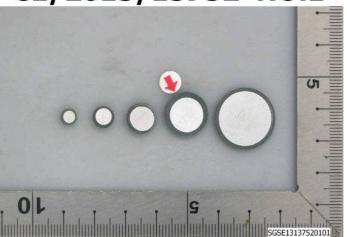
Test Report

號碼(No.) : CE/2013/13752A 日期(Date) : 2013/02/22 頁數(Page) : 11 of 13

BOURNS, INC.

1200 COLUMBIA AVE. RIVERSIDE, CA 92507, USA





CE/2013/13752 NO.2





Test Report

號碼(No.) : CE/2013/13752A 日期(Date) : 2013/02/22 頁數(Page) : 12 of 13

BOURNS, INC.

1200 COLUMBIA AVE. RIVERSIDE, CA 92507, USA





CE/2013/13752





Test Report

號碼(No.) : CE/2013/13752A 日期(Date) : 2013/02/22 頁數(Page) : 13 of 13

BOURNS, INC.

1200 COLUMBIA AVE. RIVERSIDE, CA 92507, USA

CE/2013/13752 NO.5



CE/2013/13752 NO.6



** 報告結尾 (End of Report) **