

Test Report

No. : CE/2008/C5625A Date : 2008/12/29 Page : 1 of 12

BOURNS INC.
1200 COLUMBIA AVE., RIVERSIDE, CA 92507-2114, USA



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

Sample Description : TVS / STEERING DIODE ARRAY
Style/Item No. : TVS DIODE ARRAYS
Sample Receiving Date : 2008/12/22
Testing Period : 2008/12/22 TO 2008/12/29

=====
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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BOURNS INC.
1200 COLUMBIA AVE., RIVERSIDE, CA 92507-2114, USA



Test Result(s)

PART NAME NO.1 : MIXED BLACK BODY WITH SILVER COLORED METAL PIN

Test Item (s):	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321/2nd CDV (111/95/CDV). Determination of Cadmium by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321/2nd CDV (111/95/CDV). Determination of Lead by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321/2nd CDV (111/95/CDV). Determination of Mercury by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI) by alkaline extraction	mg/kg	With reference to IEC 62321/2nd CDV (111/95/CDV). Determination of Hexavalent Chromium for non-metallic samples by UV/Vis Spectrometry.	2	n.d.
Polychlorinated Biphenyls (PCBs) (CAS No.: 001336-36-3)	mg/kg	With reference to US EPA 3540C method. Analysis was performed by GC/MS.	0.5	n.d.
Polychlorinated Terphenyls (PCTs)	mg/kg	With reference to US EPA 3540C method. Analysis was performed by GC/MS.	0.5	n.d.
Polychlorinated Naphthalene (PCNs)	mg/kg	With reference to US EPA 3540C method. Analysis was performed by GC/MS.	5	n.d.
Chlorinated Paraffin (C10~C13) (CAS No.: 010871-26-2)	%	With reference to US EPA 3540C method. Analysis was performed by GC/MS.	0.01	n.d.
PVC	**	Analysis was performed by FTIR and FLAME Test.	-	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.

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Test Item (s):	Unit	Method	MDL	Result
				No.1
Sum of PBBs	mg/kg	With reference to IEC 62321/2nd CDV (111/95/CDV). Determination of PBB and PBDE 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.		
Organic-tin compounds				
Tributyl Tin (TBT) (CAS No.: 000688-73-3)	mg/kg	With reference to DIN 38407-13. Analysis was performed by GC/FPD.	0.03	n.d.
Triphenyl Tin (TphT) (CAS No.: 000668-34-8)	mg/kg	With reference to DIN 38407-13. Analysis was performed by GC/FPD.	0.03	n.d.
Asbestos				
Actinolite (CAS No.: 013768-00-8)	%	As per NIOSH 9000 method. Analysis was performed by XRD.	1	Negative
Amosite (CAS No.: 012172-73-5)	%	As per NIOSH 9000 method. Analysis was performed by XRD.	1	Negative
Chrysotile (CAS No.: 012001-29-5)	%	As per NIOSH 9000 method. Analysis was performed by XRD.	1	Negative
Crocidolite (CAS No.: 012001-28-4)	%	As per NIOSH 9000 method. Analysis was performed by XRD.	1	Negative
Tremolite (CAS No.: 014567-73-8)	%	As per NIOSH 9000 method. Analysis was performed by XRD.	1	Negative

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Test Item (s):	Unit	Method	MDL	Result
				No.1
Anthophyllite (CAS No.: 017068-78-9)	%	As per NIOSH 9000 method. Analysis was performed by XRD.	1	Negative
AZO				
1): 4-AMINODIPHENYL (CAS No.: 000092-67-1)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
2): BENZIDINE (CAS No.: 000092-87-5)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
3): 4-CHLORO-O-TOLUIDINE (CAS No.: 000095-69-2)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
4): 2-NAPHTHYLAMINE (CAS No.: 000091-59-8)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
5): O-AMINOAZOTOLUENE (CAS No.: 000097-56-3)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
6): 2-AMINO-4-NITROTOLUENE (CAS No.: 000099-55-8)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
7): P-CHLOROANILINE (CAS No.: 000106-47-8)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
8): 2,4-DIAMINOANISOLE (CAS No.: 000615-05-4)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
9): 4,4'-DIAMINODIPHENYLMETHANE (CAS No.: 000101-77-9)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
10): 3,3'-DICHLOROBENZIDINE (CAS No.: 000091-94-1)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
11): 3,3'-DIMETHOXYBENZIDINE (CAS No.: 000119-90-4)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
12): 3,3'-DIMETHYLBENZIDINE (CAS No.: 000119-93-7)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
13): 3,3'-DIMETHYL-4,4'-DIAMINODIPHENYLMETHANE (CAS No.: 000838-88-0)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
14): P-CRESIDINE (2-METHOXY-5-METHYLANILINE) (CAS No.: 000120-71-8)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
15): 4,4'-METHYLENE-BIS- (2-CHLOROANILINE) (CAS No.: 000101-14-4)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.

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BOURNS INC.

1200 COLUMBIA AVE., RIVERSIDE, CA 92507-2114, USA



Test Item (s):	Unit	Method	MDL	Result
				No.1
16): 4,4'-OXYDIANILINE (CAS No.: 000101-80-4)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
17): 4,4'-THIODIANILINE (CAS No.: 000139-65-1)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
18): O-TOLUIDINE (CAS No.: 000095-53-4)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
19): 2,4-TOLUYLENEDIAMINE (CAS No.: 000095-80-7)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
20): 2,4,5-TRIMETHYLANILINE (CAS No.: 000137-17-7)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
21): O-ANISIDINE (CAS No.: 000090-04-0)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
22): P-AMINOAZOBENZENE (CAS No.: 000060-09-3)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
23): 2,4-XYLIDINE (CAS No.: 000095-68-1)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.
24): 2,6-XYLIDINE (CAS No.: 000087-62-7)	mg/kg	With reference to LMBG 82.02-2. Analysis was performed by GC/MS.	3	n.d.

- 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. Negative = "< 1.0 %", Positive = "> 1.0 %"
 8. The MDL is 5ppm for the single compound of CP
 9. 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 $1\mu\text{g}/\text{m}^2$ of the coated material.

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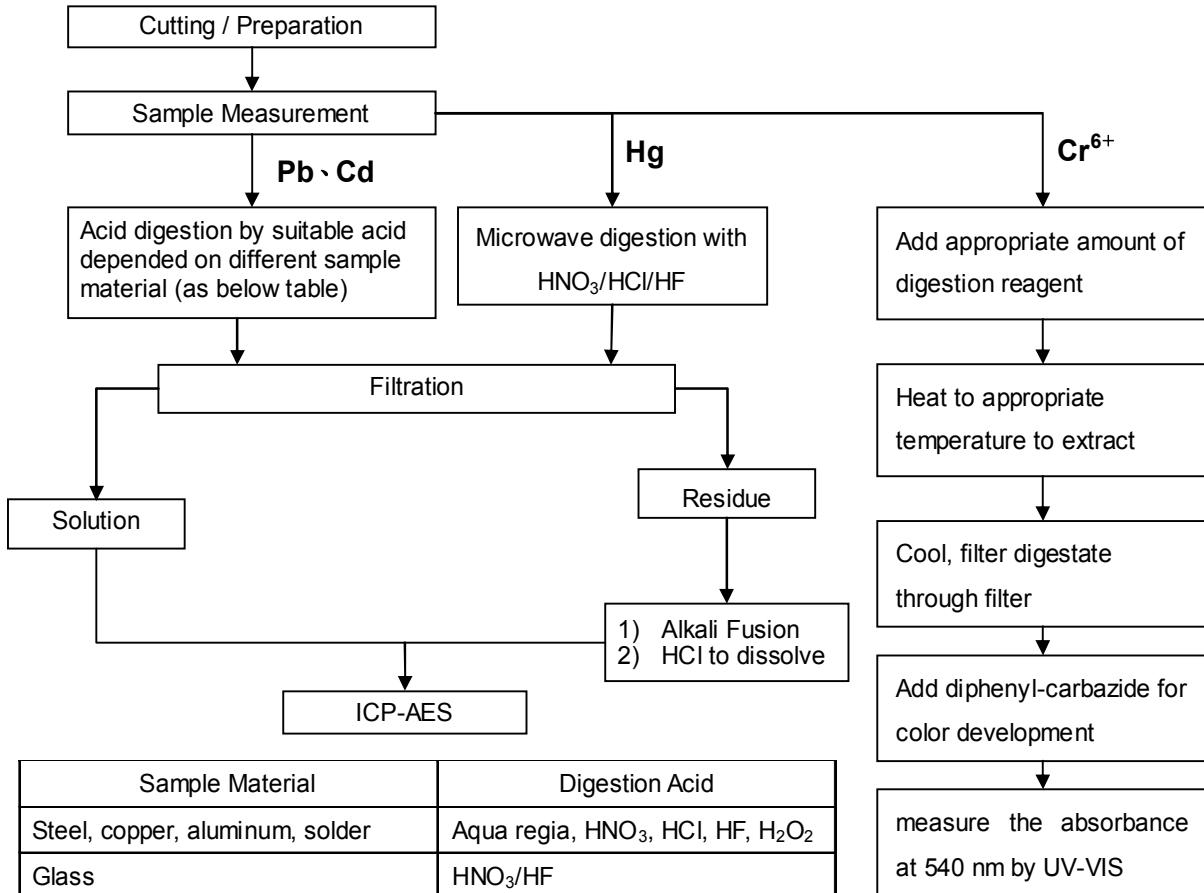
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1200 COLUMBIA AVE., RIVERSIDE, CA 92507-2114, USA



- 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

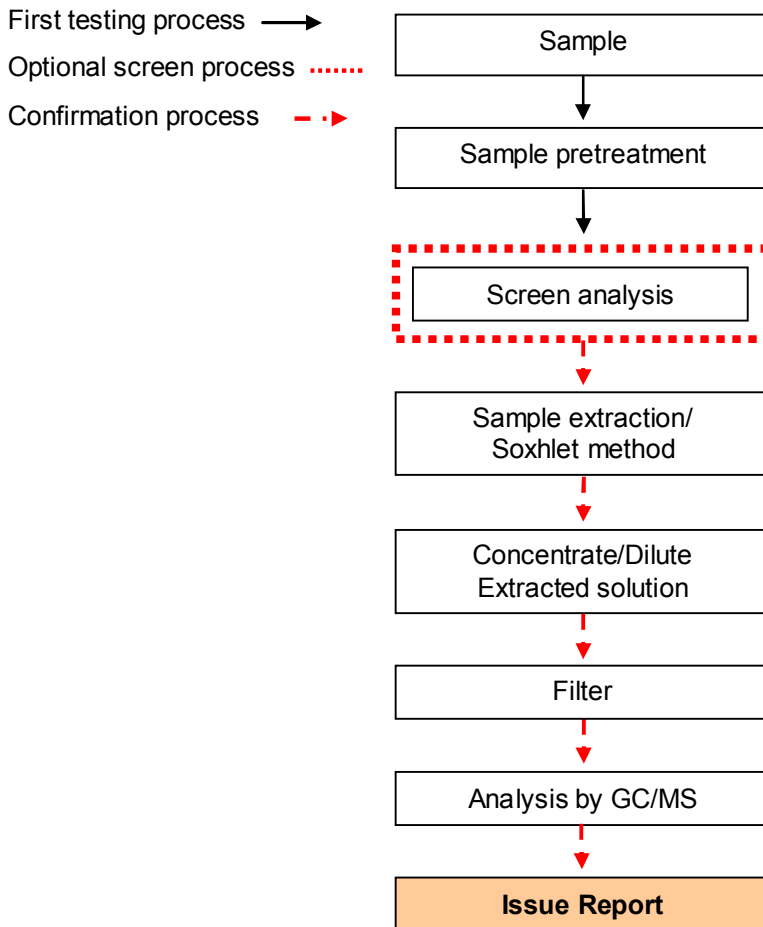
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PBB/PBDE analytical FLOW CHART

- 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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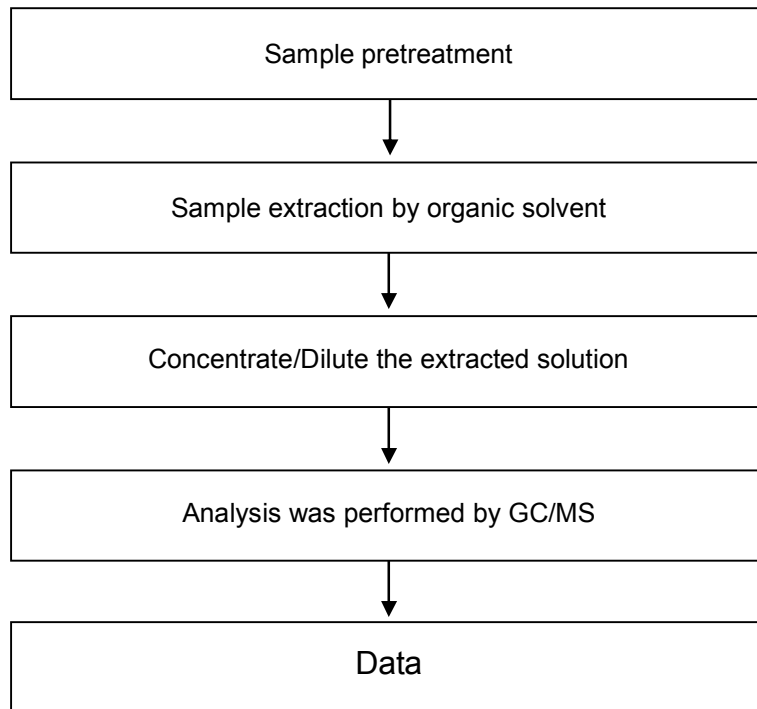
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1200 COLUMBIA AVE., RIVERSIDE, CA 92507-2114, USA



Chlorinated Flame retardant analytical flow chart

- 1) Name of the person who made measurement: Max Liu
 - 2) Name of the person in charge of measurement: Shinjyh Chen
- Reference method: US EPA 8270D, US EPA 3540
 - Test Items: PCBs, PCNs, PCTs, Mirex, CP, MCCP



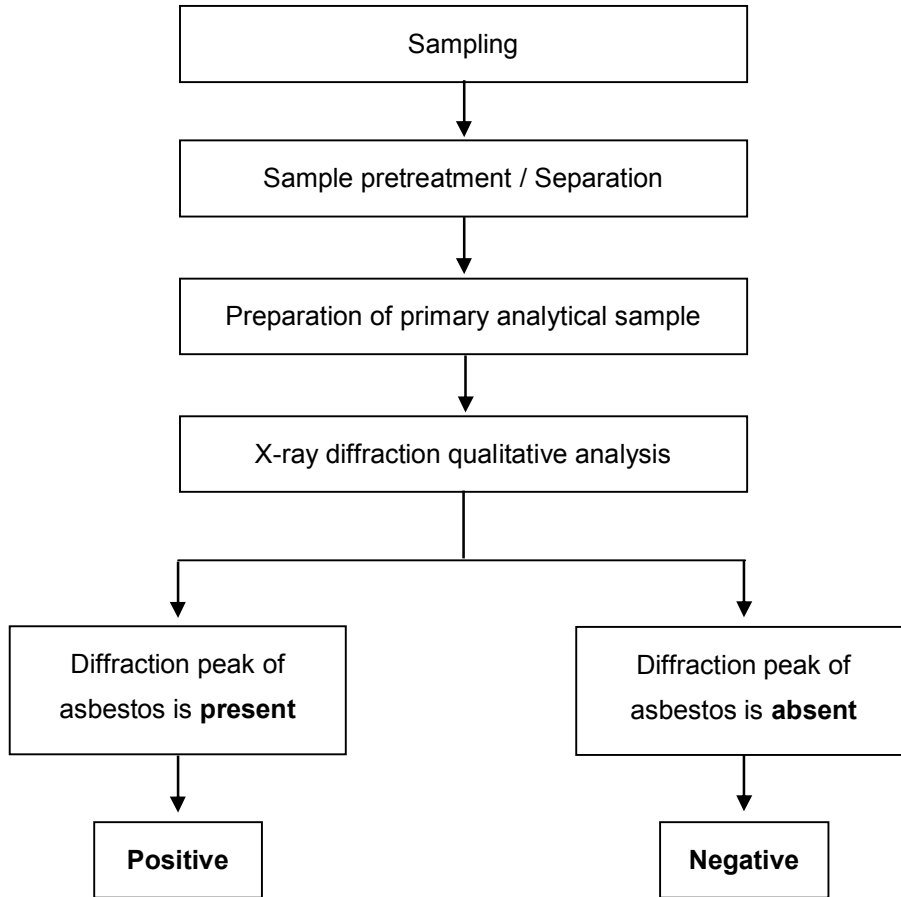
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Analysis flow chart for determination of Asbestos

- 1) Name of the person who made measurement: Victor Kao
- 2) Name of the person in charge of measurement: James Lu



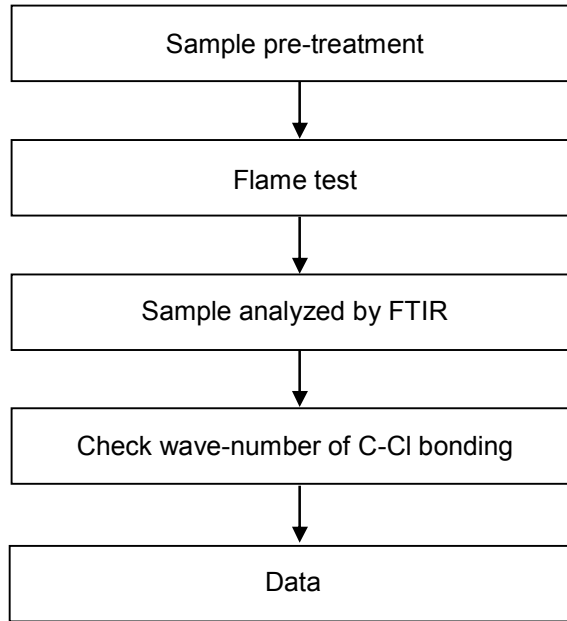
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Analysis flow chart for determination of PVC in material

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



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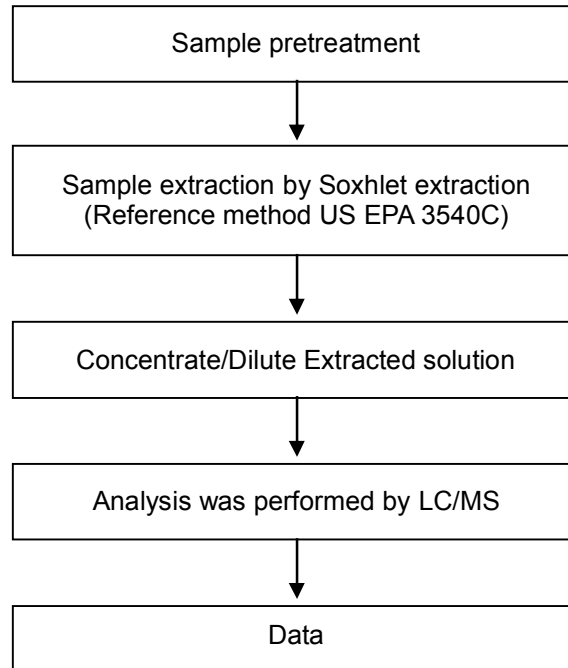
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BOURNS INC.
1200 COLUMBIA AVE., RIVERSIDE, CA 92507-2114, USA



Analytical flow chart of PFOA/PFOS content

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



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** End of Report **

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