ICP Test Report Certification Packet

Company name: Littelfuse, Inc.

Product Series: Ultra-low Capacitance Protection Array – SOT553 5L & SOT 563 6L

Product #: SP3003-02XTG (SOT 553 5L), SP3003-4XTG (SOT563 6L)

Issue Date: August 31, 2012

It is hereby certified by Littelfuse, Inc. that there is neither RoHS (EU Directive 2002/95/EC, 2011/65/EU)-restricted substance nor such use, for materials to be used for unit parts, for packing/packaging materials, and for additives and the like in the manufacturing processes.
In addition, it is hereby reported to you that the parts and sub-materials, the materials to be used for unit parts, the packing/packaging materials, and the additives and the like in the manufacturing processes, are all composed of the following components.

Issued by: KRISTEEN BACILA

<Global EHS Engineer>

(1) Parts, sub-materials and unit parts

This document covers the S RoHS-Compliant series products manufactured by Littelfuse, Inc.

＜ Raw Materials Used

Please see Table 1

(2) The ICP data on all measurable substances

Please see appropriate pages as identifed in Table 1

Remarks : .

Table 1: List of Raw Materials covered by this report

Total Parts	Raw Material Part Number	Raw Material Description	Page(s)
1	NA	IC wafer	3-6
2	NA	Gold wire	7-19
3	2200D	Adhesive	20-28
4	KMC3580	Molding Compound	29-38
5	NA	Leadframe – Copper Base	39-77
6	NA	PPF Plating	78-91

Validity unknown
For Question
Please Contact with SGS
www.tw.sgs.com

Test Report

No. : CE/2012/12342 Date : 2012/01/18

EPISIL TECHNOLOGIES INC.
NO. 3, INNOVATION ROAD 1, SCIENCE BASED INDUSTRIAL PARK, HSINCHU, TAIWAN, R. O. C.

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

Sample Description	:	IC WAFER
Style/Item No.	:	ALUMINUM PROCESS
Sample Receiving Date	:	2012/01/11
Testing Period	:	2012/01/11 TO 2012/01/18

==========

Test Requested : As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI) contents in the submitted sample.

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

SGS TAIWAN LTD

Nicole Chien / Supervisor
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

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EPISIL TECHNOLOGIES INC.
NO. 3, INNOVATION ROAD 1, SCIENCE BASED INDUSTRIAL PARK, HSINCHU, TAIWAN, R. O. C.

Test Result(s)

PART NAME No.1 : MULTICOLOR WAFER

Test Item(s)	Unit	Method	MDL	Result
				No.1
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)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.

Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit

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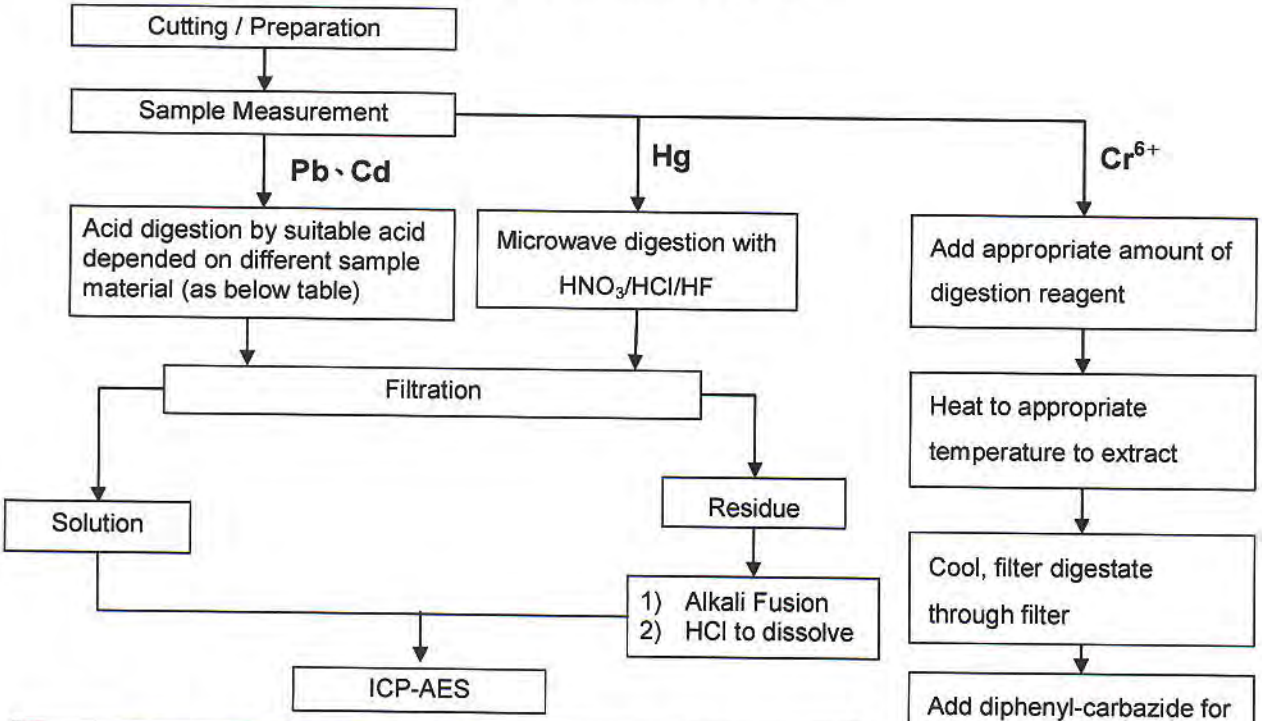
EPISIL TECHNOLOGIES INC.
NO. 3, INNOVATION ROAD 1, SCIENCE BASED INDUSTRIAL PARK, HSINCHU, TAIWAN, R. O. C.

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	Any acid to total digestion

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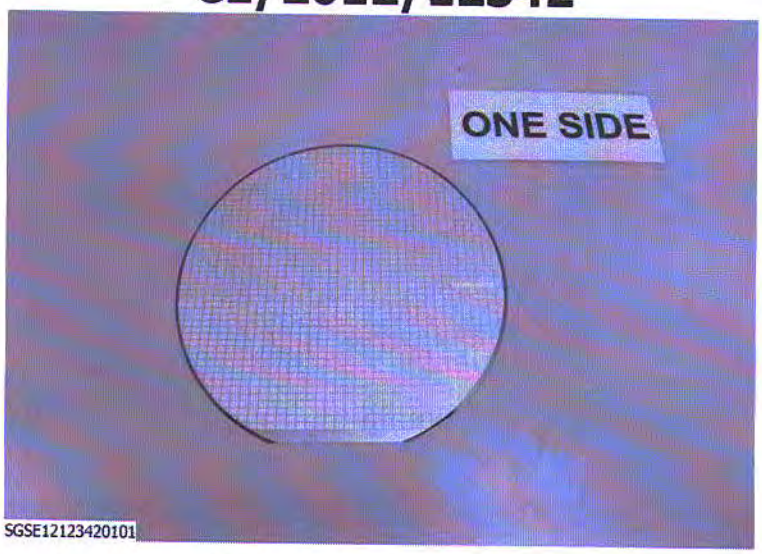
NO. 3, INNOVATION ROAD 1, SCIENCE BASED INDUSTRIAL PARK, HSINCHU, TAIWAN, R. O. C.

*** The tested sample / part is marked by an arrow if it's shown on the photo. ***

CE/2012/12342



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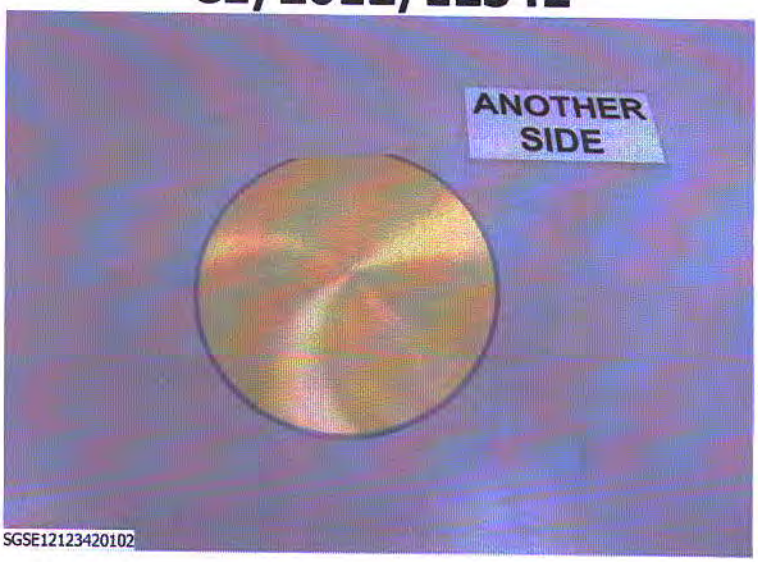
CE/2012/12342



SGSE12123420102

** End of Report **

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Test Report

TANAKA ELECTRONICS (MALAYSIA) SDN BHD
PLOT 11, PHASE IV, BAYAN LEPAS FIZ
11900 PENANG, MALAYSIA

The following merchandise was (were) submitted and identified by the client as:

Sample Description	:	Au Bonding Wire
Sample Receiving Date	:	21/11/2011
Testing Period	:	21/11/2011 to 02/12/2011
Date Completed	:	02/12/2011
Reporting Date	:	02/12/2011

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).
Analysts	:	Teh Pui Sean, Tay Siam Pine, Eileen Tan Yi Pin, Yee Sook Wai & Lim Meng Hoe

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Test results:

Test Part Description :

Sample Description : Au Bonding Wire

RoHS Directive 2011/65/EU Annex II

Test Item(s):	Unit	Test Method	Results	MDL
Cadmium (Cd)	mg/kg	With reference to IEC 62321:2008, and performed by ICP-OES	N.D.	2
Lead (Pb)	mg/kg	With reference to IEC 62321:2008, and performed by ICP-OES	N.D.	2
Mercury (Hg)	mg/kg	With reference to IEC 62321:2008, and performed by ICP-OES	N.D.	2
Hexavalent Chromium (CrVI) by Spot test / boiling water extraction (optional) #	---	With reference to IEC 62321:2008	Negative	-
Hexavalent Chromium (CrVI)	mg/kg	With reference to JIS H 8625, and performed by UV-VIS Spectrophotometry	N.D.	2
Sum of PBBs	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	-
Monobromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Dibromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Tribromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Tetrabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Hexabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Pentabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Heptabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Octabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Nonabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Decabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5

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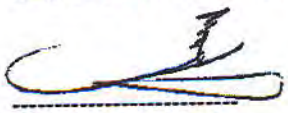

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Sum of PBDEs	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	-
Monobromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Dibromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Tribromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Tetrabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Pentabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Hexabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Heptabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Octabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Nonabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Decabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5

Note : (a) mg/kg = ppm ; (0.1wt% = 1000ppm)
(b) N.D. = Not Detected
(c) MDL = Method Detection Limit
(d) # = **Spot-Test:**
a. Negative means the absence of Cr(VI) on the tested areas
b. Positive means the presence of Cr(VI) on the tested areas
(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:
a. Negative means the absence of Cr(VI) on the tested areas
b. Positive means the presence of Cr(VI) on the tested areas;
The detected concentration in 50 mL boiling water extraction solution is equal or greater than 0.02 mg/kg with 50 cm^2 sample surface area.
For corrosion protection coatings on metals: 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.
(e) - = Not regulated

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Test results by chemical method:

Test Item (s):	Unit	Method	Result	MDL
Antimony (Sb)	ppm	With reference to EPA Method 3052, and performed by ICP-OES	N.D.	2
Polyvinylchloride (PVC)	**	Analysis was performed by FT-IR/ATR	Negative	-
Halogen	---	---	---	
Halogen-Fluorine (F)	mg/kg	With reference to BS EN 14582. Analysis was performed by IC method for Fluorine content.	N.D.	50
Halogen-Chlorine (Cl)	mg/kg	With reference to BS EN 14582. Analysis was performed by IC method for Chlorine content.	N.D.	50
Halogen-Bromine (Br)	mg/kg	With reference to BS EN 14582. Analysis was performed by IC method for Bromine content.	N.D.	50
Halogen-Iodine (I)	mg/kg	With reference to BS EN 14582. Analysis was performed by IC method for Iodine content.	N.D.	50

Test Part Description :

Sample Description : Au Bonding Wire

Note : (a) mg/kg = ppm
(b) N.D. = Not Detected
(c) MDL = Method Detection Limit
(d) --- = Not Conducted
(e) ** = Qualitative analysis (no unit)
(f) Negative = Undetectable / Positive = Detectable

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Test Report

Test result:

Test Part Description :

Sample Description : Au Bonding Wire

Optional: RoHS Directive 2011/65/EU, priority substances

Test Item(s):	Unit	Test Method	Results	MDL
Hexabromocyclododecane (HBCDD)	mg/kg	Based on IEC 62321:2008, and performed by GC-MS	N.D.	10
Phthalates	---	---	---	---
DBP (Di-butyl phthalate) (CAS No.: 000084-74-2)	%	With reference to Chromatographia Vol.47, No.784, 1998. Analysis was performed by GC/MS.	N.D.	0.003
DEHP(Di-(2-ethylhexyl phthalate) (CAS No.: 000117-81-7)	%	With reference to Chromatographia Vol.47, No.784, 1998. Analysis was performed by GC/MS.	N.D.	0.003
BBP (Benzyl Butyl phthalate) (CAS NO.: 000085-68-7)	%	With reference to Chromatographia Vol.47, No.784, 1998. Analysis was performed by GC/MS.	N.D.	0.003
DINP (Di-isononyl phthalate) (CAS No.: 028553-12-0)	%	With reference to Chromatographia Vol.47, No.784, 1998. Analysis was performed by GC/MS.	N.D.	0.01
DIDP (Di-isodecyl phthalate) (CAS No.: 026761-40-0)	%	With reference to Chromatographia Vol.47, No.784, 1998. Analysis was performed by GC/MS.	N.D.	0.01
DNOP (Di-n-octyl phthalate) (CAS No.: 000117-84-0)	%	With reference to Chromatographia Vol.47, No.784, 1998. Analysis was performed by GC/MS.	N.D.	0.003
DNHP (Di-n-hexyl phthalate) (CAS No.: 000084-75-3)	%	With reference to Chromatographia Vol.47, No.784, 1998. Analysis was performed by GC/MS.	N.D.	0.003

Note : (a) mg/kg = ppm
(b) N.D. = Not Detected
(c) MDL = Method Detection Limit
(d) --- = Not Conducted

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Test Item(s):	Unit	Test Method	Results	MDL
*Phosphorus (P)	mg/kg	With reference to US EPA Method 3052 for Phosphorus Content. Analysis was performed by ICP-AES.	N.D.	2
*Beryllium (Be)	mg/kg	With reference to US EPA Method 3052 for Beryllium Content. Analysis was performed by ICP-AES.	6.64	2
*Magnesium (Mg)	mg/kg	With reference to US EPA Method 3052 for Magnesium Content. Analysis was performed by ICP-AES.	N.D.	2
*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.	N.D.	10
* 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.	N.D.	10
*Dimethyl Fumarate (CAS No.: 624-49-7)	mg/kg	With reference to US EPA 3540C method. Analysis was performed by GC/MS.	N.D.	0.1
*DMEP (Bis (2-methoxyethyl) phthalate) (CAS No.: 117-82-8)	%	With reference to EN 14372.Analysis was performed by GC/MS	N.D.	0.003

Note : (a) mg/kg = ppm ; (0.1wt% = 1000ppm)
(b) N.D. = Not Detected
(c) MDL = Method Detection Limit
(d) *The above tests were subcontracted to SGS Taiwan based on report no. KA/2011/B1388

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^2 of the coated material.

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Test Part Description :

Sample Description : Au Bonding Wire

TANAKA ELECTRONICS (MALAYSIA) SDN BHD
LPCI/25132(B)/11+KA/2011/B1388

SGS authenticate the photo on the original report only

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1. DETERMINATION OF CADMIUM CONTENT BY IEC 62321 2008

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (0.2-0.5g) into digestion vessel
↓
Acid digestion (Microwave)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP

2. DETERMINATION OF LEAD CONTENT BY IEC 62321 2008

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (0.2-0.5g) into digestion vessel
↓
Acid digestion (Microwave)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP

3. DETERMINATION OF MERCURY CONTENT BY IEC 62321 2008

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (0.2-0.5g) into digestion vessel
↓
Acid digestion (Microwave)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP

4. DETERMINATION OF HEXAVALENT CHROMIUM BY IEC 62321 2008

Sample Receiving and Registration
↓
Sample Preparation
↓
Spot-test (Qualitative)
↓
Boiling-water-extraction
↓
Analyses by UV- Spectrophotometer
↓
Test Report

5. DETERMINATION OF PBB/PBDE WITH GC-MS BY IEC 62321 2008

Cut sample in small pieces
↓
Weight sample (0.5-4.0g) into extraction thimble
↓
Soxhlet Extraction with Toluene
↓
Filter through 0.45 um membrane filter
↓
Analyses by GC-MS (with appropriate dilution)

7. DETERMINATION OF HEXAVALENT CHROMIUM BY JIS H 8625

Sample Preparation
↓
Hot water extraction
↓
Add colour-developing reagent
↓
Let stand for 5-10 min
↓
Analyses by UV- Spectrophotometer (540 nm)

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CHONG KIEN LEN
B.Sc.(HONS) AMIC
LAB MANAGER

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8. MICROWAVE ASSISTED ACID DIGESTION OF SILICEOUS AND ORGANICALLY BASED METRICES (US EPA 3052)

Cut sample in small pieces
↓
Weight sample (0.2-0.5g) into digestion vessel
↓
Acid digestion (HF and HNO_3) – Microwave
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP

9. DETERMINATION OF HALOGEN CONTENT

Sample pretreatment
↓
Weighting and putting sample in cell
↓
Combustion / Absorption
↓
Dilution to fixed volume
↓
Analyses by IC

10. ANALYSIS FLOW CHART FOR DETERMINATION OF PVC

Cut sample in small pieces
↓
Sample analysed by FTIR
↓
Data

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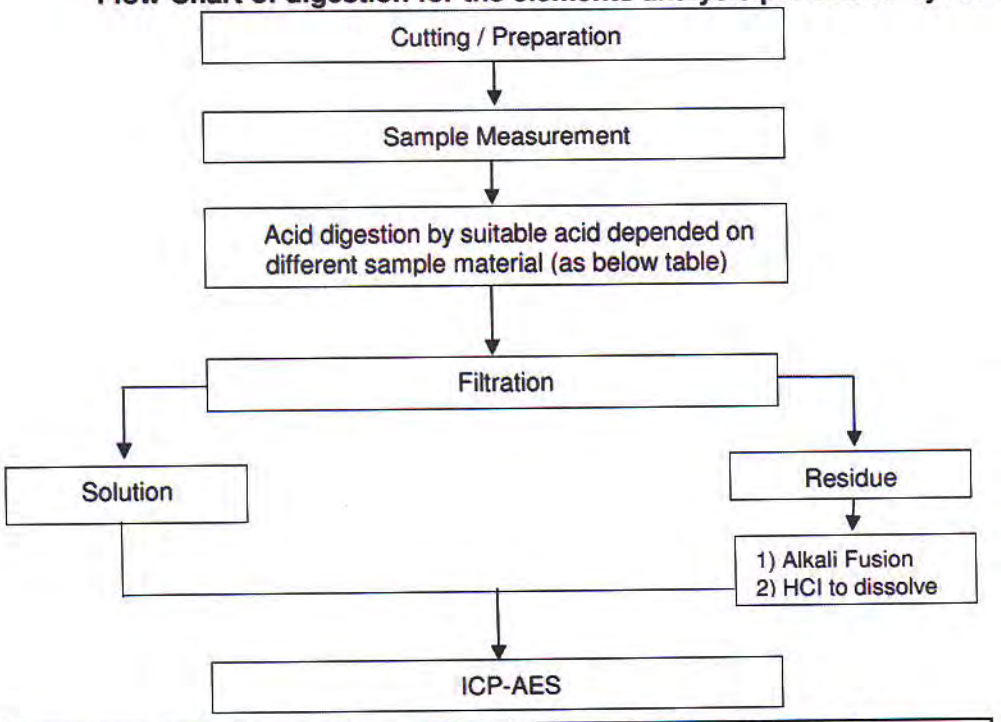
1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
2) Name of the person who made measurement: Alex Chang
3) Name of the person in charge of measurement: Ray Chang

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



Steel, copper, aluminium, 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	Any acid to total digestion

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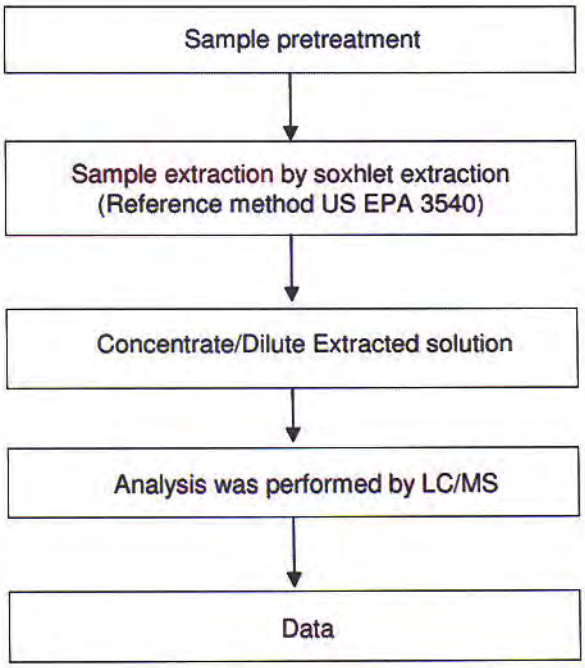
Analytical flow chart of PFOA/PFOS content

1) Name of the person who made measurement: Anson Tsao

2) Name of the person in charge of measurement: Ray Chang



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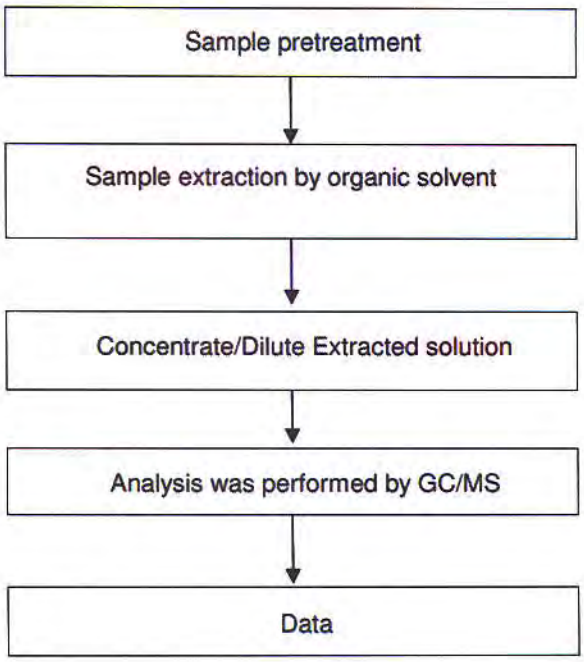
Analytical flow chart of Dimethyl Fumarate content

1) Name of the person who made measurement: Anson Tsao
2) Name of the person in charge of measurement: Ray Chang



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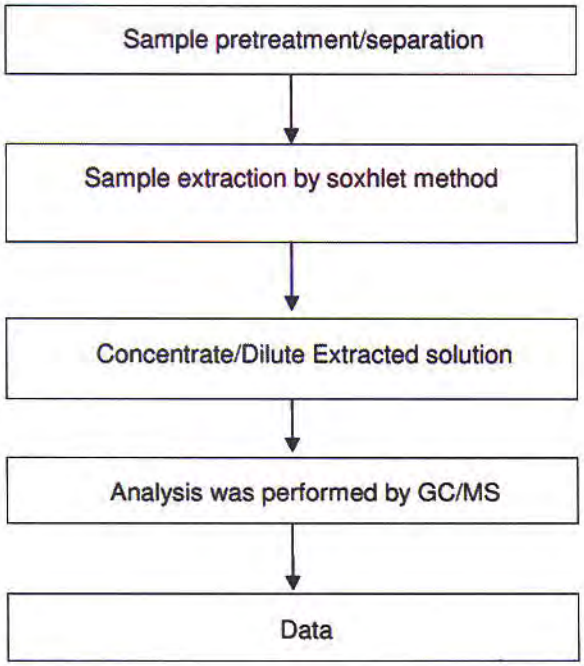
Analytical flow chart of phthalate content

1) Name of the person who made measurement: Anson Tsao
2) Name of the person in charge of measurement: Ray Chang



****End of Report****

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Test Report

No. : CE/2011/A3053 Date : 2011/10/24

HENKEL CORPORATION
HENKEL ADHESIVES-ELECTRONICS MAIN OFFICE: 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

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

Sample Description	:	ADHESIVE
Style/Item No.	:	2200D
Sample Receiving Date	:	2011/10/18
Testing Period	:	2011/10/18 TO 2011/10/24

==========

Test Requested : In accordance with the RoHS Directive 2011/65/EU Annex II.

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

SGS TAIWAN LTD SGS TAIWAN

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

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HENKEL CORPORATION
HENKEL ADHESIVES-ELECTRONICS MAIN OFFICE: 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

Test Result(s)

PART NAME No.1 : SILVER COLORED PASTE

Test Item (s):	Unit	Method	MDL	Result No.1
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)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
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.

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HENKEL CORPORATION
HENKEL ADHESIVES-ELECTRONICS MAIN OFFICE: 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated

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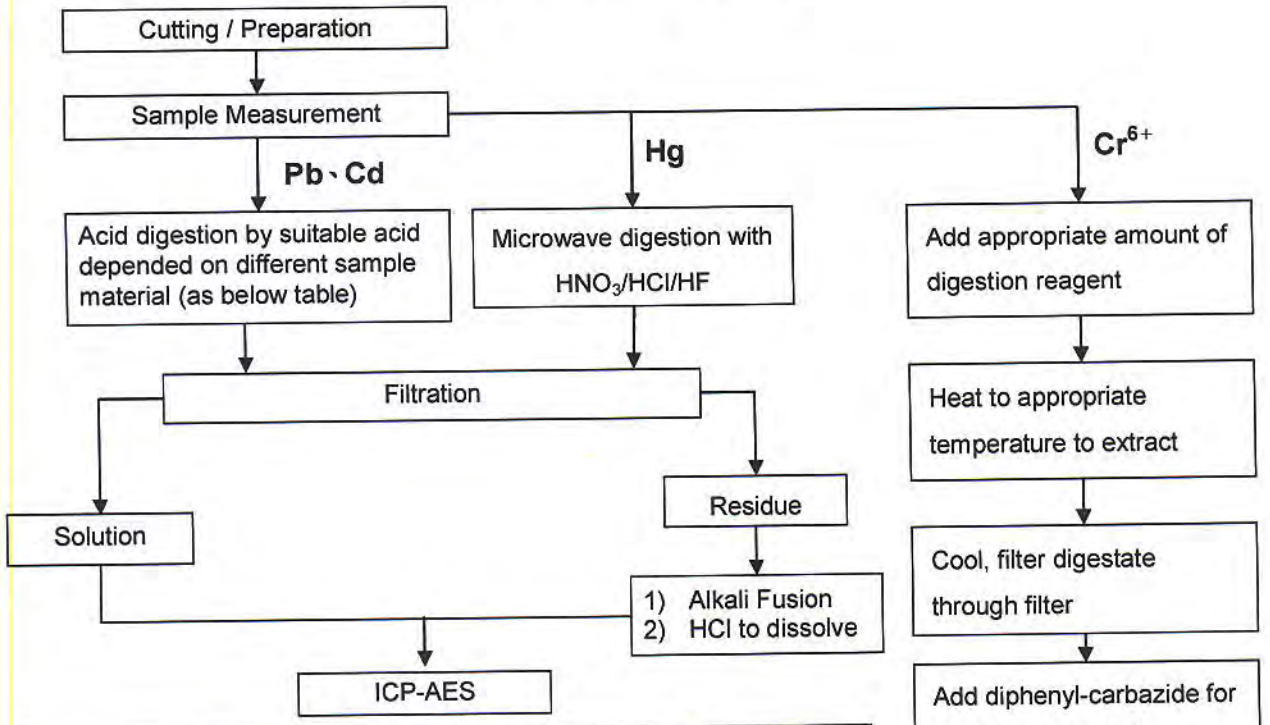
HENKEL CORPORATION
HENKEL ADHESIVES-ELECTRONICS MAIN OFFICE: 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

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	Any acid to total digestion

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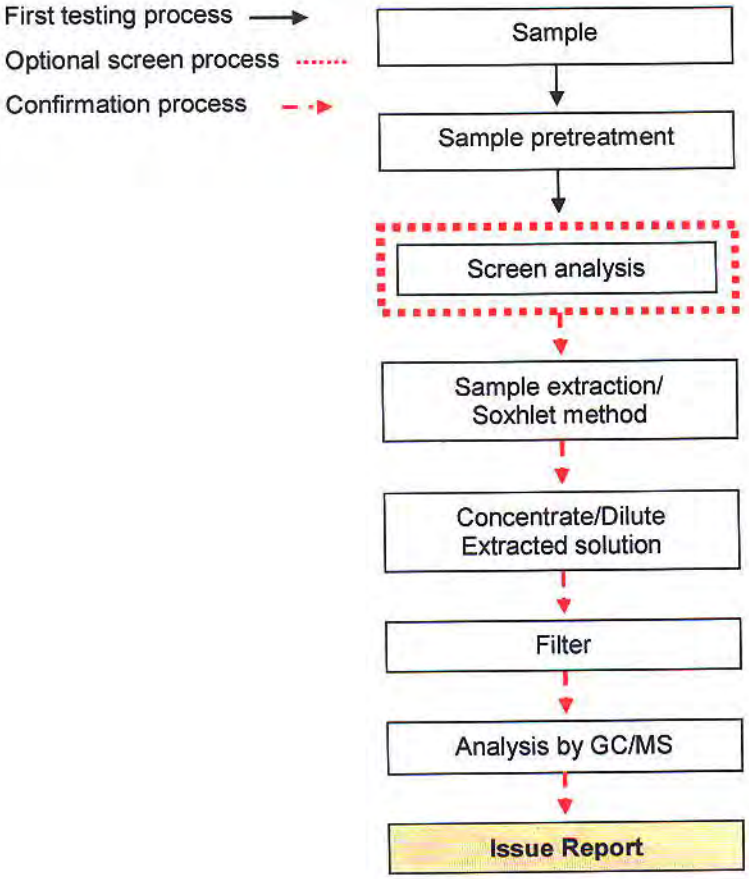
HENKEL CORPORATION
HENKEL ADHESIVES-ELECTRONICS MAIN OFFICE: 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

PBB/PBDE analytical FLOW CHART

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



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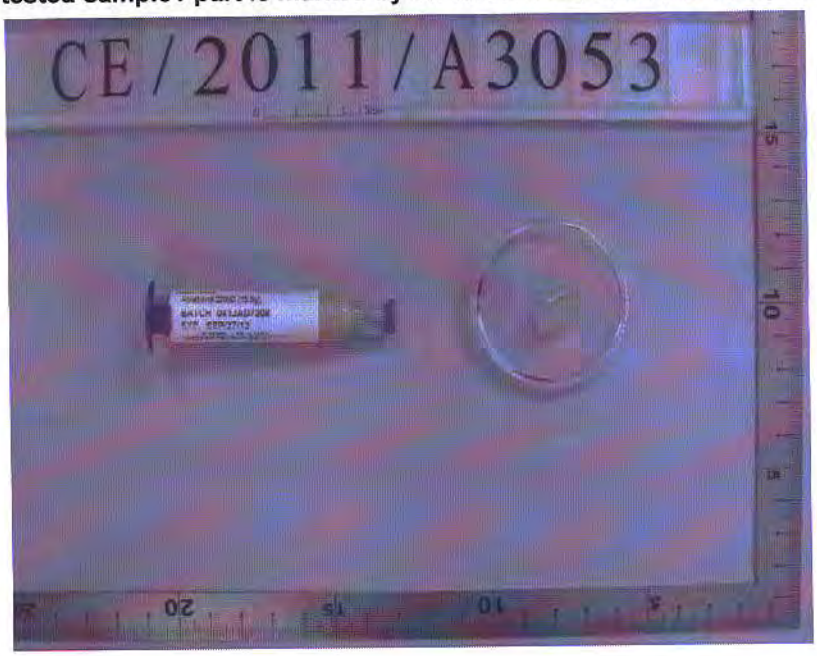
Test Report

No. : CE/2011/A3053 Date : 2011/10/24

HENKEL CORPORATION
HENKEL ADHESIVES-ELECTRONICS MAIN OFFICE: 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

*** The tested sample / part is marked by an arrow if it's shown on the photo. ***



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Test Report

No. : CE/2011/A3050 Date : 2011/10/24

HENKEL CORPORATION
HENKEL ADHESIVES-ELECTRONICS MAIN OFFICE: 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

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

Sample Description	:	ADHESIVE
Style/Item No.	:	2200D
Sample Receiving Date	:	2011/10/18
Testing Period	:	2011/10/18 TO 2011/10/24

==========

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

SGS TAIWAN LTD SGS TAIWAN

Shinjyh Chen / Asst. Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

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Test Report

No. : CE/2011/A3050 Date : 2011/10/24

HENKEL CORPORATION
HENKEL ADHESIVES-ELECTRONICS MAIN OFFICE: 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

Test Result(s)

PART NAME No.1 : SILVER COLORED PASTE

Test Item (s):	Unit	Method	MDL	Result No.1
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.

Note :

1. mg/kg = ppm; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit

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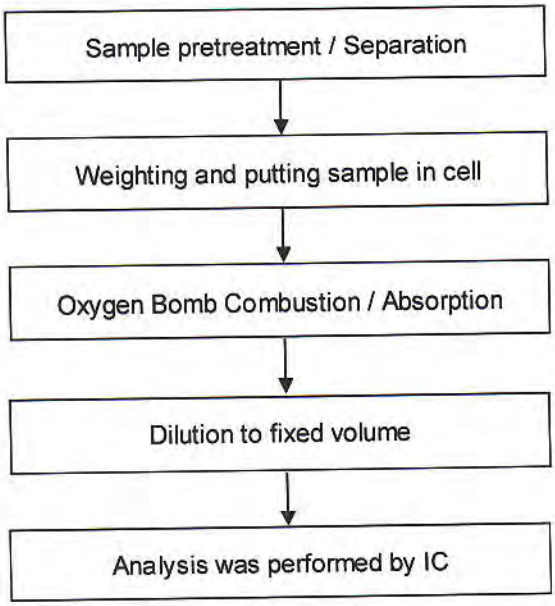
* CE/ 2011/ A3050*

HENKEL CORPORATION
HENKEL ADHESIVES-ELECTRONICS MAIN OFFICE: 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

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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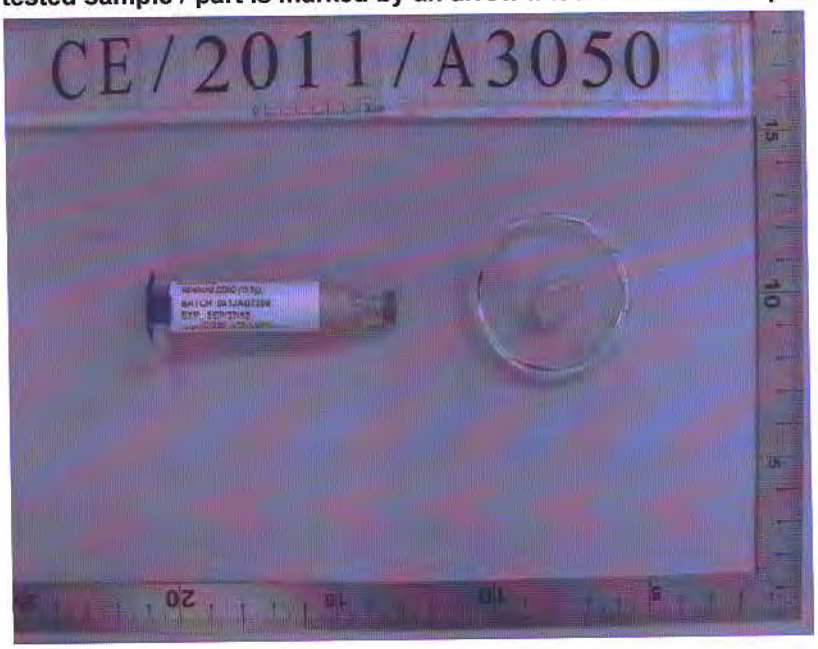
Test Report

No. : CE/2011/A3050 Date : 2011/10/24

HENKEL CORPORATION
HENKEL ADHESIVES-ELECTRONICS MAIN OFFICE: 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

CE/ 2011/ A3050

*** The tested sample / part is marked by an arrow if it's shown on the photo. ***



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C120062E

SGS

Test Report

No. CTSSA/01319/12 Date : 20/01/2012 Page: 1 of 5
CTS Ref. CTSSA/12/0183/Shin

SHIN-ETSU ELECTRONICS (M) SDN BHD
LOT 50, JALAN SERENDAH 26/17, HICOM INDUSTRIAL ESTATE
40000 SHAH ALAM, SELANGOR DARUL EHSAN

The following merchandise was (were) submitted and identified by the client as:

Sample Description	:	KMC-3580P-14F
Sample Receiving Date	:	16/01/2012
Testing Period	:	16/01/2012 to 20/01/2012

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).
Analysts	:	Teh Pui Sean & Tay Siam Pine

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LAB MANAGER

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C120062E

SGS

Test Report

No. CTSSA/01319/12 Date : 20/01/2012 Page: 2 of 5
CTS Ref. CTSSA/12/0183/Shin

Test results:

Test Part Description :

Sample Description : KMC-3580P-14F

RoHS Directive 2011/65/EU Annex II

Test Item(s)	Unit	Test Method	Results	MDL
Cadmium (Cd)	mg/kg	With reference to IEC 62321:2008, and performed by ICP-OES	N.D.	2
Lead (Pb)	mg/kg	With reference to IEC 62321:2008, and performed by ICP-OES	N.D.	2
Mercury (Hg)	mg/kg	With reference to IEC 62321:2008, and performed by ICP-OES	N.D.	2
Hexavalent Chromium (CrVI)	mg/kg	With reference to IEC 62321:2008, and performed by UV-Vis	N.D.	2
Sum of PBBs	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	-
Monobromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Dibromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Tribromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Tetrabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Hexabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Pentabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Heptabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Octabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Nonabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Decabromobiphenyl	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5

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Test Report

Sum of PBDEs	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	-
Monobromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Dibromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Tribromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Tetrabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Pentabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Hexabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Heptabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Octabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Nonabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5
Decabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, and performed by GC-MS	N.D.	5

Note : (a) mg/kg = ppm ; (0.1wt% = 1000ppm)
(b) N.D. = Not Detected
(c) MDL = Method Detection Limit
(d) - = Not regulated
(e) Testing based on original basis

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C120062E

SGS

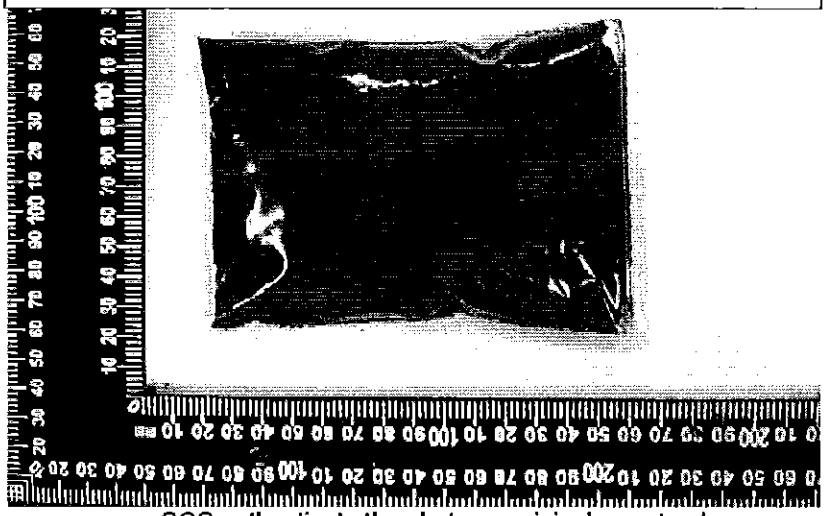
Test Report

No. CTSSA/01319/12 Date : 20/01/2012 Page: 4 of 5
CTS Ref. CTSSA/12/0183/Shin

Test Part Description :

Sample Description : KMC-3580P-14F

SHIN-ETSU ELECTRONICS (M) SDN BHD
CTSSA/01319/12



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Test Report

No. CTSSA/01319/12 Date : 20/01/2012 Page: 5 of 5

CTS Ref. CTSSA/12/0183/Shin

1. DETERMINATION OF CADMIUM CONTENT BY IEC 62321 2008

Sample Receiving and Registration
↓
Sample Preparation
↓
Weight sample (0.2-0.5g) into digestion vessel
↓
Acid digestion (Microwave)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP

2. DETERMINATION OF LEAD CONTENT BY IEC 62321 2008

Sample Receiving and Registration
↓
Sample Preparation
↓
Weight sample (0.2-0.5g) into digestion vessel
↓
Acid digestion (Microwave)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP

3. DETERMINATION OF MERCURY CONTENT BY IEC 62321 2008

Sample Receiving and Registration
↓
Sample Preparation
↓
Weight sample (0.1-0.5g) into digestion vessel
↓
Acid digestion (Microwave)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP

4. DETERMINATION OF HEXAVALENT CHROMIUM BY IEC 62321 2008

Sample Preparation
↓
Add colour-developing reagent
↓
Acidify with H_2SO_4
↓
Let stand for 5-10 min
↓
Analyses by UV- Spectrophotometer (540 nm)

5. DETERMINATION OF PBB/PBDE WITH GC-MS BY IEC 62321 2008

Sample Preparation
↓
Weight sample (0.5-4.0g) into extraction thimble
↓
Soxhlet Extraction with Toluene
↓
Filter through 0.45 um membrane filter
↓
Analyses by GC-MS (with appropriate dilution)

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Test Report

No. CTSSA/12559/12 Date : 18/06/2012 Page: 1 of 4
CTS Ref. CTSSA/12/2003/Shin-Etsu

SHIN-ETSU ELECTRONICS (M) SDN BHD
LOT 50, JALAN SERENDAH 26/17, HICOM INDUSTRIAL ESTATE
40000 SHAH ALAM, SELANGOR DARUL EHSAN

The following merchandise was (were) submitted and identified by the client as:

Sample Description	:	KMC-3580P-14F
Sample Receiving Date	:	12/06/2012
Testing Period	:	12/06/2012 to 18/06/2012

Test Results	:	Please refer to next page.
Analyst	:	Eileen Tan Yi Pin

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Test Report

Test results by chemical method:

Test Item (s) :	Unit	Method	Results	MDL
Halogen	---	---	---	---
Halogen-Fluorine (F)	mg/kg	With reference to BS EN 14582. Analysis was performed by IC method for Fluorine content.	N.D.	50
Halogen-Chlorine (Cl)	mg/kg	With reference to BS EN 14582. Analysis was performed by IC method for Chlorine content.	N.D.	50
Halogen-Bromine (Br)	mg/kg	With reference to BS EN 14582. Analysis was performed by IC method for Bromine content.	N.D.	50
Halogen-Iodine (I)	mg/kg	With reference to BS EN 14582. Analysis was performed by IC method for Iodine content.	N.D.	50

Test Part Description:

Sample Description : KMC-3580P-14F

Note : (a) mg/kg = ppm
(b) N.D. = Not Detected
(c) MDL = Method Detection Limit
(d) --- = Not Conducted
(e) Testing based on original basis

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C121150E

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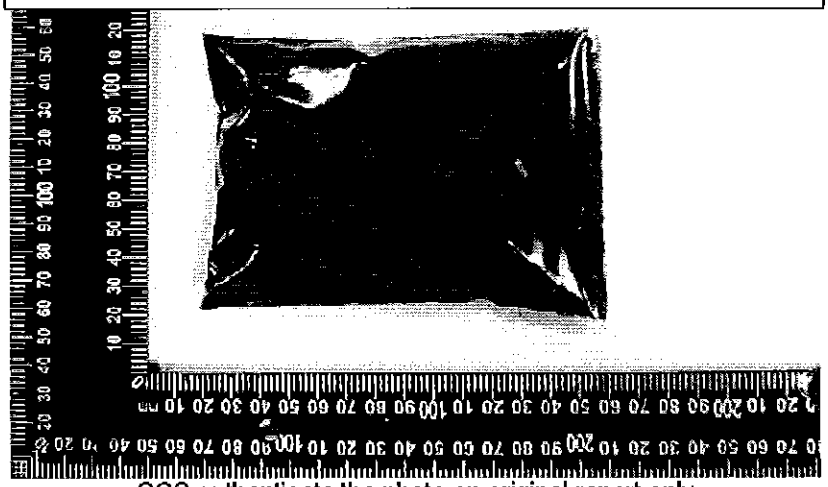
Test Report

No. CTSSA/12559/12 Date : 18/06/2012 Page: 3 of 4
CTS Ref. CTSSA/12/2003/Shin-Etsu

Test Part Description :

Sample Description : KMC-3580P-14F

SHIN-ETSU ELECTRONICS (M) SDN BHD
CTSSA/12559/12



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Test Report

DETERMINATION OF HALOGEN CONTENT

Sample pretreatment
↓
Weighting and putting sample in cell
↓
Combustion / Absorption
↓
Dilution to fixed volume
↓
Analyses by IC

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For Question
Please Contact with SGS
www.tw.sgs.com

測試報告
Test Report

號碼(No.) : KA/2011/C1699 日期(Date) : 2012/01/05 頁數(Page) : 1 of 39

ASM HK & ASM TECHNOLOGY SINGAPORE

4/F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG (ASM HK), 2 YISHUN AVENUE 7, SINGAPORE (ASM TECHNOLOGY SINGAPORE)

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 identifie by/on behalf of the client as) :

樣品名稱(Sample Description)	:	A194 ALLOY
收件日期(Sample Receiving Date)	:	2011/12/23
測試期間(Testing Period)	:	2011/12/23 TO 2012/01/05
送樣廠商(Sample Submitted By)	:	香港商先進太平洋股份有限公司 (ASM HK & ASM TECHNOLOGY SINGAPORE)

==========

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

Ray Chang

Ray Chang / Asst. Manager
Signed for and on behalf of
SGS Taiwan Limited

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台灣檢驗科技股份有限公司
No. 61, Kai-Fa Road, Nanzih Export Processing Zone, Kaohsiung, Taiwan
t + 886 (07) 301 2121 f + 886 (07) 3010867
高雄市楠梓加工出口區開發路61號
www.tw.sgs.com
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測試報告
Test Report

號碼(No.) : KA/2011/C1699 日期(Date) : 2012/01/05 頁數(Page) : 2 of 39

ASM HK & ASM TECHNOLOGY SINGAPORE

4/F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG (ASM HK), 2 YISHUN AVENUE 7, SINGAPORE (ASM TECHNOLOGY SINGAPORE)

測試結果(Test Results)

測試部位(PART NAME) NO.1 : 銅紅色 A194 ALLOY (COPPER RED A194 ALLOY)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321: 2008方法, 用感應藕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.
鉛 / Lead (Pb)	mg/kg	參考IEC 62321: 2008方法, 用感應藕合電漿原子發射光譜儀檢測. / With reference to IEC 62321: 2008 and performed by ICP-AES.	2	23.5
汞 / Mercury (Hg)	mg/kg	參考IEC 62321: 2008方法, 用感應藕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.
六價鉻 / Hexavalent Chromium Cr(VI) by boiling water extraction#	**	參考IEC 62321: 2008方法, 用 boiling water extraction方法檢測. / With reference to IEC 62321: 2008 and performed by boiling water extraction Method.	0.02mg/kg with 50 cm^2 surface area	Negative
銻 / Antimony (Sb)	mg/kg	參考US EPA 3052方法, 用感應藕合電漿原子發射光譜儀檢測銻含量. / With reference to US EPA Method 3052 for Antimony Content. Analysis was performed by ICP-AES.	2	n.d.
鈹 / Beryllium (Be)	mg/kg	參考US EPA 3052方法, 用感應藕合電漿原子發射光譜儀檢測鈹含量. / With reference to US EPA Method 3052 for Beryllium Content. Analysis was performed by ICP-AES.	2	n.d.

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SGS Taiwan Ltd.
台灣檢驗科技股份有限公司
No. 61, Kai Fa Road, Nanzih Export Processing Zone, Kaohsiung, Taiwan
t + 886 (07) 301 2121 f + 886 (07) 3010867
高雄市楠梓加工出口區開發路61號
www.tw.sgs.com
Member of the SGS Group

測試報告
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ASM HK & ASM TECHNOLOGY SINGAPORE

4/F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG (ASM HK), 2 YISHUN AVENUE 7, SINGAPORE (ASM TECHNOLOGY SINGAPORE)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
多氯聯苯 / Polychlorinated Biphenyls (PCBs) (CAS No.: 001336-36-3)	mg/kg	參考US EPA 3540C方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 3540C method. Analysis was performed by GC/MS.	0.5	n.d.
多氯奈 / Polychlorinated Naphthalene (PCNs)	mg/kg	參考US EPA 3540C方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 3540C method. Analysis was performed by GC/MS.	5	n.d.
多氯三聯苯 / Polychlorinated Terphenyls (PCTs)	mg/kg	參考US EPA 3540C方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 3540C method. Analysis was performed by GC/MS.	0.5	n.d.
氯化石蠟 / Chlorinated Paraffin (C10~C13) (CAS No.: 085535-84-8)	%	參考US EPA 3540C: 1996方法，以氣相層析儀/電子補捉偵測器檢測. / With reference to US EPA 3540C: 1996 method. Analysis was performed by GC/ECD.	0.01	n.d.
2-(3', 5'-二叔丁基-2'-羟基苯基)苯並三氮唑 / 2-(3,5-di-tert-butyl-2-hydroxyphenyl)-2H-benzotriazole (CAS No.: 003846-71-7)	mg/kg	參考US EPA 3540C方法，以氣相層析質譜儀檢測之. / With reference to US EPA 3540C method. Analysis was performed by GC/MS.	5	n.d.
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS) PFOS — Acid PFOS — Metal Salt PFOS — Amide	mg/kg	參考US EPA 3540C: 1996方法，以液相層析質譜儀檢測全氟辛烷磺酸含量. / With reference to US EPA 3540C: 1996 method for PFOS Content. Analysis was performed by LC/MS.	10	n.d.
全氟辛酸(銨) / PFOA (CAS No.: 000335-67-1)	mg/kg	參考US EPA 3540C: 1996方法，以液相層析質譜儀檢測全氟辛酸(銨)含量. / With reference to US EPA 3540C: 1996 method for PFOA Content. Analysis was performed by LC/MS.	10	n.d.

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ASM HK & ASM TECHNOLOGY SINGAPORE

4/F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG (ASM HK), 2 YISHUN AVENUE 7, SINGAPORE (ASM TECHNOLOGY SINGAPORE)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
聚氯乙烯 / PVC	**	以紅外光譜分析及焰色法檢測. / Analysis was performed by FTIR and FLAME Test.	-	Negative
鹵素 / Halogen				
鹵素 (氟) / Halogen-Fluorine (F) (CAS No.: 014762-94-8)	mg/kg	參考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.
鹵素 (氯) / Halogen-Chlorine (Cl) (CAS No.: 022537-15-1)	mg/kg	參考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.
鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 010097-32-2)	mg/kg	參考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.
鹵素 (碘) / Halogen-Iodine (I) (CAS No.: 014362-44-8)	mg/kg	參考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.
石棉 / Asbestos				
陽起石 / Actinolite (CAS No.: 77536-66-4)	%	參考EPA 600/R-93/116 / 立體顯微鏡, 偏光顯微鏡 (PLM)及X光繞射定性分析法 (XRD) / With reference to EPA 600/R-	1	Negative
斜方角閃石 / Anthophyllite (CAS No.: 77536-67-5)	%	參考EPA 600/R-93/116 / 立體顯微鏡, 偏光顯微鏡 (PLM)及X光繞射定性分析法 (XRD) / With reference to EPA 600/R-	1	Negative
棕石棉 / Amosite (CAS No.: 12172-73-5)	%	參考EPA 600/R-93/116 / 立體顯微鏡, 偏光顯微鏡 (PLM)及X光繞射定性分析法 (XRD) / With reference to EPA 600/R-	1	Negative
白石棉 / Chrysotile (CAS No.: 12001-29-5)	%	參考EPA 600/R-93/116 / 立體顯微鏡, 偏光顯微鏡 (PLM)及X光繞射定性分析法 (XRD) / With reference to EPA 600/R-	1	Negative

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SGS Taiwan Ltd. 台灣檢驗科技股份有限公司
No. 61, Kai-Fa Road, Nanzih Export Processing Zone, Kaohsiung, Taiwan
t + 886 (07) 301 2121 f + 886 (07) 3010867
高雄市楠梓加工出口區開發路61號
www.tw.sgs.com
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測試報告
Test Report

ASM HK & ASM TECHNOLOGY SINGAPORE

4/F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG (ASM HK), 2 YISHUN AVENUE 7, SINGAPORE (ASM TECHNOLOGY SINGAPORE)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
青石棉 / Crocidolite (CAS No.: 12001-28-4)	%	參考EPA 600/R-93/116 / 立體顯微鏡, 偏光顯微鏡 (PLM)及X光繞射定性分析法 (XRD) / With reference to EPA 600/R-	1	Negative
透閃石 / Tremolite (CAS No.: 77536-68-6)	%	參考EPA 600/R-93/116 / 立體顯微鏡, 偏光顯微鏡 (PLM)及X光繞射定性分析法 (XRD) / With reference to EPA 600/R-	1	Negative
有機錫 / Organic-tin compounds				
三丁基錫 / Tributyl Tin (TBT)	mg/kg	本測試參考DIN 38407-13方法, 以氣相層析儀/火焰光度偵測器檢測. / With reference to DIN 38407-13. Analysis was performed by GC/FPD.	0.03	n.d.
三苯基錫 / Triphenyl Tin (TphT)	mg/kg	本測試參考DIN 38407-13方法, 以氣相層析儀/火焰光度偵測器檢測. / With reference to DIN 38407-13. Analysis was performed by GC/FPD.	0.03	n.d.
三丁基錫氧化物 / Tributyl Tin Oxide (TBTO)*** (CAS No.: 000056-35-9)	mg/kg	本測試參考DIN 38407-13方法, 以氣相層析儀/火焰光度偵測器檢測. / With reference to DIN 38407-13. Analysis was performed by GC/FPD.	-	n.d.
多溴聯苯總和 / Sum of PBBs	mg/kg	參考IEC 62321: 2008方法, 以氣相層析儀/質譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
一溴聯苯 / Monobromobiphenyl			5	n.d.
二溴聯苯 / Dibromobiphenyl			5	n.d.
三溴聯苯 / Tribromobiphenyl			5	n.d.
四溴聯苯 / Tetrabromobiphenyl			5	n.d.
五溴聯苯 / Pentabromobiphenyl			5	n.d.
六溴聯苯 / Hexabromobiphenyl			5	n.d.
七溴聯苯 / Heptabromobiphenyl			5	n.d.
八溴聯苯 / Octabromobiphenyl			5	n.d.
九溴聯苯 / Nonabromobiphenyl			5	n.d.
十溴聯苯 / Decabromobiphenyl			5	n.d.

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SGS Taiwan Ltd. 台灣檢驗科技股份有限公司
No. 61, Kai Fa Road, Nanzih Export Processing Zone, Kaohsiung, Taiwan
t + 886 (07)301 2121 f + 886 (07)3010867
高雄市楠梓加工出口區開發路61號
www.tw.sgs.com
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測試報告
Test Report

ASM HK & ASM TECHNOLOGY SINGAPORE

4/F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG (ASM HK), 2 YISHUN AVENUE 7, SINGAPORE (ASM TECHNOLOGY SINGAPORE)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
多溴聯苯醚總和 / Sum of PBDEs	mg/kg	參考IEC 62321: 2008方法，以氣相層析儀/質譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
一溴聯苯醚 / Monobromodiphenyl ether			5	n.d.
二溴聯苯醚 / Dibromodiphenyl ether			5	n.d.
三溴聯苯醚 / Tribromodiphenyl ether			5	n.d.
四溴聯苯醚 / Tetrabromodiphenyl ether			5	n.d.
五溴聯苯醚 / Pentabromodiphenyl ether			5	n.d.
六溴聯苯醚 / Hexabromodiphenyl ether			5	n.d.
七溴聯苯醚 / Heptabromodiphenyl ether			5	n.d.
八溴聯苯醚 / Octabromodiphenyl ether			5	n.d.
九溴聯苯醚 / Nonabromodiphenyl ether			5	n.d.
十溴聯苯醚 / Decabromodiphenyl ether			5	n.d.
偶氮 (AZO)				
1): 4-氨基二苯 / 4-AMINODIPHENYL (CAS No.: 000092-67-1)	mg/kg	參考LFGB 82.02-2方法，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
2): 聯苯胺 / BENZIDINE (CAS No.: 00092-87-5)	mg/kg	參考LFGB 82.02-2方法，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
3): 4-氯鄰甲苯胺 / 4-CHLORO-O-TOLUIDINE (CAS No.: 000095-69-2)	mg/kg	參考LFGB 82.02-2方法，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
4): 2-萘胺 / 2-NAPHTHYLAMINE (CAS No.: 000091-59-8)	mg/kg	參考LFGB 82.02-2方法，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
5): 鄰氨基二甲基偶氮 / O-AMINOAZOTOLUENE (CAS No.: 000097-56-3)	mg/kg	參考LFGB 82.02-2方法，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
6): 對硝基鄰甲苯胺 / 2-AMINO-4-NITROTOLUENE (CAS No.: 000099-55-8)	mg/kg	參考LFGB 82.02-2方法，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
7): 對氯苯胺 / P-CHLOROANILINE (CAS No.: 000106-47-8)	mg/kg	參考LFGB 82.02-2方法，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
8): 4-甲氧基-間苯二胺 / 2,4-DIAMINOANISOLE (CAS No.: 000615-05-4)	mg/kg	參考LFGB 82.02-2方法，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
9): 4,4'-二氨基二苯甲烷 / 4,4'-DIAMINODIPHENYLMETHANE (CAS No.: 000101-77-9)	mg/kg	參考LFGB 82.02-2方法，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
10): 3,3'-二氯聯苯胺 / 3,3'-DICHLOROBENZIDINE (CAS No.: 000091-94-1)	mg/kg	參考LFGB 82.02-2方法，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
11): 3,3'-二甲氧基聯苯胺 / 3,3'-DIMETHOXYBENZIDINE (CAS No.: 000119-90-4)	mg/kg	參考LFGB 82.02-2方法，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
12): 3,3'-二甲基聯苯胺 / 3,3'-DIMETHYLBENZIDINE (CAS No.: 000119-93-7)	mg/kg	參考LFGB 82.02-2方法，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
13): 3,3'-二甲基-4,4'-二氨基二苯甲烷 / 3,3'-DIMETHYL-4,4'-DIAMINODIPHENYLMETHANE (CAS No.: 000838-88-0)	mg/kg	參考LFGB 82.02-2方法，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
14): 2-甲氧基-5-甲基聯苯 / P-CRESIDINE (2-METHOXY-5-METHYLANILINE) (CAS No.: 000120-71-8)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
15): 4,4'-亞甲基雙 (氯苯胺) / 4,4'-METHYLENE-BIS- (2-CHLOROANILINE) (CAS No.: 000101-14-4)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
16): 4,4'-氧化雙苯胺 / 4,4'-OXYDIANILINE (CAS No.: 000101-80-4)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
17): 4,4'-硫代雙苯胺 / 4,4'-THIODIANILINE (CAS No.: 000139-65-1)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
18): 鄰甲苯胺 / O-TOLUIDINE (CAS No.: 000095-53-4)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
19): 2,4-二氨基甲苯 / 2,4-TOLUYLENEDIAMINE (CAS No.: 000095-80-7)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
20): 2,4,5-三甲基苯胺 / 2,4,5-TRIMETHYLANILINE (CAS No.: 000137-17-7)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
21): 鄰位甲氧基苯胺 / O-ANISIDINE (CAS No.: 000090-04-0)	mg/kg	參考LFGB 82.02-2方法, 以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.

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SGS Taiwan Ltd.
台灣檢驗科技股份有限公司
No. 61, Kai-Fa Road, Nanzih Export Processing Zone, Kaohsiung, Taiwan.
t + 886 (07) 301 2121 f + 886 (07) 3010867
高雄市楠梓加工出口區開發路61號
www.tw.sgs.com
Member of the SGS Group

測試報告
Test Report

ASM HK & ASM TECHNOLOGY SINGAPORE

4/F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG (ASM HK), 2 YISHUN AVENUE 7, SINGAPORE (ASM TECHNOLOGY SINGAPORE)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
22): 對氨基偶氮苯 / P-AMINOAZOBENZENE (CAS No.: 000060-09-3)	mg/kg	參考LFGB 82.02-2方法，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
23): 2,4-二甲基苯胺 / 2,4-XYLIDINE (CAS No.: 000095-68-1)	mg/kg	參考LFGB 82.02-2方法，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
24): 2,6-二甲基苯胺 / 2,6-XYLIDINE (CAS No.: 000087-62-7)	mg/kg	參考LFGB 82.02-2方法，以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
氟氯碳化物 / CFCs (Chlorofluorocarbons)				
Group I				n.d.
氟氯碳化物(Chlorofluorocarbon)-11 (CAS No.: 000075-69-4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物(Chlorofluorocarbon)-12 (CAS No.: 000075-71-8)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物(Chlorofluorocarbon)-113 (CAS No.: 000076-13-1)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物(Chlorofluorocarbon)-114 (CAS No.: 000076-14-2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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4/F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG (ASM HK), 2 YISHUN AVENUE 7, SINGAPORE (ASM TECHNOLOGY SINGAPORE)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
氟氯碳化物(Chlorofluorocarbon)-115 (CAS No.: 000076-15-3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
Group III				n.d.
氟氯碳化物(Chlorofluorocarbon)-13 (CAS No.: 000075-72-9)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物(Chlorofluorocarbon)-111 (CAS No.: 000354-56-3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物(Chlorofluorocarbon)-112 (CAS No.: 000076-12-0)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物(Chlorofluorocarbon)-211 (CAS No.: 000422-78-6)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物(Chlorofluorocarbon)-212 (CAS No.: 003182-26-1)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物(Chlorofluorocarbon)-213 (CAS No.: 002354-06-5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物(Chlorofluorocarbon)-214 (CAS No.: 029255-31-0)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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ASM HK & ASM TECHNOLOGY SINGAPORE

4/F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG (ASM HK), 2 YISHUN AVENUE 7, SINGAPORE (ASM TECHNOLOGY SINGAPORE)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
氟氯碳化物(Chlorofluorocarbon)-215 (CAS No.: 004259-43-2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物(Chlorofluorocarbon)-216 (CAS No.: 000661-97-2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物(Chlorofluorocarbon)-217 (CAS No.: 000422-86-6)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
海龍 (Halons)				
海龍(Halon)-1211 (CAS No.: 000353-59-3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
海龍(Halon)-1301 (CAS No.: 000075-63-8)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
海龍(Halon)-2402 (CAS No.: 000124-73-2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 / HCFCs (Hydrochlorofluorocarbons)				
氟氯氫碳化物(HCFC)-21 (CAS No.: 000075-43-4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-22 (CAS No.: 000075-45-6)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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ASM HK & ASM TECHNOLOGY SINGAPORE

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
氟氯氫碳化物(HCFC)-31 (CAS No.: 000593-70-4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-121 (CAS No.: 000354-14-3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-122 (CAS No.: 000354-21-2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-123 (CAS No.: 000306-83-2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-124 (CAS No.: 002837-89-0)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-131 (CAS No.: 000359-28-4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-132b (CAS No.: 001649-08-7)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-133a (CAS No.: 000075-88-7)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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4/F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG (ASM HK), 2 YISHUN AVENUE 7, SINGAPORE (ASM TECHNOLOGY SINGAPORE)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
氟氯氫碳化物(HCFC)-141b (CAS No.: 001717-00-6)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-142b (CAS No.: 000075-68-3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-221 (CAS No.: 000422-26-4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-222 (CAS No.: 000422-49-1)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-223 (CAS No.: 000422-52-6)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-224 (CAS No.: 000422-54-8)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-225ca (CAS No.: 000422-56-0)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-225cb (CAS No.: 000507-55-1)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
氟氯氫碳化物(HCFC)-226 (CAS No.: 000431-87-8)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-231 (CAS No.: 000421-94-3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-232 (CAS No.: 000460-89-9)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-233 (CAS No.: 007125-84-0)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-234 (CAS No.: 000425-94-5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-235 (CAS No.: 000460-92-4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-241(CAS No.: 000666-27-3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-242 (CAS No.: 000460-63-9)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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No. 61, Kai Fa Road, Nanzih Export Processing Zone, Kaohsiung, Taiwan
t + 886 (07) 301 2121 f + 886 (07) 301 0867
高雄市楠梓加工出口區開發路61號
www.tw.sgs.com
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測試報告
Test Report

ASM HK & ASM TECHNOLOGY SINGAPORE

4/F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG (ASM HK), 2 YISHUN AVENUE 7, SINGAPORE (ASM TECHNOLOGY SINGAPORE)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
氟氯氫碳化物(HCFC)-243 (CAS No.: 000460-69-5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-244	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-251 (CAS No.: 000421-41-0)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-252 (CAS No.: 000819-00-1)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-253 (CAS No.: 000460-35-5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-261 (CAS No.: 000420-97-3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-262 (CAS No.: 000421-02-03)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物(HCFC)-271 (CAS No.: 000430-55-7)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
不完全鹵化氟溴化物 / HBFCs (Hydrobromofluorocarbons)				
不完全鹵化氟溴化物(HBFC)-21B2 (CHFBr2) (CAS No.: 001868-53-7)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-22B1 (CHF2Br) (CAS No.: 001511-62-2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-31B1 (CH2FBr) (CAS No.: 000373-52-4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-121B4 (C2HFBr4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-122B3 (C2HF2Br3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-123B2 (C2HF3Br2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-124B1 (C2HF4Br)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-131B3 (C2H2FBr3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
不完全鹵化氟溴化物(HBFC)-132B2 (C2H2F2Br2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-133B1 (C2H2F3Br)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-141B2 (C2H3FBr2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-142B1 (C2H3F2Br)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-151B1 (C2H4FBr)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-221B6 (C3HFBr6)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-222B5 (C3HF2Br5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-223B4 (C3HF3Br4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
不完全鹵化氟溴化物(HBFC)-224B3 (C3HF4Br3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-225B2 (C3HF5Br2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-226B1 (C3HF6Br)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-231B5 (C3H2FBr5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-232B4 (C3H2F2Br4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-233B3 (C3H2F3Br3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-234B2 (C3H2F4Br2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-235B1 (C3H2F5Br)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
不完全鹵化氟溴化物(HBFC)-241B4 (C3H3FBr4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-242B3 (C3H3F2Br3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-243B2 (C3H3F3Br2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-244B1 (C3H3F4Br)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-251B3 (C3H4FBr3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-252B2 (C3H4F2Br2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-253B1 (C3H4F3Br)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-261B2 (C3H5FBr2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
不完全鹵化氟溴化物(HBFC)-262B1 (C3H5F2Br)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物(HBFC)-271B1 (C3H6FBr)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物 / HFCs (Hydrofluorocarbon)				
氫氟碳化物(HFC)-23 (CHF3)(CAS No.: 000075-46-7)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物(HFC)-32 (CH2F2)(CAS No.: 000075-10-5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物(HFC)-41 (CH3F)(CAS No.: 000593-53-3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物(HFC)-43-10mee (C5H2F10)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物(HFC)-125 (C2HF5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物(HFC)-134 (C2H2F4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
氫氟碳化物(HFC)-134a (CH2FCF3)(CAS No.: 000811-97-2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物(HFC)-143 (CH3F3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物(HFC)-143a (CH3F3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物(HFC)-152a (C2H4F2)(CAS No.: 000075-37-6)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物(HFC)-227ea (C3HF7)(CAS No.: 000431-89-0)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物(HFC)-236ea (C3H2F6)(CAS No.: 000431-63-0)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物(HFC)-236fa (C3H2F6)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物(HFC)-245ca (C3H3F5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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測試報告
Test Report

ASM HK & ASM TECHNOLOGY SINGAPORE

4/F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG (ASM HK), 2 YISHUN AVENUE 7, SINGAPORE (ASM TECHNOLOGY SINGAPORE)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
氫氟碳化物(HFC)-245fa (C3H3F5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物(HFC)-365mfc (C4H5F5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
全氟碳化物 / PFCs (Perfluorocarbon)				
四氟甲烷 / F14 (CAS No.: 000075-73-0)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
六氟乙烷 / Fluorocarbon 116 (CAS No.: 000076-16-4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
八氟丙烷 / Freon 218 (CAS No.: 000076-19-7)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
十氟丁烷 / Decafluorobutane (CAS No.: 000355-25-9)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
八氟環丁烷 / Freon C318 (CAS No.: 000115-25-3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
全氟-1-丁烯 / Perfluor-1-butene (CAS No.: 000357-26-6)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
全氟異丁烯 / perfluorisobutene (CAS No.: 000382-21-8)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,4-二氫八氟丁烷 / 1,4-dihydrooctafluorobutane (CAS No.: 000377-36-6)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
2-全氟甲基丁烷 / nonafluor-2-(trifluoromethyl)butane (CAS No.: 000594-91-2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
全氟戊烷 / perfluoro-n-pentane (CAS No.: 000678-26-2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
2-全氟甲基戊烷 / 2-perfluoromethylpentane (CAS No.: 000355-04-4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
全氟己烷 / perfluorohexane (CAS No.: 000355-42-0)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氯化碳氫化物 / CHCs (Chlorinate hydrocarbon)				
1,1,1,2-四氯乙烷 / 1,1,1,2-Tetrachloroethane (CAS No.: 000630-20-6)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,1,1-三氯乙烷 / 1,1,1-Trichloroethane (CAS No.: 000071-55-6)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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ASM HK & ASM TECHNOLOGY SINGAPORE

4/F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG (ASM HK), 2 YISHUN AVENUE 7, SINGAPORE (ASM TECHNOLOGY SINGAPORE)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
1,1,2,2-四氯乙烷 / 1,1,2,2-Tetrachloroethane (CAS No.: 000079-34-5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,1,2-三氯乙烷 / 1,1,2-Trichloroethane (CAS No.: 000079-00-5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,1-二氯乙烷 / 1,1-Dichloroethane (CAS No.: 000075-34-3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,1-二氯乙烯 / 1,1-Dichloroethene (CAS No.: 000075-35-4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,1-二氯丙烯 / 1,1-Dichloropropene (CAS No.: 000563-58-6)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,2,3-三氯丙烷 / 1,2,3-Trichloropropane (CAS No.: 000096-18-4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,2-二氯乙烷 / 1,2-Dichloroethane (CAS No.: 000107-06-2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,2-二氯丙烷 / 1,2-Dichloropropane (CAS No.: 000078-87-5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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No. 61, Kai-Fa Road, Nanzih Export Processing Zone, Kaohsiung, Taiwan
t + 886 (0)7 301 2121 f + 886 (0)7 3010887
高雄市楠梓加工出口區開發路61號
www.tw.sgs.com
Member of the SGS Group

測試報告
Test Report

ASM HK & ASM TECHNOLOGY SINGAPORE

4/F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG (ASM HK), 2 YISHUN AVENUE 7, SINGAPORE (ASM TECHNOLOGY SINGAPORE)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
1,3-二氯丙烷 / 1,3-Dichloropropane (CAS No.: 000142-28-9)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
2,2-二氯丙烷 / 2,2-Dichloropropane (CAS No.: 000594-20-7)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
四氯甲烷(四氯化碳) / Carbon tetrachloride (CAS No.: 000056-23-5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氯乙烷 / Chloroethane (CAS No.: 000075-00-3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氯仿 / Chloroform (CAS No.: 000067-66-3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氯甲烷 / Chloromethane (CAS No.: 000074-87-3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
順-1,2-二氯乙烯 / cis-1,2-Dichloroethene (CAS No.: 000156-59-2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
順-1,3-二氯丙烯 / cis-1,3-Dichloropropene (CAS No.: 010061-01-5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) NO.1
六氯丁二烯 / Hexachlorobutadiene (CAS No.: 000087-68-3)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
二氯甲烷 / Dichloromethane (CAS No.: 000075-09-2)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
四氯乙烯 / Tetrachloroethene (CAS No.: 000127-18-4)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
反-1,2-二氯乙烯 / trans-1,2-Dichloroethene (CAS No.: 000156-60-5)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
反-1,3-二氯丙烯 / trans-1,3-Dichloropropene (CAS No.: 010061-02-6)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
三氯乙烯 / Trichloroethylene (CAS No.: 000079-01-6)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
溴甲烷 / Bromomethane (CAS No.: 000074-83-9)	mg/kg	參考US EPA 5021方法，以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	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 (方法偵測極限值)
4. "-" = Not Regulated (無規格值)

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5. **= Qualitative analysis (No Unit) 定性分析(無單位)
6. Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
7. Negative = 陰性 (< 1.0 %), Positive = 陽性 (> 1.0 %)
8. 聚氯乙烯測試由SGS其他實驗室執行 (The PVC test was subcontracted to other SGS Laboratory.)
9. 石棉測試由SGS其他實驗室執行 (The Asbestos test was subcontracted to other SGS Laboratory.)
10. ***: 該物質是由"三丁基錫", 之測試結果計算得知. 其MDL是針對"三丁基錫"之評估.
(The substance was calculated by the test results of Tributyl Tin.
The MDL is evaluated for Tributyl Tin, Triphenyl Tin.)
11. # = 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 cm^2 tested areas . /
該溶液濃度≧0.02 mg/kg with 50 cm^2 (tested areas)

PFOS參考資訊(Reference Information) : 指令 2006/122/EC (Directive 2006/122/EC)

(1) 該物質不可置於市場上或使用於特殊物質或配置成分重量濃度等於或大於0.005%.
(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) 該物質不可置於市場上的半成品或商品或其物件; 假若零件上明顯地具有PFOS並參照結構上及微細構造上計算PFOS重量濃度等於或大於0.1%, 而紡織品或其他覆蓋物質, 如果PFOS在覆蓋物質中含量等於或大於1μg/m^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^2 of the coated material.)

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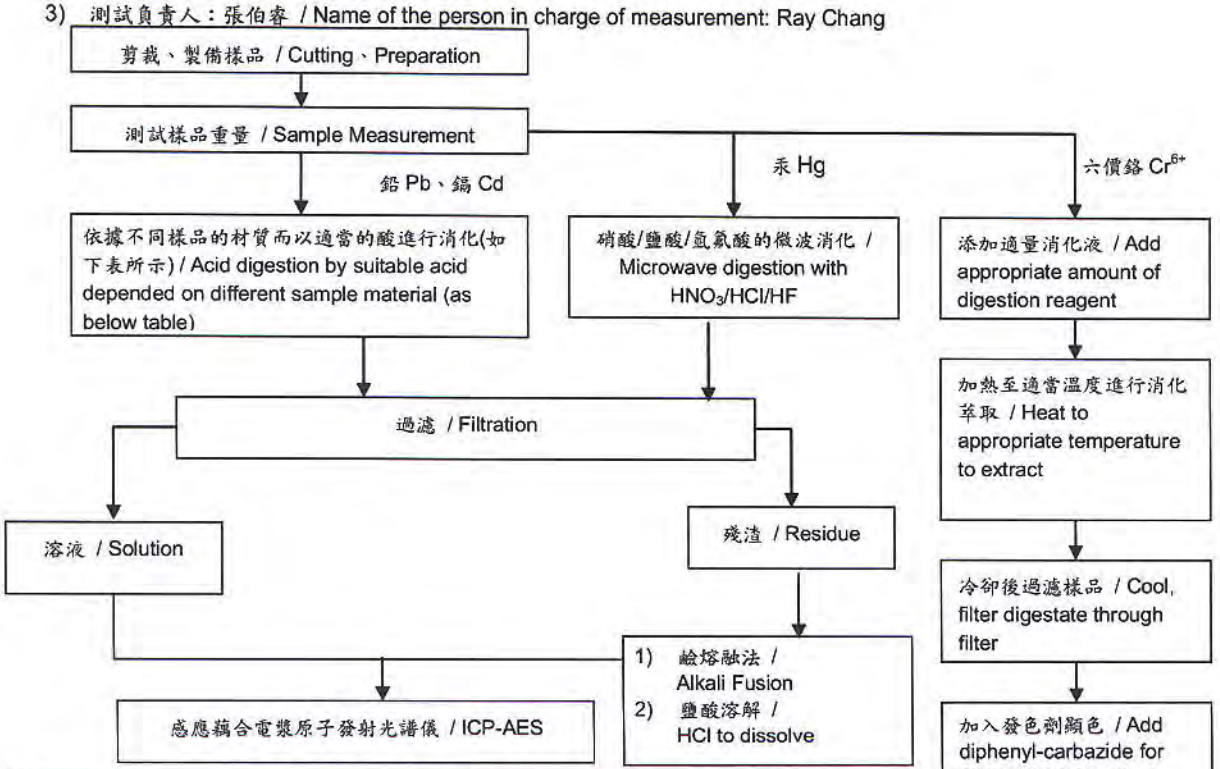
1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} test method excluded)

2) 測試人員：張俊雄 / Name of the person who made measurement: Alex Chang

3) 測試負責人：張伯睿 / Name of the person in charge of measurement: Ray Chang



樣品材質 / Sample Material	消化酸液種類 / Digestion Acid
鋼, 銅, 鋁, 焊錫 / Steel, copper, aluminum, solder	王水, 硝酸, 鹽酸, 氫氟酸, 雙氧水 / Aqua regia, HNO_3, HCl, HF, H_2O_2
玻璃 / Glass	硝酸, 氫氟酸 / HNO_3/HF
金, 鉑, 鈀, 陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO_3
塑膠 / Plastic	硫酸, 雙氧水, 硝酸, 鹽酸 / H_2SO_4, H_2O_2, HNO_3, HCl
其他 / Others	加入任何酸至完全溶解 / Any acid to total digestion

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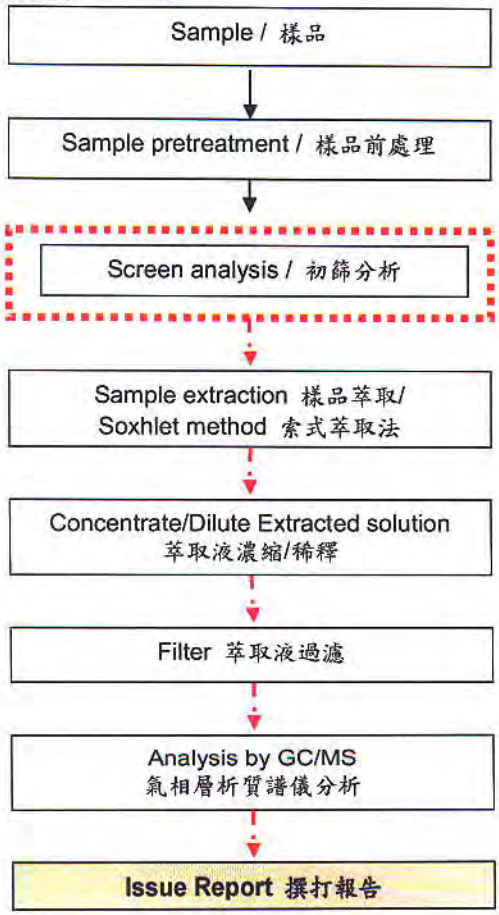
多溴聯苯/多溴聯苯醚 分析流程圖 / PBB/PBDE analytical FLOW CHART

1)測試人員：曹嘉琪 / Name of the person who made measurement: Anson Tsao
2)測試負責人：張伯睿 / Name of the person in charge of measurement: Ray 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 – · – →



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測試報告
Test Report

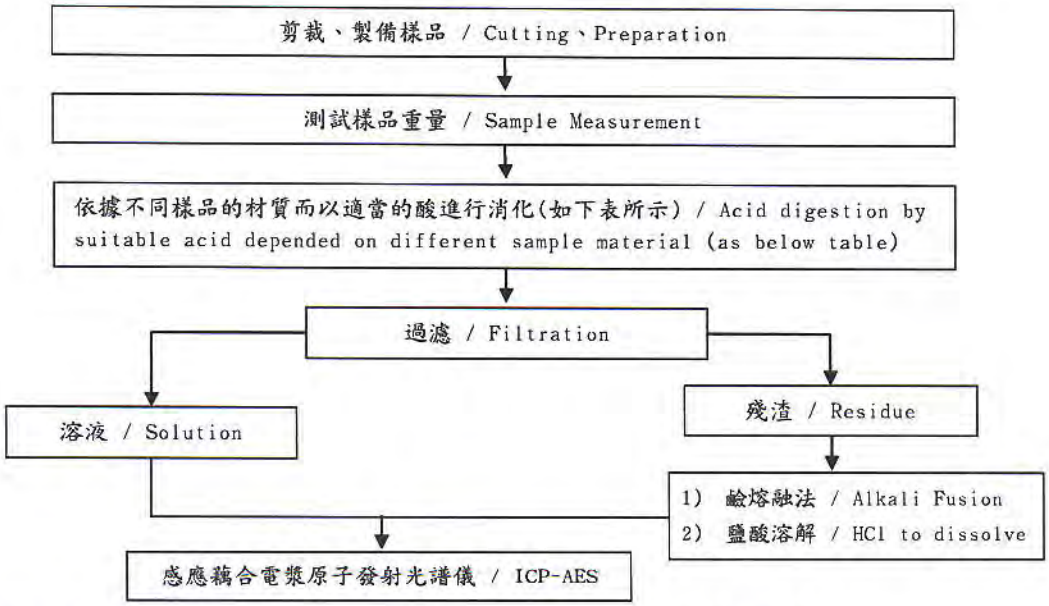
ASM HK & ASM TECHNOLOGY SINGAPORE

4/F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG (ASM HK), 2 YISHUN AVENUE 7, SINGAPORE (ASM TECHNOLOGY SINGAPORE)

1) 根據以下的流程圖之條件，樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.
2) 測試人員：張俊雄 / Name of the person who made measurement: Alex Chang
3) 測試負責人：張伯睿 / Name of the person in charge of measurement: Ray Chang

元素以 ICP-AES 分析的消化流程圖

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



鋼,銅,鋁,焊錫 / Steel, copper, aluminum, solder	王水,硝酸,鹽酸,氫氟酸,雙氧水 / Aqua regia, HNO_3, HCl, HF, H_2O_2
玻璃 / Glass	硝酸,氫氟酸 / HNO_3/HF
金,鉑,鈀,陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO_3
塑膠 / Plastic	硫酸,雙氧水,硝酸,鹽酸 / H_2SO_4, H_2O_2, HNO_3, HCl
其他 / Others	加入任何酸至完全溶解 / Any acid to total digestion

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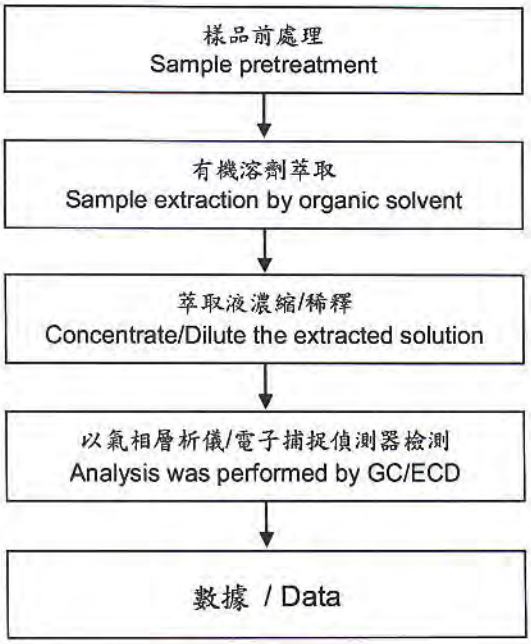
含氯阻燃劑分析流程 /

Chlorinated Flame retardant analytical flow chart

1) 測試人員：曹嘉琪 / Name of the person who made measurement: Anson Tsao
2) 測試負責人：張伯睿 / Name of the person in charge of measurement: Ray Chang

- 參考方法(Reference method): USEPA 3540
- 測試項目(Test Items): PCBs, CP, MCCP / 多氯聯苯, 氯化石蠟, 中鏈氯化石蠟



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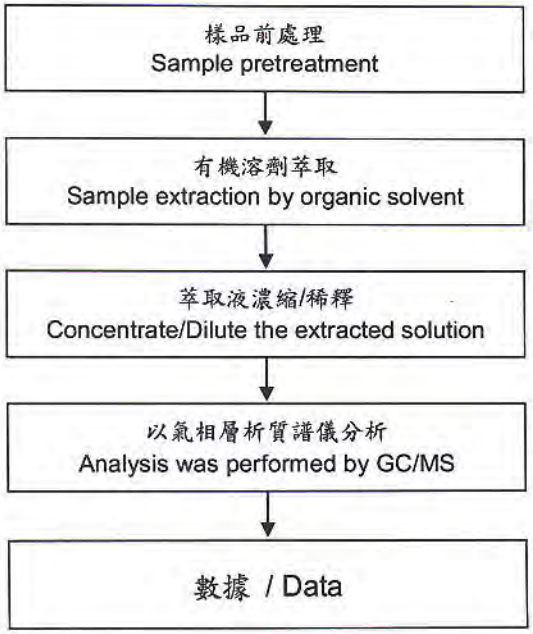
含氯阻燃劑分析流程 /

Chlorinated Flame retardant analytical flow chart

1) 測試人員：曹嘉琪 / Name of the person who made measurement: Anson Tsao
2) 測試負責人：張伯睿 / Name of the person in charge of measurement: Ray Chang

- 參考方法(Reference method): US EPA 8270D, US EPA 3540
- 測試項目(Test Items): PCNs, PCTs, Mirex / 多氯奈, 多氯三聯苯,滅蟻靈,



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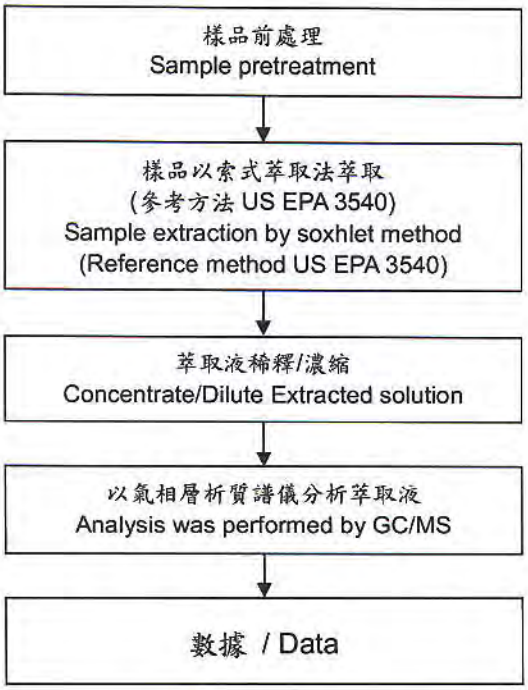
苯並三唑類化合物分析流程圖 /
Analytical flow chart of benzotriazole content

1) 測試人員：曹嘉琪 / Name of the person who made measurement: Anson Tsao
2) 測試負責人：張伯睿 / Name of the person in charge of measurement: Ray Chang



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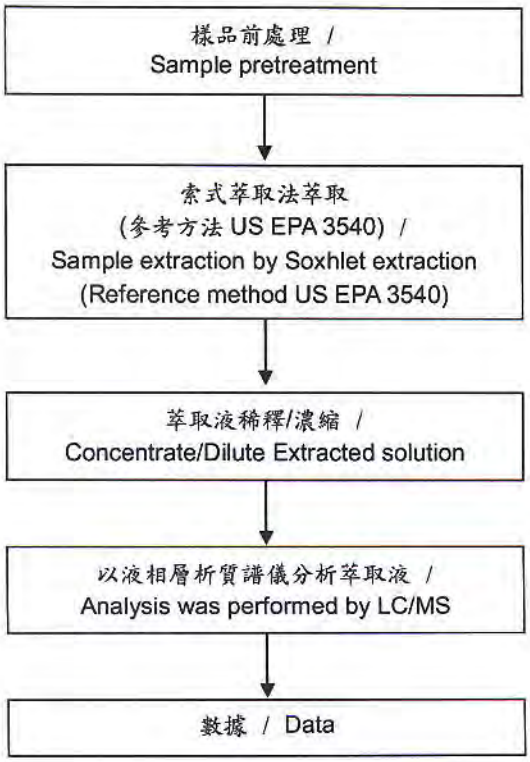
全氟辛酸(鹽)/ 全氟辛烷磺酸分析流程圖 /
Analytical flow chart of PFOA/PFOS content

1)測試人員：曹嘉琪 / Name of the person who made measurement: Anson Tsao

2)測試負責人：張伯睿 / Name of the person in charge of measurement: Ray Chang



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聚氯乙烯物質判定分析流程圖 /

Analysis flow chart for determination of PVC in material

1)測試人員：邱韻如 / Name of the person who made measurement: Joyce Chiu
2)測試負責人：林立翔 / Name of the person in charge of measurement: Roger Lin

樣品前處理 / Sample pre-treatment

↓

焰色法檢測 / Flame test

↓

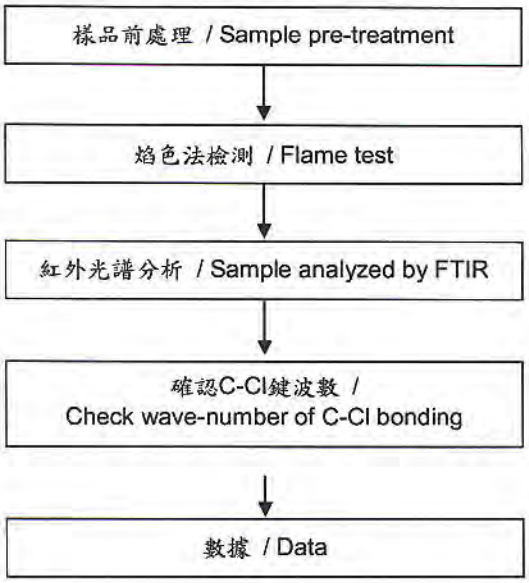
紅外光譜分析 / Sample analyzed by FTIR

↓

確認C-Cl鍵波數 /
Check wave-number of C-Cl bonding

↓

數據 / Data



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

1) 測試人員：洪秀眞/ Name of the person who made measurement: Jean Hung
2) 測試負責人：張伯睿/ Name of the person in charge of measurement: Ray Chang

樣品拍照及報告編號 /
Sample picture and report number

↓

樣品前處理/分樣 /
Sample pretreatment/separation

↓

秤重及將樣品放入樣品槽中 /
Weighting and putting sample in cell

↓

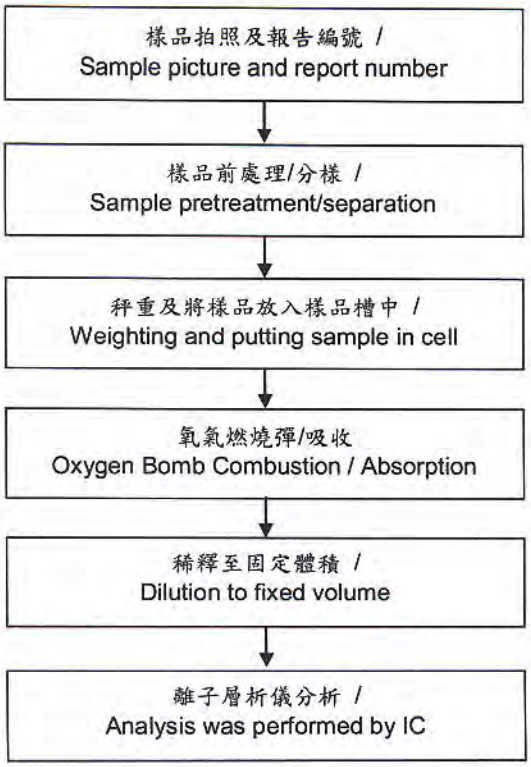
氧氣燃燒彈/吸收
Oxygen Bomb Combustion / Absorption

↓

稀釋至固定體積 /
Dilution to fixed volume

↓

離子層析儀分析 /
Analysis was performed by IC



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測試報告
Test Report

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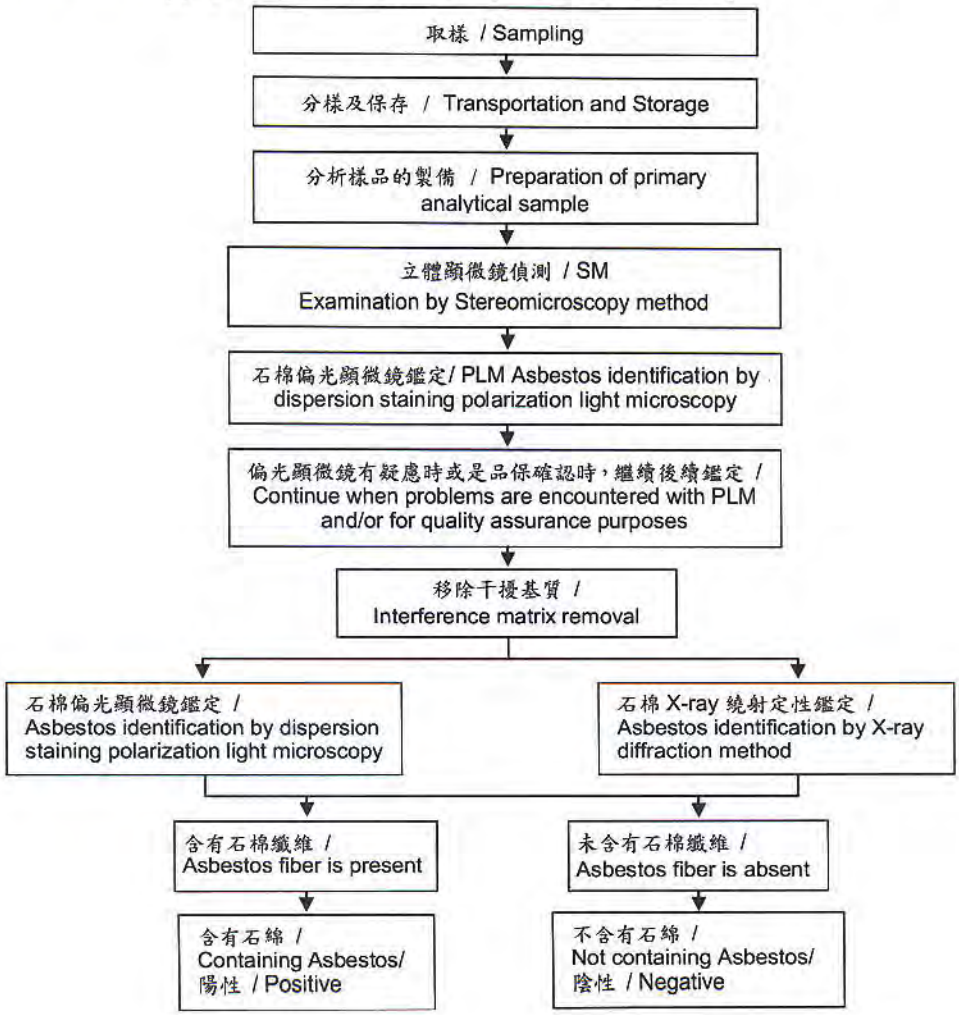
石棉物質判定分析流程圖 / Analysis flow chart for determination of Asbestos

1) 測試人員：高鍵忠 / Name of the person who made measurement: Victor Kao
2) 測試負責人：魏明芬 / Name of the person in charge of measurement: Wendy Wei

【參考方法(Reference method): EPA 600/R-93/116】



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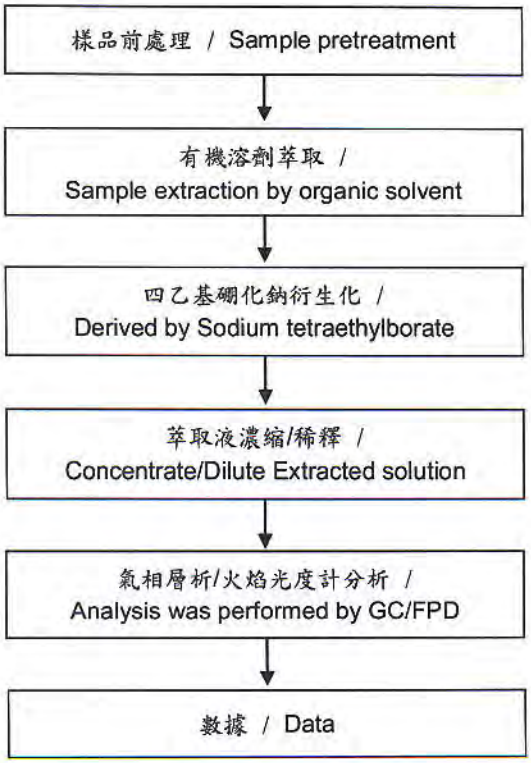
有機錫分析流程圖 / Analytical flow chart of Organic-Tin content

1) 測試人員：曹嘉琪 / Name of the person who made measurement: Anson Tsao
2) 測試負責人：張伯容 / Name of the person in charge of measurement: Ray Chang



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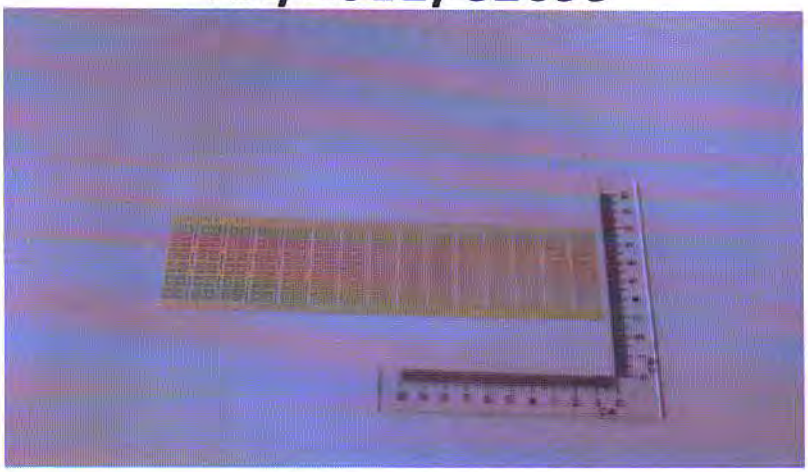
* 照片中如有箭頭標示，則表示為實際檢測之樣品/部位. *
(The tested sample / part is marked by an arrow if it's shown on the photo.)

KA/2011/C1699



** 報告結尾(End of Report) **

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Test Report

No. : KA/2012/70661 Date : 2012/07/13 Page : 1 of 28

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2 YISHUN AVENUE 7, SINGAPORE 768924

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

Sample Description	:	Ni-Pd-Au FRAMES
Sample Receiving Date	:	2012/07/09
Testing Period	:	2012/07/09 TO 2012/07/13
Sample Submitted By	:	ASM TECHNOLOGY SINGAPORE PTD LTD

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

Ray Chang

Ray Chang / Asst. Manager
Signed for and on behalf of
SGS Taiwan Limited

SGS TAIWAN LTD SGS TAIWAN

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Test Result(s)

PART NAME NO.1 : SILVER Ni-Pd-Au FRAMES

Test Item (s):	Unit	Method	MDL	Result No.1
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 boiling water extraction#	**	With reference to IEC 62321: 2008 and performed by boiling water extraction Method.	0.02mg/kg with 50 cm^2 surface area	Negative
Hexavalent Chromium Cr(VI)	mg/kg	With reference to US EPA Method 3060A & 7196A for Hexavalent Chromium. Analysis was performed by UV-Vis Spectrometry.	2	n.d.
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	mg/kg	With reference to IEC 62321: 2008 and performed by GC/MS.	-	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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Test Item (s):	Unit	Method	MDL	Result No.1
Polychlorinated Biphenyls (PCBs)	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.
Chlorinated Paraffin (C10~C13) (CAS No.: 85535-84-8)	%	With reference to US EPA 3540C method. Analysis was performed by GC/ECD.	0.01	n.d.
Antimony (Sb)	mg/kg	With reference to US EPA Method 3052 for Antimony Content. Analysis was performed by ICP-AES.	2	n.d.
Beryllium (Be)	mg/kg	With reference to US EPA Method 3052 for Beryllium Content. Analysis was performed by ICP-AES.	2	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.
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.
Organic-tin compounds				
Tributyl Tin (TBT)	mg/kg	With reference to DIN 38407-13. Analysis was performed by GC/FPD.	0.03	n.d.
Triphenyl Tin (TphT)	mg/kg	With reference to DIN 38407-13. Analysis was performed by GC/FPD.	0.03	n.d.
Tributyl Tin Oxide (TBTO)*** (CAS No.: 56-35-9)	mg/kg	With reference to DIN 38407-13. Analysis was performed by GC/FPD.	-	n.d.

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Test Item (s):	Unit	Method	MDL	Result No.1
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	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Asbestos				
Actinolite (CAS No.: 77536-66-4)	%	With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD.	1	Negative
Anthophyllite (CAS No.: 77536-67-5)	%	With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD.	1	Negative
Amosite (CAS No.: 12172-73-5)	%	With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD.	1	Negative
Chrysotile (CAS No.: 12001-29-5)	%	With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD.	1	Negative
Crocidolite (CAS No.: 12001-28-4)	%	With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD.	1	Negative
Tremolite (CAS No.: 77536-68-6)	%	With reference to EPA 600/R-93/116 method. Analysis was performed by SM, PLM and XRD.	1	Negative
CFC's (Chlorofluorocarbons)				
Group I				n.d.
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.

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Test Item (s):	Unit	Method	MDL	Result No.1
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.
Group III				n.d.
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.
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.

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Test Item (s):	Unit	Method	MDL	Result No.1
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.
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.
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.

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Test Item (s):	Unit	Method	MDL	Result No.1
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.
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.

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Test Item (s):	Unit	Method	MDL	Result No.1
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.
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.

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Test Item (s):	Unit	Method	MDL	Result No.1
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.
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.

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Test Item (s):	Unit	Method	MDL	Result No.1
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.
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.
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.

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Test Item (s):	Unit	Method	MDL	Result No.1
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.
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-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-236fa (C3H2F6)	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.

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Test Item (s):	Unit	Method	MDL	Result No.1
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.
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.
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.
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.

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Test Item (s):	Unit	Method	MDL	Result No.1
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.
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.

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Test Item (s):	Unit	Method	MDL	Result No.1
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.
Bromomethane (CAS No.: 74-83-9)	mg/kg	With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	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.
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.

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Test Item (s):	Unit	Method	MDL	Result No.1
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): P-AMINOAZOBENZENE (CAS No.: 60-09-3)	mg/kg	With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
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.

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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. # = 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
6. ** = Qualitative analysis (No Unit)
7. ***: The substance was calculated by the test results of Tributyl Tin, Triphenyl Tin or element (Ex. Antimony、Beryllium、Silicon、Zinc or Phosphorus respectively). The MDL is evaluated for Tributyl Tin, Triphenyl Tin or element (Ex. Antimony、Beryllium、Silicon、Zinc or Phosphorus respectively.)
8. PVC:Negative = Undetectable / Positive = Detectable
9. Asbestos:Negative = "< 1.0 %", Positive = "> 1.0 %"
10. The Asbestos test was subcontracted to other SGS Laboratory.
11. The PVC test was subcontracted to other SGS Laboratory.

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.

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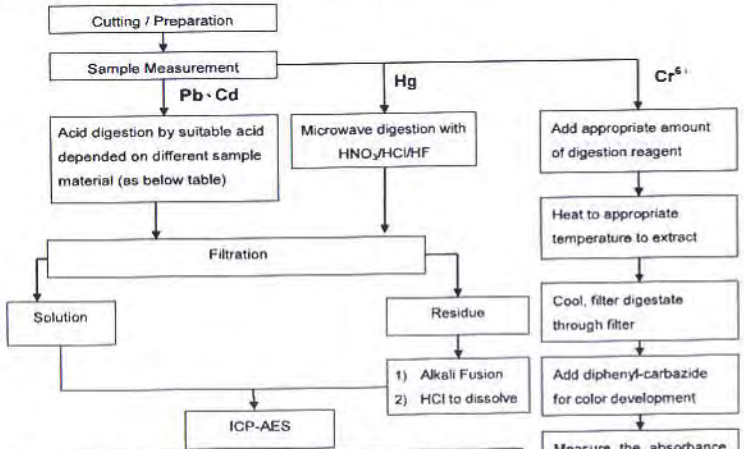
1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr6+ test method excluded)
2) Name of the person who made measurement: Alex Chang
3) Name of the person in charge of measurement: Ray Chang



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	Any acid 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.

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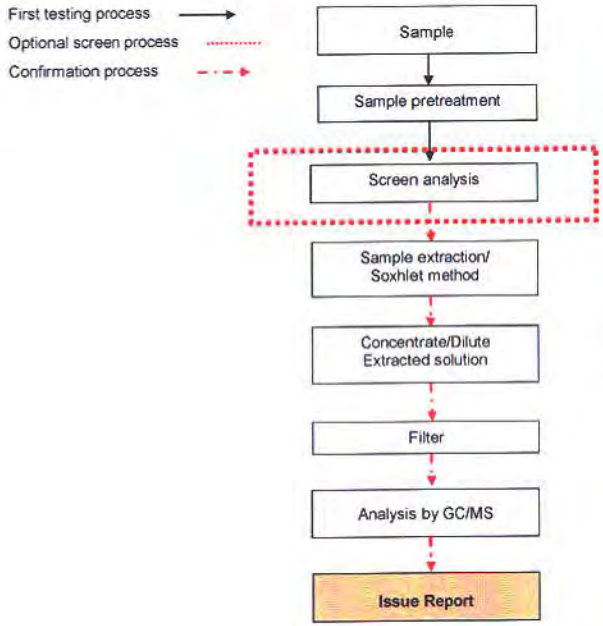
PBB/PBDE analytical FLOW CHART

1) Name of the person who made measurement: Anson Tsao
2) Name of the person in charge of measurement: Ray Chang



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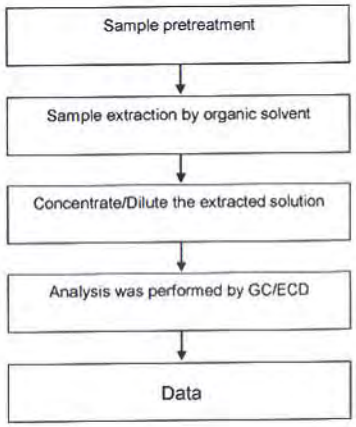
Chlorinated Flame retardant analytical flow chart

1) Name of the person who made measurement: Anson Tsao
2) Name of the person in charge of measurement: Ray Chang

- Reference method: USEPA 3540
- Test Items: PCBs, CP, MCCP



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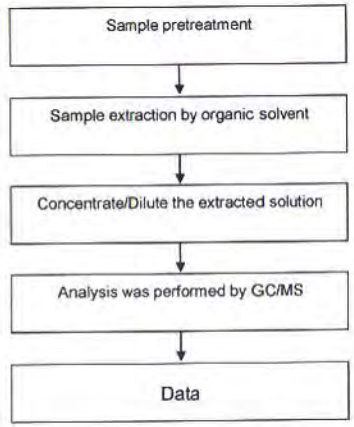
Chlorinated Flame retardant analytical flow chart

1) Name of the person who made measurement: Anson Tsao
2) Name of the person in charge of measurement: Ray Chang

- Reference method: US EPA 8270D, US EPA 3540
- Test Items: PCNs, PCTs, Mirex



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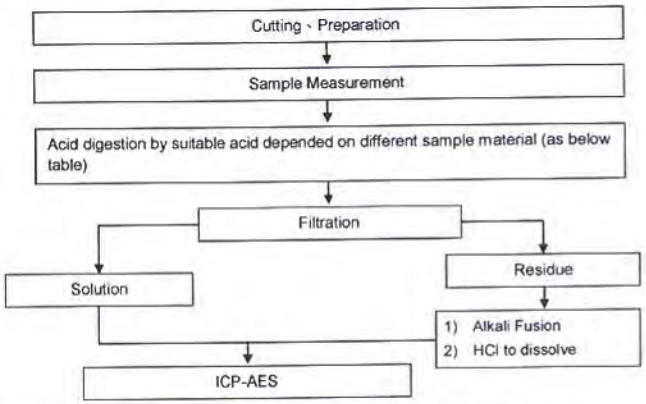
1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
2) Name of the person who made measurement: Alex Chang
3) Name of the person in charge of measurement: Ray Chang

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	Any acid to total digestion

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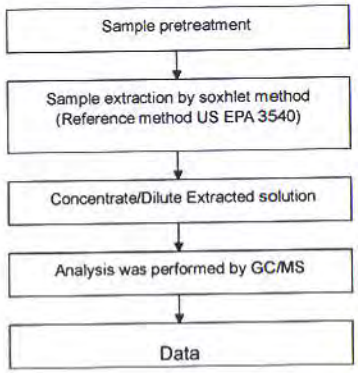
Analytical flow chart of benzotriazole content

1) Name of the person who made measurement: Anson Tsao
2) Name of the person in charge of measurement: Ray Chang



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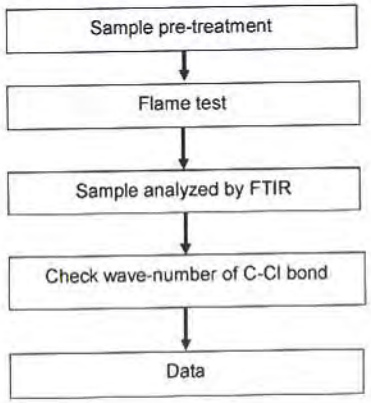
Analysis flow chart for determination of PVC in polymer material

1) Name of the person who made measurement: Joyce Chiu
2) Name of the person in charge of measurement: Roger Lin

Sample pre-treatment
↓
Flame test
↓
Sample analyzed by FTIR
↓
Check wave-number of C-Cl bond
↓
Data



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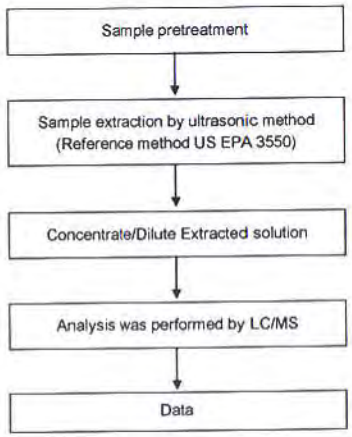
Analytical flow chart of PFOA/PFOS content

1) Name of the person who made measurement: Anson Tsao
2) Name of the person in charge of measurement: Ray Chang

Sample pretreatment
↓
Sample extraction by ultrasonic method (Reference method US EPA 3550)
↓
Concentrate/Dilute Extracted solution
↓
Analysis was performed by LC/MS
↓
Data



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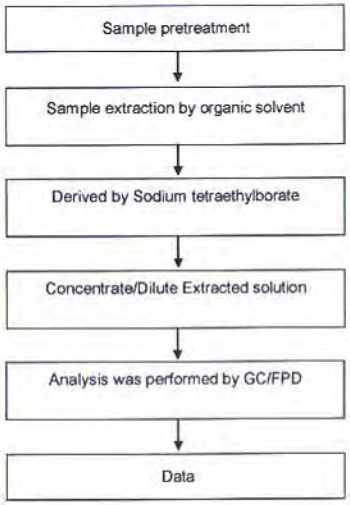
Analytical flow chart of Organic-Tin content

1) Name of the person who made measurement: Anson Tsao
2) Name of the person in charge of measurement: Ray Chang



Sample pretreatment
↓
Sample extraction by organic solvent
↓
Derived by Sodium tetraethylborate
↓
Concentrate/Dilute Extracted solution
↓
Analysis was performed by GC/FPD
↓
Data

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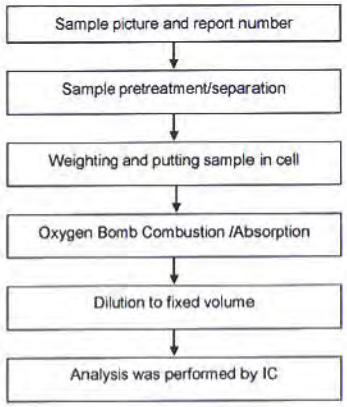
Analytical flow chart of halogen content

1) Name of the person who made measurement: Jean Hung
2) Name of the person in charge of measurement: Ray Chang



Sample picture and report number
↓
Sample pretreatment/separation
↓
Weighting and putting sample in cell
↓
Oxygen Bomb Combustion /Absorption
↓
Dilution to fixed volume
↓
Analysis was performed by IC

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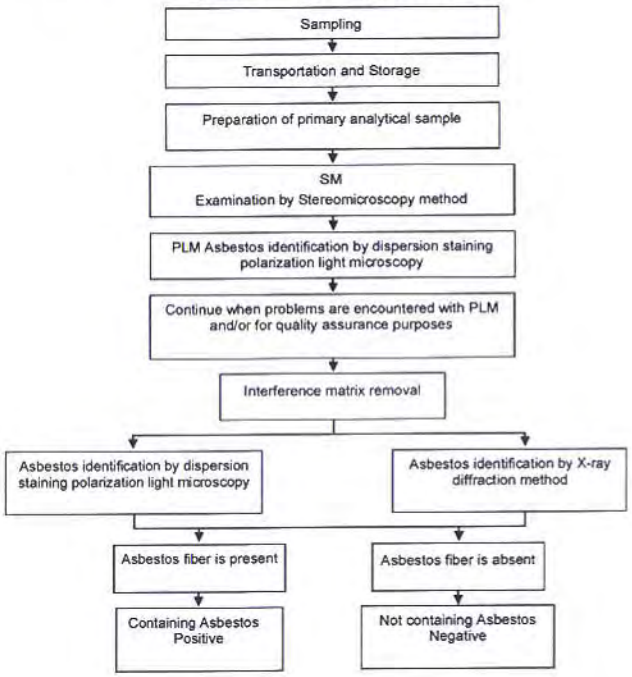
Analysis flow chart for determination of Asbestos

1) Name of the person who made measurement: Victor Kao
2) Name of the person in charge of measurement: Wendy Wei

[Reference method: EPA 600/R-93/116]



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* The tested sample / part is marked by an arrow if it's shown on the photo. *

KA/2012/70661

** End of Report **

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