

Test Report

3M TAIWAN LTD.

66, 800 LANE, CHUNG-SHAN ROAD, YANG-MEI, TAOYUAN, TAIWAN, R.O.C.

Report No. : KA/2009/70438

Date : 2009/07/14

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

Sample Description : ULTRA HIGHT TEMPERATURE TAPE
Style/Item No. : 9077 9079
Sample Receiving Date : 2009/07/08
Testing Period : 2009/07/08 TO 2009/07/14

Test Result(s) : - Please see the next page(s) -

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

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Test Result(s)

PART NAME NO.1 : TRANSPARENT ULTRA HIGHT TEMPERATURE TAPE

Test Item (s)	Unit	Method	MDL	Result		
				No. 1		
Cadmium (Cd)	mg/kg	With reference to IEC 62321:2008. Determination of Cadmium by ICP-AES.	2	n.d.		
Hexavalent Chromium Cr(VI) by alkaline extraction	mg/kg	With reference to IEC 62321:2008. Determination of Hexavalent Chromium for non-metallic samples by UV/Vis Spectrometry.	2	n.d.		
Mercury (Hg)	mg/kg	With reference to IEC 62321:2008. Determination of Mercury by ICP-AES.	2	n.d.		
Lead (Pb)	mg/kg	With reference to IEC 62321:2008. Determination of Lead by ICP-AES.	2	n.d.		
Sum of PBBs	mg/kg	With reference to IEC 62321:2008. Determination of PBBs and PBDEs 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. Determination of PBBs and PBDEs 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
PERFLUOROOCTANOIC ACID (PFOA)	mg/kg	With reference to US EPA 3540C : 1996 method for PFOA Content. Analysis was performed by LC/MS.	10	n.d.
PERFLUOROOCTANE SULFONATES (PFOS) PFOS – Acid PFOS – Metal Salt PFOS – Amide	mg/kg	With reference to US EPA 3540C : 1996 method for PFOS Content. Analysis was performed by LC/MS.	10	n.d.
PVC (CAS NO.: 9002-86-2)	**	Analysis was performed by FTIR and FLAME Test.	-	Negative
Antimony (Sb)	mg/kg	With reference to US EPA 3052. Analysis was performed by ICP-AES.	2	n.d.
Antimony trioxide (Sb ₂ O ₃) (CAS No.:1309-64-4)***	mg/kg	With reference to US EPA Method 3052 for Antimony Content. Analysis was performed by ICP-AES.	2	n.d.
Halogen				
Halogen-Chlorine (Cl) (CAS No.: 022537-15-1)	mg/kg	With reference to BS EN 14582 . Analysis was performed by IC method for Chlorine content.	50	n.d.
Halogen-Fluorine (F) (CAS No.: 014762-94-8)	mg/kg	With reference to BS EN 14582 . Analysis was performed by IC method for Fluorine content.	50	n.d.
Halogen-Bromine (Br) (CAS No.: 010097-32-2)	mg/kg	With reference to BS EN 14582 .Analysis was performed by IC method for Bromine content.	50	n.d.
Halogen-Iodine (I) (CAS No.: 014362-44-8)	mg/kg	With reference to BS EN 14582 . Analysis was performed by IC method for Iodine content.	50	n.d.

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- Note :
1. mg/kg = ppm; 0.1wt% = 1000ppm
 2. n.d. = Not Detected
 3. MDL = Method Detection Limit
 4. The exemption of DecaBDE in polymeric application according 2005/717/EC was overruled by the European Court of Justice by its decision of 01.04.2008. Subsequently DecaBDE will be included in the sum of PBDE after 01.07.2008
 6. " - " = Not Regulated
 7. " --- " = Not Conducted
 8. ** = Qualitative analysis (No Unit)
 9. Negative = Undetectable / Positive = Detectable
 10. ***The substance is calculated by the test results of Tributyl Tin or heavy metal (Ex. Antimony 、 Beryllium 、 Silicon 、 Zinc 、 Cr (VI) or Phosphorus respectively). The MDL is evaluated for

PFOS Reference Information : 2006/122/EC (Directive 2006/122/EC)

- (1) May not be placed on the market or used as a substance or constituent of preparations in a concentration equal to or higher than 0,005 % by mass.
- (2) May not be placed on the market in semi-finished products or articles, or parts thereof, if the concentration of PFOS is equal to or higher than 0,1 % by mass calculated with reference to the mass of structurally or microstructurally distinct parts that contain PFOS or, for textiles or other coated materials, if the amount of PFOS is equal to or higher than 1µg/m² of the coated material.

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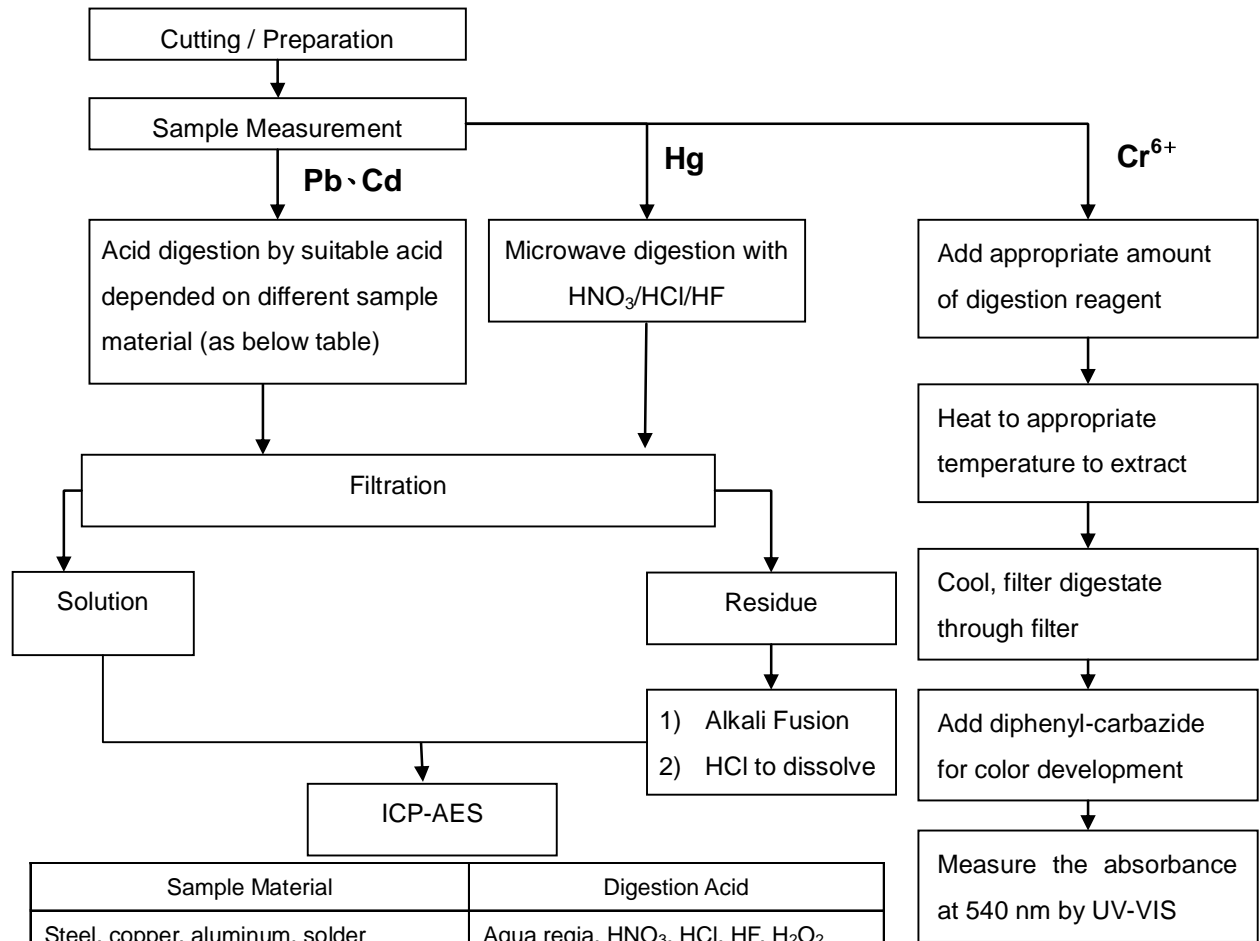
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- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)
- 2) Name of the person who made measurement: Hungming Li
- 3) Name of the person in charge of measurement: Ray Chang



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

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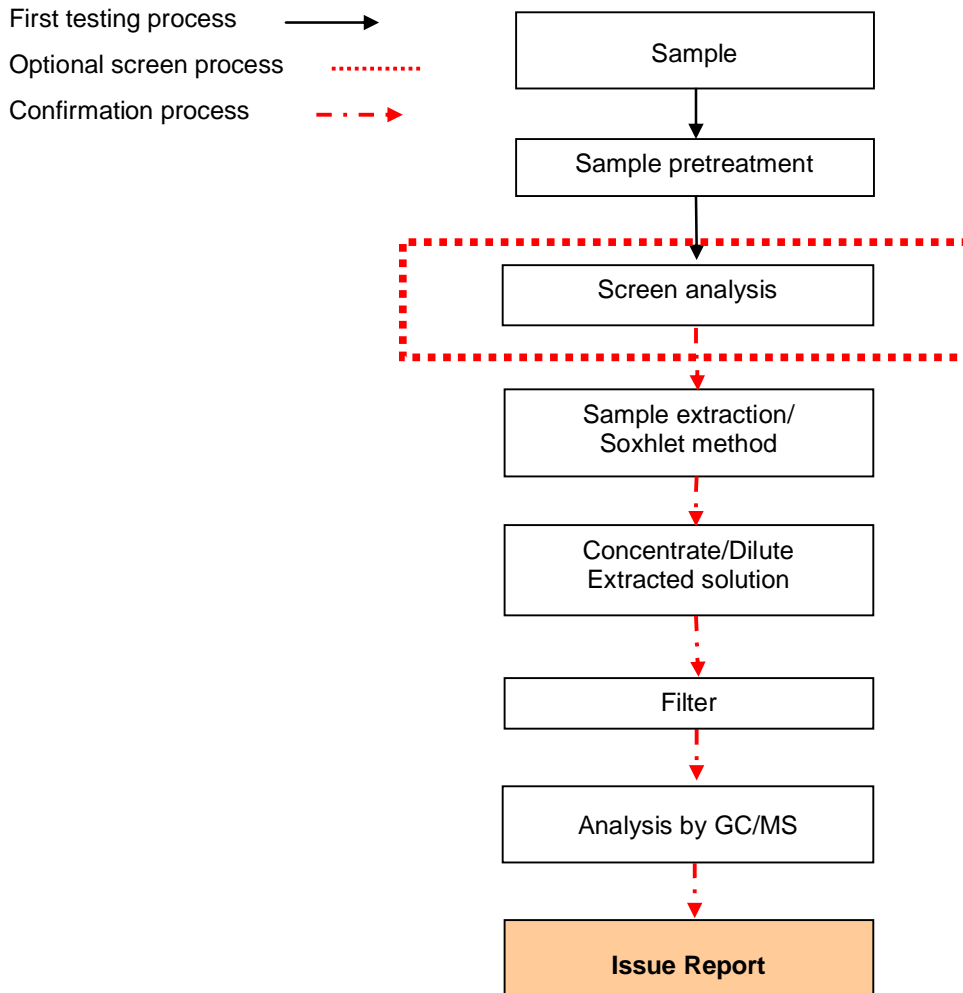
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PBB/PBDE analytical FLOW CHART

- 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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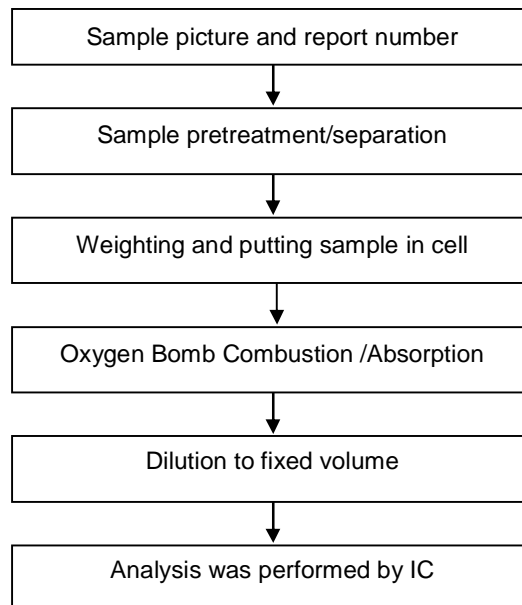
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Analytical flow chart of halogen content

- 1) Name of the person who made measurement: Hungming Li
- 2) Name of the person in charge of measurement: Ray Chang



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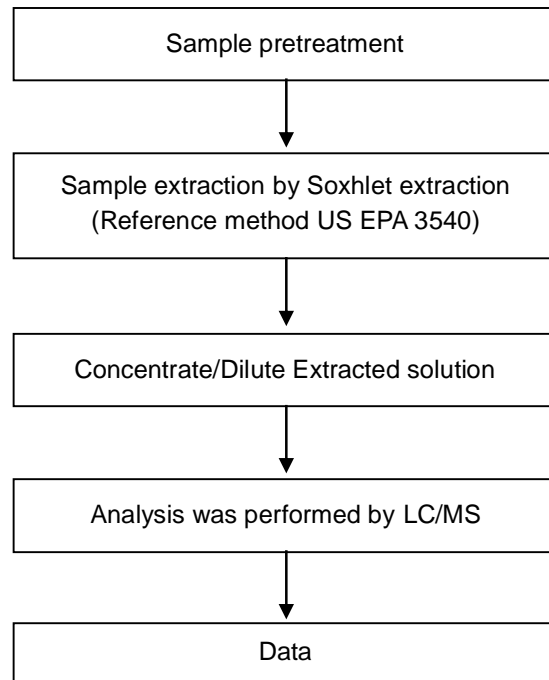
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Analytical flow chart of PFOA/PFOS content

- 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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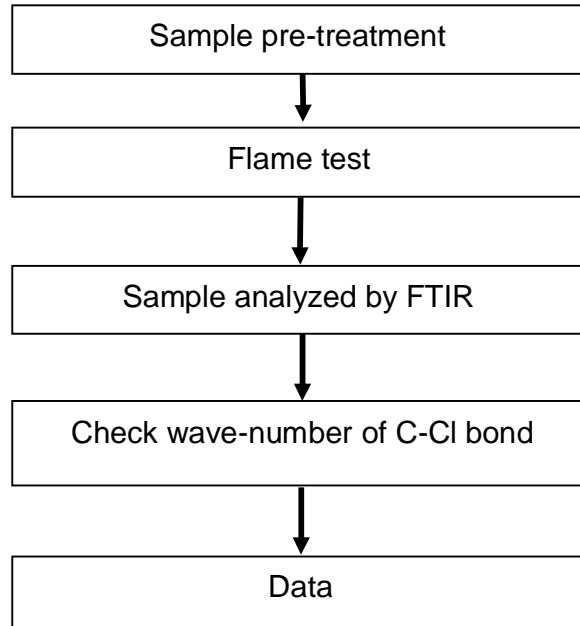
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Analysis flow chart for determination of PVC in polymer material

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



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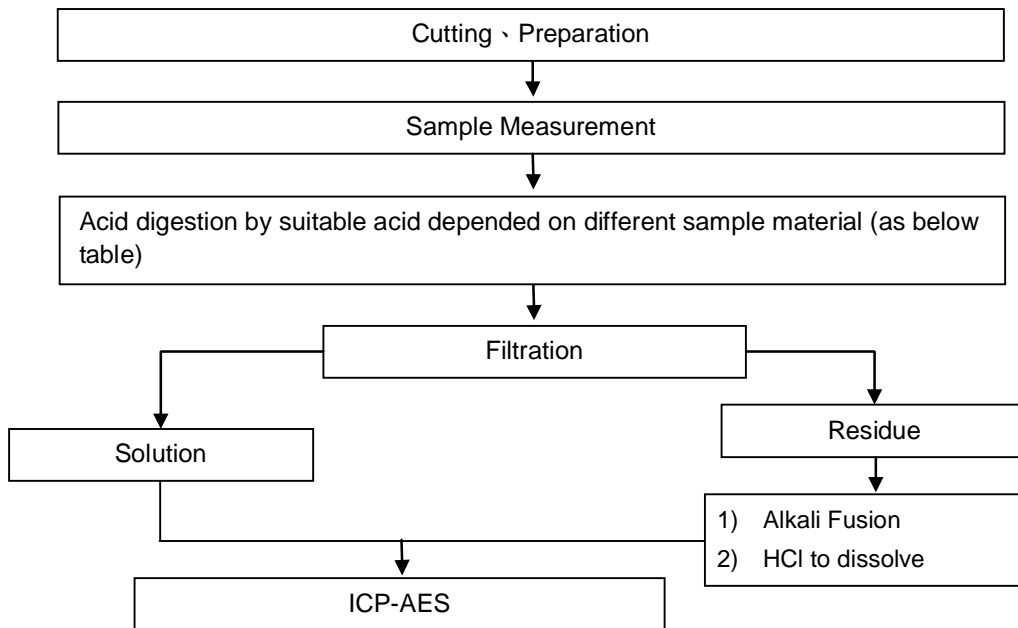
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- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 2) Name of the person who made measurement: Hungming Li
- 3) Name of the person in charge of measurement: Ray Chang

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



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

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** End of Report **

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