



TEST REPORT

NO.: AKS0911030801E

Date: Nov 11, 2009

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Customer: Nantong Fujitsu Microelectronic Co., Ltd

Address: No.288, Chongchuan Road, Nantong, Jiangsu, China

Report on the submitted sample said to be

Sample name: LQFP64NT

Model: /

Item/Lot No.: /

Material: /

Buyer: /

Supplier: /

Manufacturer: /

Sample received date: Nov 03, 2009

Testing period: From Nov 03, 2009 to Nov 11, 2009

Testing Requested:

1. As specified by client, to determine the Lead, Cadmium, Mercury, Hexavalent Chromium, PBB & PBDE, PCB, PCN, PCT, SCCP, HFC, FPC, Asbestos, Formaldehyde, TBT, TPT, DEHP, DBP, BBP, DINP, DNOP, DIDP and DNHP, Specific AZO compounds, Polyvinyl chloride (PVC) and PVC blends, Beryllium oxide and Beryllium copper, Perfluorooctane sulfonates, Benzotriazole light absorber (UV-320), Ozone-depleting substances (ODS) and Cobalt dichloride content in the submitted sample in accordance with SS-00259 eighth edition.
2. As specified by client, to determine the Chlorine, Bromine content in the submitted sample.

Results: Please refer to next page(s).

*****FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)*****

Signed for AOV Ltd.

Written by Eileen

Inspected by Silvia

Approved by Mickey

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Testing method:

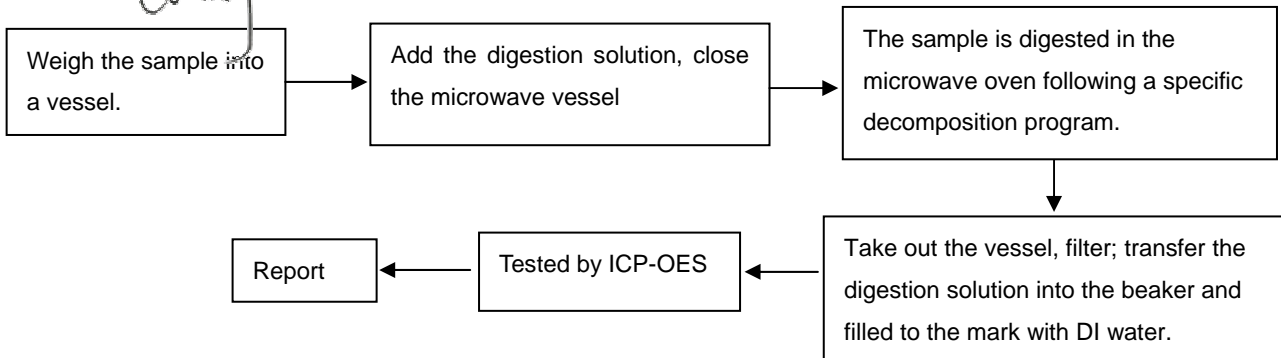
Testing Item	Pretreatment method	Measuring instrument
Lead (Pb)	IEC 62321: 2008, section 8/9	ICP-OES
Cadmium (Cd)	IEC 62321: 2008, section 8/9	ICP-OES
Mercury (Hg)	IEC 62321: 2008, section 7	ICP-OES
Chromium (Cr)	IEC 62321: 2008, Annex B/C	UV-VIS
PBBs/ PBDEs	IEC 62321: 2008, Annex A	GC-MS
PCB/ PCN/ PCT/ SCCP/ HFC/ PFC	US EPA 3540C : 1996	GC-MS
Asbestos	NIOSH 9000	FTIR
Formaldehyde	JIS L 1041 Method A	UV-VIS
Trybutyltin compounds (TBT)/ Triphenyltin compounds (TPT)	DIN EN ISO 17353:2005	GC-MS
DEHP, DBP, BBP, DINP, DNOP, DIDP, DNHP	US EPA 3550C:2007	GC-MS
Specific AZO compounds	EN 14362-1: 2003	GC-MS
Polyvinyl chloride (PVC) and PVC blends	ASTM D2124-99, ISO11358-97	FTIR
Beryllium /Beryllium oxide / Beryllium copper	US EPA3052:1996	ICP-OES
Cobalt/Cobalt dichloride	US EPA3052:1996	ICP-OES
Perfluorooctane sulfonates (PFOS)	US EPA 3540C : 1996	LC-MSD
Benzotriazole light absorber (UV-320)	US EPA3550C: 2007	HPLC
Ozone-depleting substances (ODS)	US EPA 5021	GC-MS

Testing Item	Pretreatment method	Measuring instrument
Chlorine/ Bromine	BS EN 14582 : 2007	IC

Test Flow:

1. To Determine Lead, Cadmium Content (for Polymer):

Tested by: *Condy*



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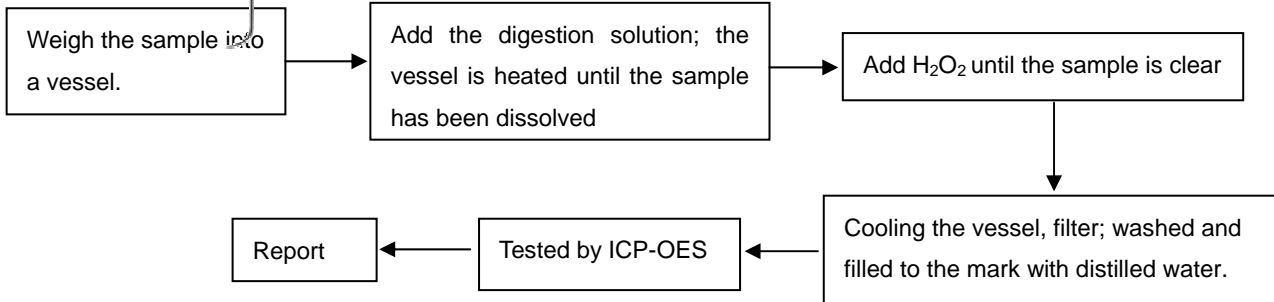
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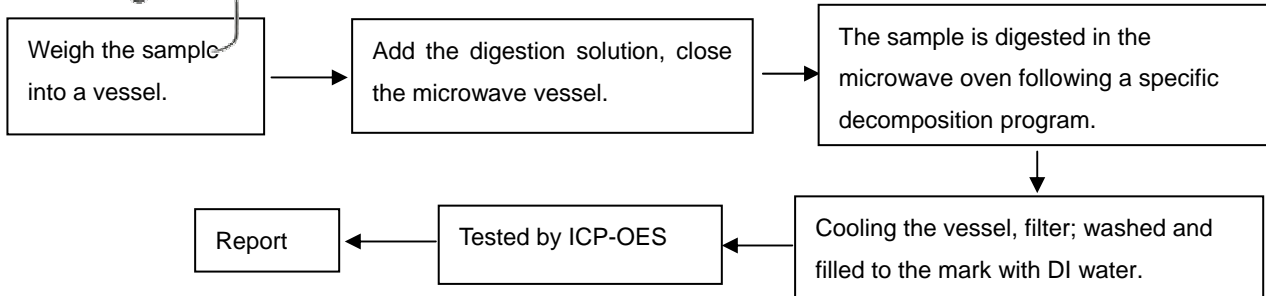
2. To Determine Lead, Cadmium Content (for metal):

Tested by: *Condy*



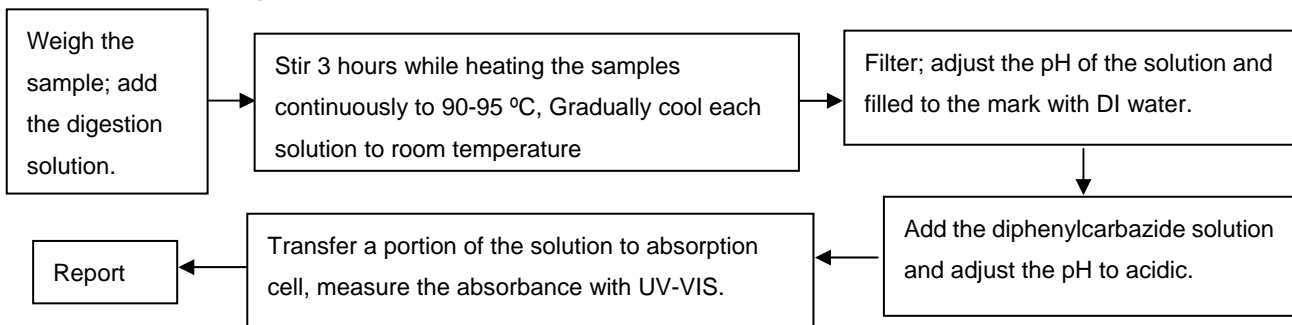
3. To Determine Mercury Content:

Tested by: *Condy*



4. To Determine Hexavalent Chromium Content (for Polymer):

Tested by: *Danae*



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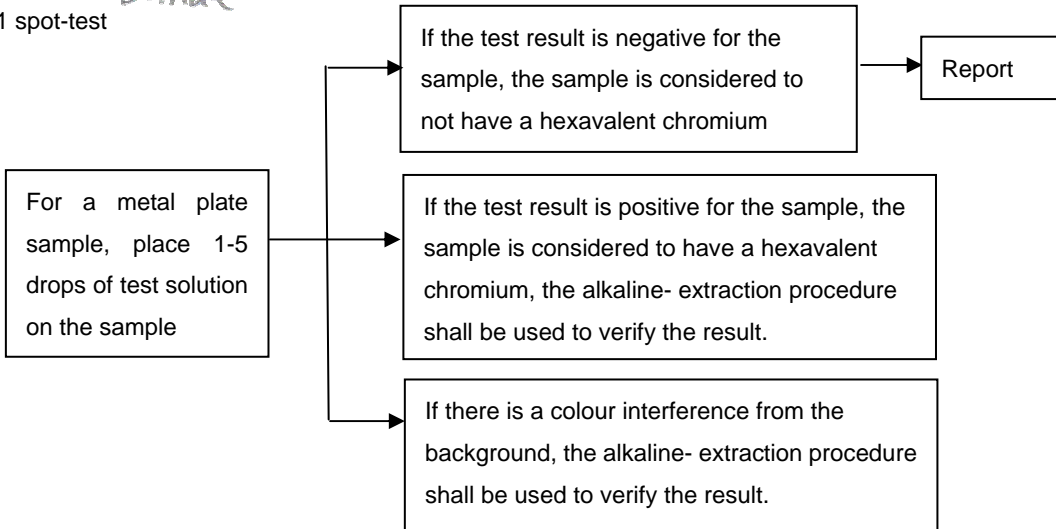
Date: Nov 11, 2009

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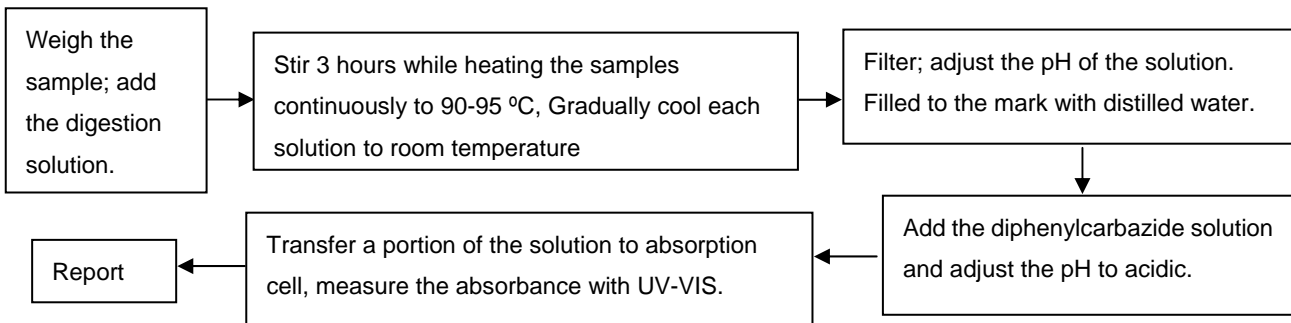
5. To Determine Hexavalent Chromium Content in metals:

Tested by: *Danae*

5.1 spot-test

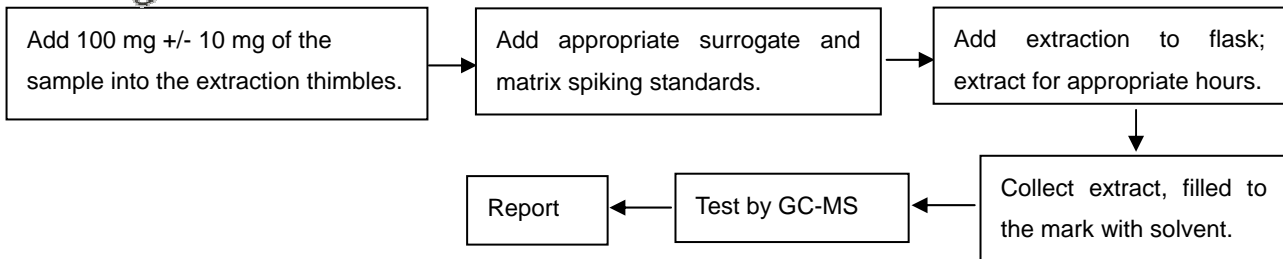


5.2 alkaline- extraction Method



6. To Determine PBBs/PBDEs Content:

Tested by: *Carina*



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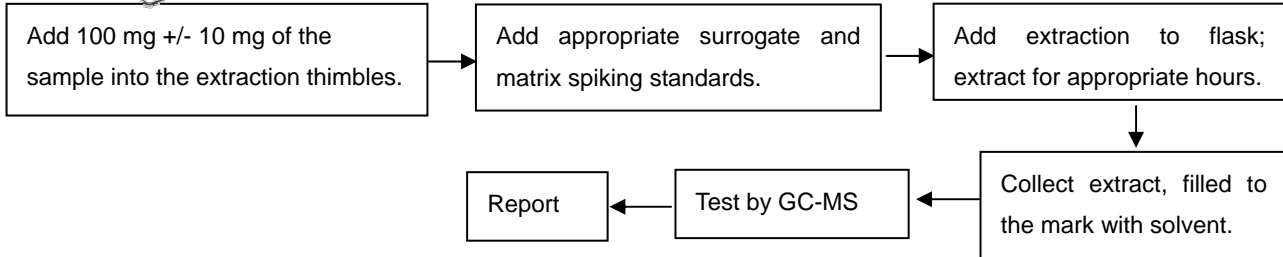
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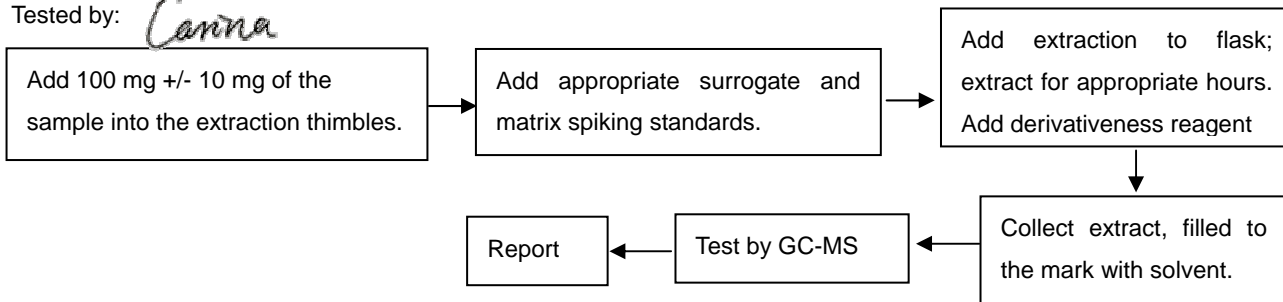
7. To Determine PCB, PCN, PCT, SCCP, HFC and FPC Content:

Tested by: *Carina*



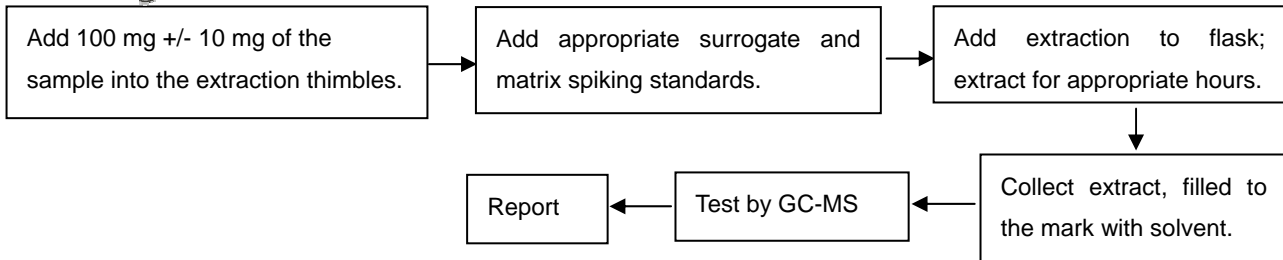
8. To Determine TBT, TPT Content:

Tested by: *Carina*



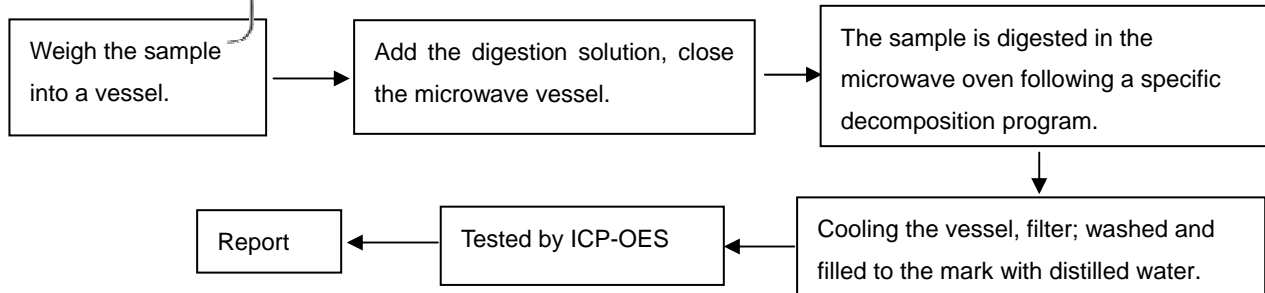
9. To Determine DEHP(DOP), DBP, BBP, DINP, DNOP, DIDP and DNHP Content:

Tested by: *Carina*



10. To Determine Beryllium, Cobalt Content:

Tested by: *Cowdy*



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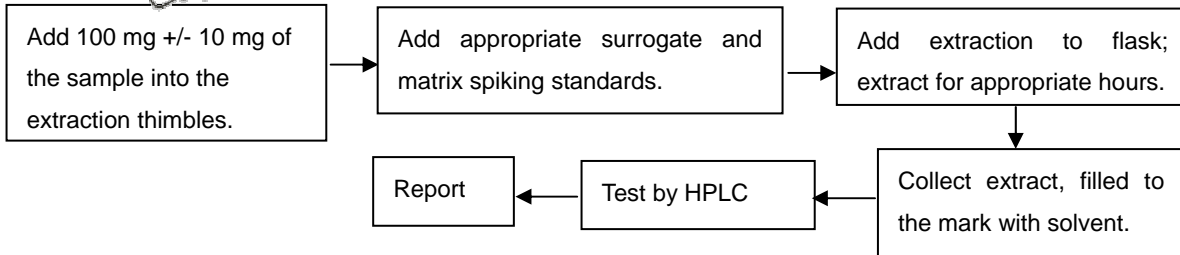
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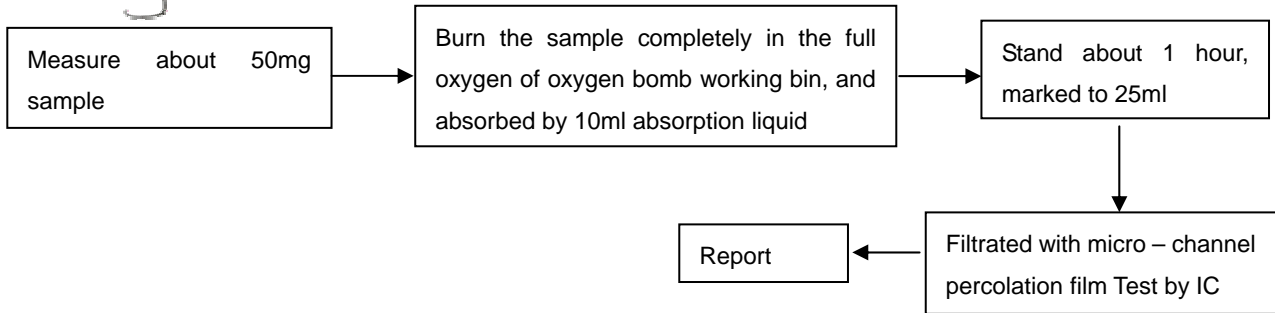
11. To Determine Benzotriazole light absorber Content:

Tested by: *Carina*



12. To Determine Chlorine, Bromine Content:

Tested by: *Jason*



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Test Results:

Item	Unit	MLQ	Acceptable Limit	A	B
Lead (Pb)	mg/kg	2	100	N.D.	14.5
Cadmium (Cd)	mg/kg	2	5	N.D.	N.D.
Mercury (Hg)	mg/kg	2	/	N.D.	N.D.
Chromium(Cr) by spot test	/	2	/	/	Negative
Chromium(Cr)	mg/kg			N.D.	N.D.
Flame Retardants					
PBBs	mg/kg	--	/	N.D.	/
MonoBB	mg/kg	5	/	N.D.	/
DiBB	mg/kg	5	/	N.D.	/
TriBB	mg/kg	5	/	N.D.	/
TetraBB	mg/kg	5	/	N.D.	/
PentaBB	mg/kg	5	/	N.D.	/
HexaBB	mg/kg	5	/	N.D.	/
HeptaBB	mg/kg	5	/	N.D.	/
OctaBB	mg/kg	5	/	N.D.	/
NonaBB	mg/kg	5	/	N.D.	/
DecaBB	mg/kg	5	/	N.D.	/
PBDEs	mg/kg	--	/	N.D.	/
MonoBDE	mg/kg	5	/	N.D.	/
DiBDE	mg/kg	5	/	N.D.	/
TriBDE	mg/kg	5	/	N.D.	/
TetraBDE	mg/kg	5	/	N.D.	/
PentaBDE	mg/kg	5	/	N.D.	/
HexaBDE	mg/kg	5	/	N.D.	/
HeptaBDE	mg/kg	5	/	N.D.	/
OctaBDE	mg/kg	5	/	N.D.	/
NonaBDE	mg/kg	5	/	N.D.	/
DecaBDE	mg/kg	5	/	N.D.	/
Beryllium	mg/kg	2	/	N.D.	N.D.
Beryllium oxide*	mg/kg	2	/	N.D.	N.D.
Beryllium copper*	mg/kg	2	/	N.D.	N.D.
Perfluorooctane Sulfonates (PFOS)	mg/kg	10	/	N.D.	N.D.

Note:

*Beryllium oxide and Beryllium copper test results are based on samples of Beryllium content of a conversion.

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Item	Unit	MQL	Acceptable Limit	A
Polychlorinated biphenyls (PCB)	mg/kg	5	/	N.D.
Polychlorinated naphthalenes (PCN)	mg/kg	5	/	N.D.
Polychlorinated terphenyls (PCT)	mg/kg	5	/	N.D.
Short-chain chlorinated paraffins (SCCP)	mg/kg	5	/	N.D.
Hydrofluorocarbon (HFC)	mg/kg	5	/	N.D.
Perfluorocarbon (FPC)	mg/kg	5	/	N.D.
Asbestos				
Amosite	%	1	/	Negative
Chrysotile	%	1	/	Negative
Crocidolite	%	1	/	Negative
Anthophyllite	%	1	/	Negative
Tremolite	%	1	/	Negative
Actinolite	%	1	/	Negative
Formaldehyde	mg/kg	20	75	N.D.
Tributyltin compounds (TBT)	mg/kg	5	/	N.D.
Triphenyltin compounds (TPT)	mg/kg	5	/	N.D.
Di-iso-nonyl phthalate (DINP)	mg/kg	50	/	N.D.
Di-n-octyl phthalate (DNOP)	mg/kg	10	/	N.D.
Di (2-ethyl hexyl)-phthalate (DEHP) (DOP)	mg/kg	10	/	N.D.
Diisodecyl phthalate (DIDP)	mg/kg	50	/	N.D.
Butylbenzyl phthalate (BBP)	mg/kg	10	/	N.D.
Dibutyl phthalate (DBP)	mg/kg	10	/	N.D.
Di-n-hexyl phthalate (DNHP)	mg/kg	10	/	N.D.
Benzotriazole light absorber (UV-320)	mg/kg	5	/	N.D.
Cobalt*	mg/kg	2	/	N.D.
Cobalt dichloride**	mg/kg	2	/	N.D.
PolyvinylChloride (PVC)***	/	/	/	Not detected

Note:

-**The substance is calculated by using the test results of element (Cobalt) respectively (testing instrument: ICP-OES)). If the sample contains total Cobalt, it needs further test the Chlorine (testing instrument: IC) content to make sure whether it includes Cobalt dichloride or not.

-*** Infrared spectrogram of test sample and standard infrared spectrogram are included.

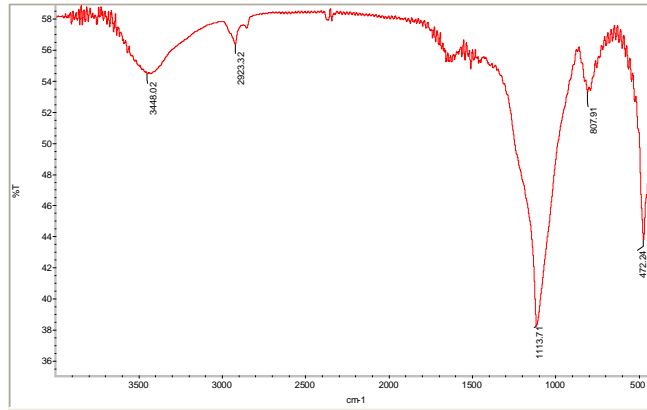
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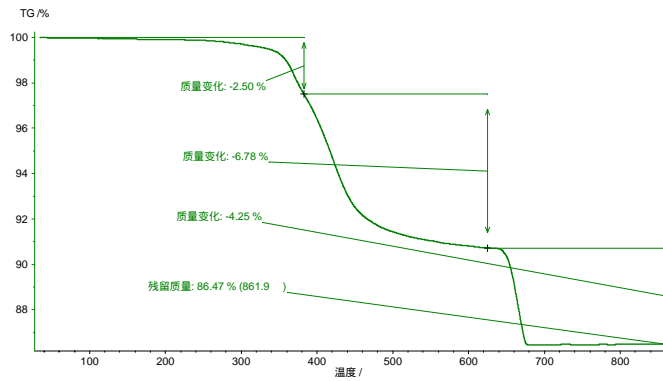
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1. Infrared Spectrogram of Test Sample.

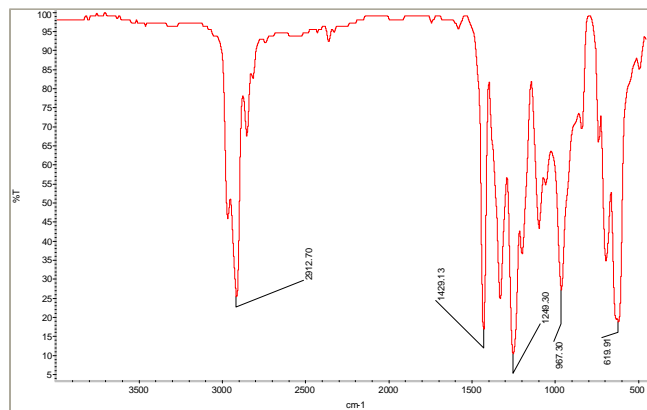


FT-IR



TG

2. Standard Infrared Spectrogram



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Amines Substances	Unit	MQL	Acceptable Limit	A
4-Aminobiphenyl	mg/kg	30	/	N.D.
Benzidine	mg/kg	30	/	N.D.
4-Chloro-2-methylaniline	mg/kg	30	/	N.D.
2-Aminonaphthalene	mg/kg	30	/	N.D.
4-Amino-2'-3-dimethylazobenzene	mg/kg	30	/	N.D.****
5-nitro-o-toluidine	mg/kg	30	/	N.D.****
4-Chloroaniline	mg/kg	30	/	N.D.
4-Methoxy-1, 3-phenylenediamine	mg/kg	30	/	N.D.
Bis- (4-aminophenyl) methane	mg/kg	30	/	N.D.
3,3'-Dichlorobenzidine	mg/kg	30	/	N.D.
3,3'-Dimethoxybenzidine	mg/kg	30	/	N.D.
3,3'-Dimethylbenzidine	mg/kg	30	/	N.D.
4, 4'-Diamino-3, 3'-dimethyldiphenyl methane	mg/kg	30	/	N.D.
2-Methoxy-5-methylaniline (Cresidine)	mg/kg	30	/	N.D.
4,4'-Methylenebis(2-chloroaniline)	mg/kg	30	/	N.D.
4,4'-Oxydianiline	mg/kg	30	/	N.D.
4-Aminophenylthioether	mg/kg	30	/	N.D.
o-Toluidine	mg/kg	30	/	N.D.
2,4-Diaminotoluene	mg/kg	30	/	N.D.
2,4,5-Trimethylaniline	mg/kg	30	/	N.D.
2-Methoxyaniline	mg/kg	30	/	N.D.
4-Aminoazobenzene	mg/kg	30	/	N.D.*****

Note:

-****The CAS Number 97-56-3 and 99-55-8 are further reduced to CAS Numbers 95-53-4 and 95-80-7

-*****Azo colorants that are able to form 4- Aminoazobenzene, generate under the condition of this method aniline and 1,4-phenylenediamine. The presence of these colorants cannot be reliably ascertained without additional information, e.g. the chemical structure of the colorant used.



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Item	Unit	ML	Acceptable Limit	A
Methylene chloride (Dichloromethane)	mg/kg	1	/	N.D.
Carbon tetrachloride	mg/kg	1	/	N.D.
Methyl chloroform=1,1,1-Trichloroethane	mg/kg	1	/	N.D.
Halons				
Halon-1211	mg/kg	1	/	N.D.
Halon-1301	mg/kg	1	/	N.D.
Halon-2402	mg/kg	1	/	N.D.
CFC's (Chlorofluorocarbons)				
Group				
Chlorofluorocarbon-11	mg/kg	1	/	N.D.
Chlorofluorocarbon-12	mg/kg	1	/	N.D.
Chlorofluorocarbon-113	mg/kg	1	/	N.D.
Chlorofluorocarbon-114	mg/kg	1	/	N.D.
Chlorofluorocarbon-115	mg/kg	1	/	N.D.
Group				
Chlorofluorocarbon-13	mg/kg	1	/	N.D.
Chlorofluorocarbon-111	mg/kg	1	/	N.D.
Chlorofluorocarbon-112	mg/kg	1	/	N.D.
Chlorofluorocarbon-211	mg/kg	1	/	N.D.
Chlorofluorocarbon-212	mg/kg	1	/	N.D.
Chlorofluorocarbon-213	mg/kg	1	/	N.D.
Chlorofluorocarbon-214	mg/kg	1	/	N.D.
Chlorofluorocarbon-215	mg/kg	1	/	N.D.
Chlorofluorocarbon-216	mg/kg	1	/	N.D.
Chlorofluorocarbon-217	mg/kg	1	/	N.D.

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Item	Unit	MQL	Acceptable Limit	A
HCFC's (Hydrogenated chlorofluorocarbons)				
Hydrogenated chlorofluorocarbons-21	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-22	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-31	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-121	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-122	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-123	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-124	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-131	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-131b	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-133a	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-141b	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-221	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-222	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-223	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-224	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-225ca	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-225cb	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-226	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-231	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-232	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-233	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-234	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-235	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-241	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-242	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-243	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-244	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-251	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-252	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-253	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-261	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-262	mg/kg	1	/	N.D.
Hydrogenated chlorofluorocarbons-271	mg/kg	1	/	N.D.

Item	Unit	MQL	Acceptable Limit	A
Chlorine (Cl)	mg/kg	50	900	204.1
Bromine (Br)	mg/kg	50	900	2,117.3
Total (Br+ Cl)	mg/kg	/	1500	2,321.4

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Specimen Description:

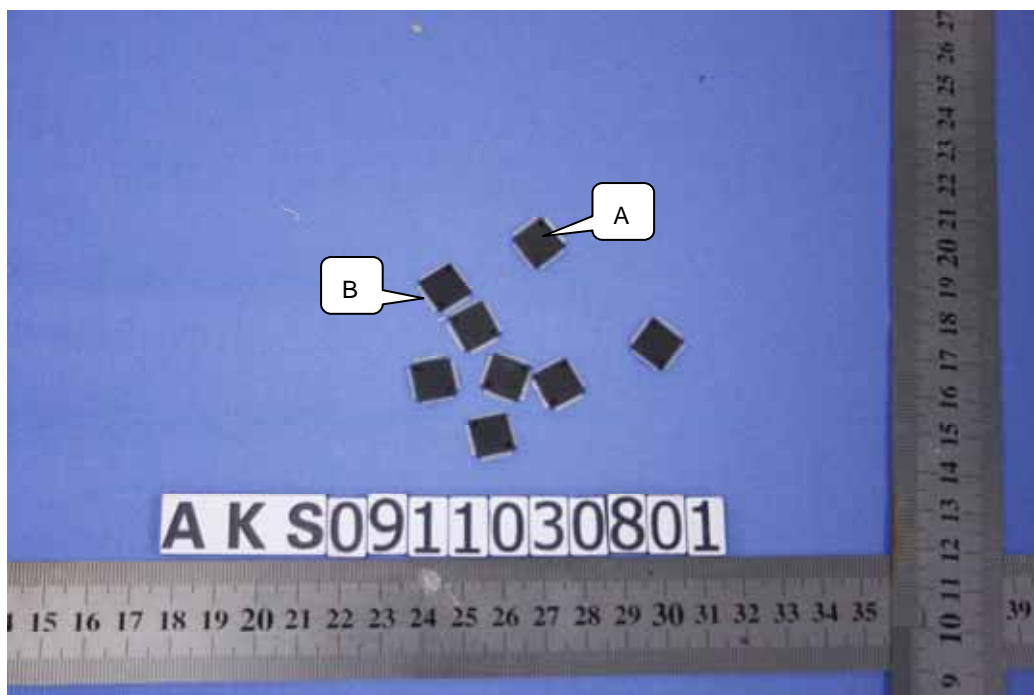
A: Black plastic

B: Metal pin

Note:

- Specimens, which requested to determine Cadmium, Mercury, Lead, Beryllium and Cobalt Content, have been dissolved completely.
- mg/kg=ppm
- N.D.=not detected(<MQL)
- MQL=Method Quantitation Limit
- Spot-test:
 - Negative=Absence of Cr();
 - Positive=Presence of Cr();
- Photo is included

Photograph of Sample



LQFP64NT

End of Report