

ICP Test Report Certification Packet

Company name:	Littelfuse, Inc.	
Product Series:	3AB Cartridge	
Product #:	326xxxP Series	
Issue Date:	May 22, 2013	
2011/65/EU)-restricted supacking/packaging matering addition, it is hereby refor unit parts, the packing/	Littelfuse, Inc. that there is neither RoHS (EU Directive 200 ubstance nor such use, for materials to be used for unit prials, and for additives and the like in the manufacturing process eported to you that the parts and sub-materials, the materials to /packaging materials, and the additives and the like in the manusced of the following components.	parts, for ses. be used
	Issued by: JENNY DINGLASAN <global ehs="" specialist=""></global>	
(1) Parts, sub-materials a This document cov by Littelfuse, Inc.< Raw Materials U Please see Tab	vers the 3AB Cartridge RoHS-Compliant series products manu	ufactured
(2) The ICP data on all I	measurable substances propriate 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	910-289 (910-005)	Cap (Copper Shell)	3-9
2	C610 (909-162/909-165)	Ceramic Tube - Body	10-38
3	082xxx-001	99% Cu Sn Plated Wire	39-42
4	LF079020 (917-xxxxxx-P 917-44500410-P, 079xxx)	Cu 110 STRIP with Center Sn Overlay	43-46
5	RD series (899-4xx-1)	Carbon Film Resistor	47-53
6	YTW102 (692535-003)	Solder	54-58
7	AIM230 FastCore H RSA605 (692539-003)	Solder	59-63
8	3M 3779-PG (087244)	HMA (RoHS & Halogens)	64-76
9	648102	Yarn	77-84
10	090187	Filler	85-91
11	090184	Filler	92-99
12	425906	Brown Ink	100-110
13	425902	Black Ink	111-121
14	425907	Green Ink	122-132
15	10-0691 (497xxx)	Element – Ni99.9MAg	133-138
16	DRAGxxx	Element	139-143
17	912-337	Spring	144-148



Report No. RLSZE001492100002

Page 1 of 4

Applicant

DONGGUAN CITY XINHAI METAL PRODUCTS CO.,LTD

Address

I 'ST WEIMING ROAD HENGZENG AV.XINAN COMMUNITY CHANGAN

TOWN DONGGUAN CITY GUANGDONG PROVINCE

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

Sample Name

BASE OF CAP

Material

BRASS H65

Sample Received Date

Nov. 16, 2012

Testing Period

Nov. 16, 2012 to Nov. 19, 2012

Test Requested

As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg),

Hexavalent Chromium(Cr(VI)) in the submitted sample(s).

Test Method

Test Item(s)	Test Method	Measured Equipment(s)	MDL
Lead(Pb)	IEC 62321:2008 Ed.1 Sec.9	ICP-OES	2 mg/kg
Cadmium(Cd)	IEC 62321:2008 Ed.1 Sec.9	ICP-OES	2 mg/kg
Mercury(Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES	2 mg/kg
Hexavalent Chromium(Cr(VI))	IEC 62321:2008 Ed.1 Annex B	UV-Vis	/

Test Result(s)

Please refer to the following page(s).

Reviewed by Approved by Danny Liu

Nov. 19, 2012

Technical Manager

No. 11033098

Centre Testing International (Shenzhen) Co., Ltd. Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China





Report No. RLSZE001492100002

Page 2 of 4

Test Result(s)

Tested Item(s)	Result	
Lead(Pb)	13 mg/kg	
Cadmium (Cd)	N.D.	
Mercury(Hg)	N.D.	
Hexavalent Chromium(Cr(VI))	Negative	

Tested Sample/Part Description

Metal base

Note:

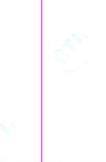
The sample had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

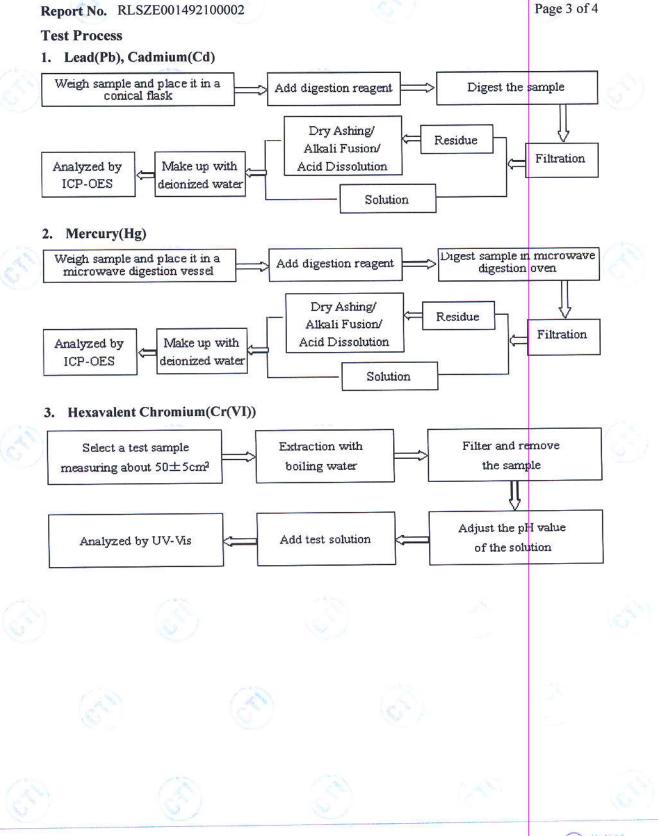
-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

-Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.02 mg/kg with 50cm² sample surface area used.









Report No. RLSZE001492100002

Photo(s) of the sample(s)





*** End of report ***

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.







Report No. RLSZE001492100001

Page 1 of 3

Applicant

DONGGUAN CITY XINHAI METAL PRODUCTS CO.,LTD

Address

I 'ST WEIMING ROAD HENGZENG AV.XINAN COMMUNITY CHANGAN

TOWN DONGGUAN CITY GUANGDONG PROVINCE

The following sample(s) and sample information was/were submitted and identified by/on the

behalf of the client

Sample Name

SILVER COLOR PLATING OF CAP

Material

Electrolytic Nickel

Sample Received Date

Nov. 16, 2012

Testing Period

Nov. 16, 2012 to Nov. 19, 2012

Test Requested

As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg),

Hexavalent Chromium(Cr(VI)) in the submitted sample(s).

Test Method

Test Item(s)	Test Method	Measured Equipment(s)	MDL
Lead(Pb)	Refer to IEC 62321:2008 Ed.1	ICP-OES	2 mg/kg
Cadmium(Cd)	Refer to IEC 62321:2008 Ed.1	ICP-OES	2 mg/kg
Mercury(Hg)	Refer to IEC 62321:2008 Ed.1	ICP-OES	2 mg/kg
Hexavalent Chromium(Cr(VI))	IEC 62321:2008 Ed.1 Annex B	UV-Vis	1

Test Result(s)

Please refer to the following page(s).



Danny Liu

Nov. 19, 2012

No. 11033098

Centre Testing International (Shenzhen) Co., Ltd. Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China

Technical Manager



Report No. RLSZE001492100001

Page 2 of 3

Test Result(s)

Tested Item(s)	Result	
Lead(Pb)	N.D.	
Cadmium (Cd)	N.D.	
Mercury(Hg)	N.D.	
Hexavalent Chromium(Cr(VI))	Negative	

Tested Sample/Part Description

Silvery plating

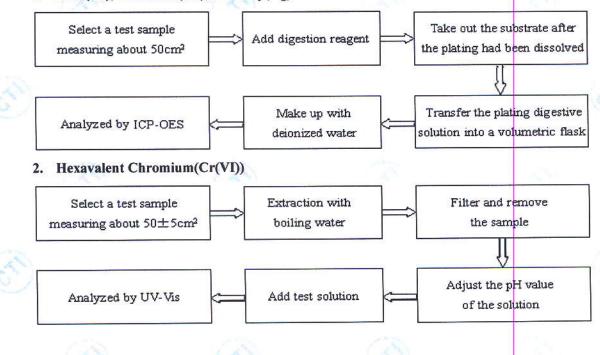
Note:

The washed plating had been dissolved totally tested for Lead, Cadmium,

- -MDL = Method Detection Limit
- -N.D. = Not Detected (<MDL)
- -mg/kg = ppm = parts per million
- -Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.02 mg/kg with 50cm² sample surface area used.

Test Process

1. Lead(Pb), Cadmium(Cd), Mercury(Hg)

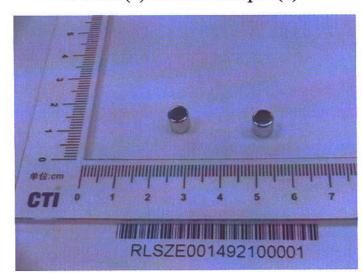




Report No. RLSZE001492100001

Photo(s) of the sample(s)

Page 3 of 3



*** End of report ***

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.





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

Test Report

No.: CE/2013/13191 Date: 2013/01/21 Page: 1 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF

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

Sample Description

: CERAMIC

Style/Item No.

C610

Sample Receiving Date

: 2013/1/14

Testing Period

: 2013/1/14 TO 2013/01/21

Test Result(s)

: Please refer to next page(s).

Conclusion

: Based on the performed tests on submitted samples, the test results of Cadmium, Lead, Mercury, Hexavalent Chromium Cr(VI), PBBs and PBDEs comply with the limits as set by

RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Chenyu Kung / Signed for and on be SGS TAIWAN LTD. Chemical Laboratory - Taipei



No.: CE/2013/13191 Date: 2013/01/21 Page: 2 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



Test Result(s)

PART NAME No.1 : CREAM CERAMIC

Test Item(s)	Unit	Method	MDL	Result No.1	Limit
Cadmium (Cd)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.	100
Lead (Pb)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	204	1000
Mercury (Hg)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.	1000
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.	1000
BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.	1
DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.	-
DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.	1
DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.	
DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.	17
DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.	
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.	A
Polychlorinated Biphenyls (PCBs) (CAS No.: 1336-36-3)	mg/kg	With reference to US EPA 3540C method. Analysis was performed by GC/MS.	0.5	n.d.	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company 新进入企业工作,不是不会工作,不可能分配。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-and-Conditions/Te



No.: CE/2013/13191 Date: 2013/01/21 Page: 3 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF

Test Item(s)	Unit	Method	MDL	Result No.1	Limit
Polychlorinated Terphenyls (PCTs)	mg/kg	With reference to US EPA 3540C method. Analysis was performed by GC/MS.	0.5	n.d.	
Polychlorinated Naphthalene (PCNs)	mg/kg	With reference to US EPA 3540C method. Analysis was performed by GC/MS.	5	n.d.	91
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (CAS No.: 85535-84-8)	mg/kg	With reference to US EPA 3540C method. Analysis was performed by GC/MS.	100	n.d.	
PVC	**	Analysis was performed by FTIR and FLAME Test.	-	Negative	1.2
Formaldehyde (CAS No.: 50-00-0)	mg/kg	With reference to ISO 17226-1(2008). Analysis was performed by HPLC/DAD.	3	n.d.	1.3
Monomethyl dibromodiphenyl methane (DBBT)	mg/kg	With reference to US EPA 8270D method. Analysis was performed by GC/MS.	0.5	n.d.	Ĭ
Monomethyl dichlorodiphenyl methane (Ugilec121)	mg/kg	With reference to US EPA 8270D method. Analysis was performed by GC/MS.	0.5	n.d.	*
Monomethyl tetrachlorodiphenyl methane (Ugilec141)	mg/kg	With reference to US EPA 8270D method. Analysis was performed by GC/MS.	0.5	n.d.	
Halogen					100
Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg		50	n.d.	
Halogen-Chlorine (CI) (CAS No.: 22537-15-1)	mg/kg	With reference to BS EN 14582:2007.	50	n.d.	
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	Analysis was performed by IC.	50	n.d.	-
Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg		50	n.d.	
Organic-tin compounds				The second	
Tributyl Tin (TBT)	mg/kg	With reference to DIN 38407-13.	0.03	n.d.	24.
Triphenyl Tin (TphT)	mg/kg	Analysis was performed by GC/FPD.	0.03	n.d.	



No.: CE/2013/13191 Date: 2013/01/21 Page: 4 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



Test Item(s)	Unit	Method	MDL	Result No.1	Limit
	3		111.02		
Asbestos				1	
Actinolite (CAS No.: 77536-66-4)	%		-	Negative	(+)
Amosite (CAS No.: 12172-73-5)	%	With reference to EPA 600/R-93/116	12	Negative	1-1
Anthophyllite (CAS No.: 77536-67- 5)	%	method. Analysis was performed by Stereo Microscope (SM), Dispersion	-	Negative	1.92
Chrysotile (CAS No.: 12001-29-5)	%	Staining Polarized Light Microscope (DS-PLM) and X-ray Diffraction		Negative	1
Crocidolite (CAS No.: 12001-28-4)	%	Spectrometer (XRD).	12	Negative	-
Tremolite (CAS No.: 77536-68-6)	%	Specification (ALLS).		Negative	-
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.	19
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.	.8
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.	-
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.	- 4

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company,除走过,我从此间,不是一个时间的复数。
This document is issued by the Company subject to its General Conditions of Service printed overfeaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/en/Terms-and-Conditions/Terms-e-Document. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



No.: CE/2013/13191 Date: 2013/01/21 Page: 5 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF

Test Item(s)	Unit	Method	MDL	Result	4.00
	Oille	Metriod	WIDL	No.1	Limit
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.	4
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.	- 2
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.	3
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.	3
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.	-2
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.	
CFC's (Chlorofluorocarbons)					
Group I					
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.	



No.: CE/2013/13191 Date: 2013/01/21 Page: 6 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



Test Item(s)	Unit	Method	MDL	Result No.1	Limit
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.	4
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			-		
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.	7.2
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.	Ī
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.	9
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.	•

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 所有的 the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/en/Terms-and-Conditions/Terms-e-Document. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



No.: CE/2013/13191 Date: 2013/01/21 Page: 7 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



Test Item(s)	Unit	Method	MDL	Result No.1	Limit
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.	
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.	- 1
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.	1-
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.	•



No.: CE/2013/13191 Date: 2013/01/21 Page: 8 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF

Test Item(s)	I India	Method MI	MDL	Result	Limit
	Unit		MDL	No.1	
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.	37
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.	3
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.	2
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.	1
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.	



No.: CE/2013/13191 Date: 2013/01/21 Page: 9 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF

Test Item(s)	Unit	Method	MDL	Result	Limit
	1 440000	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	MIDE	No.1	
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.	2
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.	10
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.	-3
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.	4
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.	•
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.	-2
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.	



No.: CE/2013/13191 Date: 2013/01/21 Page: 10 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



Test Item(s)	Unit	Method	MDL	Result No.1	Limit
	- C.I.I.				
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.	
Halons					
Halon-1211 (CAS No.: 353-59-3)	mg/kg	With reference to US EPA 5021	1	n.d.	. . .
Halon-1301 (CAS No.: 75-63-8)	mg/kg	method. Analysis was performed by	1	n.d.	- 2
Halon-2402 (CAS No.: 124-73-2)	mg/kg	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.	-
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.	1.20
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.	7



No.: CE/2013/13191 Date: 2013/01/21 Page: 11 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF

Test Item(s)	Unit	Method	MDL	Result No.1	Limit
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.	- 13
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.	7.17
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.	14
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.	2
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.	



No.: CE/2013/13191 Date: 2013/01/21 Page: 12 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF

Test Item(s)	Unit	Method	MDL	Result No.1	Limit
	Oint				
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.	-
Sum of PBBs	mg/kg		-	n.d.	1000
Monobromobiphenyl	mg/kg	1	5	n.d.	
Dibromobiphenyl	mg/kg	1	5	n.d.	-
Tribromobiphenyl	mg/kg	1	5	n.d.	
Tetrabromobiphenyl	mg/kg	1	5	n.d.	-
Pentabromobiphenyl	mg/kg	1	5	n.d.	
Hexabromobiphenyl	mg/kg		5	n.d.	
Heptabromobiphenyl	mg/kg		5	n.d.	- 20
Octabromobiphenyl	mg/kg	1	5	n.d.	-
Nonabromobiphenyl	mg/kg		5	n.d.	141
Decabromobiphenyl	mg/kg	With reference to IEC 62321: 2008 and	5	n.d.	1 5
Sum of PBDEs	mg/kg	performed by GC/MS.		n.d.	1000
Monobromodiphenyl ether	mg/kg		5	n.d.	1
Dibromodiphenyl ether	mg/kg		5	n.d.	40
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.	3-
Heptabromodiphenyl ether	mg/kg		5	n.d.	-
Octabromodiphenyl ether	mg/kg		5	n.d.	
Nonabromodiphenyl ether	mg/kg		5	n.d.	1 = 1 + 1
Decabromodiphenyl ether	mg/kg		5	n.d.	(-1

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company, \$\frac{\text{SP}}{\text{TP}} \frac{\text{SP}}{\text{TP}} \frac{\text{TP}}{\text{TP}} \frac{\text{TP}}{\text{



No.: CE/2013/13191 Date: 2013/01/21 Page: 13 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



Note:

- 1. mg/kg = ppm : 0.1wt% = 1000ppm
- 2. n.d. = Not Detected
- 3. MDL = Method Detection Limit
- 4. " " = Not Regulated
- 5. ** = Qualitative analysis (No Unit)
- 6. Negative = Undetectable / Positive = Detectable
- 7. Testing range of asbestos qualitative analysis is from less than 0.1% to 100%. The judgment criterion: asbestos fibers being found is shown as "Positive"; asbestos fibers not being found is shown as "Negative".

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.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company 就非为有论文人此识性结果实现是这种的

Unless otherwise stated the results shown in this test report reter only to the samplets; tested. This test report cannot be reproduced, except in full, white style of the company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_and_Conditions/Terms-e-Document. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and writhin the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

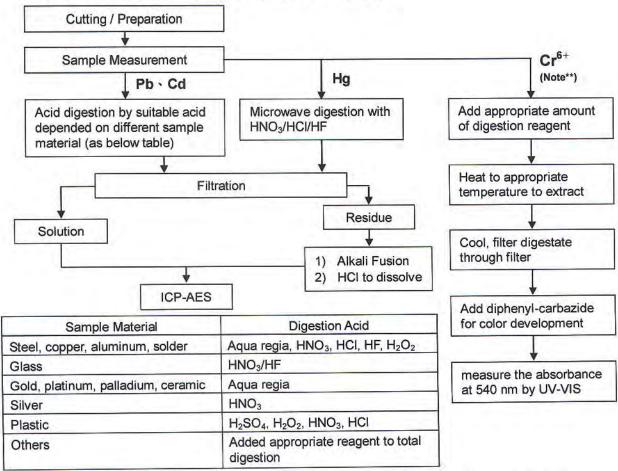


No.: CE/2013/13191 Date: 2013/01/21 Page: 14 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



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



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.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the



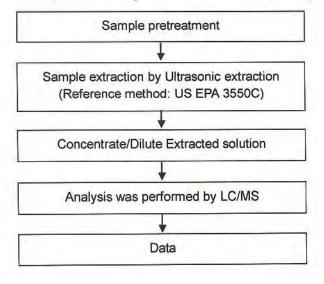
No.: CE/2013/13191 Date: 2013/01/21 Page: 15 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



PFOA/PFOS analytical flow chart of Ultrasonic extraction (LC/MS) procedure

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



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company, Note 1, 100 by the Company subject to the Company subject to the General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm This document is issued by the Company subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-and-Conditions/Terms-e-Document. Attention is drawn to the and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-and-Conditions/Terms-e-Document. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full. without prior written approval of the transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law.



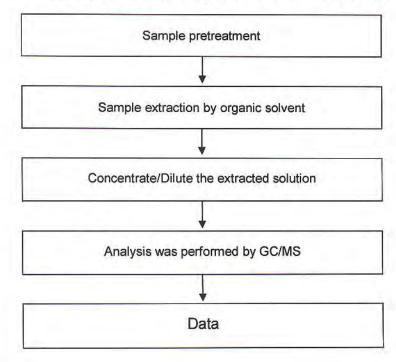
No.: CE/2013/13191 Date: 2013/01/21 Page: 16 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



PCTs analytical flow chart

- Name of the person who made measurement: Barry Tseng
- Name of the person in charge of measurement: Troy Chang





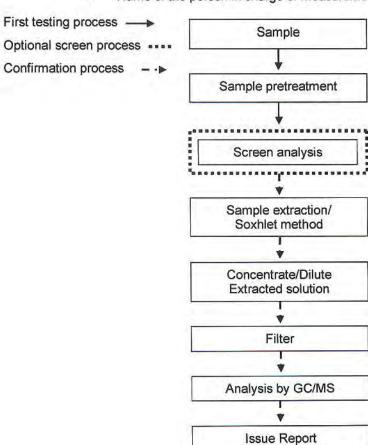
No.: CE/2013/13191 Date: 2013/01/21 Page: 17 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



PBB/PBDE analytical FLOW CHART

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



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company, Supplied to the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-and-Conditions/Terms-and-Conditio



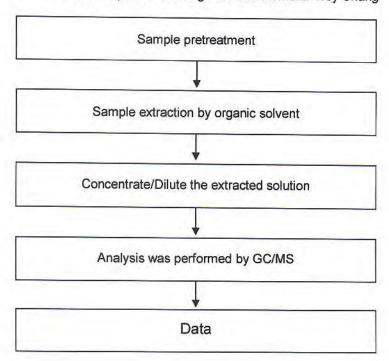
No.: CE/2013/13191 Date: 2013/01/21 Page: 18 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



PCBs analytical flow chart

Name of the person who made measurement: Barry Tseng Name of the person in charge of measurement: Troy Chang





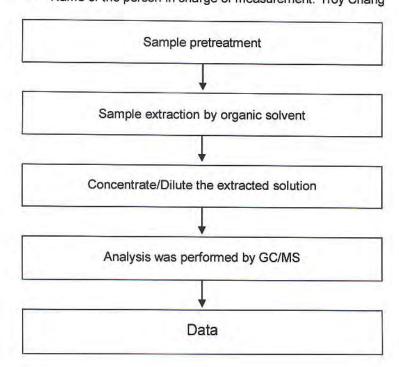
No.: CE/2013/13191 Date: 2013/01/21 Page: 19 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



Chlorinated Paraffins analytical flow chart

Name of the person who made measurement: Barry Tseng Name of the person in charge of measurement: Troy Chang



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. ACLESTIC Company. ACLESTIC COMPANIESTIC COMPANIES



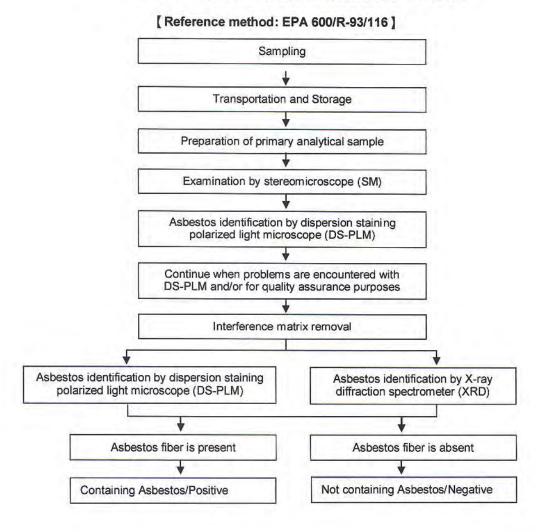
No.: CE/2013/13191 Date: 2013/01/21 Page: 20 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



Analysis flow chart for determination of Asbestos

- Name of the person who made measurement: Victor Kao
- Name of the person in charge of measurement: Wendy Wei



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the

Company 解析 12. 39 - 比 等于 12. 30 - 比 等于 12. 30 -



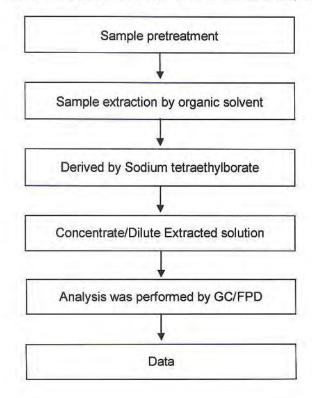
No.: CE/2013/13191 Date: 2013/01/21 Page: 21 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



Analytical flow chart of Organic-Tin content

- Name of the person who made measurement: Ginny Chen
- Name of the person in charge of measurement: Troy Chang





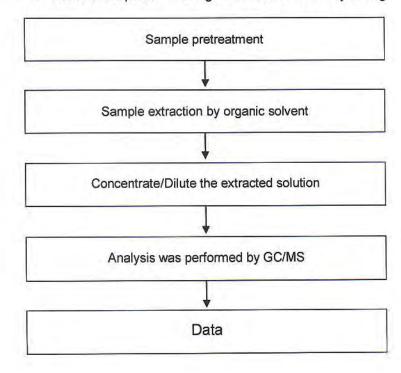
No.: CE/2013/13191 Date: 2013/01/21 Page: 22 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



PCNs analytical flow chart

- Name of the person who made measurement: Barry Tseng
- Name of the person in charge of measurement: Troy Chang



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company, Exist (1.7.9) and Exist (1



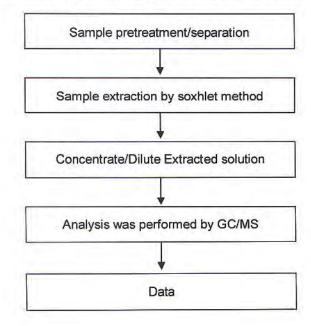
No.: CE/2013/13191 Date: 2013/01/21 Page: 23 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



Analytical flow chart of phthalate content

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





No.: CE/2013/13191 Date: 2013/01/21 Page: 24 of 29

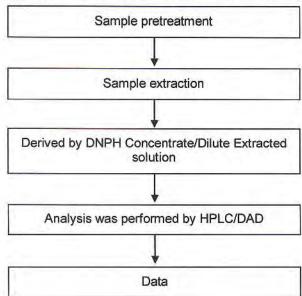
CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



Formaldehyde analytical flow chart

- Name of the person who made measurement: Scott Ku
- Name of the person in charge of measurement: Troy Chang

[Test Method : US EPA 8315A . ISO 17226-1]



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company 新非男行鬼头,此意当就你再赢成之徒!皇在一本报告未经上员工,不可能分投聚。

Unless otherwise stated the results shown in this test report relear only to the samplets, tested that it is saying the company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-and-Conditions/Terms-e-Document, Attention is drawn to the limitation of fiability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company, Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



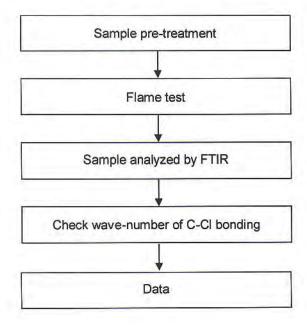
No.: CE/2013/13191 Date: 2013/01/21 Page: 25 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



Analysis flow chart for determination of PVC in material

- Name of the person who made measurement: Ginny Chen
- Name of the person in charge of measurement: Troy Chang



Member of the SGS Group



No.: CE/2013/13191 Date: 2013/01/21 Page: 26 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



DBBT analytical flow chart

- Name of the person who made measurement: Roman Wong Name of the person in charge of measurement: Troy Chang
 - Sample pretreatment/separation Sample extraction by soxhlet method Concentrate/Dilute Extracted solution Analysis was performed by GC/MS Data



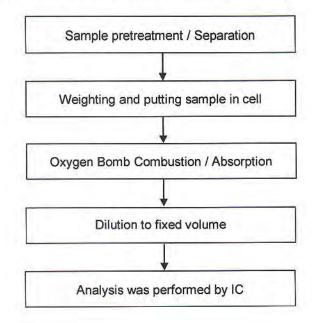
No.: CE/2013/13191 Date: 2013/01/21 Page: 27 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



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





Page: 28 of 29 No.: CE/2013/13191 Date: 2013/01/21

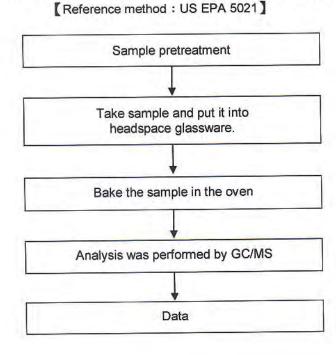
CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



Analytical flow chart of volatile organic compounds (VOCs)

Name of the person who made measurement: Chun Wu

Name of the person in charge of measurement: Shinjyh Chen



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company,张邦为主义的自由,并可以为政党。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_and_Conditions/Terms_and_Conditions/Terms_and_Conditions for Electronic Documents at www.sgs.com/terms_and_Conditions/Terms_and_Conditions for Electronic Documents at www.sgs.com/terms_and_Conditions/Terms_and_C



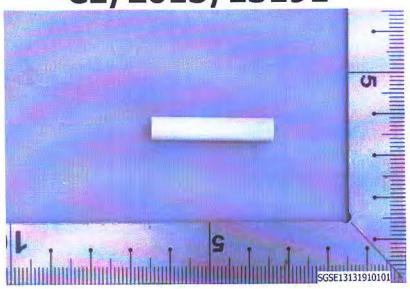
No.: CE/2013/13191 Date: 2013/01/21 Page: 29 of 29

CERAMTEC GMBH GESCHAFTSBEREICH MULTIFUNKTIONSKERAMIK, LUITPOLDSTRABE 15, 91207 LAUF



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

CE/2013/13191



** End of Report **

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company 张护元子至于 (1925) 此代 张龙元子 (1925) 正代 张龙元子 (1925) 正代 张龙元子 (1925) 正元 (1



Test Report Number: SHAH00361401

Date:

JAN 16, 2013

Applicant: LITTELFUSE,INC.

800 E. NORTHWEST HWY

A.DIVIETRO/D.UNTIEDT

Sample Description:

One (1) submitted sample said to be Grey Wire.

: Wire Tin Plated Cu. Item Name

Part No. Element.

Tests Conducted:

As requested by the applicant, for details refer to attached page(s).

To be continued

Authorized by:

For intertek testing services Ltd., Shanghai

Jacob Lin

General Manager





Test Report SHAH00361401 Number:

Tests Conducted

(I) Test Result Summary:

Testing Item R	esult (ppm)
(1)	
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	ND
Mercury (Hg) content	ND
Chromium VI (Cr ⁸⁺) content (mg/kg With 50cm ²)	Negative (< 0.02)

Testing Item R	esult (ppm)
(2)	
Heavy Metal	
Cadmium (Cd) content / Plating	ND
Lead (Pb) content / Plating	60
Mercury (Hg) content / Plating	ND
Chromium VI (Cr ⁶⁺) content (mg/kg With 50cm ²) / Plating	Negative (< 0.02)

Remarks:

ppm = parts per million = mg/kg

ND = not detected

@ = Due to the insufficient sample area, reduced total sample surface of 10 cm² was used and the dilution factor

was adjusted accordingly.
mg/kg with 50cm² = milligram per kilogram with 50 square centimetre

Tested components:

(1)Substrate. (2)Plating.

Responsibility of Chemist: Dent Fang / Ken He

(II) RoHS Requirement:

Restricted substances	<u>Limits</u>
Cadmium (Cd) Content	0.01% (100ppm)
Lead (Pb) Content	0.1% (1000ppm)
Mercury (Hg) Content	0.1% (1000ppm)
Chromium VI (Cr ^{o+}) Content	0.1% (1000ppm)
Polybrominated Biphenyls (PBBs)	0.1% (1000ppm)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000ppm)

The above limits were quoted from RoHS Directive 2011/65/EU for homogeneous material.

(III) Test Method:

1	<u>Festing item</u> T	esting method R	eporting limit
C	Cadmium (Cd) content	determined by ICP-OES.	2 ppm
L		determined by ICP-OES.	2 ppm
Ν	Mercury (Hg) content	With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
(Chromium VI (Cr ⁶⁺) content		0.02 mg/kg with 50cm ²

Remark: Reporting limit = Quantitation limit of analyze in sample

Date Sample Received: Jan.9, 2013
Testing Period: Jan.9, 2013 to Jan.14, 2013

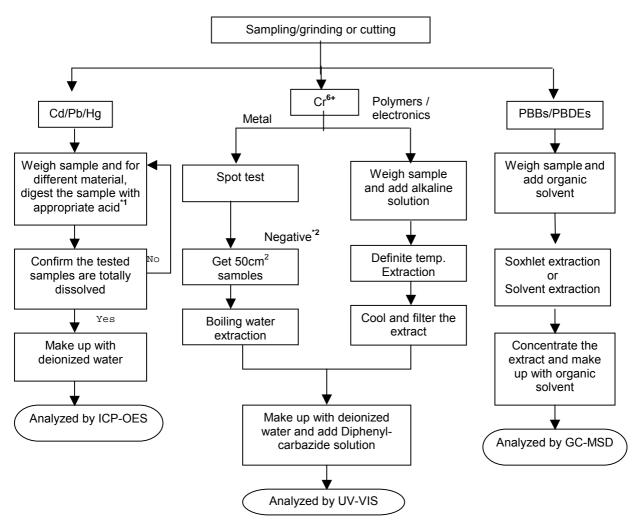
To be continued



Test Report Number: SHAH00361401

Tests Conducted (IV) MEASUREMENT FLOWCHART:

Test for Cd/ Pb/ Hg/Cr (VI)/ PBBs/PBDEs contents Reference standard: IEC 62321 edition 1.0:2008



REMARKS:

*1: LIST OF APPROPRIATE ACID:

7 THE TROIT WITH THE TROID.	
MATERIAL	ACID ADDED FOR DIGESTION
Polymers HNO	3,HCI,HF,H ₂ O ₂ ,H ₃ BO ₃
Metals HNO	3,HCL,HF
Electronics H	NO ₃ ,HCL,H ₂ O ₂ ,HBF ₄

*2: IF THE RESULT OF SPOT TEST IS POSITIVE, CHROMIUM (VI) WOULD BE DETERMINED AS DETECTED.

To be continued



Test Report SHAH00361401 Number:

Tests Conducted



End of report

This report is made solely on the basis of your instructions and/or information and materials supplied by you. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct.



No. SHAEC1215842621

Date: 13 Sep 2012

Page 1 of 4

CHINALO LUOYANG COPPER CO., LTD.
NO.50, JIANSHE ROAD, LUOYANG, HENAN PROVINCE

The following sample(s) was/were submitted and identified on behalf of the clients as: C10100(TU1)

SGS Job No. :

SP12-027024 - SH

Date of Sample Received:

10 Sep 2012

Testing Period:

10 Sep 2012 - 13 Sep 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).

Conclusion:

Based on the performed tests on submitted samples, the results of Lead,

Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

Fan Jingjie, JJ

Approved Signatory

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions. It is and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of liability, and appropriate to an analysis of the company is findings at the time of liability is to its Client and this document does not exponent on its specialisty is to its Client and this document does not exponent on attended to a transaction its is present on the company is find to the company its propriate parties of the Company its propriate parties of the Company is find the company of the Company is find the company of the company of



No. SHAEC1215842621

Date: 13 Sep 2012

Page 2 of 4

Test Results:

Test Part Description:

SGS Sample ID Specimen No.

Description

SHA12-158426.015

Copper metal sheet

Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive 2011/65/EU

Test Method: With reference to IEC 62321:2008

- (1) Determination of Cadmium by ICP-OES.
- (2) Determination of Lead by ICP-OES.
- (3) Determination of Mercury by ICP-OES.
- (4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method using UV-Vis.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	MDL	<u>015</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))		-	\Diamond	Negative

Notes:

(1) The maximum permissible limit is quoted from directive 2011/65/EU, Annex II

(2) Spot-test:

Negative = Absence of Cr(VI) coating, Positive = Presence of Cr(VI) coating;

(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:

Negative = Absence of Cr(VI) coating

Positive = Presence of Cr(VI) coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² 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.

document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions and,for electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of and,for electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of and for electronic Documents are www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of its province of the company's findings at the time of the company is on any jurisdiction lessues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of presention of the company is to its Client and this document does not axonerate parties to a transaction of sevential province of the company. The Company is to its Client and this document document and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Unauthorized alternation, torgety or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



No. SHAEC1215842621

Date: 13 Sep 2012

Page 3 of 4

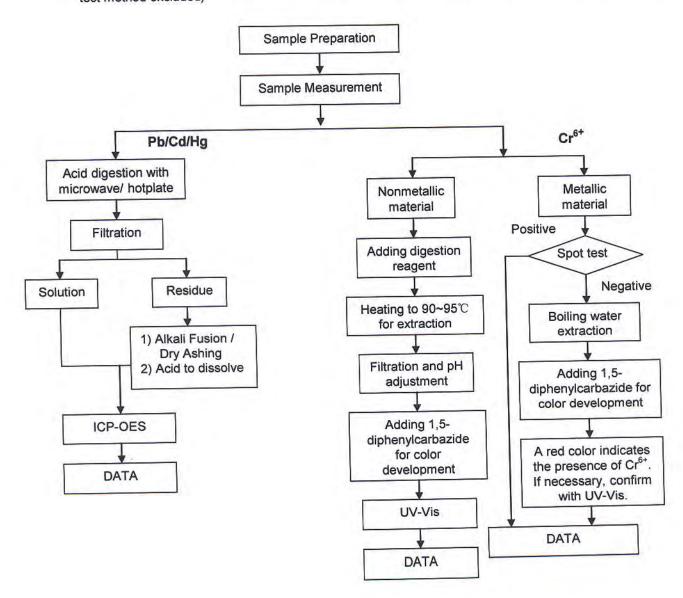
ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Jan Shi/Yoyo Wang/Allen Xiao

2) Name of the person in charge of testing: Jeff Zhang/George Xu

These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions. htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of liability, and printed in the company's findings at the time of liability in the limits of Client in instructions, if any. The Company's sole responsibility is to its Client and this document does not exponent earner to a transaction from the subject of the subject in the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document on the subject in the

3°Building,No.889 Yishan Road Xuhul District,Shanghai China 200233 中国・上海・徐江区宜山路889号3号楼 邮编: 200233

retora Ca., d. 1

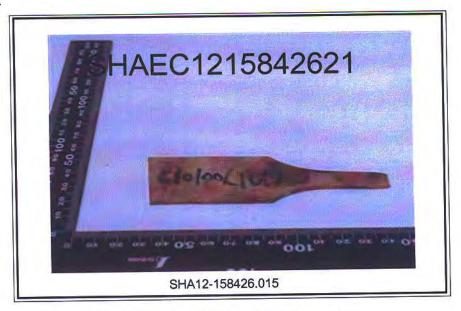


No. SHAEC1215842621

Date: 13 Sep 2012

Page 4 of 4

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions full and for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of liability transporting tion and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of liability transporting to the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not expert aprice to a transaction from the produced except in full, without prior written approval of the Company, and unauthorized alternion, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

The company of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

3"Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 

Report No. RLSHE001116910005

Page 1 of 7

Applicant

YANCHENG HUIHUA METAL WIRE CO.,LTD

Address

NO.10 HUANGHE ROAD, ECONOMIC DEVELOPMENT ZONE, FUNING

COUNTY, YANCHENG

The following sample(s)and sample information was/were submitted and identified by/on the

Final product Name

TIN COATED COPPER WIRE

Sample Name

1. COPPER

2. THE TIN LAYER

Sample Received Date

Aug.10,2012

Testing Period Test Requested

Aug.10,2012 to Aug.15,2012

As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg),

Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs), Hexabromocyclododecane

(HBCDD), Phthalates in the submitted sample(s).

Test Method

Please refer to the following pages.

Test Result

Please refer to the following pages.

Reviewed by

Date

Aug.15,2012

Joy Su

Senior Laboratory Manager

No. 83402468

Centre Testing International (Shenzhen) Co., Ltd.Shanghai Branch

No 1996, New Jinqiao Road, Pudong District, Shanghai



Report No. RLSHE001116910005

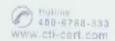
Page 2 of 7

Test Method

Tested Item	Test Method	Measured Equipment	M.D.L.	
	IEC 62321:2008 Ed.1 Sec.9			
Lead (Pb)	Plating layer test method (In-house method)	ICP-OES	2 mg/kg	
	IEC 62321:2008 Ed.1 Sec.9		2 mg/kg	
Cadmium (Cd)	Plating layer test method (In-house method)	ICP-OES		
And the second	IEC 62321:2008 Ed.1 Sec.7			
Mercury (Hg)	Plating layer test method (In-house method)	ICP-OES	2 mg/kg	
Hexavalent Chromium (Cr(VI))	IEC 62321:2008 Ed.1 Annex B	UV-Vis	-/	
Polybrominated Biphenyls (PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS	5 mg/kg	
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS	5 mg/kg	
Hexabromocyclododecane (HBCDD)	Refer to US EPA3550C:2007	GC-MS	5mg/kg	
Phthalates	Refer to EN 14372:2004	GC-MS	50mg/kg	

Test Result

Tested Items	Con	ntent
0.000	1	2
Lead (Pb)	N.D.	34 mg/kg
Cadmium (Cd)	N.D.	N.D.
Mercury (Hg)	N.D.	N.D.
Hexavalent Chromium (Cr(VI))	Negative	Negative





Report No. RLSHE001116910005

Page 3 of 7

Tested Item(s)	Co	ntent
337	1	2
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	N.D.
Dibromobiphenyl	N.D.	N.D.
Tribromobiphenyl	N.D.	N.D.
Tetrabromobiphenyl	N.D.	N.D.
Pentabromobiphenyl	N.D.	N.D.
Hexabromobiphenyl	N.D.	N.D.
Heptabromobiphenyl	N.D.	N.D.
Octabromobiphenyl	N.D.	N.D.
Nonabromobiphenyl	N.D.	N.D.
Decabromobiphenyl	N.D.	N.D.
Polybrominated Diphenyl Ethers(PBDEs		1,1,12,
Monobromodiphenyl ether	N.D.	N.D.
Dibromodiphenyl ether	N.D.	N.D.
Tribromodiphenyl ether	N.D.	N.D.
Tetrabromodiphenyl ether	N.D.	N.D.
Pentabromodiphenyl ether	N.D.	N.D.
Hexabromodiphenyl ether	N.D.	N.D.
Heptabromodiphenyl ether	N.D.	N.D.
Octabromodiphenyl ether	N.D.	N.D.
Nonabromodiphenyl ether	N.D.	N.D.
Decabromodiphenyl ether	N.D.	N.D.

Tested Item	Cor	ntent
	1	2
Hexabromocyclododecane (HBCDD)	N.D.	N.D.





Report No. RLSHE001116910005

Page 4 of 7

Tested Item	CAS No. EC No.	EC.N.	Content	
- Control of the Cont		1	2	
Phthalates				-
Dibutyl phthalate (DBP)	84-74-2	201-557-4	N.D.	N.D.
Benzylbutyl phthalate (BBP)	85-68-7	201-622-7	N.D.	N.D.
Bis(2-ethyl(hexyl)) phthalate (DEHP)	117-81-7	204-211-0	N.D.	N.D.

Tested Sample/Part Description: 1. Metal base material

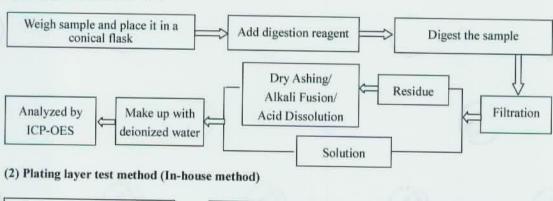
2. Silvery plating

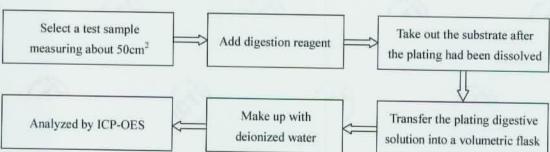
Note The sample had been dissolved totally tested for Lead, Cadmium, and Mercury.

- -M.D.L. = Method Detection Limit
- -N.D. = Not Detected (<M.D.L.)
- -mg/kg = ppm = parts per million
- -Negative = Absence of Cr (VI). The Cr (VI) concentration detected in the boiling water extraction solution is less than 0.02 mg/kg with 50cm2 sample surface area used.

Test Process

- 1. Test for Pb/Cd Content
- (1) IEC 62321:2008 Ed.1 Sec.9

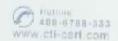




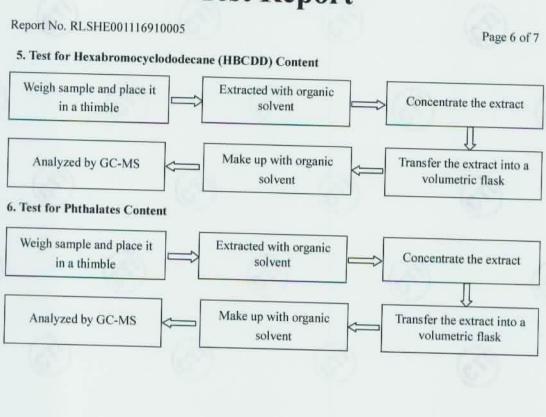




Report No. RLSHE001116910005 Page 5 of 7 2. Test for Hg Content (1)IEC 62321:2008 Ed.1 Sec.7 Weigh sample and place it in a Add digestion reagent Digest sample in microwave microwave digestion vessel digestion oven Dry Ashing/ Residue Alkali Fusion/ Analyzed by Make up with Acid Dissolution Filtration ICP-OES deionized water Solution (2) Plating layer test method (In-house method) Select a test sample Take out the substrate after Add digestion reagent measuring about 50cm2 the plating had been dissolved Make up with Transfer the plating digestive Analyzed by ICP-OES deionized water solution into a volumetric flask 3. Test for Cr (VI) Content Select a test sample Extraction with Filter and remove measuring about 50 ± 5 cm2 boiling water the sample Analyzed by UV-Vis Adjust the pH value Add test solution of the solution 4. Test for PBBs /PBDEs Content Weigh sample and Extracted with place it in a thimble Concentrate the extract organic solvent Make up with Transfer the extract into a Analyzed by GC-MS organic solvent volumetric flask









Report No. RLSHE001116910005

Page 7 of 7

Photo of the sample



1,2

*** End of Report ***

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.



www.cti-cert.com



No. SHAEC1216714748

Date: 25 Sep 2012

Page 1 of 5

ZHEJIANG ASIA GENERAL SOLDERING&BRAZING MATERIAL CO., LTD XIHU INDUSTRIAL PARK, SANDUN, HANGZHOU CITY, ZHEJIANG, PROVINCE, CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : LEAD-FREE SOLDER WIRE

SP12-028285 - SH SGS Job No. :

Part No. (P/N):

YTW108 (692535-001, 692535-003)

Composition:

Sn3.0CuRE

Date of Sample Received:

21 Sep 2012

Testing Period:

21 Sep 2012 - 25 Sep 2012

Test Requested:

Selected test(s) as requested by client.

Test Method:

Please refer to next page(s).

Test Results: Conclusion:

Please refer to next page(s).

Based on the performed tests on submitted samples, the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB),

Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

Fan Jingiie, JJ Approved Signatory

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions.

In and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of initiality in an analysis of the company's findings at the time of liability in an analysis of client and this document does not exponsibility in the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exponsible to a transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company frequency of the company. This document cannot be reproduced except in full, without prior written approval of the Company from the company of the company of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

These of the company results shown in this test report refer only to the sample(s) tested.

anghai) Co., List 3" Building, No. 889 Yishan Road Xuhui District, Shanghai China 200233



No. SHAEC1216714748

Date: 25 Sep 2012

Page 2 of 5

Test Results:

Test Part Description:

Specimen No. SGS Sample ID

Description

1

SHA12-167147.041

Silvery wire

Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive 2011/65/EU

Test Method: V

With reference to IEC 62321:2008

- (1) Determination of Cadmium by ICP-OES.
- (2) Determination of Lead by ICP-OES.
- (3) Determination of Mercury by ICP-OES.
- (4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method using UV-Vis.
- (5) Determination of PBBs / PBDEs by GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	MDL	041
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	55
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))		-	\Diamond	Negative
Sum of PBBs	1000	mg/kg	9.1	ND
Monobromobiphenyl	(4)	mg/kg	5	ND
Dibromobiphenyl	12	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	0.00	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl		mg/kg	5	ND
Octabromobiphenyl	4	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
	2.1	mg/kg	5	ND
Decabromobiphenyl	1000	mg/kg	1.41	ND
Sum of PBDEs Monobromodiphenyl ether	-	mg/kg	5	ND
Several de Augustin and Santan Santan				

3°Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 中国 - 上海·徐汇区宜山路889号3号楼 邮網: 200233 

Test Report	No. SHAEC121671474	48	Date: 25	Sep 2012	Page 3 of 5
Test Item(s)	<u>Limit</u>	<u>Unit</u>	MDL	041	
Dibromodiphenyl ether	-	mg/kg	5	ND	
Tribromodiphenyl ether	-	mg/kg	5	ND	
Tetrabromodiphenyl ether	C ò	mg/kg	5	ND	
Pentabromodiphenyl ether	-	mg/kg	5	ND	
Hexabromodiphenyl ether	C-	mg/kg	5	ND	
Heptabromodiphenyl ether	- 2	mg/kg	5	ND	
Octabromodiphenyl ether	THE STATE OF THE S	mg/kg	5	ND	
Nonabromodiphenyl ether	4	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	

Notes:

- (1) The maximum permissible limit is quoted from directive 2011/65/EU, Annex II
- (2) Spot-test:

Negative = Absence of Cr(VI) coating, Positive = Presence of Cr(VI) coating;

(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:

Negative = Absence of Cr(VI) coating

Positive = Presence of Cr(VI) coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² 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.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions to the limitation of the limitation of the company subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of tability of the company subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of the Company's findings at the time of liability of the Company within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not expert approval of the Company frequency of the Company is a subject to the company of the Company in the company of the Comp

gtai Co.l 4 3"Building, No.889 Yishan Road Xuhui District, Shanghai China 200233 中國 - 上海、徐江区宜山路889号3号楼 邮網: 200233 

No. SHAEC1216714748

Date: 25 Sep 2012

Page 4 of 5

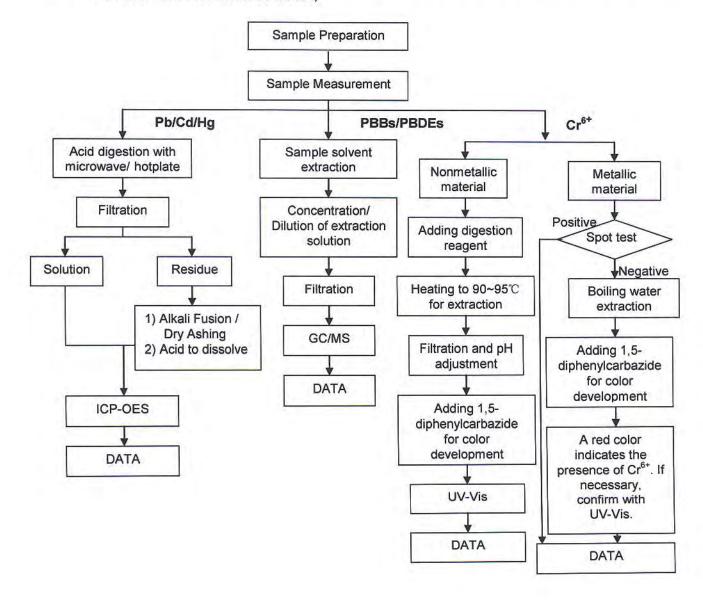
ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Jan Shi/Yoyo Wang/Allen Xiao/Gary Xu

2) Name of the person in charge of testing: Jeff Zhang/George Xu/ Linda Li

These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ and PBBs/PBDEs test method excluded)



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions. htm_and_for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of liability in formation contained hereon reflects the Company's findings at the time of its individual within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exponent parties to a transaction for the exercising all thin begins and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. The company is unauthorized alternation, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

The second prior to the second prior

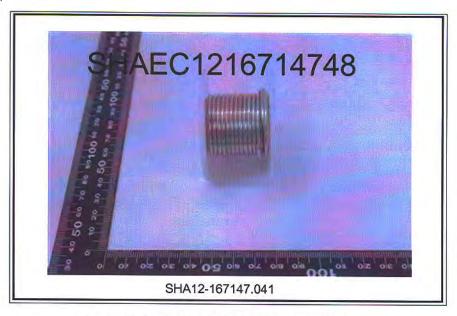
3"Bullding,No.889 Yishan Road Xuhui District,Shanghal China 200233 中国 - 上海 - 徐汇区宜山路889号3号楼 邮编: 200233 

No. SHAEC1216714748

Date: 25 Sep 2012

Page 5 of 5

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms and conditions htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of liability intermediate the formation is drawn to the limitation of liability intermediate the formation contained hereon reflects the Company's findings at the time of its intermediate within the limits of Client's instructions. If any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction for the provision all this hights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. It was unauthorized alternation, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

3°Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 中国 - 上海·徐江区宜山路889号3号楼 邮编: 200233 

Test Report No. CANEC1208305601 Date: 02 Jul 2012 Page 1 of 5

AIM SOLDER (SHEN ZHEN) CO.,LTD.

BLOCK 69,THIRD INDUSTRIAL ZONE,LUOTIAN VILLAGE,SONGGANG TOWN,BAOAN DISTRICT,SZ CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as: SOLDER WIRE AIM230 FAST CORE H RSA605

SGS Job No.: CP12-030363 - SZ

Date of Sample Received: 26 Jun 2012

Testing Period: 26 Jun 2012 - 02 Jul 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).

Conclusion: Based on the performed tests on submitted samples, the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

Kenny Wang Approved Signatory



No. CANEC1208305601

Date: 02 Jul 2012

Page 2 of 5

Test Results:

Test Part Description:

Specimen No. SGS Sample ID Description

1 CAN12-083056.001 Silvery metal wire

Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive 2011/65/EU

Test Method: With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method using UV-Vis.

(5) Determination of PBBs / PBDEs by GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	78
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-		\Diamond	Negative
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	4	mg/kg	5	ND
Dibromobiphenyl		mg/kg	5	ND
Tribromobiphenyl	1.5	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl		mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	- 2	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	2	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions.
htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document, htm. Attention is drawn to the limitation of liability are minus, tion and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its is translation of the document does not exonerate parties to a transaction its is translation of the document of the document does not exonerate parties to a transaction from the produced except in full, without prior written approval of the Company. The Company is a company of the content or appearance of this document is unlewful and offenders may be prosecuted to the fullest extent of the law.

In less otherwise attendance results shown in this test report refer only to the sample(s) tested.



Test Report	No. CANEC12083056	01	Date: 02	Jul 2012	Page 3 of 5
Test Item(s)	Limit	<u>Unit</u>	MDL	001	
Dibromodiphenyl ether		mg/kg	5	ND	
Tribromodiphenyl ether	1.4	mg/kg	5	ND	
Tetrabromodiphenyl ether	-	mg/kg	5	ND	
Pentabromodiphenyl ether	-	mg/kg	5	ND	
Hexabromodiphenyl ether		mg/kg	5	ND	
Heptabromodiphenyl ether		mg/kg	5	ND	
Octabromodiphenyl ether		mg/kg	5	ND	
Nonabromodiphenyl ether	4	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	

Notes:

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II (2) Spot-test:

Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;

(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:

Negative = Absence of CrVI coating

Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm2 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.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions.

In another electronic format document, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of himself and the state of the state of



No. CANEC1208305601

Date: 02 Jul 2012

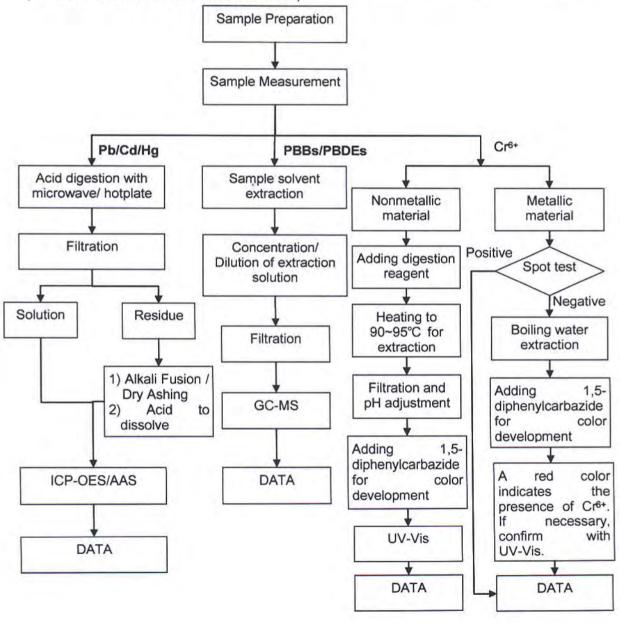
Page 4 of 5

www.cn.sgs.com

ATTACHMENTS

RoHS Testing Flow Chart

- 1) Name of the person who made testing: Bella Wang / Cutey Yu
- 2) Name of the person in charge of testing: Adams Yu / Ryan Yang
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr⁶⁺ and PBBs/PBDEs test method excluded).



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions.

In and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability_each. The company is continued by the company is findings_at the time of list of continued by the company is findings_at the time of list of company is the company is continued by the company is the company is to its Client and this document does not axonerate parties to a transaction for axis of company is continued at the company in the company is continued at the company of the company is continued at the company of the company



No. CANEC1208305601

Date: 02 Jul 2012

Page 5 of 5

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



No. SHAEC1219975401

Date: 19 Nov 2012

Page 1 of 7

3M CHINA LIMITED 222# TIAN LIN ROAD, SHANGHAI (200233)

The following sample(s) was/were submitted and identified on behalf of the clients as: 3M 3779-PG

SGS Job No. : SP12-033081 - SH

Date of Sample Received: 14 Nov 2012

Testing Period : 14 Nov 2012 - 19 Nov 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).

Conclusion: Based on the performed tests on submitted samples, the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

JJ Fan

Approved Signatory

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions. htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of liability dependence of the description of the descriptio



No. SHAEC1219975401

Date: 19 Nov 2012

Page 2 of 7

Test Results:

Test Part Description:

Specimen No. SGS Sample ID Description
1 SHA12-199754.001 Brown solid

Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive 2011/65/EU

Test Method: With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.

(5) Determination of PBBs / PBDEs content by GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	2	ND
Sum of PBBs	1000	mg/kg	+	ND
Monobromobiphenyl	19	mg/kg	5	ND
Dibromobiphenyl	4	mg/kg	5	ND
Tribromobiphenyl	1.4	mg/kg	5	ND
Tetrabromobiphenyl	(+)	mg/kg	5	ND
Pentabromobiphenyl		mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	Gé.	mg/kg	5	ND
Octabromobiphenyl	i i	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl		mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether		mg/kg	5	ND

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions. It mand, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of inability in a progression and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its interval within the limits of Client's instructions. If any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all time highest and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company for the company is formed attending to the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

The solid progression of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

3"Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 中国 - 上海 - 徐汇区宜山路889号3号楼 邮编: 200233 

Test Report	No. SHAEC12199754	01	Date: 19	Nov 2012	Page 3 of 7
Test Item(s)	Limit	<u>Unit</u>	MDL	001	
Dibromodiphenyl ether		mg/kg	5	ND	
Tribromodiphenyl ether	-	mg/kg	5	ND	
Tetrabromodiphenyl ether	-	mg/kg	5	ND	
Pentabromodiphenyl ether		mg/kg	5	ND	
Hexabromodiphenyl ether	9.0	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether		mg/kg	5	ND	
Nonabromodiphenyl ether		mg/kg	5	ND	
Decabromodiphenyl ether	· ·	mg/kg	5	ND	

Notes:

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II

Hexabromocyclododecane (HBCDD)

Test Method: Determination of HBCDD by GC-MS based on IEC 62321:2008.

Test Item(s)	<u>Unit</u>	MDL	001
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND

Notes:

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Hexabromocyclododecane (HBCDD) is considered as a priority for risk evaluation and substance restriction.

Phthalates

Test Method: Determination of phthalates by GC-MS based on EN 14372:2004.

Test Item(s)	<u>Unit</u>	MDL	001
Dibutyl Phthalate (DBP)	%	0.003	ND
Benzylbutyl Phthalate (BBP)	%	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	%	0.003	ND

Notes:

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP) and Dibutyl phthalate (DBP) are considered as a priority for risk evaluation and substance restriction.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions. htm and for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of itability of the state of the company is findings at the time of its intermediate on the properties of the company's findings at the time of the state of the company's findings at the time of the company is findings at the time of the company is findings at the time of the company. This document cannot be reproduced except in full, without prior written approval of the Company is findings at the time of the company is findings at the time of the company is finding to the company is finding to the company is the time of the company is finding to the company is find to the company is finding to t

3°Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 中国・上海・徐汇区宜山路889号3号楼 邮编: 200233 

No. SHAEC1219975401

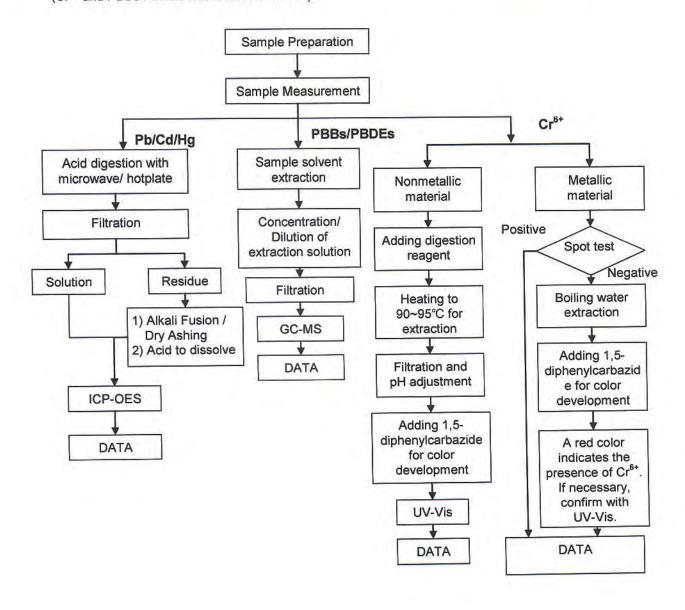
Date: 19 Nov 2012

Page 4 of 7

ATTACHMENTS

RoHS Testing Flow Chart

- 1) Name of the person who made testing: Jan Shi/Yoyo Wang/Allen Xiao/Gary Xu
- 2) Name of the person in charge of testing: Jeff Zhang/George Xu/ Linda Li
- These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ and PBBs/PBDEs test method excluded)



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions. htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of tiability and private diction issues defined theroin. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its instructions, if any. The Company's sole responsibility is to its Client and this document does not exponent parties to a transaction try dexercising all the hights and obligations under the transaction documents. This document cannot be reproduced except in full. without prior written approval of the Company. Any unauthorized siteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Lines of the prior transaction is a supplicable of the sample(s) tested.

3°Building,No.889 Yishan Road Xuhul District,Shanghai China 200233 中国 - 上海·徐汇区宜山路889号3号楼 邮编: 200233 

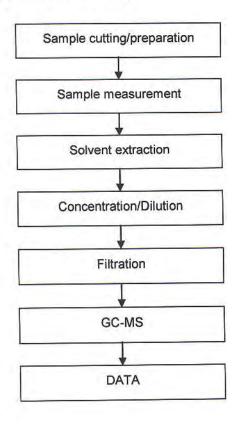
No. SHAEC1219975401

Date: 19 Nov 2012

Page 5 of 7

Phthalates Testing Flow Chart

- 1) Name of the person who made testing: Elyn Yao
- 2) Name of the person in charge of testing: Rachel Zhang



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions. htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of liability in sequence of the document is advised that information contained hereon reflects the Company's findings at the time of its interesting of the company within the limits of Client's instructions. If any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from the company in the company is a sequence of the company in the company is a sequence of the company in the company in the company of the company of the company of the company is considered in the company of the company is considered in the company of th

3"Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 中国 - 上海 - 徐汇区宜山路889号3号楼 邮编: 200233 

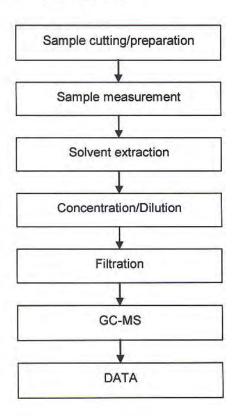
No. SHAEC1219975401

Date: 19 Nov 2012

Page 6 of 7

HBCDD Testing Flow Chart

- 1) Name of the person who made testing: Gary Xu
- 2) Name of the person in charge of testing: Jessy Huang



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions. htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of liability to account the formation contained hereon reflects the Company's findings at the time of its independent on only account the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not expense parties to a transaction for the company in the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not expense the expense of this document cannot be reproduced except in full, without prior written approval of the Company, unauthorized alternation, longery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

3°Building,No.889 Yishan Roed Xuhui District,Shanghai China 200233 中国 - 上海 · 徐汇区宜山路889号3号楼 邮编: 200233 

No. SHAEC1219975401

Date: 19 Nov 2012

Page 7 of 7

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terma_and_conditions. htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of inability in formation contained hereon reflects the Company's findings at the time of its interest of the company within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exponentee parties to a transaction of the company. It is to the company in the company in the company is to the company. It is to the company in the company in the company of the Company. It is unlawful and offenders may be prosecuted to the fullest extent of the law.

If the company is to the company is to the company in the company in the company of the company is unlawful and offenders may be prosecuted to the fullest extent of the law.



No. SHAEC1219975401

Date: 19 Nov 2012

Page 1 of 6

3M CHINA LIMITED 222# TIAN LIN ROAD, SHANGHAI (200233)

The following sample(s) was/were submitted and identified on behalf of the clients as: 3M 3779-PG

SGS Job No.: SP12-033081 - SH

Date of Sample Received: 14 Nov 2012

Testing Period: 14 Nov 2012 - 19 Nov 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).

Signed for and on behalf of SGS-CSTC Ltd.

JJ Fan

Approved Signatory

spaiCand I

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions. htm. and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of hability transportation and jurisdiction issued defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its interestion of hydrox within the limits of Client's instructions. If any, The Company's sole responsibility is to its Client and this document does not expert at a transaction its increase its produced accept in full, without prior written approval of the Company are unauthorized alternation, lorgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



No. SHAEC1219975401

Date: 19 Nov 2012

Page 2 of 6

Test Results:

Test Part Description:

Specimen No. SGS Sample ID Description

1 SHA12-199754.001 Brown solid

Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

Halogen

Test Method: With reference to EN 14582: 2007, analysis was performed by Ion Chromatograph (IC).

Test Item(s)	<u>Unit</u>	MDL	001
Fluorine (F)	mg/kg	50	ND
Chlorine (CI)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
lodine (I)	mg/kg	50	ND

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions. It mand, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.itm. Attention is drawn to the limitation of liability in adjustment on an jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its interest within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not expense the parties to a transaction documents. This document cannot be reproduced except in full without prior written approval of the Company, and under the transaction of the company. This document is unlawful and offenders may be prosecuted to the fullest extent of the law.

The second of the company of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

3 "Building, No.889 Yishan Road Xuhui District, Shanghai China 200233 中国・上海・徐江区宜山路889号3号楼 邮網: 200233 

No. SHAEC1219975401

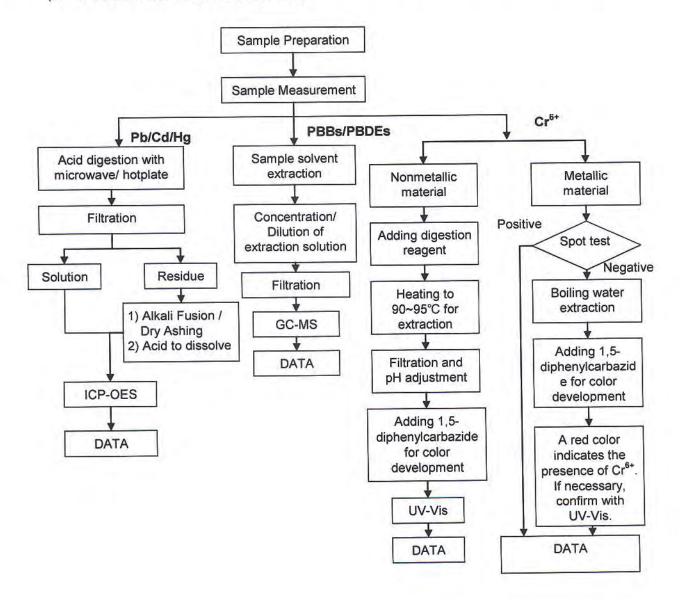
Date: 19 Nov 2012

Page 3 of 6

ATTACHMENTS

RoHS Testing Flow Chart

- 1) Name of the person who made testing: Jan Shi/Yoyo Wang/Allen Xiao/Gary Xu
- 2) Name of the person in charge of testing: Jeff Zhang/George Xu/ Linda Li
- These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ and PBBs/PBDEs test method excluded)



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_end_conditions. htm and for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability in formation contained hereon reflects the Company's findings at the time of its persention only act, within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not expressed as a transaction of the company in the company is a sole responsibility in the limits of the company of the Company are unauthorized attention, longery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

The second of the company of the company is a supplication of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

3°Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 

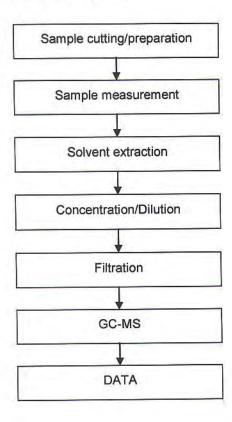
No. SHAEC1219975401

Date: 19 Nov 2012

Page 4 of 6

Phthalates Testing Flow Chart

- 1) Name of the person who made testing: Elyn Yao
- 2) Name of the person in charge of testing: Rachel Zhang



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions. htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of liability integritable and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its province of the company within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from the company is a sole in the company of the company. This document cannot be reproduced except in full, without prior written approval of the Company is unauthorized after a long to the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

The company is contained and the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



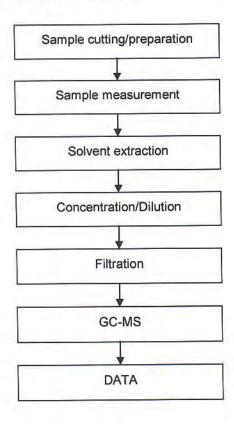
No. SHAEC1219975401

Date: 19 Nov 2012

Page 5 of 6

HBCDD Testing Flow Chart

- 1) Name of the person who made testing: Gary Xu
- 2) Name of the person in charge of testing: Jessy Huang



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions bitm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of liability to grow the subject to the following state that information contained hereon reflects the Company's findings at the time of its information on the properties of the subject to the findings at the time of its information of the subject to the company's sole responsibility is to its Client and this document does not exponent exported experts the company of the company. This document cannot be reproduced except in full, without prior written approval of the Company unumbrized atterfallow, forgery or fatsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

The company is a subject to the full of the company o

3"Building,Na.889 Yishan Road Xuhui District,Shanghai China 200233 中国 - 上海 - 徐江区宜山路889号3号楼 鄭纲: 200233 

No. SHAEC1219975401

Date: 19 Nov 2012

Page 6 of 6

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions to reject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability and expression and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its instructions, if any. The Company's sole responsibility is to its Client and this document does not exponent parties to a transaction its ignored attention only any time in the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exponent parties to a transaction documents. This document cannot be reproduced except in full. without prior written approval of the Company, and unuthorized alters in any time in the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

If all the company is forced to the full of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

3°Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 www.cn.sgs.com e sgs.china@sgs.com



Block B, Jinling Business Square,No.801 Yi Shan Road, Shanghai, China, 200233

AUG 15, 2012

Tel: +86 21 6120 6565 Fax: +86 21 6127 9740 www.intertek.com www.intertek.com.cn China Toll-Free: 800 999 1338

DATE:

TEST REPORT NUMBER: SH AH00334352

APPLICANT: LITTELFUSE,INC.

800 E. NORTHWEST HWY ATTN: A. CESISTA/ K. BACILA

SAMPLE DESCRIPTION:

One (1) submitted sample said to be **White Yarn.**Part Description : Yarn.
Part Number : 648102.

TESTS CONDUCTED:

AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

TO BE CONTINUED

AUTHORIZED BY: FOR INTERTEK TESTING SERVICES LTD., SHANGHAI

JACOB LIN GENERAL MANAGER



Block B, Jinling Business Square, No. 801 Yi Shan Road, Shanghai, China, 200233

Tel: +86 21 6120 6565 Fax: +86 21 6127 9740 www.intertek.com www.intertek.com.cn China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SH AH00334352

TESTS CONDUCTED

1 (I) Test Result Summary:

TESTING ITEM R	ESULT (ppm)
HEAVY METAL	
CADMIUM (Cd) CONTENT	ND
LEAD (Pb) CONTENT	ND
MERCURY (Hg) CONTENT	ND
CHROMIUM VI (Cr ⁶⁺) CONTENT	ND
POLYBROMINATED BIPHENYLS (PBBs)	
MONOBROMINATED BIPHENYLS (MonoBB)	ND
DIBROMINATED BIPHENYLS (DIBB)	ND
TRIBROMINATED BIPHENYLS (TriBB)	ND
TETRABROMINATED BIPHENYLS (TetraBB)	ND
PENTABROMINATED BIPHENYLS (PentaBB)	ND
HEXABROMINATED BIPHENYLS (HexaBB)	ND
HEPTABROMINATED BIPHENYLS (HeptaBB)	ND
OCTABROMINATED BIPHENYLS (OctaBB)	ND
NONABROMINATED BIPHENYLS (NonaBB)	ND
DECABROMINATED BIPHENYL (DecaBB) ND	
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	
MONOBROMINATED DIPHENYL ETHERS (MonoBDE)	ND
DIBROMINATED DIPHENYL ETHERS (DIBDE)	ND
TRIBROMINATED DIPHENYL ETHERS (TriBDE)	ND
TETRABROMINATED DIPHENYL ETHERS (TetraBDE)	ND
PENTABROMINATED DIPHENYL ETHERS (PentaBDE)	ND
HEXABROMINATED DIPHENYL ETHERS (HexaBDE)	ND
HEPTABROMINATED DIPHENYL ETHERS (HeptaBDE)	ND
OCTABROMINATED DIPHENYL ETHERS (OctaBDE)	ND
NONABROMINATED DIPHENYL ETHERS (NonaBDE) ND	
DECABROMINATED DIPHENYL ETHER (DecaBDE) ND	
HALOGEN CONTENT	
FLUORINE (F)	ND
CHLORINE (CI)	ND
BROMINE (Br)	ND
IODINE (I)	ND

REMARKS: ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

RESPONSIBILITY OF CHEMIST: DENT FANG / KEN HE



Block B, Jinling Business Square,No.801 Yi Shan Road, Shanghai, China, 200233

Tel: +86 21 6120 6565 Fax: +86 21 6127 9740 www.intertek.com www.intertek.com.cn China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SH AH00334352

TESTS CONDUCTED

(II) ROHS REQUIREMENT:

<u> </u>	
RESTRICTED SUBSTANCES LIM	<u>ITS</u>
CADMIUM (Cd) CONTENT	0.01% (100ppm)
LEAD (Pb) CONTENT	0.1% (1000ppm)
MERCURY (Hg) CONTENT	0.1% (1000ppm)
CHROMIUM VI (Cr ⁵⁺) CONTENT	0.1% (1000ppm)
POLYBROMINATED BIPHENYLS (PBBs)	0.1% (1000ppm)
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	0.1% (1000ppm)

THE ABOVE LIMITS WERE QUOTED FROM ROHS DIRECTIVE 2002/95/EC AND AMENDMENT 2005/618/EC FOR HOMOGENEOUS MATERIAL.

(III) TEST METHOD:

(III) TEOT WETTIOD.		
TESTING ITEM TE	STING METHOD	REPORTING LIMIT
CADMIUM (Cd) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN CLAUSE 8/9/10, BY MICROWAVE DIGESTION UNTIL THE TESTED SAMPLES ARE TOTALLY DISSOLVED AND DETERMINED BY ICP-OES.	2 ppm
LEAD (Pb) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN CLAUSE 8/9/10, BY MICROWAVE DIGESTION UNTIL THE TESTED SAMPLES ARE TOTALLY DISSOLVED AND DETERMINED BY ICP-OES.	2 ppm
MERCURY (Hg) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN CLAUSE 7, BY MICROWAVE DIGESTION UNTIL THE TESTED SAMPLES ARE TOTALLY DISSOLVED AND DETERMINED BY ICP-OES.	2 ppm
CHROMIUM VI (CR ⁶⁺) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN ANNEX C, BY ALKALINE DIGESTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER.	1 ppm
POLYBROMINATED BIPHENYLS (PBBs)	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN ANNEX A, BY SOLVENT EXTRACTION AND DETERMINED BY GC-MSD AND FURTHER HPLC CONFIRMATION WHEN NECESSARY.	5 ppm
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN ANNEX A, BY SOLVENT EXTRACTION AND DETERMINED BY GC-MSD AND FURTHER HPLC CONFIRMATION WHEN NECESSARY.	5 ppm

REMARK: REPORTING LIMIT = QUANTITATION LIMIT OF ANALYZE IN SAMPLE

Date Sample Receive: AUG.9, 2012 Test Period: AUG.9, 2012 To AUG.15, 2012

RESPONSIBILITY OF CHEMIST: KEN HE



Block B, Jinling Business Square,No.801 Yi Shan Road, Shanghai, China, 200233

Tel: +86 21 6120 6565 Fax: +86 21 6127 9740 www.intertek.com www.intertek.com.cn China Toll-Free: 800 999 1338

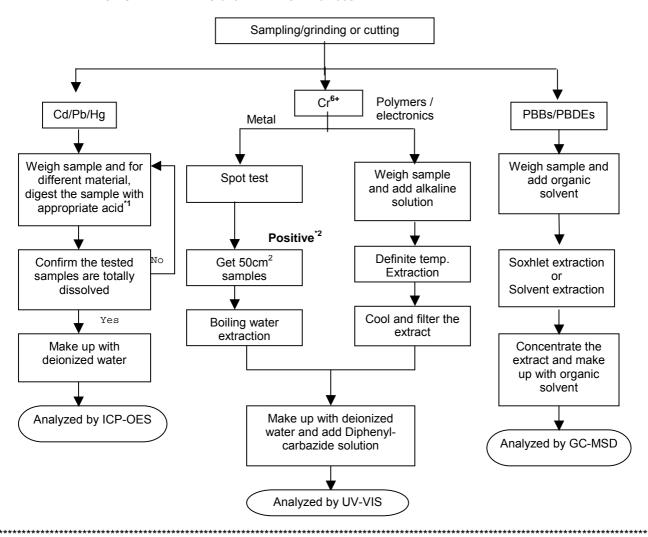
TEST REPORT

NUMBER: SH AH00334352

TESTS CONDUCTED

(IV) MEASUREMENT FLOWCHART:

TEST FOR Cd/ Pb/ Hg/Cr (VI)/ PBBS/PBDES CONTENTS REFERENCE STANDARD: IEC 62321 EDITION 1.0:2008





Block B, Jinling Business Square,No.801 Yi Shan Road, Shanghai, China, 200233

Tel: +86 21 6120 6565 Fax: +86 21 6127 9740 www.intertek.com www.intertek.com.cn China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SH AH00334352

TESTS CONDUCTED

REMARKS:

*1: LIST OF APPROPRIATE ACID:

MATERIAL	ACID ADDED FOR DIGESTION	
POLYMERS HNO	_{3,} HCL,HF,H ₂ O _{2,} H ₃ BO ₃	
METALS HNO	_{3,} HCL,HF	
ELECTRONICS HNO	3,HCL,H ₂ O ₂ ,HBF ₄	

*2: IF THE RESULT OF SPOT TEST IS POSITIVE, CHROMIUM (VI) WOULD BE DETERMINED AS DETECTED.



Block B, Jinling Business Square,No.801 Yi Shan Road, Shanghai, China, 200233

Tel: +86 21 6120 6565 Fax: +86 21 6127 9740 www.intertek.com www.intertek.com.cn China Toll-Free: 800 999 1338

TEST REPORT NUMBER: SH AH00334352

TESTS CONDUCTED

2 (I) Test Result Summary:

` '		
	Testing Item	Result (ppm)
Halogen Content		
Fluorine (F)		ND
Chlorine (CI)		ND
Bromine (Br)		ND
lodine (I)		ND

Remarks: ppm = Parts per million = mg/kg

ND = Not detected

(III) Test Method:

Testing Item T	esting Method R	eporting Limit
THAINNEN CONTENT	With reference to EN 14582:2007 by combustion flask with oxygen and determined by ion chromatography	50 ppm

Remark: Reporting limit = Quantitation limit of analyte in sample



Block B, Jinling Business Square,No.801 Yi Shan Road, Shanghai, China, 200233

Tel: +86 21 6120 6565 Fax: +86 21 6127 9740 www.intertek.com www.intertek.com.cn China Toll-Free: 800 999 1338

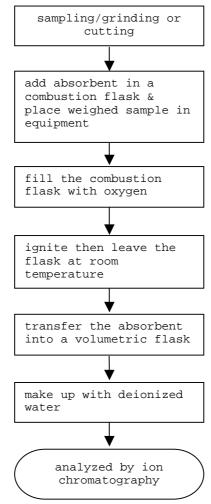
TEST REPORT

NUMBER: SH AH00334352

TESTS CONDUCTED

(IV) Measurement Flowchart:

Test For Halogen Content Reference Standard: EN 14582





Block B, Jinling Business Square,No.801 Yi Shan Road, Shanghai, China, 200233

Tel: +86 21 6120 6565 Fax: +86 21 6127 9740 www.intertek.com www.intertek.com.cn China Toll-Free: 800 999 1338

TEST REPORT

NUMBER: SH AH00334352

TESTS CONDUCTED



END OF REPORT

This report is made solely on the basis of your instructions and/or information and materials supplied by you. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct.



APPLICANT: LITTELFUSE, INC. DATE: DEC 13, 2012

800 E. NORTHWEST HWY ΑT A.DIVIETRO/D.UNTIEDT

SAMPLE DESCRIPTION:

ONE (1) SUBMITTED SAMPLE SAID TO BE WHITE POWDER.

ITEM NAME FILLER. PART NO. 090187.

TESTS CONDUCTED:

AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

TO BE CONTINUED

AUTHORIZED BY: FOR INTERTEK TESTING SERVICES LTD., SHANGHAI

JACOB LIN

GENERAL MANAGER



TESTS CONDUCTED

(I) Test Result Summary:

TESTING ITEM R	ESULT (ppm)
HEAVY METAL	
CADMIUM (Cd) CONTENT	ND
LEAD (Pb) CONTENT	ND
MERCURY (Hg) CONTENT	ND
CHROMIUM VI (Cr ⁶⁺) CONTENT	ND
POLYBROMINATED BIPHENYLS (PBBs)	
MONOBROMINATED BIPHENYLS (MonoBB)	ND
DIBROMINATED BIPHENYLS (DIBB)	ND
TRIBROMINATED BIPHENYLS (TriBB)	ND
TETRABROMINATED BIPHENYLS (TetraBB)	ND
PENTABROMINATED BIPHENYLS (PentaBB)	ND
HEXABROMINATED BIPHENYLS (HexaBB)	ND
HEPTABROMINATED BIPHENYLS (HeptaBB)	ND
OCTABROMINATED BIPHENYLS (OctaBB)	ND
NONABROMINATED BIPHENYLS (NonaBB)	ND
DECABROMINATED BIPHENYL (DecaBB)	ND
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	
MONOBROMINATED DIPHENYL ETHERS (MonoBDE)	ND
DIBROMINATED DIPHENYL ETHERS (DIBDE)	ND
TRIBROMINATED DIPHENYL ETHERS (TriBDE)	ND
TETRABROMINATED DIPHENYL ETHERS (TetraBDE)	ND
PENTABROMINATED DIPHENYL ETHERS (PentaBDE)	ND
HEXABROMINATED DIPHENYL ETHERS (HexaBDE)	ND
HEPTABROMINATED DIPHENYL ETHERS (HeptaBDE)	ND
OCTABROMINATED DIPHENYL ETHERS (OctaBDE)	ND
NONABROMINATED DIPHENYL ETHERS (NonaBDE)	ND
DECABROMINATED DIPHENYL ETHER (DecaBDE)	ND

NUMBER: SH

AH00355828

REMARKS: ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

(II) ROHS REQUIREMENT:

(II) NOTO REGUIRENT:	
RESTRICTED SUBSTANCES LIM	ITS
CADMIUM (Cd) CONTENT	0.01% (100ppm)
LEAD (Pb) CONTENT	0.1% (1000ppm)
MERCURY (Hg) CONTENT	0.1% (1000ppm)
CHROMIUM VI (Cr ⁶⁺) CONTENT	0.1% (1000ppm)
POLYBROMINATED BIPHENYLS (PBBs)	0.1% (1000ppm)
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	0.1% (1000ppm)

THE ABOVE LIMITS WERE QUOTED FROM ROHS DIRECTIVE 2002/95/EC AND AMENDMENT 2005/618/EC FOR HOMOGENEOUS MATERIAL.



TESTS CONDUCTED

(I) Test Result Summary:

TESTING ITEM R	ESULT (ppm)
HALOGEN CONTENT	
FLUORINE (F)	ND
CHLORINE (CI)	ND
BROMINE (Br)	ND
IODINE (I)	ND

NUMBER: SH

AH00355828

ppm = PARTS PER MILLION = mg/kg **REMARKS:**

ND = NOT DETECTED

(III) TEST METHOD:

TESTING ITEM T	ESTING METHOD	REPORTING LIMIT
IHALOGENICONTENT	WITH REFERENCE TO EN 14582:2007 BY COMBUSTION FLASK WITH OXYGEN AND DETERMINED BY ION CHROMATOGRAPHY	50 ppm



TESTS CONDUCTED

(III) TEST METHOD:

(m) reor merrios.		
TESTING ITEM T	ESTING METHOD	REPORTING LIMIT
CADMIUM (Cd) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN CLAUSE 8/9/10, BY MICROWAVE DIGESTION UNTIL THE TESTED SAMPLES ARE TOTALLY DISSOLVED AND DETERMINED BY ICP-OES.	2 ppm
LEAD (Pb) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN CLAUSE 8/9/10, BY MICROWAVE DIGESTION UNTIL THE TESTED SAMPLES ARE TOTALLY DISSOLVED AND DETERMINED BY ICP-OES.	2 ppm
MERCURY (Hg) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN CLAUSE 7, BY MICROWAVE DIGESTION UNTIL THE TESTED SAMPLES ARE TOTALLY DISSOLVED AND DETERMINED BY ICP-OES.	2 ppm
CHROMIUM VI (CR ⁶⁺) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN ANNEX C, BY ALKALINE DIGESTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER.	1 ppm
POLYBROMINATED BIPHENYLS (PBBs)	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN ANNEX A, BY SOLVENT EXTRACTION AND DETERMINED BY GC-MSD AND FURTHER HPLC CONFIRMATION WHEN NECESSARY.	5 ppm
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN ANNEX A, BY SOLVENT EXTRACTION AND DETERMINED BY GC-MSD AND FURTHER HPLC CONFIRMATION WHEN NECESSARY.	5 ppm

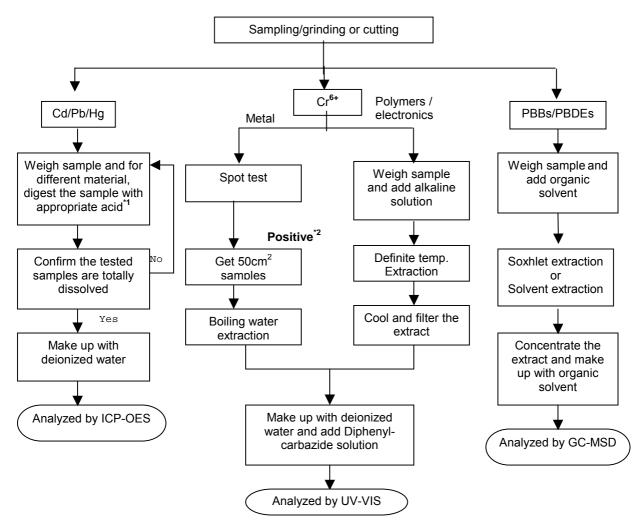
REMARK: REPORTING LIMIT = QUANTITATION LIMIT OF ANALYZE IN SAMPLE



TESTS CONDUCTED

(IV) MEASUREMENT FLOWCHART:

TEST FOR Cd/ Pb/ Hg/Cr (VI)/ PBBS/PBDES CONTENTS REFERENCE STANDARD: IÉC 62321 EDITION 1.0:2008



REMARKS:

*1: LIST OF APPROPRIATE ACID:

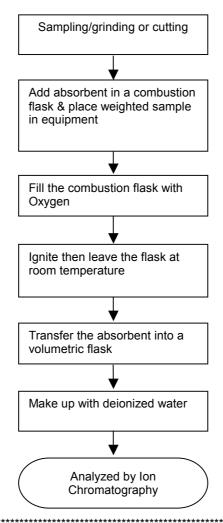
MATERIAL	ACID ADDED FOR DIGESTION
POLYMERS HNO	_{3,} HCL,HF,H ₂ O _{2,} H ₃ BO ₃
METALS HNO	_{3,} HCL,HF
ELECTRONICS HNO	3,HCL,H ₂ O ₂ ,HBF ₄

*2: IF THE RESULT OF SPOT TEST IS POSITIVE, CHROMIUM (VI) WOULD BE DETERMINED AS DETECTED.



TESTS CONDUCTED

(V) MEASUREMENT FLOWCHART: TEST FOR HALOGEN CONTENT REFERENCE STANDARD: EN 14582



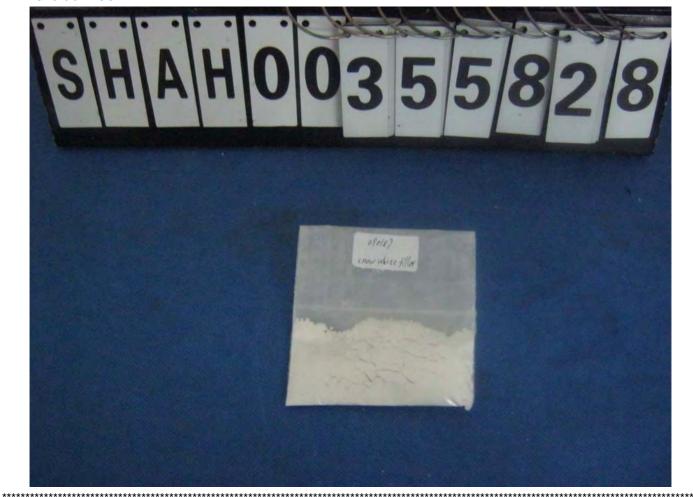
NUMBER: SH

AH00355828



TESTS CONDUCTED

NUMBER: SH AH00355828



END OF REPORT

This report is made solely on the basis of your instructions and/or information and materials supplied by you. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct.



APPLICANT: LITTELFUSE, INC. DATE: DEC 13, 2012

800 E. NORTHWEST HWY ΑT A.DIVIETRO/D.UNTIEDT

SAMPLE DESCRIPTION:

ONE(1) SUBMITTED SAMPLE SAID TO BE BEIGE POWDER.

ITEM NAME FILLER. PART NO. 090184.

TESTS CONDUCTED:

AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

TO BE CONTINUED

AUTHORIZED BY: FOR INTERTEK TESTING SERVICES LTD., SHANGHAI

JACOB LIN

GENERAL MANAGER



TESTS CONDUCTED

1 (I) Test Result Summary:

TESTING ITEM R	ESULT (ppm)
HEAVY METAL	
CADMIUM (Cd) CONTENT	ND
LEAD (Pb) CONTENT	ND
MERCURY (Hg) CONTENT	ND
CHROMIUM VI (Cr ⁶⁺) CONTENT	ND
POLYBROMINATED BIPHENYLS (PBBs)	
MONOBROMINATED BIPHENYLS (MonoBB)	ND
DIBROMINATED BIPHENYLS (DiBB)	ND
TRIBROMINATED BIPHENYLS (TriBB)	ND
TETRABROMINATED BIPHENYLS (TetraBB)	ND
PENTABROMINATED BIPHENYLS (PentaBB)	ND
HEXABROMINATED BIPHENYLS (HexaBB)	ND
HEPTABROMINATED BIPHENYLS (HeptaBB)	ND
OCTABROMINATED BIPHENYLS (OctaBB)	ND
NONABROMINATED BIPHENYLS (NonaBB)	ND
BROMINATED BIPHENYL (DecaBB) ND	
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	
MONOBROMINATED DIPHENYL ETHERS (MonoBDE)	ND
DIBROMINATED DIPHENYL ETHERS (DIBDE)	ND
TRIBROMINATED DIPHENYL ETHERS (TriBDE)	ND
TETRABROMINATED DIPHENYL ETHERS (TetraBDE)	ND
PENTABROMINATED DIPHENYL ETHERS (PentaBDE)	ND
HEXABROMINATED DIPHENYL ETHERS (HexaBDE)	ND
HEPTABROMINATED DIPHENYL ETHERS (HeptaBDE)	ND
OCTABROMINATED DIPHENYL ETHERS (OctaBDE)	ND
NONABROMINATED DIPHENYL ETHERS (NonaBDE)	ND
DECABROMINATED DIPHENYL ETHER (DecaBDE)	ND

REMARKS: ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

RESPONSIBILITY OF CHEMIST: DENT FANG / LEAF LIU

(II) ROHS REQUIREMENT:

RESTRICTED SUBSTANCES LIM	ITS
CADMIUM (Cd) CONTENT	0.01% (100ppm)
LEAD (Pb) CONTENT	0.1% (1000ppm)
MERCURY (Hg) CONTENT	0.1% (1000ppm)
CHROMIUM VI (Cr ⁶⁺) CONTENT	0.1% (1000ppm)
POLYBROMINATED BIPHENYLS (PBBs)	0.1% (1000ppm)
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	0.1% (1000ppm)

THE ABOVE LIMITS WERE QUOTED FROM ROHS DIRECTIVE 2002/95/EC AND AMENDMENT 2005/618/EC FOR HOMOGENEOUS MATERIAL.



TESTS CONDUCTED

(III) TEST METHOD:

(III) ILOI WEITIOD.		
TESTING ITEM T	ESTING METHOD	REPORTING LIMIT
CADMIUM (Cd) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN CLAUSE 8/9/10, BY MICROWAVE DIGESTION UNTIL THE TESTED SAMPLES ARE TOTALLY DISSOLVED AND DETERMINED BY ICP-OES.	2 ppm
LEAD (Pb) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN CLAUSE 8/9/10, BY MICROWAVE DIGESTION UNTIL THE TESTED SAMPLES ARE TOTALLY DISSOLVED AND DETERMINED BY ICP-OES.	2 ppm
MERCURY (Hg) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN CLAUSE T, BY MICROWAVE DIGESTION UNTIL THE TESTED SAMPLES ARE TOTALLY DISSOLVED AND DETERMINED BY ICP-OES.	
CHROMIUM VI (CR ⁶⁺) CONTENT	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN ANNEX C, BY ALKALINE DIGESTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER.	1 ppm
POLYBROMINATED BIPHENYLS (PBBs)	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN ANNEX A, BY SOLVENT EXTRACTION AND DETERMINED BY GC-MSD AND FURTHER HPLC CONFIRMATION WHEN NECESSARY.	5 ppm
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	WITH REFERENCE TO IEC 62321 EDITION 1.0:2008 IN ANNEX A, BY SOLVENT EXTRACTION AND DETERMINED BY GC-MSD AND FURTHER HPLC CONFIRMATION WHEN NECESSARY.	5 ppm

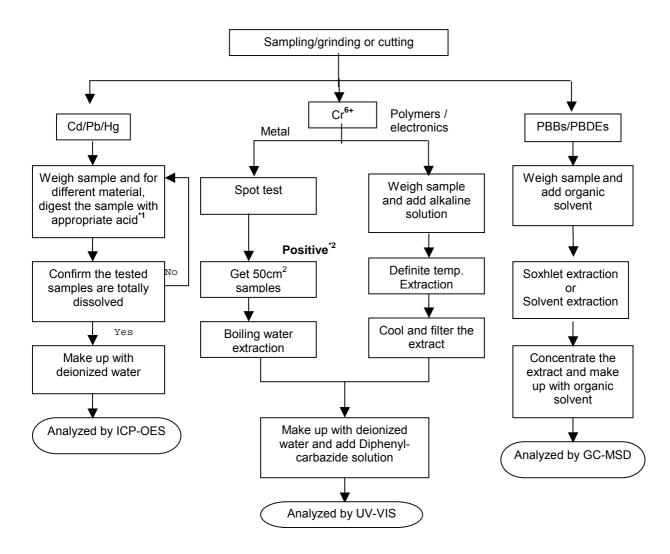
REMARK: REPORTING LIMIT = QUANTITATION LIMIT OF ANALYZE IN SAMPLE



TESTS CONDUCTED

(IV) MEASUREMENT FLOWCHART:

TEST FOR Cd/ Pb/ Hg/Cr (VI)/ PBBS/PBDES CONTENTS REFERENCE STANDARD: IEC 62321 EDITION 1.0:2008



REMARKS:

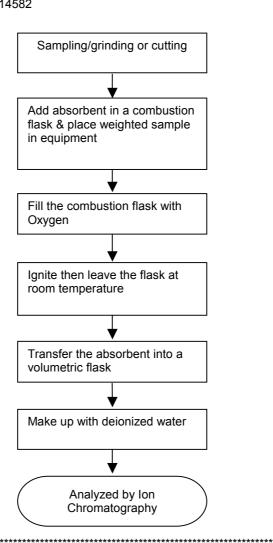
*1: LIST OF APPROPRIATE ACID:

MATERIAL	ACID ADDED FOR DIGESTION
POLYMERS HNO	_{3,} HCL,HF,H ₂ O _{2,} H ₃ BO ₃
METALS HNO	_{3,} HCL,HF
ELECTRONICS HNO	3,HCL,H ₂ O ₂ ,HBF ₄

*2: IF THE RESULT OF SPOT TEST IS POSITIVE, CHROMIUM (VI) WOULD BE DETERMINED AS DETECTED.



TESTS CONDUCTED (\boldsymbol{V}) MEASUREMENT FLOWCHART: TEST FOR HALOGEN CONTENT REFERENCE STANDARD: EN 14582



NUMBER: SH

AH00355836



TESTS CONDUCTED

2 (I) Test Result Summary:

	Testing Item	Result (ppm)
Halogen Content		
Fluorine (F)		ND
Chlorine (CI)		100
Bromine (Br)		ND
lodine (I)		ND

ppm = Parts per million = mg/kg Remarks:

Not detected

Responsibility Of Chemist : Grace Wang

(III) Test Method:

Testing Item T	esting Method R	eporting Limit
inalonen Content	With reference to EN 14582:2007 by combustion flask with oxygen and determined by ion chromatography	50 ppm

Remark: Reporting limit = Quantitation limit of analyte in sample

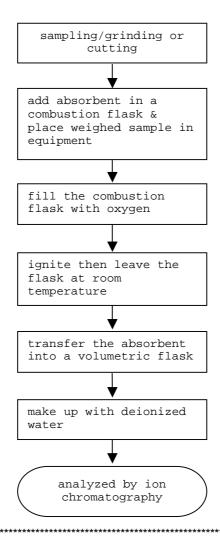
Date Sample Received : Dec.5, 2012

Testing Period : Dec.5, 2012 To Dec.11, 2012



TESTS CONDUCTED ($\!\operatorname{IV}\!$) Measurement Flowchart:

> Test For Halogen Content Reference Standard: EN 14582



NUMBER: SH

AH00355836



NUMBER: SH AH00355836

TESTS CONDUCTED



END OF REPORT

This report is made solely on the basis of your instructions and/or information and materials supplied by you. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct.



APPLICANT: LITTELFUSE, INC. DATE: OCT 29, 2012

800 E. NORTHWEST HWY ΑT A.DIVIETRO/D.UNTIEDT

SAMPLE DESCRIPTION:

ONE (1) SUBMITTED SAMPLE SAID TO BE **BROWN INK.** PART DESCRIPTION INK-BROWN. PART NUMBER 425906.

DATE SAMPLE RECEIVED OCTOBER.15, 2012. DATE TEST STARTED OCTOBER.15, 2012.

TESTS CONDUCTED:

AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

TO BE CONTINUED

AUTHORIZED BY: FOR INTERTEK TESTING SERVICES LTD., SHANGHAI

JACOB LIN

GENERAL MANAGER



TESTS CONDUCTED

1 (I) Test Result Summary:

<u>Testing Item</u>	Result (ppm)
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	ND
Mercury (Hg) content	ND
Chromium VI (Cr ⁶⁺) content	ND
Polybrominated Biphenyls (PBBs)	
Monobrominated Biphenyls (MonoBB)	ND
Dibrominated Biphenyls (DiBB)	ND
Tribrominated Biphenyls (TriBB)	ND
Tetrabrominated Biphenyls (TetraBB)	ND
Pentabrominated Biphenyls (PentaBB)	ND
Hexabrominated Biphenyls (HexaBB)	ND
Heptabrominated Biphenyls (HeptaBB)	ND
Octabrominated Biphenyls (OctaBB)	ND
Nonabrominated Biphenyls (NonaBB)	ND
Decabrominated Biphenyl (DecaBB)	ND
Polybrominated Diphenyl Ethers (PBDEs)	
Monobrominated Diphenyl Ethers (MonoBDE)	ND
Dibrominated Diphenyl Ethers (DiBDE)	ND
Tribrominated Diphenyl Ethers (TriBDE)	ND
Tetrabrominated Diphenyl Ethers (TetraBDE)	ND
Pentabrominated Diphenyl Ethers (PentaBDE)	ND
Hexabrominated Diphenyl Ethers (HexaBDE)	ND
Heptabrominated Diphenyl Ethers (HeptaBDE)	ND
Octabrominated Diphenyl Ethers (OctaBDE)	ND
Nonabrominated Diphenyl Ethers (NonaBDE)	ND
Decabrominated Diphenyl Ether (DecaBDE)	ND

(III) Test Method:

(III) Test Metriou.			
Testing Item T	esting Method R	eporting Limit	
Cadmium (Cd) content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm	
Lead (Pb) content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.		
Mercury (Hg) content	With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm	
Chromium VI (Cr ⁶⁺) content	With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.	1 ppm	
Polybrominated Biphenyls (PBBs)	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary. 5 ppm		
Polybrominated Diphenyl Ethers (PBDEs) With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.		5 ppm	

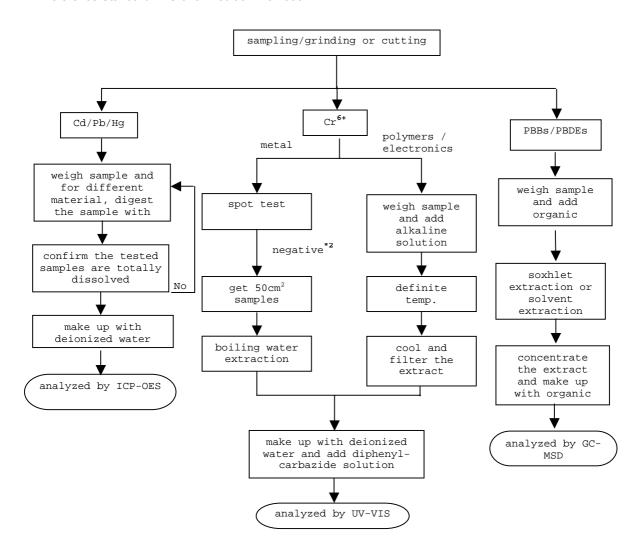
Reporting limit = Quantitation limit of analyte in sample Remark:



TESTS CONDUCTED

(IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents Reference Standard: IEC 62321 edition 1.0:2008



REMARKS:

*1: List of appropriate acid:

<u>Material</u>	Acid added for digestion
Polymers	HNO _{3,} HCl,HF,H ₂ O _{2,} H ₃ BO ₃
Metals HNO	_{3,} HCl,HF
Electronics H	NO _{3,} HCl,H ₂ O _{2,} HBF ₄

*2: If the result of spot test is positive, Chromium VI would be determined as detected.



TESTS CONDUCTED

2 (I) Test Result Summary:

	Testing Item	Result (ppm)
Halogen Content		,
Fluorine (F)		ND
Chlorine (CI)		8600
Bromine (Br)		ND
lodine (I)		ND

Remarks: ppm = Parts per million = mg/kg

Ν D = Not detected

Responsibility Of Chemist : Leaf Liu

(III) Test Method:

Testing Item T	esting Method R	eporting Limit
Halogen Content	With reference to EN 14582:2007 by combustion flask with	50 ppm
I lalogeri Content	oxygen and determined by ion chromatography	эо ррш

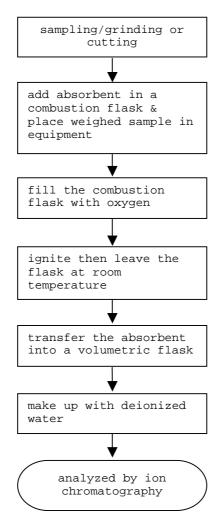
Reporting limit = Quantitation limit of analyte in sample Remark:



TESTS CONDUCTED

(${\rm IV}$) Measurement Flowchart:

Test For Halogen Content Reference Standard: EN 14582



NUMBER: SH

AH00345432



TESTS CONDUCTED

(A) TEST RESULT SUMMARY:

TESTING ITEM R	ESULT(ppm)
HBCD (HEXABROMOCYCLODODECANE)	ND

REMARKS:

ppm = PARTS PER MILLION = mg/kg ND = NOT DETECTED

(B) TEST METHOD:

TESTING ITEM T	ESTING METHOD	REPORTING LIMIT	
HBCD (HEXABROMOCYCLODODECANE)	WITH REFERENCE TO USEPA 3540C, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS	10 ppm	



NUMBER: SH AH00345432

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCD (HEXABROMOCYCLODODECANE) CONTENT

WEIGH SAMPLE AND PLACE INTO A THIMBLE IJ SOXHLET EXTRACTION WITH ORGANIC SOLVENT CONCENTRATE THE EXTRACT TRANSFER THE EXTRACT INTO A VOLUMETRIC FLASK IJ MAKE UP WITH ORGANIC SOLVENT IJ ANALYZE BY GC-MSD



TESTS CONDUCTED

4 PHTHALATE CONTENT TEST

WITH REFERENCE TO EN14372, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

TESTED COMPOUND RESULT	(%,W/W)	LIMIT(%,W/W)
		<u>(MAX.)</u>
DIBUTYL PHTHALATE (DBP)	ND	
DI(2-ETHYL HEXYL) PHTHALATE(DEHP)	ND	
BENZYL BUTYL PHTHALATE (BBP)	ND	
SUM OF THREE PHTHALATES	ND	0.1

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO ANNEX XVII ITEMS 51 & 52 OF THE REACH

REGULATION (EC) NO. 1907/2006 & AMENDENT NO.552/2009 (FORMERLY KNOWN AS

DIRECTIVE 2005/84/EC) FOR PHTHALATE CONTENT IN TOYS AND CHILDREN CARE ARTICLES.

DETECTION LIMIT = 0.01%(W/W)

ND = NOT DETECTED

5 PHTHALATE CONTENT TEST

WITH REFERENCE TO CPSC-CH-C1001-09.3, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

TESTED COMPOUND RESULT	(%,W/W)	<u>LIMIT(%,W/W)</u>
		(MAX.)
DI-BUTYL PHTHALATE (DBP)	ND	0.1
DI(2-ETHYL HEXYL) PHTHALATE(DEHP)	ND	0.1
BENZYL BUTYL PHTHALATE (BBP)	ND	0.1

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO US CONSUMER PRODUCT SAFETY

IMPROVEMENT ACT 2008 FOR PROHIBITION ON SALE OF CERTAIN PRODUCTS CONTAINING

SPECIFIED PHTHALATES.

DETECTION LIMIT = 0.01%(W/W)

ND = NOT DETECTED

DATE SAMPLE RECEIVED: OCT.15, 2012

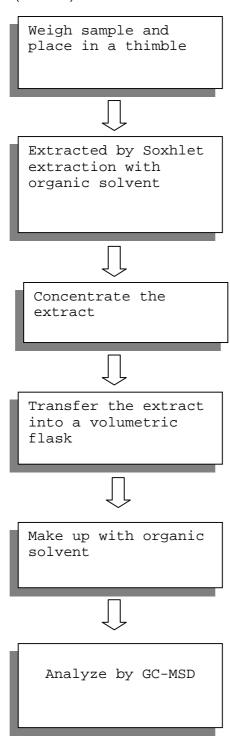
TESTING PERIOD: OCT.15, 2012 TO OCT.23, 2012



NUMBER: SH AH00345432

TESTS CONDUCTED MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (EN14372)

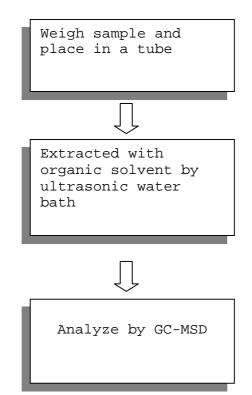




NUMBER: SH AH00345432

TESTS CONDUCTED MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (CPSC-CH-C1001-09.3)





NUMBER: SH AH00345432

TESTS CONDUCTED



END OF REPORT

This report is made solely on the basis of your instructions and/or information and materials supplied by you. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct.



DATE:

OCT 29, 2012

APPLICANT: LITTELFUSE,INC.

A.DIVIETRO/D.UNTIEDT ATT

SAMPLE DESCRIPTION:

ONE (1) SUBMITTED SAMPLE SAID TO BE **BLACK INK.** PART DESCRIPTION INK-BLACK. 425902. PART NUMBER

800 E. NORTHWEST HWY

DATE SAMPLE RECEIVED OCTOBER.15, 2012. DATE TEST STARTED OCTOBER.15, 2012.

TESTS CONDUCTED:

AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

TO BE CONTINUED

AUTHORIZED BY: FOR INTERTEK TESTING SERVICES LTD., SHANGHAI

JACOB LIN

GENERAL MANAGER



TESTS CONDUCTED

I) Test Result Summary:

Testing Item	Result (ppm)
Heavy Metal	·
Cadmium (Cd) content	ND
Lead (Pb) content	ND
Mercury (Hg) content	ND
Chromium VI (Cr ⁶⁺) content	ND
Polybrominated Biphenyls (PBBs)	
Monobrominated Biphenyls (MonoBB)	ND
Dibrominated Biphenyls (DiBB)	ND
Tribrominated Biphenyls (TriBB)	ND
Tetrabrominated Biphenyls (TetraBB)	ND
Pentabrominated Biphenyls (PentaBB)	ND
Hexabrominated Biphenyls (HexaBB)	ND
Heptabrominated Biphenyls (HeptaBB)	ND
Octabrominated Biphenyls (OctaBB)	ND
Nonabrominated Biphenyls (NonaBB)	ND
Decabrominated Biphenyl (DecaBB)	ND
Polybrominated Diphenyl Ethers (PBDEs)	·
Monobrominated Diphenyl Ethers (MonoBDE)	ND
Dibrominated Diphenyl Ethers (DiBDE)	ND
Tribrominated Diphenyl Ethers (TriBDE)	ND
Tetrabrominated Diphenyl Ethers (TetraBDE)	
Pentabrominated Diphenyl Ethers (PentaBDE)	
Hexabrominated Diphenyl Ethers (HexaBDE) ND	
Heptabrominated Diphenyl Ethers (HeptaBDE)	ND
Octabrominated Diphenyl Ethers (OctaBDE)	ND
Nonabrominated Diphenyl Ethers (NonaBDE)	ND
Decabrominated Diphenyl Ether (DecaBDE) ND	

NUMBER: SH

AH00345635

(III) Test Method:

esting Method R	eporting Limit
With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.	1 ppm
With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.	5 ppm
With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.	5 ppm
	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer. With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary. With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further

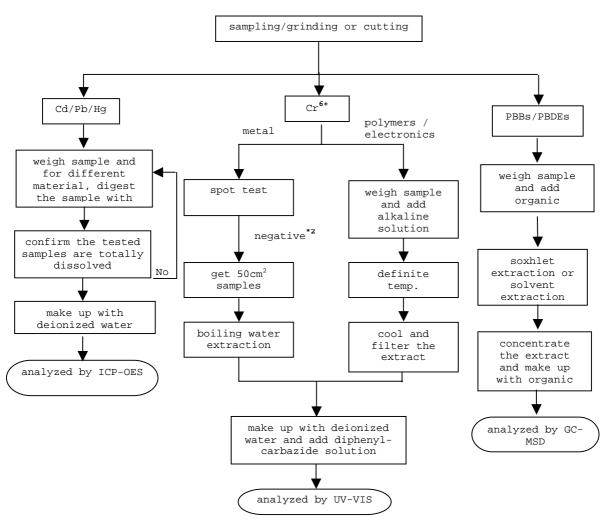
Reporting limit = Quantitation limit of analyte in sample Remark:



TESTS CONDUCTED

(IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents Reference Standard: IEC 62321 edition 1.0:2008



REMARKS:

*1: List of appropriate acid:

<u>Material</u>	Acid added for digestion
Polymers	HNO ₃ ,HCl,HF,H ₂ O ₂ ,H ₃ BO ₃
Metals HNO	_{3,} HCl,HF
Electronics H	NO ₃ ,HCl,H ₂ O ₂ ,HBF ₄

*2: If the result of spot test is positive, Chromium VI would be determined as detected.



TESTS CONDUCTED

I) Test Result Summary:

	Testing Item	Result (ppm)
Halogen Content		
Fluorine (F)		ND
Chlorine (CI)		150
Bromine (Br)		ND
lodine (I)		ND

NUMBER: SH

AH00345635

Remarks: ppm = Parts per million = mg/kg

ND = Not detected

Responsibility Of Chemist : Leaf Liu

(III) Test Method:

Testing Item T	esting Method R	eporting Limit
THAINNEN CONTENT	With reference to EN 14582:2007 by combustion flask with oxygen and determined by ion chromatography	50 ppm

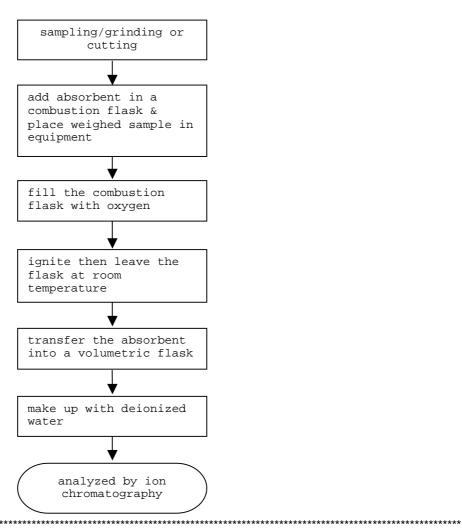
Reporting limit = Quantitation limit of analyte in sample Remark:



TESTS CONDUCTED

(IV) Measurement Flowchart:

Test For Halogen Content Reference Standard: EN 14582



NUMBER: SH

AH00345635



TESTS CONDUCTED

3 (A) TEST RESULT SUMMARY:

TESTING ITEM R	ESULT(ppm)
HBCD (HEXABROMOCYCLODODECANE)	ND

NUMBER: SH

AH00345635

REMARKS:

ppm = PARTS PER MILLION = mg/kg ND = NOT DETECTED

(B) TEST METHOD:

TESTING ITEM TE	STING METHOD	REPORTING LIMIT
HBCD (HEXABROMOCYCLODODECANE)	WITH REFERENCE TO USEPA 3540C, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS	10 ppm



NUMBER: SH AH00345635

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCD (HEXABROMOCYCLODODECANE) CONTENT

WEIGH SAMPLE AND PLACE INTO A THIMBLE IJ SOXHLET EXTRACTION WITH ORGANIC SOLVENT CONCENTRATE THE EXTRACT TRANSFER THE EXTRACT INTO A VOLUMETRIC FLASK IJ MAKE UP WITH ORGANIC SOLVENT IJ ANALYZE BY GC-MSD

TO BE CONTINUED



TESTS CONDUCTED

4 PHT HALATE CONTENT TEST

WITH REFERENCE TO EN14372, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

TESTED COMPOUND R	<u>ESULT (%,W/W)</u>	LIMIT(%,W/W)
		<u>(MAX.)</u>
DIBUTYL PHTHALATE (DBP)	ND	
DI(2-ETHYL HEXYL) PHTHALATE(DEHP)	ND	
BENZYL BUTYL PHTHALATE (BBP)	ND	
SUM OF THREE PHTHALATES	ND	0.1

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO ANNEX XVII ITEMS 51 & 52 OF THE REACH

REGULATION (EC) NO. 1907/2006 & AMENDENT NO.552/2009 FOR PHTHALATE CONTENT IN TOYS

AND CHILDREN CARE ARTICLES.

DETECTION LIMIT = 0.01%(W/W)

ND = NOT DETECTED

5 PHT HALATE CONTENT TEST

WITH REFERENCE TO CPSC-CH-C1001-09.3, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

TESTED COMPOUND R	<u>ESULT (%,W/W)</u>	LIMIT(%,W/W)
		<u>(MAX.)</u>
DI-BUTYL PHTHALATE (DBP)	ND	0.1
DI(2-ETHYL HEXYL) PHTHALATE(DEHP)	ND	0.1
BENZYL BUTYL PHTHALATE (BBP)	ND	0.1

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO US CONSUMER PRODUCT SAFETY

IMPROVEMENT ACT 2008 & AMENDMENT H.R.2715 FOR PROHIBITION ON SALE OF CERTAIN

PRODUCTS CONTAINING SPECIFIED PHTHALATES.

DETECTION LIMIT = 0.01%(W/W)

ND = NOT DETECTED

DATE SAMPLE RECEIVED: OCT.15, 2012

TESTING PERIOD : OCT.15, 2012 TO OCT.18, 2012

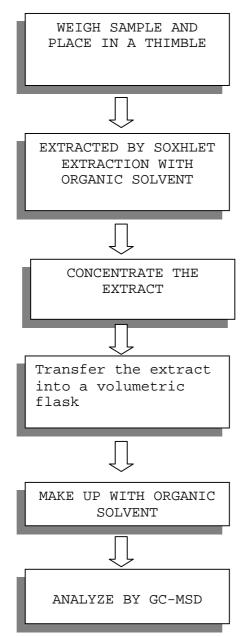


NUMBER: SH AH00345635

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (EN14372)

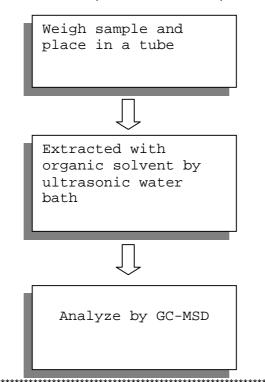




TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (CPSC-CH-C1001-09.3)





TESTS CONDUCTED

NUMBER: SH AH00345635



END OF REPORT

This report is made solely on the basis of your instructions and/or information and materials supplied by you. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct.



APPLICANT: LITTELFUSE, INC. DATE: OCT 29, 2012

800 E. NORTHWEST HWY

A.DIVIETRO/D.UNTIEDT ATT

SAMPLE DESCRIPTION:

ONE (1) SUBMITTED SAMPLE SAID TO BE GREEN INK. PART DESCRIPTION INK-GREEN. PART NUMBER 425907.

DATE SAMPLE RECEIVED OCTOBER.15, 2012. DATE TEST STARTED OCTOBER.15, 2012.

TESTS CONDUCTED:

AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

TO BE CONTINUED

AUTHORIZED BY: FOR INTERTEK TESTING SERVICES LTD., SHANGHAI

JACOB LIN

GENERAL MANAGER



TESTS CONDUCTED

I) Test Result Summary:

Testing Item	Result (ppm)
Heavy Metal	
Cadmium (Cd) content	ND
Lead (Pb) content	ND
Mercury (Hg) content	ND
Chromium VI (Cr ⁶⁺) content	ND
Polybrominated Biphenyls (PBBs)	
Monobrominated Biphenyls (MonoBB)	ND
Dibrominated Biphenyls (DiBB)	ND
Tribrominated Biphenyls (TriBB)	ND
Tetrabrominated Biphenyls (TetraBB)	ND
Pentabrominated Biphenyls (PentaBB)	ND
Hexabrominated Biphenyls (HexaBB)	ND
Heptabrominated Biphenyls (HeptaBB)	ND
Octabrominated Biphenyls (OctaBB)	ND
Nonabrominated Biphenyls (NonaBB)	ND
Decabrominated Biphenyl (DecaBB) ND	
Polybrominated Diphenyl Ethers (PBDEs)	
Monobrominated Diphenyl Ethers (MonoBDE)	ND
Dibrominated Diphenyl Ethers (DiBDE)	ND
Tribrominated Diphenyl Ethers (TriBDE)	ND
Tetrabrominated Diphenyl Ethers (TetraBDE)	ND
Pentabrominated Diphenyl Ethers (PentaBDE)	
Hexabrominated Diphenyl Ethers (HexaBDE)	
Heptabrominated Diphenyl Ethers (HeptaBDE)	ND
Octabrominated Diphenyl Ethers (OctaBDE)	ND
Nonabrominated Diphenyl Ethers (NonaBDE)	ND
Decabrominated Diphenyl Ether (DecaBDE)	ND

NUMBER: SH

AH00345639

(III) Test Method:

esting Method R	eporting Limit
With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer.	1 ppm
With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.	5 ppm
With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary.	5 ppm
	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer. With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary. With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further

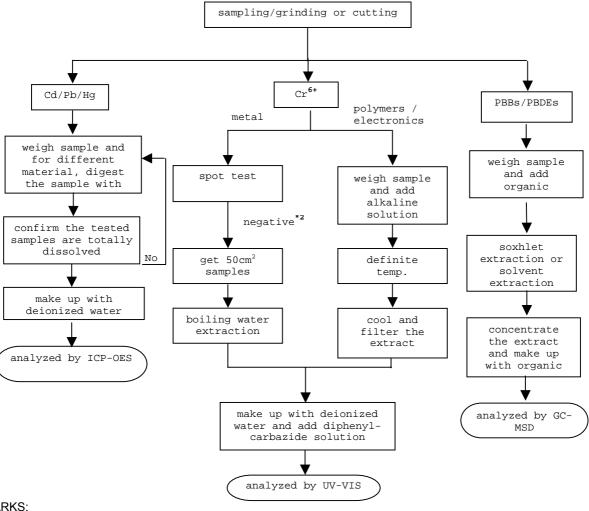
Remark: Reporting limit = Quantitation limit of analyte in sample



TESTS CONDUCTED

(IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents Reference Standard: IEC 62321 edition 1.0:2008



REMARKS:

*1: List of appropriate acid:

i. List of appropriate acid:	
<u>Material</u>	Acid added for digestion
Polymers	HNO ₃ ,HCl,HF,H ₂ O ₂ ,H ₃ BO ₃
Metals HNO	_{3,} HCl,HF
Electronics H	NO_3 , HCI , H_2O_2 , HBF_4

*2: If the result of spot test is positive, Chromium VI would be determined as detected.



TESTS CONDUCTED

2 (I) Test Result Summary:

Testing Item	Result (ppm)
Halogen Content	
Fluorine (F)	200
Chlorine (CI)	650
Bromine (Br)	ND
lodine (I)	ND

Remarks: ppm = Parts per million = mg/kg

ND = Not detected

Responsibility Of Chemist : Leaf Liu

(III) Test Method:

Testing Item T	esting Method R	eporting Limit
IHAIOGEN CONTENT	With reference to EN 14582:2007 by combustion flask with oxygen and determined by ion chromatography	50 ppm

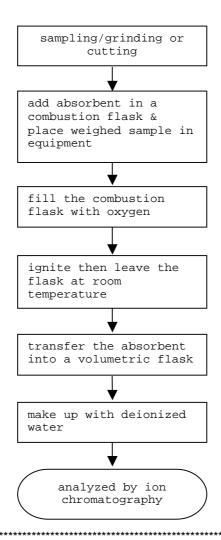
Remark: Reporting limit = Quantitation limit of analyte in sample



TESTS CONDUCTED

(IV) Measurement Flowchart:

Test For Halogen Content Reference Standard: EN 14582



NUMBER: SH

AH00345639



TESTS CONDUCTED

3 (A) TEST RESULT SUMMARY:

TESTING ITEM R	ESULT(ppm)
HBCD (HEXABROMOCYCLODODECANE)	ND

NUMBER: SH

AH00345639

REMARKS:

ppm = PARTS PER MILLION = mg/kg ND = NOT DETECTED

(B) TEST METHOD:

TESTING ITEM TE	STING METHOD	REPORTING LIMIT
	WITH REFERENCE TO USEPA 3540C, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS	10 ppm



TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR HBCD (HEXABROMOCYCLODODECANE) CONTENT

WEIGH SAMPLE AND PLACE INTO A THIMBLE IJ SOXHLET EXTRACTION WITH ORGANIC SOLVENT CONCENTRATE THE EXTRACT TRANSFER THE EXTRACT INTO A VOLUMETRIC FLASK IJ MAKE UP WITH ORGANIC SOLVENT IJ ANALYZE BY GC-MSD



TESTS CONDUCTED

4 PHT HALATE CONTENT TEST

WITH REFERENCE TO EN14372, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

TESTED COMPOUND R	<u>ESULT (%,W/W)</u>	LIMIT(%,W/W)
		<u>(MAX.)</u>
DIBUTYL PHTHALATE (DBP)	ND	
DI(2-ETHYL HEXYL) PHTHALATE(DEHP)	ND	
BENZYL BUTYL PHTHALATE (BBP)	ND	
SUM OF THREE PHTHALATES	ND	0.1

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO ANNEX XVII ITEMS 51 & 52 OF THE REACH

REGULATION (EC) NO. 1907/2006 & AMENDENT NO.552/2009 FOR PHTHALATE CONTENT IN TOYS

AND CHILDREN CARE ARTICLES.

DETECTION LIMIT = 0.01%(W/W)

ND = NOT DETECTED

5 PHT HALATE CONTENT TEST

WITH REFERENCE TO CPSC-CH-C1001-09.3, BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) ANALYSIS.

TESTED COMPOUND R	<u>ESULT (%,W/W)</u>	LIMIT(%,W/W)
		<u>(MAX.)</u>
DI-BUTYL PHTHALATE (DBP)	ND	0.1
DI(2-ETHYL HEXYL) PHTHALATE(DEHP)	ND	0.1
BENZYL BUTYL PHTHALATE (BBP)	ND	0.1

REMARK: THE ABOVE LIMIT WAS QUOTED ACCORDING TO US CONSUMER PRODUCT SAFETY

IMPROVEMENT ACT 2008 & AMENDMENT H.R.2715 FOR PROHIBITION ON SALE OF CERTAIN

PRODUCTS CONTAINING SPECIFIED PHTHALATES.

DETECTION LIMIT = 0.01%(W/W)

ND = NOT DETECTED

DATE SAMPLE RECEIVED: OCT.15, 2012

TESTING PERIOD : OCT.15, 2012 TO OCT.18, 2012

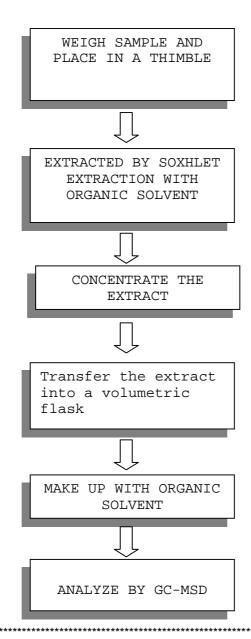


NUMBER: SH AH00345639

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (EN14372)



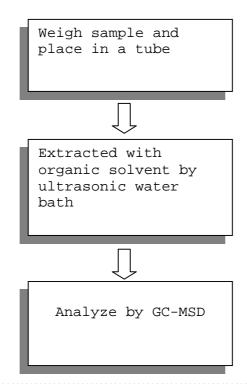


NUMBER: SH AH00345639

TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR PHTHALATES CONTENTS (CPSC-CH-C1001-09.3)





NUMBER: SH AH00345639



END OF REPORT

This report is made solely on the basis of your instructions and/or information and materials supplied by you. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct.



Intertek Consumer Goods GmbH · Würzburger Straße 152 · 90766 Fürth

Polyfil AG

Gina Gregorio Oberallmendstrasse 20A

6300 Zug / Switzerland

Fürth, 2012-12-19

Test report No. FUHL1236941

Testing of a material sample according to the RoHS directive 2011/65/EC

Sample description: Ni99.9MAg wire

Arrival in lab: 2012-012-04; Period of XRF analysis incl. sample preparation and photo documentation: 2012-12-07 - 2012-12-10 Head of Inorganic Lab: Claudia List

Copying this test report is permitted only in agreement with the contracted lab. The test results refer only to the tested item. This report consists of 6 page(s).

The test methods signed with * are not listed in the attachment of the accreditation certificate.

Conclusion based on tested item

Test order	Status
testing according to the RoHS directive 2011/65/EC	conform [°]

Please see overview of test results

- Test results see next pages -





Page 2 of 6 page(s) of our test report No. FUHL1236941 dated 2012-12-19

Sample description: Ni99.9MAg wire

nM = non Metal M = Metal cM = composite Material

List of component parts:

Sample No.	Part No.	Material	Description
236941	1	М	Ni99.9MAg wire

Sitz Fürth Amtsgericht Fürth, HRB 5756 Ust-IdNr. DE169317871



Page 3 of 6 page(s) of our test report No. FUHL1236941 dated 2012-12-19

Sample description: Ni99.9MAg wire

Comment

LOD = Limit of Detection

BL = Below Limit
OL = Over Limit

X = Inconclusive, further test necessary

 σ = Standard deviation

CS = Composite sample

Remark:

Results were obtained by EDXRF for primary screening. Additional chemical testing using ICP (for Cd, Pb), AAS (for Hg), IC-UC/VIS (for CrVI) and GC/MS (for PBBs/PBDEs) are recommended, if the concentration exceeds the below warning value according to IEC 62321.

Element	Unit	non - metal	metal
Cd	mg / kg	$BL \le (70-3\sigma) < X < (130+3\sigma) \le OL$	$BL \le (70-3\sigma) < X < (130+3\sigma) \le OL$
Pb	mg / kg	$BL \le (700-3\sigma) < X < (1300+3\sigma) \le OL$	$BL \le (700-3\sigma) < X < (1300+3\sigma) \le OL$
Hg	mg / kg	$BL \le (700-3\sigma) < X < (1300+3\sigma) \le OL$	$BL \le (700-3\sigma) < X < (1300+3\sigma) \le OL$
Br	mg / kg	BL ≤ (300-3σ) < X	
Cr	mg / kg	BL ≤ (700-3σ) < X	BL ≤ $(700-3\sigma) < X$

Element	Unit	composite material	
Cd	mg / kg	$LOD < X < (150+3\sigma) \le OL$	
Pb	mg / kg	$BL \le (500-3\sigma) < X < (1500+3\sigma) \le OL$	
Hg	mg / kg	$BL \le (500-3\sigma) < X < (1500+3\sigma) \le OL$	
Br	mg / kg	BL ≤ (250-3σ) < X	
Cr	mg / kg	BL ≤ (500-3σ) < X	



Page 4 of 6 page(s) of our test report No. FUHL1236941 dated 2012-12-19

Sample description: Ni99.9MAg wire

1. XRF screening

Method: XRF according to IEC 62321:2008*

Sample No.	Part No.	Pb	Hg	Cd	Cr _{total}	Br	
236941	1	BL	BL	BL	BL		

Comment:

Elements	RoHS-limit value
Lead (Pb)	1000 mg/kg
Mercury (Hg)	1000 mg/kg
Cadmium (Cd)	100 mg/kg
Chromium VI (Cr VI)	1000 mg/kg
Polybrominated Biphenyle (PBBs)	1000 mg/kg
Polybrominated Diphenyl ether (PBDEs)	1000 mg/kg

Intertek Consumer Goods GmbH

Prüfleitung / Lab Manager

□ A. Breunig, □ K. Grönhardt, □ Dr. K. Laue-Schuler,
□ R. Micolay, □ M. Neumeister, □ Dr. R. Rätze, □ K. Scharrer, □ M. Tutsch

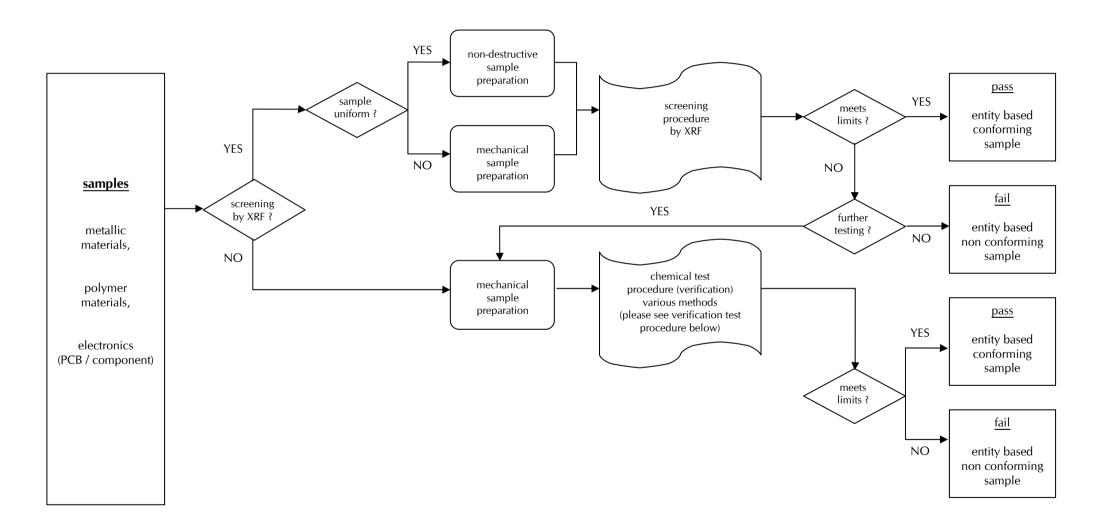
- Flow charts see next page(s) -

Status conform



Page 5 of 6 page(s)

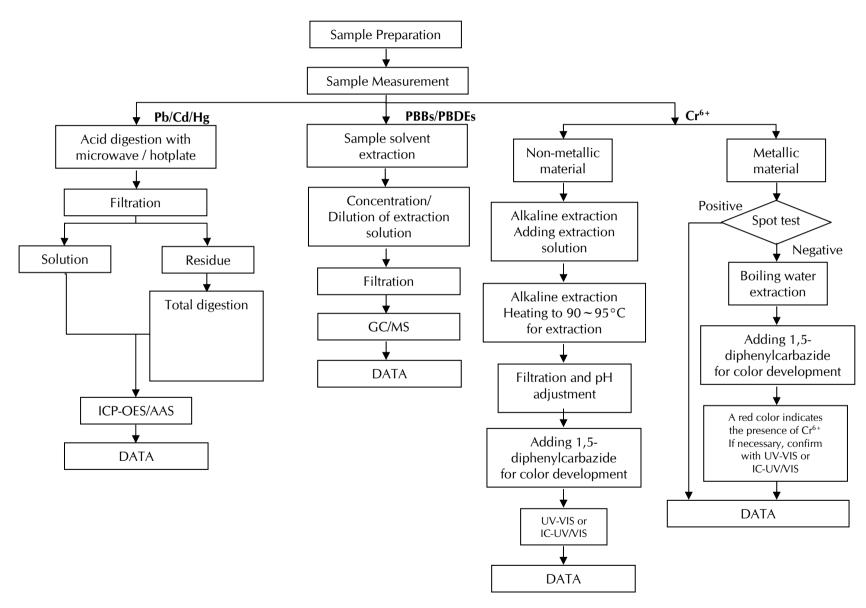
Test procedure





Page 6 of 6 page(s)

Verification test procedure



Sitz Fürth Amtsgericht Fürth, HRB 5756 Ust-IdNr. DE169317871 Geschäftsführer Kay Grönhardt Rainer Mast



Test Report Number: SHAH0036227401

Applicant: ELSCHUKOM ELEKTROSCHUTZKOMPONENTENBAU

GM

GEWERBESTRASSE 87, D-98669 VEILSDORF,

GERMANY

Sample Description:

Two(2) pieces of submitted samples said to be:

(1) Mixed all kinds of metal substrates.

(2) Mixed all kinds of plating layers.

Item Name : Silver Plated & Pure Silver Wires.

Item No.

- silver plated copper wire - Cu, Ag--%

(B-2) 101.0131.----

: (B-1) 101.014 -. ----

- pure silver wire - Ag 1000

(B-3) 101.0123.0---

- silver plated purest nickel wire - Ni99.98%, Ag1%

(B-4) 101.0182.0---

- silver-copper alloy plated copper plated iron nickel alloy wire

Date:

JAN 18, 2013

- ElconD, AgCu5%

(B-5) 101.0120.0---

- silver plated constantan wire - CuNi44, Ag5%

(B-6) 101.0151.0---

- silver plated copper - nickel 44 alloy wire

- CuNi44, Ag10%

(B-7) 1050--31.--

pure silver strips - Ag 1000 pure

Country Of Origin Germany.

Tests Conducted:

As requested by the applicant, for details refer to attached page(s).

To Be Continued

Authorized by:

For intertek testing services Ltd., Shanghai

Jacob Lin

General Manager





Test Report Number: SHAH0036227401

Tests Conducted

(A) Test result of RoHS Directive:

Testing item	Result	
Testing item	(1)	
Cadmium (Cd) content (mg/kg)	ND	
Lead (Pb) content (mg/kg)	ND	
Mercury (Hg) content (mg/kg)	ND	
Chromium (VI)(Cr ⁶⁺) result (by boiling water extraction on metal) (mg/kg with 50cm ²)	ND	

Testing item	Result	
resting item	(2)	
Cadmium (Cd) content (mg/kg) /Plating	ND	
Lead (Pb) content (mg/kg) /Plating	ND	
Mercury (Hg) content (mg/kg) /Plating	ND	
Chromium (VI)(Cr ⁶⁺) result (by boiling water extraction on metal) (mg/kg with 50cm ²) /Plating	ND	

Remark: mg/kg with 50cm² = milligram per kilogram with 50 square centimeter

ND = not detected

(B) RoHS Requirement:

Restricted substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cro+)	0.1% (1000 mg/kg)

The above limits were quoted from RoHS Directive 2011/65/EU for homogeneous material.

(C) Test method:

Testing item	Testing method	Reporting limit
Cadmium (Cd) content	With reference to IEC 62321 Edition 1.0: 2008, by acid digestion until the tested sample was totally dissolved, and determined by ICP-OES.	2 mg/kg
Lead (Pb) content	determined by ICP-OES.	2 mg/kg
Mercury (Hg) content	With reference to IEC 62321 Edition 1.0: 2008, by acid digestion until the tested sample was totally dissolved, and determined by ICP-OES.	2 mg/kg
Chromium (VI) (Cr ⁶⁺) content (for metal)	With reference to IEC 62321 Edition 1.0: 2008, by boiling water extraction and determined by UV-VIS Spectrophotometer.	0.02mg/kg with 50cm ² (in testing solution)

Date sample received: Jan.14, 2013 Testing period: Jan.14, 2013 To Jan.17, 2013

To Be Continued

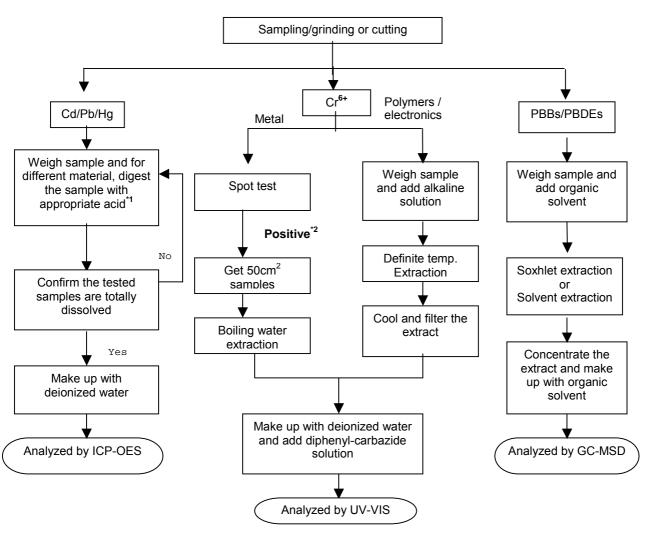


Test Report Number: SHAH0036227401

Tests Conducted

(D) Measurement flowchart:

Test for Cd/Pb/Hg/Cr (VI)/PBBs/PBDEs contents Reference standard: IEC 62321 Edition 1.0: 2008



Remarks:

*1: list of appropriate acid:

or appropriate dold.		
<u>Material</u>	Acid added for digestion	
Polymers HNO	3,HCL,HF,H2O2,H3BO3	
Metals HNO	3,HCL,HF	
Electronics H	NO ₃ ,HCL,H ₂ O ₂ ,HBF ₄	

*2: If the result of spot test is positive, Chromium VI would be determined as detected.

To Be Continued



Test Report Number: SHAH0036227401

Tests Conducted



To Be Continued



Test Report SHAH0036227401 Number:

Tests Conducted



End Of Report

This report is made solely on the basis of your instructions and/or information and materials supplied by you. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct.



APPLICANT: LITTELFUSE, INC. DATE: NOV 15, 2012

A. DIVIETRO/D. UNTIEDT 800E. NORTHWEST HWY

SAMPLE DESCRIPTION:

ONE(1) SUBMITTED SAMPLE SAID TO BE SILVERY SPRING WITH PLATING.

PART DESCRIPTION SPRING. PART NUMBER 912-337. NOV.09, 2012. DATE SAMPLE RECEIVED DATE TEST STARTED NOV.09, 2012.

TESTS CONDUCTED:

AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

TO BE CONTINUED

AUTHORIZED BY: FOR INTERTEK TESTING SERVICES LTD., SHANGHAI

JACOB LIN

GENERAL MANAGER



TESTS CONDUCTED

(I) Test Result Summary :

Tasking House	Result (ppm)	
<u>Testing Item</u>	(1)	
Heavy Metal	•	
Cadmium (Cd) content	ND	
Lead (Pb) content	40	
Mercury (Hg) content	ND	
Chromium VI (Cr ⁶⁺) content (mg/kg with 50cm ²)	Negative (< 0.02)	

Testing Item	Result (ppm)
<u>Testing Item</u>	(2)
Heavy Metal	
Cadmium (Cd) content / Plating	ND
Lead (Pb) content / Plating	ND
Mercury (Hg) content / Plating	ND
Chromium VI (Cr ⁶⁺) content (mg/kg with 50cm ²) / Plating	Negative (< 0.02)

ppm = Parts per million = mg/kg Remarks:

Ν = Not detected

mg/kg with 50cm² = milligram per kilogram with 50 square centimetre

Negative = A negative test result indicated positive observation was not found at the time of testing.

Responsibility Of Chemist : Dent Fang / Leaf Liu

Tested Components: (1)Substrate (2)Plating

(II) RoHS Requirement:

Restricted Substances	<u>Limits</u>
Cadmium (Cd) Content	0.01% (100ppm)
Lead (Pb) Content	0.1% (1000ppm)
Mercury (Hg) Content	0.1% (1000ppm)
Chromium VI (Cr ⁶⁺) Content	0.1% (1000ppm)
Polybrominated Biphenyls (PBBs)	0.1% (1000ppm)
Polybrominated Diphenyl Ehters (PBDEs)	0.1% (1000ppm)

The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.



TESTS CONDUCTED

(III) Test Method:

Testing Item T	esting Method R	eporting Limit
Cadmium (Cd) content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Lead (Pb) content	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Mercury (Hg) content	With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES.	2 ppm
Chromium VI (Cr ⁶⁺) content	With reference to IEC 62321 edition 1.0:2008 in annex B, by boiling water extraction and determined by UV-Vis spectrophotometer.	0.02 mg/kg with 50cm ²

Reporting limit = Quantitation limit of analyte in sample Remark:

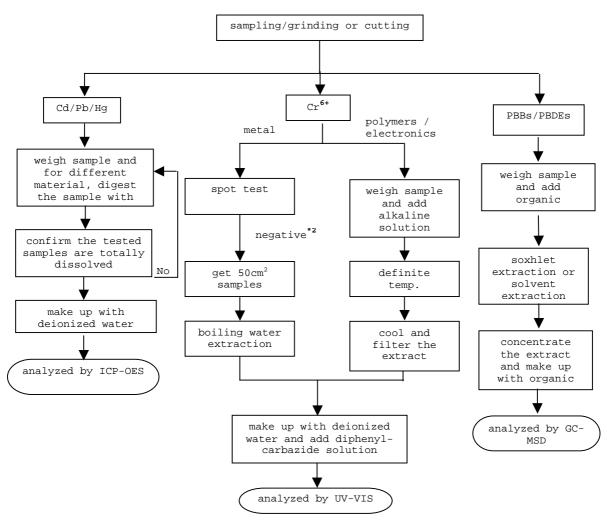
Date Sample Received: Nov.9, 2012 Testing Period : Nov.9, 2012 To Nov.15, 2012



TESTS CONDUCTED

(IV) Measurement Flowchart:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents Reference Standard: IEC 62321 edition 1.0:2008



REMARKS:

*1: List of appropriate acid

i. List of appropriate acid:		
	<u>Material</u>	Acid added for digestion
	Polymers	HNO ₃ ,HCl,HF,H ₂ O ₂ ,H ₃ BO ₃
	Metals HNO	_{3,} HCl,HF
	Electronics H	NO _{3.} HCI,H ₂ O _{2.} HBF ₄

*2: If the result of spot test is positive, Chromium VI would be determined as detected.



TESTS CONDUCTED

NUMBER: SH AH00350858



END OF REPORT

This report is made solely on the basis of your instructions and/or information and materials supplied by you. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct.