ICP Test Report Certification Packet

Company name: Littelfuse, Inc.

Product Series: GDT

Product #: SL1021A and SL1021B Series

Issue Date: April 3, 2009

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

Issued by: 

<Global Environmental, Health & Safety Manager>

(1) Parts, sub-materials and unit parts

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

＜ Raw Materials Used

Please see Table 1

(2) The ICP data on all measurable substances

Please see appropriate pages as identifed in Table 1

Remarks :

Table 1: List of Raw Materials covered by this report

Total Parts	Raw Material Part Number	Raw Material Description	Page(s)
1	N/A	Ceramic	3-6
2	N/A	Copper Electrode	7-10
3	N/A	Silver Brazing Ring	11-14
4	N/A	Silicon Oil	15-18
5	N/A	Blue Ink	19-22
6	N/A	Terminal Wire	23-26
7	N/A	Failsafe Clip	27-30
8	N/A	Solder Pill	31-34
9	N/A	Red Ink	35-38

Test Report

LITTELFUSE INC.
800 E. NORTHWEST HIGHWAY
DES PLAINES,
IL 60016, USA

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

Sample Description	:	Ceramic
Sample Receiving Date	:	2008/05/16
Testing Period	:	2008/05/16 to 2008/05/26

Test Requested	:	In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.
Test Method	:	(1) With reference to IEC 62321/2nd (111/95/CDV) for Cadmium Content. Analysis was performed by ICP - OES (2) With reference to IEC 62321/2nd (111/95/CDV) for Lead Content. Analysis was performed by ICP - OES (3) With reference to IEC 62321/2nd (111/95/CDV) for Mercury Content. Analysis was performed by ICP - OES (4) With reference to IEC 62321/2nd (111/95/CDV) Section 9 for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrophotometry. (5) With reference to IEC 62321/2nd (111/95/CDV). Determination of PBBs and PBDEs by GC/MS.
Test Results	:	Please refer to next page.
Analysts	:	Lim Meng Hoe & Jocelyn Christmas

SGS LABORATORY SERVICES (M) SDN. BHD.

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

Test Report

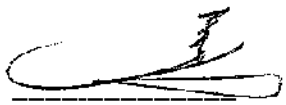
No. LPCI/10214(B-AD)/08 Date : 2008/05/26 Page: 2 of 4
CTS Ref. CTS/08/2410/Littelfuse

Test results by chemical method (Unit: mg/kg)

Test Item(s):	Method (refer to)	Result	MDL	Limit of RoHS
Cadmium(Cd)	(1)	N.D.	2	100
Lead (Pb)	(2)	N.D.	2	1000
Mercury (Hg)	(3)	N.D.	2	1000
Hexavalent Chromium (CrVI)	(4)	N.D.	2	1000
Sum of Polybrominated Biphenyl (PBBs) (Mono to Deca)	(5)	N.D.	-	1000
Monobromobiphenyl		N.D.	5	-
Dibromobiphenyl		N.D.	5	-
Tribromobiphenyl		N.D.	5	-
Tetrabromobiphenyl		N.D.	5	-
Pentabromobiphenyl		N.D.	5	-
Hexabromobiphenyl		N.D.	5	-
Heptabromobiphenyl		N.D.	5	-
Octabromobiphenyl		N.D.	5	-
Nonabromobiphenyl		N.D.	5	-
Decabromobiphenyl		N.D.	5	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Deca)		N.D.	-	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Nona)		N.D.	-	1000
Monobromodiphenyl ether		N.D.	5	-
Dibromodiphenyl ether		N.D.	5	-
Tribromodiphenyl ether		N.D.	5	-
Tetrabromodiphenyl ether		N.D.	5	-
Pentabromodiphenyl ether		N.D.	5	-
Hexabromodiphenyl ether		N.D.	5	-
Heptabromodiphenyl ether		N.D.	5	-
Octabromodiphenyl ether		N.D.	5	-
Nonabromodiphenyl ether		N.D.	5	-
Decabromodiphenyl ether		N.D.	5	-

Test Part Description :
As per page 3

SGS LABORATORY SERVICES (M) SDN. BHD.



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

Test Part Description :

Sample Description : Ceramic

Note : (a) mg/kg = ppm
(b) N.D. = Not Detected
(c) MDL = Method Detection Limit
(d) This report supersedes report no. LPCI/10214(B)/08

SGS LABORATORY SERVICES (M) SDN. BHD.

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

1. DETERMINATION OF HEXAVALENT CHROMIUM BY IEC 62321/2nd (111/95/CDV)

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

2. DETERMINATION OF LEAD CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (1.0g) into digestion vessel
↓
Wet digestion / Microwave digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

3. DETERMINATION OF MERCURY CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (0.5 - 1.0g) into digestion vessel
↓
Acid digestion (Microwave)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

4. DETERMINATION OF CADMIUM CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (1.0g)
↓
Acid digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

5. DETERMINATION OF PBB/PBDE WITH GC-MS BY IEC 62321/2nd (111/95/CDV)

Cut sample in small pieces
↓
Weight sample (2g) into extraction thimble
↓
Soxhlet Extraction with Toluene
↓
Filter through 0.45 um membrane filter
↓
Analyses by GC-MS (with appropriate dilution)

**** End of Report ****

SGS LABORATORY SERVICES (M) SDN. BHD.

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

Test Report

No. LPCI/10215(B-AD)/08 Date : 2008/05/26 Page: 1 of 4
CTS Ref. CTS/08/2410/Littelfuse

LITTELFUSE INC.
800 E. NORTHWEST HIGHWAY
DES PLAINES,
IL 60016, USA

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

Sample Description	:	Copper Electrode
Sample Receiving Date	:	2008/05/16
Testing Period	:	2008/05/16 to 2008/05/26

Test Requested	:	In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.
Test Method	:	(1) With reference to IEC 62321/2nd (111/95/CDV) for Cadmium Content. Analysis was performed by ICP - OES (2) With reference to IEC 62321/2nd (111/95/CDV) for Lead Content. Analysis was performed by ICP - OES (3) With reference to IEC 62321/2nd (111/95/CDV) for Mercury Content. Analysis was performed by ICP - OES (4) With reference to IEC 62321/2nd (111/95/CDV) Section 8.5.1 for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrophotometry. (5) With reference to IEC 62321/2nd (111/95/CDV). Determination of PBBs and PBDEs by GC/MS.
Test Results	:	Please refer to next page.
Analysts	:	Lim Meng Hoe & Jocelyn Christmas

SGS LABORATORY SERVICES (M) SDN. BHD.

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

Test Report

No. LPCI/10215(B-AD)/08 Date : 2008/05/26
CTS Ref. CTS/08/2410/Littelfuse

Test results by chemical method (Unit: mg/kg)

Test Item(s):	Method (refer to)	Result	MDL	Limit of RoHS
Cadmium(Cd)	(1)	N.D.	2	100
Lead (Pb)	(2)	N.D.	2	1000
Mercury (Hg)	(3)	N.D.	2	1000
Hexavalent Chromium (CrVI)	(4)	Negative	*	1000
Sum of Polybrominated Biphenyl (PBBs) (Mono to Deca)	(5)	N.D.	-	1000
Monobromobiphenyl		N.D.	5	-
Dibromobiphenyl		N.D.	5	-
Tribromobiphenyl		N.D.	5	-
Tetrabromobiphenyl		N.D.	5	-
Pentabromobiphenyl		N.D.	5	-
Hexabromobiphenyl		N.D.	5	-
Heptabromobiphenyl		N.D.	5	-
Octabromobiphenyl		N.D.	5	-
Nonabromobiphenyl		N.D.	5	-
Decabromobiphenyl		N.D.	5	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Deca)		N.D.	-	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Nona)		N.D.	-	1000
Monobromodiphenyl ether		N.D.	5	-
Dibromodiphenyl ether		N.D.	5	-
Tribromodiphenyl ether		N.D.	5	-
Tetrabromodiphenyl ether		N.D.	5	-
Pentabromodiphenyl ether		N.D.	5	-
Hexabromodiphenyl ether		N.D.	5	-
Heptabromodiphenyl ether		N.D.	5	-
Octabromodiphenyl ether		N.D.	5	-
Nonabromodiphenyl ether		N.D.	5	-
Decabromodiphenyl ether		N.D.	5	-

Test Part Description :
As per page 3

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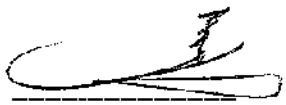


CHONG KIEN LEN
B.Sc.(HONS) AMIC
LAB MANAGER

Test Part Description :

Sample Description : Copper Electrode

Note : (a) mg/kg = ppm
(b) N.D. = Not Detected
(c) MDL = Method Detection Limit
(d) *Detection limit = 1 mg/kg of Hexavalent Chromium on the tested areas
Negative = less than detection limit
(e) This report supersedes report no. LPCI/10215(B)/08

SGS LABORATORY SERVICES (M) SDN. BHD.

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

1. DETERMINATION OF HEXAVALENT CHROMIUM BY IEC 62321/2nd (111/95/CDV)

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

2. DETERMINATION OF LEAD CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (1.0g) into digestion vessel
↓
Wet digestion / Microwave digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

3. DETERMINATION OF MERCURY CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (0.5 - 1.0g) into digestion vessel
↓
Acid digestion (Microwave)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

4. DETERMINATION OF CADMIUM CONTENT BY IEC 62321/2nd (111/95/CDV)

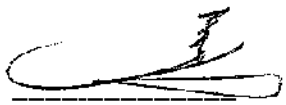
Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (1.0g)
↓
Acid digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

5. DETERMINATION OF PBB/PBDE WITH GC-MS BY IEC 62321/2nd (111/95/CDV)

Cut sample in small pieces
↓
Weight sample (2g) into extraction thimble
↓
Soxhlet Extraction with Toluene
↓
Filter through 0.45 um membrane filter
↓
Analyses by GC-MS (with appropriate dilution)

**** End of Report ****

SGS LABORATORY SERVICES (M) SDN. BHD.



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

Test Report

LITTELFUSE INC.
800 E. NORTHWEST HIGHWAY
DES PLAINES,
IL 60016, USA

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

Sample Description	:	Silver Ring
Sample Receiving Date	:	2008/05/16
Testing Period	:	2008/05/16 to 2008/05/26

Test Requested	:	In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.
Test Method	:	(1) With reference to IEC 62321/2nd (111/95/CDV) for Cadmium Content. Analysis was performed by ICP - OES (2) With reference to IEC 62321/2nd (111/95/CDV) for Lead Content. Analysis was performed by ICP - OES (3) With reference to IEC 62321/2nd (111/95/CDV) for Mercury Content. Analysis was performed by ICP - OES (4) With reference to IEC 62321/2nd (111/95/CDV) Section 8.5.1 for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrophotometry. (5) With reference to IEC 62321/2nd (111/95/CDV). Determination of PBBs and PBDEs by GC/MS.
Test Results	:	Please refer to next page.
Analysts	:	Lim Meng Hoe & Jocelyn Christmas

SGS LABORATORY SERVICES (M) SDN. BHD.

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

Test Report

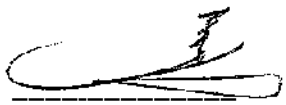
No. LPCI/10217(B-AD)/08 Date : 2008/05/26
CTS Ref. CTS/08/2410/Littelfuse

Test results by chemical method (Unit: mg/kg)

Test Item(s):	Method (refer to)	Result	MDL	Limit of RoHS
Cadmium(Cd)	(1)	N.D.	2	100
Lead (Pb)	(2)	N.D.	2	1000
Mercury (Hg)	(3)	N.D.	2	1000
Hexavalent Chromium (CrVI)	(4)	Negative	*	1000
Sum of Polybrominated Biphenyl (PBBs) (Mono to Deca)	(5)	N.D.	-	1000
Monobromobiphenyl		N.D.	5	-
Dibromobiphenyl		N.D.	5	-
Tribromobiphenyl		N.D.	5	-
Tetrabromobiphenyl		N.D.	5	-
Pentabromobiphenyl		N.D.	5	-
Hexabromobiphenyl		N.D.	5	-
Heptabromobiphenyl		N.D.	5	-
Octabromobiphenyl		N.D.	5	-
Nonabromobiphenyl		N.D.	5	-
Decabromobiphenyl		N.D.	5	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Deca)		N.D.	-	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Nona)		N.D.	-	1000
Monobromodiphenyl ether		N.D.	5	-
Dibromodiphenyl ether		N.D.	5	-
Tribromodiphenyl ether		N.D.	5	-
Tetrabromodiphenyl ether		N.D.	5	-
Pentabromodiphenyl ether		N.D.	5	-
Hexabromodiphenyl ether		N.D.	5	-
Heptabromodiphenyl ether		N.D.	5	-
Octabromodiphenyl ether		N.D.	5	-
Nonabromodiphenyl ether		N.D.	5	-
Decabromodiphenyl ether		N.D.	5	-

Test Part Description :
As per page 3

SGS LABORATORY SERVICES (M) SDN. BHD.



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

Test Part Description :

Sample Description : Silver Ring

Note : (a) mg/kg = ppm
(b) N.D. = Not Detected
(c) MDL = Method Detection Limit
(d) *Detection limit = 1 mg/kg of Hexavalent Chromium on the tested areas
Negative = less than detection limit
(e) This report supersedes report no. LPCI/10217(B)/08

SGS LABORATORY SERVICES (M) SDN. BHD.

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

1. DETERMINATION OF HEXAVALENT CHROMIUM BY IEC 62321/2nd (111/95/CDV)

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

2. DETERMINATION OF LEAD CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (1.0g) into digestion vessel
↓
Wet digestion / Microwave digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

3. DETERMINATION OF MERCURY CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (0.5 - 1.0g) into digestion vessel
↓
Acid digestion (Microwave)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

4. DETERMINATION OF CADMIUM CONTENT BY IEC 62321/2nd (111/95/CDV)

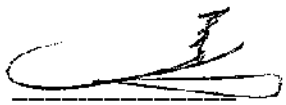
Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (1.0g)
↓
Acid digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

5. DETERMINATION OF PBB/PBDE WITH GC-MS BY IEC 62321/2nd (111/95/CDV)

Cut sample in small pieces
↓
Weight sample (2g) into extraction thimble
↓
Soxhlet Extraction with Toluene
↓
Filter through 0.45 um membrane filter
↓
Analyses by GC-MS (with appropriate dilution)

**** End of Report ****

SGS LABORATORY SERVICES (M) SDN. BHD.



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

Test Report

No. LPCI/10223(B-AD)/08 Date : 2008/05/26 Page: 1 of 4
CTS Ref. CTS/08/2410/Littelfuse

LITTELFUSE INC.
800 E. NORTHWEST HIGHWAY
DES PLAINES,
IL 60016, USA

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

Sample Description	:	Silicon Oil
Sample Receiving Date	:	2008/05/16
Testing Period	:	2008/05/16 to 2008/05/26

Test Requested	:	In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.
Test Method	:	(1) With reference to IEC 62321/2nd (111/95/CDV) for Cadmium Content. Analysis was performed by ICP - OES (2) With reference to IEC 62321/2nd (111/95/CDV) for Lead Content. Analysis was performed by ICP - OES (3) With reference to IEC 62321/2nd (111/95/CDV) for Mercury Content. Analysis was performed by ICP - OES (4) With reference to IEC 62321/2nd (111/95/CDV) Section 9 for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrophotometry. (5) With reference to IEC 62321/2nd (111/95/CDV). Determination of PBBs and PBDEs by GC/MS.
Test Results	:	Please refer to next page.
Analysts	:	Lim Meng Hoe & Jocelyn Christmas

SGS LABORATORY SERVICES (M) SDN. BHD.

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

Test Report

Test results by chemical method (Unit: mg/kg)

Test Item(s):	Method (refer to)	Result	MDL	Limit of RoHS
Cadmium(Cd)	(1)	N.D.	2	100
Lead (Pb)	(2)	N.D.	2	1000
Mercury (Hg)	(3)	N.D.	2	1000
Hexavalent Chromium (CrVI)	(4)	N.D.	2	1000
Sum of Polybrominated Biphenyl (PBBs) (Mono to Deca)	(5)	N.D.	-	1000
Monobromobiphenyl		N.D.	5	-
Dibromobiphenyl		N.D.	5	-
Tribromobiphenyl		N.D.	5	-
Tetrabromobiphenyl		N.D.	5	-
Pentabromobiphenyl		N.D.	5	-
Hexabromobiphenyl		N.D.	5	-
Heptabromobiphenyl		N.D.	5	-
Octabromobiphenyl		N.D.	5	-
Nonabromobiphenyl		N.D.	5	-
Decabromobiphenyl		N.D.	5	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Deca)		N.D.	-	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Nona)		N.D.	-	1000
Monobromodiphenyl ether		N.D.	5	-
Dibromodiphenyl ether		N.D.	5	-
Tribromodiphenyl ether		N.D.	5	-
Tetrabromodiphenyl ether		N.D.	5	-
Pentabromodiphenyl ether		N.D.	5	-
Hexabromodiphenyl ether		N.D.	5	-
Heptabromodiphenyl ether		N.D.	5	-
Octabromodiphenyl ether		N.D.	5	-
Nonabromodiphenyl ether		N.D.	5	-
Decabromodiphenyl ether		N.D.	5	-

Test Part Description :
As per page 3

SGS LABORATORY SERVICES (M) SDN. BHD.

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

Test Part Description :

Sample Description : Silicon Oil

LITTELFUSE INC.
LPCI/10223(B-AD)/08

Note : (a) mg/kg = ppm
(b) N.D. = Not Detected
(c) MDL = Method Detection Limit
(d) Testing based on original basis
(e) This report supersedes report no. LPCI/10223(B)/08

SGS LABORATORY SERVICES (M) SDN. BHD.

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

1. DETERMINATION OF HEXAVALENT CHROMIUM BY IEC 62321/2nd (111/95/CDV)

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

2. DETERMINATION OF LEAD CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Sample Preparation
↓
Weight sample (1.0g) into digestion vessel
↓
Wet digestion / Microwave digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

3. DETERMINATION OF MERCURY CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Sample Preparation
↓
Weight sample (0.5 - 1.0g) into digestion vessel
↓
Acid digestion (Microwave)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

4. DETERMINATION OF CADMIUM CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Sample Preparation
↓
Weight sample (1.0g)
↓
Acid digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

5. DETERMINATION OF PBB/PBDE WITH GC-MS BY IEC 62321/2nd (111/95/CDV)

Sample Preparation
↓
Weight sample (2g) into extraction thimble
↓
Soxhlet Extraction with Toluene
↓
Filter through 0.45 um membrane filter
↓
Analyses by GC-MS (with appropriate dilution)

**** End of Report ****

SGS LABORATORY SERVICES (M) SDN. BHD.

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

Test Report

No. LPCI/10227(B-AD)/08 Date : 2008/05/26 Page: 1 of 4
CTS Ref. CTS/08/2410/Littelfuse

LITTELFUSE INC.
800 E. NORTHWEST HIGHWAY
DES PLAINES,
IL 60016, USA

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

Sample Description	:	Blue Ink
Sample Receiving Date	:	2008/05/16
Testing Period	:	2008/05/16 to 2008/05/26

Test Requested	:	In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.
Test Method	:	(1) With reference to IEC 62321/2nd (111/95/CDV) for Cadmium Content. Analysis was performed by ICP - OES (2) With reference to IEC 62321/2nd (111/95/CDV) for Lead Content. Analysis was performed by ICP - OES (3) With reference to IEC 62321/2nd (111/95/CDV) for Mercury Content. Analysis was performed by ICP - OES (4) With reference to IEC 62321/2nd (111/95/CDV) Section 9 for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrophotometry. (5) With reference to IEC 62321/2nd (111/95/CDV). Determination of PBBs and PBDEs by GC/MS.
Test Results	:	Please refer to next page.
Analysts	:	Lim Meng Hoe & Jocelyn Christmas

SGS LABORATORY SERVICES (M) SDN. BHD.

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

Test Report

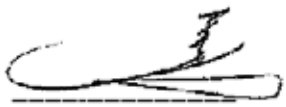
No. LPCI/10227(B-AD)/08 Date : 2008/05/26
CTS Ref. CTS/08/2410/Littelfuse

Test results by chemical method (Unit: mg/kg)

Test Item(s):	Method (refer to)	Result	MDL	Limit of RoHS
Cadmium(Cd)	(1)	N.D.	2	100
Lead (Pb)	(2)	N.D.	2	1000
Mercury (Hg)	(3)	N.D.	2	1000
Hexavalent Chromium (CrVI)	(4)	N.D.	2	1000
Sum of Polybrominated Biphenyl (PBBs) (Mono to Deca)	(5)	N.D.	-	1000
Monobromobiphenyl		N.D.	5	-
Dibromobiphenyl		N.D.	5	-
Tribromobiphenyl		N.D.	5	-
Tetrabromobiphenyl		N.D.	5	-
Pentabromobiphenyl		N.D.	5	-
Hexabromobiphenyl		N.D.	5	-
Heptabromobiphenyl		N.D.	5	-
Octabromobiphenyl		N.D.	5	-
Nonabromobiphenyl		N.D.	5	-
Decabromobiphenyl		N.D.	5	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Deca)		N.D.	-	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Nona)		N.D.	-	1000
Monobromodiphenyl ether		N.D.	5	-
Dibromodiphenyl ether		N.D.	5	-
Tribromodiphenyl ether		N.D.	5	-
Tetrabromodiphenyl ether		N.D.	5	-
Pentabromodiphenyl ether		N.D.	5	-
Hexabromodiphenyl ether		N.D.	5	-
Heptabromodiphenyl ether		N.D.	5	-
Octabromodiphenyl ether		N.D.	5	-
Nonabromodiphenyl ether		N.D.	5	-
Decabromodiphenyl ether		N.D.	5	-

Test Part Description :
As per page 3

SGS LABORATORY SERVICES (M) SDN. BHD.



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

Test Part Description :

Sample Description : Blue Ink

Note : (a) mg/kg = ppm
(b) N.D. = Not Detected
(c) MDL = Method Detection Limit
(d) Testing based on original basis
(e) This report supersedes report no. LPCI/10227(B)/08

SGS LABORATORY SERVICES (M) SDN. BHD.

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

1. DETERMINATION OF HEXAVALENT CHROMIUM BY IEC 62321/2nd (111/95/CDV)

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

2. DETERMINATION OF LEAD CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Sample Preparation
↓
Weight sample (1.0g) into digestion vessel
↓
Wet digestion / Microwave digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

3. DETERMINATION OF MERCURY CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Sample Preparation
↓
Weight sample (0.5 - 1.0g) into digestion vessel
↓
Acid digestion (Microwave)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

4. DETERMINATION OF CADMIUM CONTENT BY IEC 62321/2nd (111/95/CDV)

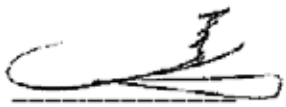
Sample Receiving and Registration
↓
Sample Preparation
↓
Weight sample (1.0g)
↓
Acid digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

5. DETERMINATION OF PBB/PBDE WITH GC-MS BY IEC 62321/2nd (111/95/CDV)

Sample Preparation
↓
Weight sample (2g) into extraction thimble
↓
Soxhlet Extraction with Toluene
↓
Filter through 0.45 um membrane filter
↓
Analyses by GC-MS (with appropriate dilution)

**** End of Report ****

SGS LABORATORY SERVICES (M) SDN. BHD.



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

Test Report

LITTELFUSE INC.
800 E. NORTHWEST HIGHWAY
DES PLAINES,
IL 60016, USA

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

Sample Description	:	Terminal Wire (Tin Plated)
Sample Receiving Date	:	2008/05/16
Testing Period	:	2008/05/16 to 2008/05/26

Test Requested	:	In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.
Test Method	:	(1) With reference to IEC 62321/2nd (111/95/CDV) for Cadmium Content. Analysis was performed by ICP - OES (2) With reference to IEC 62321/2nd (111/95/CDV) for Lead Content. Analysis was performed by ICP - OES (3) With reference to IEC 62321/2nd (111/95/CDV) for Mercury Content. Analysis was performed by ICP - OES (4) With reference to IEC 62321/2nd (111/95/CDV) Section 8.5.1 for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrophotometry. (5) With reference to IEC 62321/2nd (111/95/CDV). Determination of PBBs and PBDEs by GC/MS.
Test Results	:	Please refer to next page.
Analysts	:	Lim Meng Hoe & Jocelyn Christmas

SGS LABORATORY SERVICES (M) SDN. BHD.

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

Test Report

No. LPCI/10220(B-AD)/08 Date : 2008/05/26 Page: 2 of 4
CTS Ref. CTS/08/2410/Littelfuse

Test results by chemical method (Unit: mg/kg)

Test Item(s):	Method (refer to)	Result	MDL	Limit of RoHS
Cadmium(Cd)	(1)	N.D.	2	100
Lead (Pb)	(2)	N.D.	2	1000
Mercury (Hg)	(3)	N.D.	2	1000
Hexavalent Chromium (CrVI)	(4)	Negative	*	1000
Sum of Polybrominated Biphenyl (PBBs) (Mono to Deca)	(5)	N.D.	-	1000
Monobromobiphenyl		N.D.	5	-
Dibromobiphenyl		N.D.	5	-
Tribromobiphenyl		N.D.	5	-
Tetrabromobiphenyl		N.D.	5	-
Pentabromobiphenyl		N.D.	5	-
Hexabromobiphenyl		N.D.	5	-
Heptabromobiphenyl		N.D.	5	-
Octabromobiphenyl		N.D.	5	-
Nonabromobiphenyl		N.D.	5	-
Decabromobiphenyl		N.D.	5	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Deca)		N.D.	-	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Nona)		N.D.	-	1000
Monobromodiphenyl ether		N.D.	5	-
Dibromodiphenyl ether		N.D.	5	-
Tribromodiphenyl ether		N.D.	5	-
Tetrabromodiphenyl ether		N.D.	5	-
Pentabromodiphenyl ether		N.D.	5	-
Hexabromodiphenyl ether		N.D.	5	-
Heptabromodiphenyl ether		N.D.	5	-
Octabromodiphenyl ether		N.D.	5	-
Nonabromodiphenyl ether		N.D.	5	-
Decabromodiphenyl ether		N.D.	5	-

Test Part Description :
As per page 3

SGS LABORATORY SERVICES (M) SDN. BHD.

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

Test Part Description :

Sample Description : Terminal Wire (Tin Plated)

LITTELFUSE INC.
LPCI/10220(B-AD)/08

Note : (a) mg/kg = ppm
(b) N.D. = Not Detected
(c) MDL = Method Detection Limit
(d) *Detection limit = 1 mg/kg of Hexavalent Chromium on the tested areas
Negative = less than detection limit
(e) This report supersedes report no. LPCI/10220(B)/08

SGS LABORATORY SERVICES (M) SDN. BHD.

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

1. DETERMINATION OF HEXAVALENT CHROMIUM BY IEC 62321/2nd (111/95/CDV)

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

2. DETERMINATION OF LEAD CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (1.0g) into digestion vessel
↓
Wet digestion / Microwave digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

3. DETERMINATION OF MERCURY CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (0.5 - 1.0g) into digestion vessel
↓
Acid digestion (Microwave)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

4. DETERMINATION OF CADMIUM CONTENT BY IEC 62321/2nd (111/95/CDV)

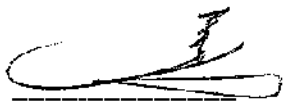
Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (1.0g)
↓
Acid digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

5. DETERMINATION OF PBB/PBDE WITH GC-MS BY IEC 62321/2nd (111/95/CDV)

Cut sample in small pieces
↓
Weight sample (2g) into extraction thimble
↓
Soxhlet Extraction with Toluene
↓
Filter through 0.45 um membrane filter
↓
Analyses by GC-MS (with appropriate dilution)

**** End of Report ****

SGS LABORATORY SERVICES (M) SDN. BHD.



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

Test Report

No. LPCI/10218(B-AD)/08 Date : 2008/05/26 Page: 1 of 4
CTS Ref. CTS/08/2410/Littelfuse

LITTELFUSE INC.
800 E. NORTHWEST HIGHWAY
DES PLAINES,
IL 60016, USA

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

Sample Description	:	Fail safe Clip
Sample Receiving Date	:	2008/05/16
Testing Period	:	2008/05/16 to 2008/05/26

Test Requested	:	In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.
Test Method	:	(1) With reference to IEC 62321/2nd (111/95/CDV) for Cadmium Content. Analysis was performed by ICP - OES (2) With reference to IEC 62321/2nd (111/95/CDV) for Lead Content. Analysis was performed by ICP - OES (3) With reference to IEC 62321/2nd (111/95/CDV) for Mercury Content. Analysis was performed by ICP - OES (4) With reference to IEC 62321/2nd (111/95/CDV) Section 8.5.1 for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrophotometry. (5) With reference to IEC 62321/2nd (111/95/CDV). Determination of PBBs and PBDEs by GC/MS.
Test Results	:	Please refer to next page.
Analysts	:	Lim Meng Hoe & Jocelyn Christmas

SGS LABORATORY SERVICES (M) SDN. BHD.

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

Test Report

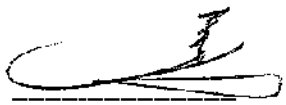
No. LPCI/10218(B-AD)/08 Date : 2008/05/26
CTS Ref. CTS/08/2410/Littelfuse

Test results by chemical method (Unit: mg/kg)

Test Item(s):	Method (refer to)	Result	MDL	Limit of RoHS
Cadmium(Cd)	(1)	N.D.	2	100
Lead (Pb)	(2)	25	2	1000
Mercury (Hg)	(3)	N.D.	2	1000
Hexavalent Chromium (CrVI)	(4)	Negative	*	1000
Sum of Polybrominated Biphenyl (PBBs) (Mono to Deca)	(5)	N.D.	-	1000
Monobromobiphenyl		N.D.	5	-
Dibromobiphenyl		N.D.	5	-
Tribromobiphenyl		N.D.	5	-
Tetrabromobiphenyl		N.D.	5	-
Pentabromobiphenyl		N.D.	5	-
Hexabromobiphenyl		N.D.	5	-
Heptabromobiphenyl		N.D.	5	-
Octabromobiphenyl		N.D.	5	-
Nonabromobiphenyl		N.D.	5	-
Decabromobiphenyl		N.D.	5	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Deca)		N.D.	-	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Nona)		N.D.	-	1000
Monobromodiphenyl ether		N.D.	5	-
Dibromodiphenyl ether		N.D.	5	-
Tribromodiphenyl ether		N.D.	5	-
Tetrabromodiphenyl ether		N.D.	5	-
Pentabromodiphenyl ether		N.D.	5	-
Hexabromodiphenyl ether		N.D.	5	-
Heptabromodiphenyl ether		N.D.	5	-
Octabromodiphenyl ether		N.D.	5	-
Nonabromodiphenyl ether		N.D.	5	-
Decabromodiphenyl ether		N.D.	5	-

Test Part Description :
As per page 3

SGS LABORATORY SERVICES (M) SDN. BHD.



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

Test Part Description :

Sample Description : Fail safe Clip

Note : (a) mg/kg = ppm
(b) N.D. = Not Detected
(c) MDL = Method Detection Limit
(d) *Detection limit = 1 mg/kg of Hexavalent Chromium on the tested areas
Negative = less than detection limit
(e) This report supersedes report no. LPCI/10218(B)/08

SGS LABORATORY SERVICES (M) SDN. BHD.

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

1. DETERMINATION OF HEXAVALENT CHROMIUM BY IEC 62321/2nd (111/95/CDV)

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

2. DETERMINATION OF LEAD CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (1.0g) into digestion vessel
↓
Wet digestion / Microwave digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

3. DETERMINATION OF MERCURY CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (0.5 - 1.0g) into digestion vessel
↓
Acid digestion (Microwave)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

4. DETERMINATION OF CADMIUM CONTENT BY IEC 62321/2nd (111/95/CDV)

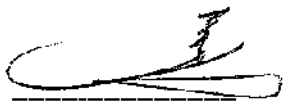
Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (1.0g)
↓
Acid digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

5. DETERMINATION OF PBB/PBDE WITH GC-MS BY IEC 62321/2nd (111/95/CDV)

Cut sample in small pieces
↓
Weight sample (2g) into extraction thimble
↓
Soxhlet Extraction with Toluene
↓
Filter through 0.45 um membrane filter
↓
Analyses by GC-MS (with appropriate dilution)

**** End of Report ****

SGS LABORATORY SERVICES (M) SDN. BHD.



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

Test Report

LITTELFUSE INC.
800 E. NORTHWEST HIGHWAY
DES PLAINES,
IL 60016, USA

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

Sample Description	:	Solder Pill
Sample Receiving Date	:	2008/05/16
Testing Period	:	2008/05/16 to 2008/05/26

Test Requested	:	In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.
Test Method	:	(1) With reference to IEC 62321/2nd (111/95/CDV) for Cadmium Content. Analysis was performed by ICP - OES (2) With reference to IEC 62321/2nd (111/95/CDV) for Lead Content. Analysis was performed by ICP - OES (3) With reference to IEC 62321/2nd (111/95/CDV) for Mercury Content. Analysis was performed by ICP - OES (4) With reference to IEC 62321/2nd (111/95/CDV) Section 8.5.1 for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrophotometry. (5) With reference to IEC 62321/2nd (111/95/CDV). Determination of PBBs and PBDEs by GC/MS.
Test Results	:	Please refer to next page.
Analysts	:	Lim Meng Hoe & Jocelyn Christmas

SGS LABORATORY SERVICES (M) SDN. BHD.

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

Test Report

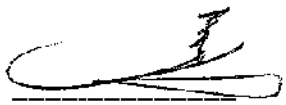
No. LPCI/10219(B-AD)/08 Date : 2008/05/26
CTS Ref. CTS/08/2410/Littelfuse

Test results by chemical method (Unit: mg/kg)

Test Item(s):	Method (refer to)	Result	MDL	Limit of RoHS
Cadmium(Cd)	(1)	N.D.	2	100
Lead (Pb)	(2)	360	2	1000
Mercury (Hg)	(3)	N.D.	2	1000
Hexavalent Chromium (CrVI)	(4)	Negative	*	1000
Sum of Polybrominated Biphenyl (PBBs) (Mono to Deca)	(5)	N.D.	-	1000
Monobromobiphenyl		N.D.	5	-
Dibromobiphenyl		N.D.	5	-
Tribromobiphenyl		N.D.	5	-
Tetrabromobiphenyl		N.D.	5	-
Pentabromobiphenyl		N.D.	5	-
Hexabromobiphenyl		N.D.	5	-
Heptabromobiphenyl		N.D.	5	-
Octabromobiphenyl		N.D.	5	-
Nonabromobiphenyl		N.D.	5	-
Decabromobiphenyl		N.D.	5	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Deca)		N.D.	-	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Nona)		N.D.	-	1000
Monobromodiphenyl ether		N.D.	5	-
Dibromodiphenyl ether		N.D.	5	-
Tribromodiphenyl ether		N.D.	5	-
Tetrabromodiphenyl ether		N.D.	5	-
Pentabromodiphenyl ether		N.D.	5	-
Hexabromodiphenyl ether		N.D.	5	-
Heptabromodiphenyl ether		N.D.	5	-
Octabromodiphenyl ether		N.D.	5	-
Nonabromodiphenyl ether		N.D.	5	-
Decabromodiphenyl ether		N.D.	5	-

Test Part Description :
As per page 3

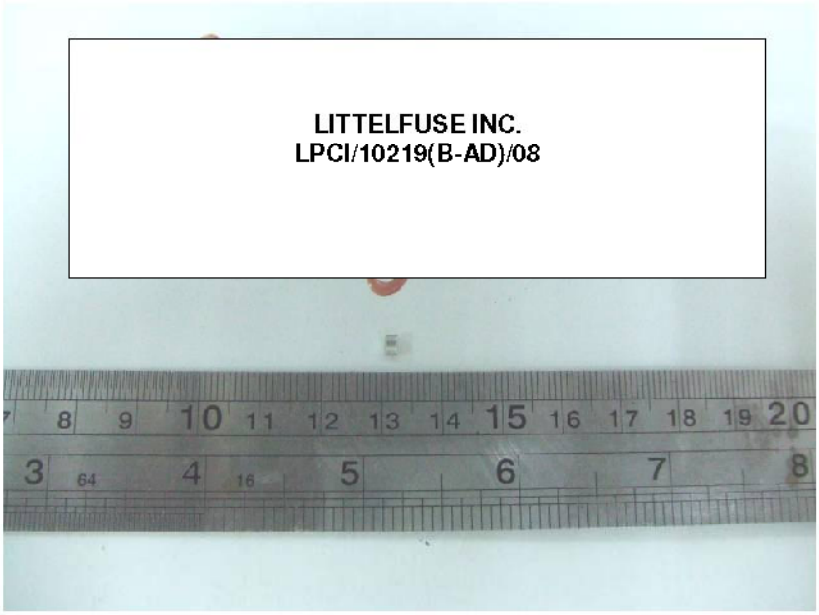
SGS LABORATORY SERVICES (M) SDN. BHD.



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

Test Part Description :

Sample Description : Solder Pill



Note : (a) mg/kg = ppm
(b) N.D. = Not Detected
(c) MDL = Method Detection Limit
(d) *Detection limit = 1 mg/kg of Hexavalent Chromium on the tested areas
Negative = less than detection limit
(e) This report supersedes report no. LPCI/10219(B)/08

SGS LABORATORY SERVICES (M) SDN. BHD.

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

1. DETERMINATION OF HEXAVALENT CHROMIUM BY IEC 62321/2nd (111/95/CDV)

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

2. DETERMINATION OF LEAD CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (1.0g) into digestion vessel
↓
Wet digestion / Microwave digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

3. DETERMINATION OF MERCURY CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (0.5 - 1.0g) into digestion vessel
↓
Acid digestion (Microwave)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

4. DETERMINATION OF CADMIUM CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Cut sample in small pieces
↓
Weight sample (1.0g)
↓
Acid digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

5. DETERMINATION OF PBB/PBDE WITH GC-MS BY IEC 62321/2nd (111/95/CDV)

Cut sample in small pieces
↓
Weight sample (2g) into extraction thimble
↓
Soxhlet Extraction with Toluene
↓
Filter through 0.45 um membrane filter
↓
Analyses by GC-MS (with appropriate dilution)

**** End of Report ****

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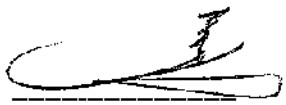

CHONG KIEN LEN
B.Sc.(HONS) AMIC
LAB MANAGER

Test Report

No. LPCI/10228(B-AD)/08 Date : 2008/05/26 Page: 1 of 4
CTS Ref. CTS/08/2410/Littelfuse

LITTELFUSE INC.
800 E. NORTHWEST HIGHWAY
DES PLAINES,
IL 60016, USA

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

Sample Description	:	Red Ink
Sample Receiving Date	:	2008/05/16
Testing Period	:	2008/05/16 to 2008/05/26

Test Requested	:	In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.
Test Method	:	(1) With reference to IEC 62321/2nd (111/95/CDV) for Cadmium Content. Analysis was performed by ICP - OES (2) With reference to IEC 62321/2nd (111/95/CDV) for Lead Content. Analysis was performed by ICP - OES (3) With reference to IEC 62321/2nd (111/95/CDV) for Mercury Content. Analysis was performed by ICP - OES (4) With reference to IEC 62321/2nd (111/95/CDV) Section 9 for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrophotometry. (5) With reference to IEC 62321/2nd (111/95/CDV). Determination of PBBs and PBDEs by GC/MS.
Test Results	:	Please refer to next page.
Analysts	:	Lim Meng Hoe & Jocelyn Christmas

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CHONG KIEN LEN
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LAB MANAGER

Test Report

No. LPCI/10228(B-AD)/08 Date : 2008/05/26 Page: 2 of 4
CTS Ref. CTS/08/2410/Littelfuse

Test results by chemical method (Unit: mg/kg)

Test Item(s):	Method (refer to)	Result	MDL	Limit of RoHS
Cadmium(Cd)	(1)	N.D.	2	100
Lead (Pb)	(2)	N.D.	2	1000
Mercury (Hg)	(3)	N.D.	2	1000
Hexavalent Chromium (CrVI	(4)	N.D.	2	1000
Sum of Polybrominated Biphenyl (PBBs) (Mono to Deca)	(5)	N.D.	-	1000
Monobromobiphenyl		N.D.	5	-
Dibromobiphenyl		N.D.	5	-
Tribromobiphenyl		N.D.	5	-
Tetrabromobiphenyl		N.D.	5	-
Pentabromobiphenyl		N.D.	5	-
Hexabromobiphenyl		N.D.	5	-
Heptabromobiphenyl		N.D.	5	-
Octabromobiphenyl		N.D.	5	-
Nonabromobiphenyl		N.D.	5	-
Decabromobiphenyl		N.D.	5	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Deca)		N.D.	-	-
Sum of Polybrominated Diphenylethers (PBDEs) (Mono to Nona)		N.D.	-	1000
Monobromodiphenyl ether		N.D.	5	-
Dibromodiphenyl ether		N.D.	5	-
Tribromodiphenyl ether		N.D.	5	-
Tetrabromodiphenyl ether		N.D.	5	-
Pentabromodiphenyl ether		N.D.	5	-
Hexabromodiphenyl ether		N.D.	5	-
Heptabromodiphenyl ether		N.D.	5	-
Octabromodiphenyl ether		N.D.	5	-
Nonabromodiphenyl ether		N.D.	5	-
Decabromodiphenyl ether		N.D.	5	-

Test Part Description :
As per page 3

SGS LABORATORY SERVICES (M) SDN. BHD.

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LAB MANAGER

Test Part Description :

Sample Description : Red Ink

Note : (a) mg/kg = ppm
(b) N.D. = Not Detected
(c) MDL = Method Detection Limit
(d) Testing based on original basis
(e) This report supersedes report no. LPCI/10228(B)/08

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1. DETERMINATION OF HEXAVALENT CHROMIUM BY IEC 62321/2nd (111/95/CDV)

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

2. DETERMINATION OF LEAD CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Sample Preparation
↓
Weight sample (1.0g) into digestion vessel
↓
Wet digestion / Microwave digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

3. DETERMINATION OF MERCURY CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Sample Preparation
↓
Weight sample (0.5 - 1.0g) into digestion vessel
↓
Acid digestion (Microwave)
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

4. DETERMINATION OF CADMIUM CONTENT BY IEC 62321/2nd (111/95/CDV)

Sample Receiving and Registration
↓
Sample Preparation
↓
Weight sample (1.0g)
↓
Acid digestion
↓
"Totally Dissolved"
↓
Filtration
↓
Analyses by ICP - OES

5. DETERMINATION OF PBB/PBDE WITH GC-MS BY IEC 62321/2nd (111/95/CDV)

Sample Preparation
↓
Weight sample (2g) into extraction thimble
↓
Soxhlet Extraction with Toluene
↓
Filter through 0.45 um membrane filter
↓
Analyses by GC-MS (with appropriate dilution)

**** End of Report ****

SGS LABORATORY SERVICES (M) SDN. BHD.

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B.Sc.(HONS) AMIC
LAB MANAGER