



ICP Test Report Certification Packet

Company name: Littelfuse, Inc.
Product Series: PulseGuard ESD Supressor
Product #: 4000015NR
Issue Date: April 24, 2006

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:

<Environmental Data Coordinator >

(1) Parts, sub-materials and unit parts

This document covers the PulseGuard ESD Supressor 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 identified in Table 1

Remarks :

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Table 1: List of Raw Materials covered by this report

Total Parts	Raw Material Part Number	Raw Material Description	Page(s)
1	039618 (039610)	FR-4	3 – 6
2	010113	Tin Anode	7 – 8
3	010104	Nickel Anode	9 – 10
4	010114	Copper Anode	11 – 12
5	087299	Cover Coating	13 – 16
6	4501-WPM	Polymeric Coating	17 – 20
7	4501-L32	Polymeric Coating	21 - 24



Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/21770
Date : 2006/02/16
Page : 1 of 4

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

Type of Product : 10z COPPER LAMINATE (FR-4)
Style/Item No : 039610
Manufacturer/Supplier : LITTELFUSE INC.
Name
Country of Destination : TAIWAN
Country of Origin : USA
Sample Received : 2006/02/09
Testing Date : 2006/02/09 TO 2006/02/16

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Test Result : - Please see the next page -


Daniel Yeh, M.R. / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.

Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/21770
Date : 2006/02/16
Page : 2 of 4

Test Result

PART NAME NO.1 : COPPER COLORED METAL LAMINATE

Test Item (s):	Unit	Method	MDL	Result
				No. 1
Monobromobiphenyl	ppm	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	5	N.D.
Dibromobiphenyl	ppm		5	N.D.
Tribromobiphenyl	ppm		5	N.D.
Tetrabromobiphenyl	ppm		5	N.D.
Pentabromobiphenyl	ppm		5	N.D.
Hexabromobiphenyl	ppm		5	N.D.
Heptabromobiphenyl	ppm		5	N.D.
Octabromobiphenyl	ppm		5	N.D.
Nonabromobiphenyl	ppm		5	N.D.
Decabromobiphenyl	ppm		5	N.D.
Total PBBs (Polybrominated biphenyls)/Sum of above	ppm		-	N.D.
Monobromobiphenyl ether	ppm	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	5	N.D.
Dibromobiphenyl ether	ppm		5	N.D.
Tribromobiphenyl ether	ppm		5	N.D.
Tetrabromobiphenyl ether	ppm		5	N.D.
Pentabromobiphenyl ether	ppm		5	N.D.
Hexabromobiphenyl ether	ppm		5	N.D.
Heptabromobiphenyl ether	ppm		5	N.D.
Octabromobiphenyl ether	ppm		5	N.D.
Nonabromobiphenyl ether	ppm		5	N.D.
Decabromobiphenyl ether	ppm		5	N.D.
Total PBBEs(PBDEs) (Polybrominated biphenyl ethers)/Sum of above	ppm		-	N.D.
Total of Mono to Nona-brominated biphenyl ether. (Note 4)	ppm	-	N.D.	

Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/21770
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Test Item (s):	Unit	Method	MDL	Result
				No.1
Chromium VI (Cr+6)	ppm	UV-VIS after reference to US EPA 3060A.	2	N.D.
Cadmium (Cd)	ppm	ICP-AES after reference to EN 1122, method B:2001 or other acid digestion.	2	N.D.
Mercury (Hg)	ppm	ICP-AES after reference to US EPA 3052 or other acid digestion.	2	N.D.
Lead (Pb)	ppm	ICP-AES after reference to US EPA 3050B or other acid digestion.	2	N.D.

- NOTE: (1) N.D. = Not detected (<MDL)
 (2) ppm = mg/kg
 (3) MDL = Method Detection Limit
 (4) Decabromodiphenyl ether (DecaBDE) in polymeric applications is exempted by Commission Decision of 13 Oct 2005 amending Directive 2002/95/EC notified under document 2005/717/EC.
 (5) PBBEs=PBDEs=Polybrominated Diphenyl Ethers=PBDOs=PBBOs.
 (6) " - " = Not Regulation



Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/21770
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Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/21812
Date : 2006/02/17
Page : 1 of 2

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

Type of Product : TIN ANODE
Style/Item No : 010113
Manufacturer/Supplier Name : LITTELFUSE INC.
Country of Destination : TAIWAN
Country of Origin : USA
Sample Received : 2006/02/10
Testing Date : 2006/02/10 TO 2006/02/17

Test Result

PART NAME NO.1 : SILVER COLORED METAL

Test Item (s):	Unit	Method	MDL	Result
				No. 1
Chromium VI (Cr+6)	ppm	UV-VIS after reference to US EPA 3060A.	2	N.D.
Cadmium (Cd)	ppm	ICP-AES after reference to EN 1122, method B:2001 or other acid digestion.	2	N.D.
Mercury (Hg)	ppm	ICP-AES after reference to US EPA 3052 or other acid digestion.	2	N.D.
Lead (Pb)	ppm	ICP-AES after reference to US EPA 3050B or other acid digestion.	2	141.1

NOTE: (1) N.D. = Not detected (<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit


Daniel Yeh, M.R. / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.

Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/21812
Date : 2006/02/17
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Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/21813
Date : 2006/02/17
Page : 1 of 2

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

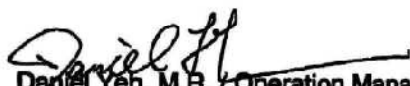
Type of Product : NICKEL ANODE
Style/Item No : 010104
Manufacturer/ Supplier : LITTELFUSE INC.
Name
Country of Destination : TAIWAN
Country of Origin : USA
Sample Received : 2006/02/10
Testing Date : 2006/02/10 TO 2006/02/17

Test Result

PART NAME NO.1 : SILVER COLORED METAL

Test Item (s):	Unit	Method	MDL	Result
				No.1
Chromium VI (Cr+6)	ppm	UV-VIS after reference to US EPA 3060A.	2	N.D.
Cadmium (Cd)	ppm	ICP-AES after reference to EN 1122, method B:2001 or other acid digestion.	2	N.D.
Mercury (Hg)	ppm	ICP-AES after reference to US EPA 3052 or other acid digestion.	2	N.D.
Lead (Pb)	ppm	ICP-AES after reference to US EPA 3050B or other acid digestion.	2	N.D.

NOTE: (1) N.D. = Not detected (<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit


Daniel Yeh, M.R. / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.

Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/21813
Date : 2006/02/17
Page : 2 of 2



Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/21814
Date : 2006/02/17
Page : 1 of 2

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

Type of Product : COPPER ANODE
Style/Item No : 010114
Manufacturer/Supplier Name : LITTELFUSE INC.
Country of Destination : TAIWAN
Country of Origin : USA
Sample Received : 2006/02/10
Testing Date : 2006/02/10 TO 2006/02/17

Test Result

PART NAME NO.1 : COPPER COLORED METAL

Test Item (s):	Unit	Method	MDL	Result
				No.1
Chromium VI (Cr+6)	ppm	UV-VIS after reference to US EPA 3060A.	2	N.D.
Cadmium (Cd)	ppm	ICP-AES after reference to EN 1122, method B:2001 or other acid digestion.	2	N.D.
Mercury (Hg)	ppm	ICP-AES after reference to US EPA 3052 or other acid digestion.	2	N.D.
Lead (Pb)	ppm	ICP-AES after reference to US EPA 3050B or other acid digestion.	2	N.D.

NOTE: (1) N.D. = Not detected (<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit


Daniel Yeh, M.R. / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.

Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/21814
Date : 2006/02/17
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Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016


Report No. : CE/2006/43542
Date : 2006/04/19
Page : 1 of 4

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

Type of Product : DYNAMASK
Style/Item No : 087299
Manufacturer/Supplier : LITTELFUSE INC.
Name
Country of Destination : TAIWAN
Country of Origin : USA
Sample Received : 2006/04/12
Testing Date : 2006/04/12 TO 2006/04/19

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Test Result : - Please see the next page -


Daniel Yen, M.R. / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.

Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/43542
Date : 2006/04/19
Page : 2 of 4

Test Result

PART NAME NO.1 : DARK-GREEN SOLID

Test Item (s):	Unit	Method	MDL	Result
				No. 1
Monobromobiphenyl	ppm	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	5	N.D.
Dibromobiphenyl	ppm		5	N.D.
Tribromobiphenyl	ppm		5	N.D.
Tetrabromobiphenyl	ppm		5	N.D.
Pentabromobiphenyl	ppm		5	N.D.
Hexabromobiphenyl	ppm		5	N.D.
Heptabromobiphenyl	ppm		5	N.D.
Octabromobiphenyl	ppm		5	N.D.
Nonabromobiphenyl	ppm		5	N.D.
Decabromobiphenyl	ppm		5	N.D.
Total PBBs (Polybrominated biphenyls)/Sum of above	ppm		-	N.D.
Monobromobiphenyl ether	ppm	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	5	N.D.
Dibromobiphenyl ether	ppm		5	N.D.
Tribromobiphenyl ether	ppm		5	N.D.
Tetrabromobiphenyl ether	ppm		5	N.D.
Pentabromobiphenyl ether	ppm		5	N.D.
Hexabromobiphenyl ether	ppm		5	N.D.
Heptabromobiphenyl ether	ppm		5	N.D.
Octabromobiphenyl ether	ppm		5	N.D.
Nonabromobiphenyl ether	ppm		5	N.D.
Decabromobiphenyl ether	ppm		5	N.D.
Total PBBEs(PBDEs) (Polybrominated biphenyl ethers)/Sum of above	ppm		-	N.D.
Total of Mono to Nona-brominated biphenyl ether. (Note 4)	ppm	-	N.D.	

Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

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Test Item (s):	Unit	Method	MDL	Result
				No. 1
Chromium VI (Cr+6)	ppm	UV-VIS(US EPA 7196A) after reference to US EPA 3060A.	2	N.D.
Cadmium (Cd)	ppm	ICP-AES after reference to EN 1122, method B:2001 or other acid digestion.	2	N.D.
Mercury (Hg)	ppm	ICP-AES after reference to US EPA 3052 or other acid digestion.	2	N.D.
Lead (Pb)	ppm	ICP-AES after reference to US EPA 3050B or other acid digestion.	2	N.D.

- NOTE: (1) N.D. = Not detected (<MDL)
 (2) ppm = mg/kg
 (3) MDL = Method Detection Limit
 (4) Decabromobiphenyl ether (DecaBDE) in polymeric applications is exempted by Commission Decision of 13 Oct 2005 amending Directive 2002/95/EC notified under document 2005/717/EC.
 (5) PBBEs=PBDEs=Polybrominated Diphenyl Ethers=PBDOs=PBBOs.
 (6) " - " = Not Regulation

Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/43542
Date : 2006/04/19
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Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

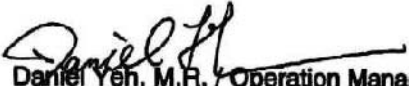
Report No. : CE/2006/43543
Date : 2006/04/19
Page : 1 of 4

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

Type of Product : VVM
Style/Item No : 4501-WPM
Manufacturer/Supplier : LITTELFUSE INC.
Name
Country of Destination : TAIWAN
Country of Origin : USA
Sample Received : 2006/04/12
Testing Date : 2006/04/12 TO 2006/04/19

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Test Result : - Please see the next page -


Daniel Yen, M.R. / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.



Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/43543
Date : 2006/04/19
Page : 2 of 4

Test Result

PART NAME NO.1 : GRAY PASTE

Test Item (s):	Unit	Method	MDL	Result
				No. 1
Monobromobiphenyl	ppm	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	5	N.D.
Dibromobiphenyl	ppm		5	N.D.
Tribromobiphenyl	ppm		5	N.D.
Tetrabromobiphenyl	ppm		5	N.D.
Pentabromobiphenyl	ppm		5	N.D.
Hexabromobiphenyl	ppm		5	N.D.
Heptabromobiphenyl	ppm		5	N.D.
Octabromobiphenyl	ppm		5	N.D.
Nonabromobiphenyl	ppm		5	N.D.
Decabromobiphenyl	ppm		5	N.D.
Total PBBs (Polybrominated biphenyls)/Sum of above	ppm		-	N.D.
Monobromobiphenyl ether	ppm	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	5	N.D.
Dibromobiphenyl ether	ppm		5	N.D.
Tribromobiphenyl ether	ppm		5	N.D.
Tetrabromobiphenyl ether	ppm		5	N.D.
Pentabromobiphenyl ether	ppm		5	N.D.
Hexabromobiphenyl ether	ppm		5	N.D.
Heptabromobiphenyl ether	ppm		5	N.D.
Octabromobiphenyl ether	ppm		5	N.D.
Nonabromobiphenyl ether	ppm		5	N.D.
Decabromobiphenyl ether	ppm		5	N.D.
Total PBBEs(PBDEs) (Polybrominated biphenyl ethers)/Sum of above	ppm		-	N.D.
Total of Mono to Nona-brominated biphenyl ether. (Note 4)	ppm	-	N.D.	

Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/43543
Date : 2006/04/19
Page : 3 of 4

Test Item (s):	Unit	Method	MDL	Result
				No. 1
Chromium VI (Cr+6)	ppm	UV-VIS(US EPA 7196A) after reference to US EPA 3060A.	2	N.D.
Cadmium (Cd)	ppm	ICP-AES after reference to EN 1122, method B:2001 or other acid digestion.	2	N.D.
Mercury (Hg)	ppm	ICP-AES after reference to US EPA 3052 or other acid digestion.	2	N.D.
Lead (Pb)	ppm	ICP-AES after reference to US EPA 3050B or other acid digestion.	2	N.D.

- NOTE: (1) N.D. = Not detected (<MDL)
 (2) ppm = mg/kg
 (3) MDL = Method Detection Limit
 (4) Decabromobiphenyl ether (DecaBDE) in polymeric applications is exempted by Commission Decision of 13 Oct 2005 amending Directive 2002/95/EC notified under document 2005/717/EC.
 (5) PBBEs=PBDEs=Polybrominated Diphenyl Ethers=PBDOs=PBBOs.
 (6) " - " = Not Regulation

Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/43543
Date : 2006/04/19
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Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

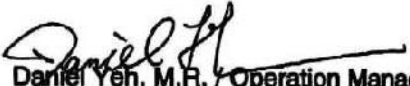
Report No. : CE/2006/43544
Date : 2006/04/19
Page : 1 of 4

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

Type of Product : VVM
Style/Item No : 4501-L32
Manufacturer/Supplier : LITTELFUSE INC.
Name
Country of Destination : TAIWAN
Country of Origin : USA
Sample Received : 2006/04/12
Testing Date : 2006/04/12 TO 2006/04/19

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Test Result : - Please see the next page -


Daniel Yen, M.R. / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.



Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/43544
Date : 2006/04/19
Page : 2 of 4

Test Result

PART NAME NO.1 : GRAY PASTE

Test Item (s):	Unit	Method	MDL	Result
				No. 1
Monobromobiphenyl	ppm	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	5	N.D.
Dibromobiphenyl	ppm		5	N.D.
Tribromobiphenyl	ppm		5	N.D.
Tetrabromobiphenyl	ppm		5	N.D.
Pentabromobiphenyl	ppm		5	N.D.
Hexabromobiphenyl	ppm		5	N.D.
Heptabromobiphenyl	ppm		5	N.D.
Octabromobiphenyl	ppm		5	N.D.
Nonabromobiphenyl	ppm		5	N.D.
Decabromobiphenyl	ppm		5	N.D.
Total PBBs (Polybrominated biphenyls)/Sum of above	ppm		-	N.D.
Monobromobiphenyl ether	ppm	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	5	N.D.
Dibromobiphenyl ether	ppm		5	N.D.
Tribromobiphenyl ether	ppm		5	N.D.
Tetrabromobiphenyl ether	ppm		5	N.D.
Pentabromobiphenyl ether	ppm		5	N.D.
Hexabromobiphenyl ether	ppm		5	N.D.
Heptabromobiphenyl ether	ppm		5	N.D.
Octabromobiphenyl ether	ppm		5	N.D.
Nonabromobiphenyl ether	ppm		5	N.D.
Decabromobiphenyl ether	ppm		5	N.D.
Total PBBEs(PBDEs) (Polybrominated biphenyl ethers)/Sum of above	ppm		-	N.D.
Total of Mono to Nona-brominated biphenyl ether. (Note 4)	ppm	-	N.D.	

Test Report

LITTELFUSE INC.
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/43544
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Page : 3 of 4

Test Item (s):	Unit	Method	MDL	Result
				No. 1
Chromium VI (Cr+6)	ppm	UV-VIS(US EPA 7196A) after reference to US EPA 3060A.	2	N.D.
Cadmium (Cd)	ppm	ICP-AES after reference to EN 1122, method B:2001 or other acid digestion.	2	N.D.
Mercury (Hg)	ppm	ICP-AES after reference to US EPA 3052 or other acid digestion.	2	N.D.
Lead (Pb)	ppm	ICP-AES after reference to US EPA 3050B or other acid digestion.	2	N.D.

- NOTE: (1) N.D. = Not detected (<MDL)
 (2) ppm = mg/kg
 (3) MDL = Method Detection Limit
 (4) Decabromobiphenyl ether (DecaBDE) in polymeric applications is exempted by Commission Decision of 13 Oct 2005 amending Directive 2002/95/EC notified under document 2005/717/EC.
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800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Report No. : CE/2006/43544
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