



## Certificate of non-use of The Controlled Substances

Company name           Littelfuse, LP (Subsidiary of Littelfuse, Inc.)

Product Covered        Thyristor TO-220 R Package (Non-isolated)

Issue Date              October 12, 2006

It is hereby certified by Littelfuse, LP, 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

\_\_\_\_\_  
< Product Engineer, Littelfuse, L.P.>

(1) Parts, sub-materials and unit parts

This document covers Thyristor TO-220 R Package (non-isolated) series products manufactured by Littelfuse, LP. Actual values in this report are taken from S8055R and the result is generally applicable to all Thyristor TO-220 R Package series products supplied by Littelfuse, LP. Please see page 2 for the complete list of part number covered by this report.

< Homogeneous Materials used >

Please see figure and table 1 on page 3 and table 2 on page 4 of this document.

(2) The analytical data on all measurable substances

Please see annex 1 through 12, attached to this document

Remarks :

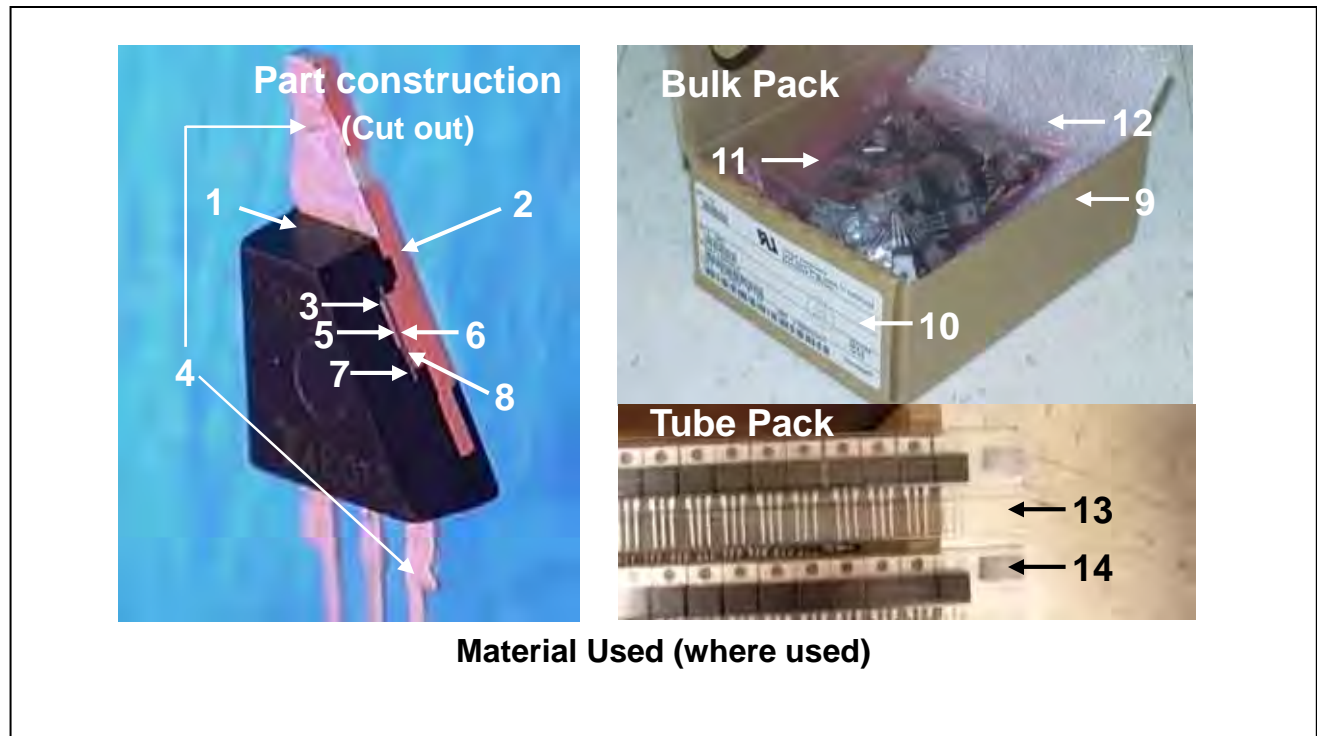
**1. Pb (lead) contained in die bonding solder (item 8 on page 3) and passivation glass (item 7) to be categorized as exempt in RoHS Annex 5 and 7.**

**Please refer to Annex 13 of this report for the extract of the applicable exemptions of RoHS (EU Directive 2002/95/EC)**



**Littelfuse Part Number covered by this report**

Standard (Catalog) Part Number						
C122A	Q4010R4	Q6006R4	Q7025R5	S0308R	S5012R	
C122B	Q4010R5	Q6006R5	Q7025R6	S0312R	S5025R	
C122C	Q4010RH5	Q6006RH4	Q7025R9	S0316R	S6008R	
C122D	Q4012R5	Q6008R4	Q8006R5	S0325R	S6010R	
C122E	Q4012RH5	Q6008R5	Q8006RH4	S0508R	S6012R	
C122F	Q4015R5	Q6008RH4	Q8008R5	S0510R	S6016R	
C122M	Q4015R6	Q6010R4	Q8008RH4	S0512R	S6025R	
C122A	Q4015R9	Q6010R5	Q8010R4	S0516R	S6040R	
	Q4016RH3	Q6010RH5	Q8010R5	S0525R	S6055R	
	Q4016RH4	Q6012R5	Q8010RH5	S0540R	S8008R	
Q2006R4	Q4016RH6	Q6012RH5	Q8012R5	S0555R	S8010R	
Q2006R5	Q4025R5	Q6015R5	Q8012RH5	S1008R	S8012R	
Q2006RH4	Q4025R6	Q6015R6	Q8015R5	S1010R	S8016R	
Q2008R4	Q4025R9	Q6015R9	Q8015R6	S1012R	S8025R	
Q2008R5	Q5006R4	Q6016RH3	Q8015R9	S1016R	S8040R	
Q2008RH4	Q5006R5	Q6016RH4	Q8016RH3	S1025R	S8055R	
Q2010R4	Q5006RH4	Q6016RH6	Q8016RH4	S1040R	SK008R	
Q2010R5	Q5008R4	Q6025R5	Q8016RH6	S1055R	SK010R	
Q2010RH5	Q5008R5	Q6025R6	Q8025R5	S2008R	SK012R	
Q2012R5	Q5008RH4	Q6025R9	Q8025R6	S2010R	SK016R	
Q2012RH5	Q5010R4	Q6025RX	Q8025R9	S2012R	SK025R	
Q2015R5	Q5010R5	Q6035RH5	QK006R5	S2016R	SK040R	
Q2015R9	Q5010RH5	Q7006R5	QK006RH4	S2025R	SK055R	
Q2016RH3	Q5012R5	Q7006RH4	QK008R5	S2040R		
Q2016RH4	Q5012RH5	Q7008R5	QK008RH4	S2055R		
Q2016RH6	Q5015R5	Q7008RH4	QK010R4	S2800A		
Q2025R5	Q5015R6	Q7010R5	QK010R5	S2800C		
Q2025R6	Q5015RX	Q7010RH5	QK010RH5	S2800E		
Q2025R9	Q5016RH3	Q7012R5	QK012RH5	S2800F		<b>SPECIAL DEVICE P/N</b>
Q2035RH5	Q5016RH4	Q7012RH5	QK015R5	S4008R		Any Special P/N that has base standard P/N listed in this table
Q4006R4	Q5016RH6	Q7015R5	QK016RH3	S4010R		
Q4006R5	Q5025R5	Q7015R6	QK016RH4	S4012R		
Q4006RH4	Q5025R6	Q7015R9	QK016RH6	S4016R		<b>OPTIONAL SUFFIX</b>
Q4008R4	Q5025R9	Q7016RH3	QK025R5	S4025R		Any Part Number listed here may be followed by suffix for packing options, such as "RP" or lead form options such as "LB" or "51".
Q4008R5	Q5025RX	Q7016RH4	QK025R6	S4040R		
Q4008RH4		Q7016RH6		S4055R		



**Table 1: Homogeneous Material Used**

#	Description	Name of Material	Type	Analysis data
1	Molding compound	epoxy resin	plastic	annex 1
2	Lead frame	copper alloy	metal	annex 2
3	Preform	copper alloy	metal	annex 3 TO-220 uses the same copper material as DO-214. ICP report is from DO-214 Material.
4	Matte-Tin plating	Tin	metal	annex 4, tested as plating cathode
5	Silicon die	silicon	metal	annex 5, tested as Nickel-plated wafer.
6	Nickel electrode	nickel	metal	
7	Passivation glass	glass	glass	annex 6. Pb in this glass is exempted by RoHS Annex 7.
8	Die bonding solder	solder	metal	annex 7. Pb in this solder is exempted by RoHS Annex 5.
9	Cardboard Box	cardboard	paper	annex 8, tested with label TO-220 uses the same paper material as DO-214. ICP report is from DO-214 Material.
10	Product Label	paper	paper	annex 8, tested with box
11	Poly Tubing Bag	polyethylene	plastic	annex 9
12	Packing Foam	polystyrene	plastic	annex 10
13	Packing Tube	PVC	plastic	annex 11
14	End Plug	rubber	rubber	annex 12

**Table 2: RoHS-regulated substance in raw materials**

Components	Analysis Result						
	Weight (typical)	Cd Cadmium	Cr Chromium	Hg Mercury	Pb Lead	PBB	PBDE
<b>As Component Total</b> (Values of S8055R* <sup>1</sup> , as representative of Thyristor, TO-220R Package)	2,180mg	< 2ppm	< 2ppm	< 2ppm	<10 ppm* <sup>2</sup> (0.95%* <sup>3</sup> )	< 5 ppm	< 5 ppm
<b>Epoxy Resin compound</b> (mixture of phenolix resin, epoxy resin, filler and Sb <sub>2</sub> O <sub>3</sub> as fire retardant) See Annex 1 for the detail.	612mg	< 2ppm	< 2ppm	< 2ppm	< 2ppm	< 5ppm	<5 ppm
<b>Lead frame / Preform</b> (Copper Alloy, C14420 / CDA110)  See Annex 2 & 3 for the detail.	1,490mg	< 2ppm	< 2ppm	< 2ppm	< 2ppm	---	---
<b>Outside lead finish</b> (Matte-Tin plated, Sn 100%)  See Annex 4 for the detail.	40mg	< 1ppm	< 1ppm	< 0.5ppm	58ppm* <sup>4</sup>	---	---
<b>Silicon Die</b> (Silicon + Ni electrode)  See Annex 5 for the detail.	18mg	< 2ppm	< 2ppm	< 2ppm	52ppm* <sup>4</sup>	---	---
<b>Passivation Glass</b>  See Annex 6 for the detail.	0.7mg	< 2ppm	< 2ppm	< 2ppm	39% * <sup>5</sup>	---	---
<b>Die Bonding Solder</b> (Pb/Sn=90/10)  See Annex 7 for the detail.	22mg	< 2ppm	< 2ppm	< 2ppm	90% * <sup>6</sup>	---	---
<b>Packing Materials</b> (Box, Reel, Tapes, Plastic bag)  See Annex 8-13 for the detail	---	< 2ppm	< 2ppm	< 2ppm	< 2ppm	< 5ppm	< 5ppm

\*1 Other products may contain equal or less amount of Pb as S8055R value shown here, but not more than the value shown here.

\*2 Less than 10ppm Pb content overall, excluding Pb from the die bonding solder and the passivation glass on the silicon die.

\*3 0.95wt% or 21mg of Pb (lead) content overall, including the RoHS-exempted use of Pb

\*4 Pb (lead) contained in outside finish and Nickel-plated silicon wafer is not exempted from restriction by RoHS, but considered as process contamination. Littelfuse does not add Pb (lead) intentionally.

\*5 Pb (lead) contained in passivation glass is exempted from restriction by RoHS Annex 5.

\*6 Pb (lead) contained in die bonding solder is exempted from restriction by RoHS Annex 7, first item.

Please refer to Annex 13 of this report for the applicable exemptions of RoHS (EU Directive 2002/95/EC)

**Annex 1: Analysis Result of Molding Compound (Page 1 of 4)**

**SGS**

## Test Report

Report No : CE/2006/91634    Date : 2006/09/13    Page: 1 of 4  
LITTELFUSE INC.      
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

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

Sample Description : MOLDING COMPOUND LS-16S  
Style/Item No : 1003010-16  
Manufacturer/Supplier : LITTELFUSE INC.  
Name  
Country of Destination : TAIWAN  
Country of Origin : USA  
Sample Received : 2006/09/06  
Testing Period : 2006/09/06 TO 2006/09/13

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**Test Requested** : With reference to the RoHS Directive 2002/95/EC, and its amendment directives.

**Test Method** : (1) With reference to BS EN 1122:2001, Method B for Cadmium Content. Analysis was performed by ICP-AES.  
(2) With reference to US EPA Method 3050B for Lead Content. Analysis was performed by ICP-AES.  
(3) With reference to US EPA Method 3052 for Mercury Content. Analysis was performed by ICP-AES.  
(4) With reference to US EPA Method 3060A & 7196A for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrometry.  
(5) With reference to US EPA 3540C, Analysis was performed by GC/MS and screening via US EPA 3550C with HPLC/DAD/MS.


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

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


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SGS Taiwan LTD.    NO. 135-1, Wu Kung Road, Wu Ku Industrial Zone, Taipei county Taiwan  
8066-21 22893039 61886 21 2299 2237    www.sgs.com.tw

## Annex 1: Analysis Result of Molding Compound (Page 2 of 4)



### Test Report

Report No : CE/2006/91634    Date : 2006/09/13    Page: 2 of 4  
 LITTELFUSE INC.      
 800 E. NORTHWEST HWY. DES PLAINES, IL 60016

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

Test Item (s):	Method (Refer to)	Result	MDL
		No. 1	
Cadmium (Cd)	(1)	n.d.	2
Lead (Pb)	(2)	8.0	2
Mercury (Hg)	(3)	n.d.	2
Chromium VI (Cr+6)	(4)	n.d.	2
<b>Total PBBs</b>		n.d.	-
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
<b>Total PBBEs(PBDEs)</b>	(5)	n.d.	-
Monobromobiphenyl ether		n.d.	5
Dibromobiphenyl ether		n.d.	5
Tribromobiphenyl ether		n.d.	5
Tetrabromobiphenyl ether		n.d.	5
Pentabromobiphenyl ether		n.d.	5
Hexabromobiphenyl ether		n.d.	5
Heptabromobiphenyl ether		n.d.	5
Octabromobiphenyl ether		n.d.	5
Nonabromobiphenyl ether		n.d.	5
Decabromobiphenyl ether		n.d.	5
<b>Total of Mono to Nona(Note 5)</b>		n.d.	-

**Test Part Description**  
 PART NAME NO.1    :    BLACK LUMP


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 (886) 21 22080319 (886) 21 2299 2217    www.sgs.com.tw

**Annex 1: Analysis Result of Molding Compound (Page 3 of 4)**

**SGS**

**Test Report**

Report No : CE/2006/91634    Date : 2006/09/13    Page: 3 of 4  
LITTELFUSE INC.      
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Note : (1) mg/kg = ppm, 0.1% = 1000 ppm(mg/kg), 0.0005% = 5 ppm(mg/kg)  
(2) n.d. = N.D. = ND = Not Detected  
(3) MDL = Method Detection Limit  
(4) Sample was totally digested for Pb, Cd, Hg  
(5) Sum of Mono to NonaBDE & according to 2005/717/EC DecaBDE is exempt.  
(6) "-" = Not Regulated

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**Annex 1: Analysis Result of Molding Compound (Page 4 of 4)**

**SGS**

**Test Report**

Report No : CE/2006/91634    Date : 2006/09/13    Page: 4 of 4  
LITTELFUSE INC.      
800 E. NORTHWEST HWY. DES PLAINES, IL 60016



**CE / 2006**  
**/ 91634**



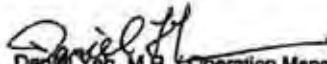
**\*\* End of Report \*\***

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**Annex 2: Analysis Result of Lead frame (Page 1 of 3)**

	
<b>Test Report</b>	
Report No : CE/2006/91766    Date : 2006/09/12	Page: 1 of 3
LITTELFUSE INC.	
800 E. NORTHWEST HWY. DES PLAINES, IL 60016	
 <b>The following sample(s) was/were submitted and identified by/on behalf of the client as :</b>	
Sample Description	: LEAD FRAME
Part No	: 7001004-05
Manufacturer/Supplier Name	: LITTELFUSE INC.
Country of Destination	: TAIWAN
Country of Origin	: USA
Sample Received	: 2006/9/6
Testing Period	: 2006/9/6 TO 2006/09/12
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<b>Test Requested</b>	: With reference to the RoHS Directive 2002/95/EC, and its amendment directives.
<b>Test Method</b>	: (1) With reference to BS EN 1122:2001, Method B for Cadmium Content. Analysis was performed by ICP-AES. (2) With reference to US EPA Method 3050B for Lead Content. Analysis was performed by ICP-AES. (3) With reference to US EPA Method 3052 for Mercury Content. Analysis was performed by ICP-AES. (4) With reference to US EPA Method 3060A & 7196A for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrometry.
<b>Test Result(s)</b>	: - Please see the next page(s) -
  Daniel Yeh, M.P., Operation Manager Signed for and on behalf of SGS TAIWAN LTD.	
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## Annex 2: Analysis Result of Lead frame (Page 2 of 3)



### Test Report

Report No : CE/2006/91766    Date : 2006/09/12    Page: 2 of 3  
 LITTELFUSE INC.   
 800 E. NORTHWEST HWY. DES PLAINES, IL 60016

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

Test Item (s):	Method (Refer to)	Result	MDL
		No. 1	
Cadmium (Cd)	(1)	n.d.	2
Lead (Pb)	(2)	n.d.	2
Mercury (Hg)	(3)	n.d.	2
Chromium VI (Cr+6)	(4)	n.d.	2

**Test Part Description**  
 PART NAME NO.1                    :    COPPER COLORED METAL

Note : (1) mg/kg = ppm, 0.1% = 1000 ppm(mg/kg), 0.0005% = 5 ppm(mg/kg)  
 (2) n.d. = N.D. = ND = Not Detected  
 (3) MDL = Method Detection Limit  
 (4) Sample was totally digested for Pb, Cd, Hg

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**Annex 2: Analysis Result of Lead frame (Page 3 of 3)**

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**Test Report**

Report No : CE/2006/91766    Date : 2006/09/12    Page: 3 of 3  
LITTELFUSE INC.      
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

CE / 2006 / 91766




**\*\* End of Report \*\***

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**Annex 3: Analysis Result of Preform (Page 1 of 3)**




## Test Report

Report No : CE/2006/91765    Date : 2006/09/12  
LITTELFUSE INC.  
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Page: 1 of 3  


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

Sample Description	:	PREFORM
Part No	:	7101814-00
Manufacturer/Supplier Name	:	LITTELFUSE INC.
Country of Destination	:	TAIWAN
Country of Origin	:	USA
Sample Received	:	2006/9/6
Testing Period	:	2006/9/6 TO 2006/09/12

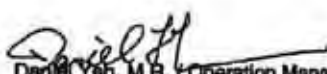
  

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<b>Test Requested</b>	:	With reference to the RoHS Directive 2002/95/EC, and its amendment directives.
<b>Test Method</b>	:	<ol style="list-style-type: none"><li>(1) With reference to BS EN 1122:2001, Method B for Cadmium Content. Analysis was performed by ICP-AES.</li><li>(2) With reference to US EPA Method 3050B for Lead Content. Analysis was performed by ICP-AES.</li><li>(3) With reference to US EPA Method 3052 for Mercury Content. Analysis was performed by ICP-AES.</li><li>(4) With reference to US EPA Method 3060A &amp; 7196A for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrometry.</li></ol>
<b>Test Result(s)</b>	:	- Please see the next page(s) -


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

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### Annex 3: Analysis Result of Preform (Page 2 of 3)

<h1>SGS</h1>			
<h2>Test Report</h2>			
Report No : CE/2006/91765	Date : 2006/09/12	Page: 2 of 3	
LITTELFUSE INC.			
800 E. NORTHWEST HWY. DES PLAINES, IL 60016			
<b>Test Result(s)</b>			
Test results by chemical method (Unit: mg/kg)			
Test Item (s):	Method (Refer to)	Result	MDL
		No. 1	
Cadmium (Cd)	(1)	n.d.	2
Lead (Pb)	(2)	n.d.	2
Mercury (Hg)	(3)	n.d.	2
Chromium VI (Cr+6)	(4)	n.d.	2
<b>Test Part Description</b>			
PART NAME NO.1 ; COPPER COLORED METAL			
Note : (1) mg/kg = ppm, 0.1% = 1000 ppm(mg/kg), 0.0005% = 5 ppm(mg/kg)			
(2) n.d. = N.D. = ND = Not Detected			
(3) MDL = Method Detection Limit			
(4) Sample was totally digested for Pb, Cd, Hg			
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**Annex 3: Analysis Result of Preform (Page 3 of 3)**

**SGS**

**Test Report**

Report No : CE/2006/91765    Date : 2006/09/12    Page: 3 of 3  
LITTELFUSE INC.      
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

CE / 2006 / 91765


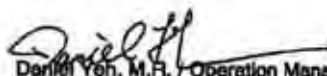


\*\* End of Report \*\*


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0886-21-22083839/0886-21-2298-2237    www.sgs.com.tw


**Annex 4: Analysis Result of Tin plating cathode (page 1 of 3)**

		
<b>Test Report</b>		
Report No : CE/2006/96119	Date : 2006/09/29	Page: 1 of 3
LITTELFUSE INC.		
800 E. NORTHWEST HWY. DES PLAINES, IL 60016		
<b>The following sample(s) was/were submitted and identified by/on behalf of the client as :</b>		
Sample Description	:	TIN PLATING CATHODE BALL
Style/Item No	:	TIN PLATING CATHODE BALL
Manufacturer/Supplier Name	:	LITTELFUSE INC.
Country of Destination	:	TAIWAN
Country of Origin	:	USA
Sample Received	:	2006/09/22
Testing Period	:	2006/09/22 TO 2006/09/29
-----		
<b>Test Requested</b>	:	With reference to the RoHS Directive 2002/95/EC, and its amendment directives.
<b>Test Method</b>	:	(1) With reference to BS EN 1122:2001, Method B for Cadmium Content. Analysis was performed by ICP-AES. (2) With reference to US EPA Method 3050B for Lead Content. Analysis was performed by ICP-AES. (3) With reference to US EPA Method 3052 for Mercury Content. Analysis was performed by ICP-AES. (4) With reference to US EPA Method 3060A & 7196A for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrometry.
<b>Test Result(s)</b>	:	- Please see the next page(s) -
 Daniel Yeh, M.F., Operation Manager Signed for and on behalf of SGS TAIWAN LTD.		
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## Annex 4: Analysis Result of Tin plating cathode (page 2 of 3)



### Test Report

Report No : CE/2006/96119    Date : 2006/09/29    Page: 2 of 3  
 LITTELFUSE INC.   
 800 E. NORTHWEST HWY. DES PLAINES, IL 60016

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

Test Item (s):	Method (Refer to)	Result	MDL
		No.1	
Cadmium (Cd)	(1)	n.d.	2
Lead (Pb)	(2)	58.2	2
Mercury (Hg)	(3)	n.d.	2
Chromium VI (Cr+6)	(4)	n.d.	2

**Test Part Description**  
 PART NAME NO.1 : SILVER COLORED TIN BALL

Note : (1) mg/kg = ppm, 0.1% = 1000 ppm(mg/kg), 0.0005% = 5 ppm(mg/kg)  
 (2) n.d. = N.D. = ND = Not Detected  
 (3) MDL = Method Detection Limit  
 (4) Sample was totally digested for Pb, Cd, Hg

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**Annex 4: Analysis Result of Tin plating cathode (page 3 of 3)**

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**Test Report**

Report No : CE/2006/96119    Date : 2006/09/29    Page: 3 of 3  
LITTELFUSE INC.      
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

CE / 2006 / 96119





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**Annex 5: Analysis Result of Ni-plated Wafer (Page 1 of 3)**


	
<b>Test Report</b>	
Report No : CE/2006/91815A Date : 2006/09/14	Page: 1 of 3
LITTELFUSE INC. 800 EAST NORTHWEST HIGHWAY DES PLAINES, IL 60016	
<b>The following sample(s) was/were submitted and identified by/on behalf of the client as :</b>	
Sample Description	: SILICON WAFER ELECTRODE
Style/Item No	: 7101505xx
Manufacturer/Supplier Name	: LITTELFUSE INC.
Country of Destination	: TAIWAN
Country of Origin	: USA
Sample Received	: 2006/09/07
Testing Period	: 2006/09/07 TO 2006/09/14
-----	
<b>Test Requested</b>	: With reference to the RoHS Directive 2002/95/EC, and its amendment directives.
<b>Test Method</b>	: (1) With reference to BS EN 1122:2001, Method B for Cadmium Content. Analysis was performed by ICP-AES. (2) With reference to US EPA Method 3050B for Lead Content. Analysis was performed by ICP-AES. (3) With reference to US EPA Method 3052 for Mercury Content. Analysis was performed by ICP-AES. (4) With reference to US EPA Method 3060A & 7196A for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrometry.
<b>Test Result(s)</b>	: - Please see the next page(s) -
 Daniel Yeh, M.P., Operation Manager Signed for and on behalf of SGS TAIWAN LTD.	
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## Annex 5: Analysis Result of Ni-plated Wafer (Page 2 of 3)



### Test Report

Report No : CE/2006/91815A Date : 2006/09/14  
 LITTELFUSE INC.  
 800 EAST NORTHWEST HIGHWAY DES PLAINES,  
 IL 60016

Page: 2 of 3  


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

Test Item (s):	Method (Refer to)	Result	MDL
		No.1	
Cadmium (Cd)	(1)	n.d.	2
Lead (Pb)	(2)	52.4	2
Mercury (Hg)	(3)	n.d.	2
Chromium VI (Cr+6)	(4)	n.d.	2

**Test Part Description**  
 PART NAME NO.1 : SILICON WAFER WITH NICKEL ELECTRODE

Note : (1) mg/kg = ppm, 0.1% = 1000 ppm(mg/kg), 0.0005% = 5 ppm(mg/kg)  
 (2) n.d. = N.D. = ND = Not Detected  
 (3) MDL = Method Detection Limit  
 (4) Sample was totally digested for Pb, Cd, Hg  
 (5) The report number of CE/2006/91815 is invalid.

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**Annex 5: Analysis Result of Ni-plated Wafer (Page 3 of 3)**

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**Test Report**

Report No : CE/2006/91815A Date : 2006/09/14 Page: 3 of 3  
LITTELFUSE INC.   
800 EAST NORTHWEST HIGHWAY DES PLAINES,  
IL 60016





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**Annex 6: Analysis Result of Passivation Glass (Page 1 of 4)**

	
<b>Test Report</b>	
LEITELFUSE, INC. 800 E. NORTHWEST HIGHWAY DES PLAINES, IL 60016 USA	Report No. : CE/2006/34224 Date : 2006/03/29 Page : 1 of 4
<b>The following merchandise was (were) submitted and identified by the client as :</b>	
<u>Type of Product</u>	: PASSIVATION GLASS POWDER
<u>Style/Item No</u>	: 110233600
<u>Manufacturer/Supplier</u>	: LITTELFUSE INC.
<u>Name</u>	
<u>Country of Destination</u>	: TAIWAN
<u>Country of Origin</u>	: USA
<u>Sample Received</u>	: 2006/03/14
<u>Testing Date</u>	: 2006/03/14 TO 2006/03/21 & 2006/03/26 TO 2006/03/29
-----	
<u>Test Result</u>	: - Please see the next page -
  Daniel Yen, M.R., Operation Manager Signed for and on behalf of SGS TAIWAN LTD.	
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## Annex 6: Analysis Result of Passivation Glass (Page 2 of 4)



### Test Report

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

Report No. : CE/2006/34224  
 Date : 2006/03/29  
 Page : 2 of 4

**Test Result**


PART NAME NO.1 : WHITE POWDER

Test Item (s):	Unit	Method	MDL	Result
				No.1
Monobromobiphenyl	%	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)	0.0005	N.D.
Dibromobiphenyl	%		0.0005	N.D.
Tribromobiphenyl	%		0.0005	N.D.
Tetrabromobiphenyl	%		0.0005	N.D.
Pentabromobiphenyl	%		0.0005	N.D.
Hexabromobiphenyl	%		0.0005	N.D.
Heptabromobiphenyl	%		0.0005	N.D.
Octabromobiphenyl	%		0.0005	N.D.
Nonabromobiphenyl	%		0.0005	N.D.
Decabromobiphenyl	%		0.0005	N.D.
<b>Total PBBs (Polybrominated biphenyls)/Sum of above</b>	%		-	N.D.
Monobromobiphenyl ether	%	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)	0.0005	N.D.
Dibromobiphenyl ether	%		0.0005	N.D.
Tribromobiphenyl ether	%		0.0005	N.D.
Tetrabromobiphenyl ether	%		0.0005	N.D.
Pentabromobiphenyl ether	%		0.0005	N.D.
Hexabromobiphenyl ether	%		0.0005	N.D.
Heptabromobiphenyl ether	%		0.0005	N.D.
Octabromobiphenyl ether	%		0.0005	N.D.
Nonabromobiphenyl ether	%		0.0005	N.D.
Decabromobiphenyl ether	%		0.0005	N.D.
<b>Total PBDEs(PBDEs) (Polybrominated biphenyl ethers)/Sum of above</b>	%		-	N.D.
<b>Total of Mono to Nona-brominated biphenyl ether. (Note 4)</b>	%		-	N.D.

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## Annex 6: Analysis Result of Passivation Glass (Page 3 of 4)



### Test Report


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

Report No. : CE/2006/34224  
Date : 2006/03/29  
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	385475.0

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

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**Annex 6: Analysis Result of Passivation Glass (Page 4 of 4)**

## Test Report

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

Report No. : CE/2006/34224  
Date : 2006/03/29  
Page : 4 of 4



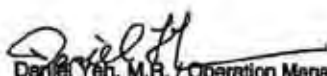


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**Annex 7: Analysis Result of Die Bonding Solder (Page 1 of 3)**

	
<b>Test Report</b>	
Report No : CE/2006/91816    Date : 2006/09/14	Page: 1 of 3
LITTELFUSE INC. 800 EAST NORTHWEST HIGHWAY DES PLAINES, IL 60016	
<b>The following sample(s) was/were submitted and identified by/on behalf of the client as :</b>	
Sample Description	: SOLDER PASTE (HIGH Pb)
Style/Item No	: 4102844-06
Manufacturer/Supplier Name	: LITTELFUSE INC.
Country of Destination	: TAIWAN
Country of Origin	: USA
Sample Received	: 2006/09/07
Testing Period	: 2006/09/07 TO 2006/09/14
-----	
<b>Test Requested</b>	: With reference to the RoHS Directive 2002/95/EC, and its amendment directives.
<b>Test Method</b>	: (1) With reference to BS EN 1122:2001, Method B for Cadmium Content. Analysis was performed by ICP-AES. (2) With reference to US EPA Method 3050B for Lead Content. Analysis was performed by ICP-AES. (3) With reference to US EPA Method 3052 for Mercury Content. Analysis was performed by ICP-AES. (4) With reference to US EPA Method 3060A & 7196A for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrometry.
<b>Test Result(s)</b>	: - Please see the next page(s) -
 Daniel Yeh, M.R. / Operation Manager Signed for and on behalf of SGS TAIWAN LTD.	
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## Annex 7: Analysis Result of Die Bonding Solder (Page 2 of 3)

<b>SGS</b>			
<b>Test Report</b>			
Report No : CE/2006/91816		Date : 2006/09/14	Page: 2 of 3
LITTELFUSE INC.			
800 EAST NORTHWEST HIGHWAY DES PLAINES, IL 60016			
<b>Test Result(s)</b>			
Test results by chemical method (Unit: mg/kg)			
Test Item (s):	Method (Refer to)	Result	MDL
		No.1	
Cadmium (Cd)	(1)	n.d.	2
Lead (Pb)	(2)	821635.5	2
Mercury (Hg)	(3)	n.d.	2
Chromium VI (Cr+6)	(4)	n.d.	2
<b>Test Part Description</b>			
PART NAME NO.1 : DARK-GRAY SOLDER PASTE			
Note : (1) mg/kg = ppm, 0.1% = 1000 ppm(mg/kg), 0.0005% = 5 ppm(mg/kg)			
(2) n.d. = N.D. = ND = Not Detected			
(3) MDL = Method Detection Limit			
(4) Sample was totally digested for Pb, Cd, Hg			
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**Annex 7: Analysis Result of Die Bonding Solder (Page 3 of 3)**

**SGS**

**Test Report**

Report No : CE/2006/91816    Date : 2006/09/14    Page: 3 of 3  
LITTELFUSE INC.  
800 EAST NORTHWEST HIGHWAY DES PLAINES,  
IL 60016



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**Annex 8: Analysis Result of Packing Box (Page 1 of 4)**

	
<b>Test Report</b>	
Report No : CE/2006/91636    Date : 2006/09/13	Page: 1 of 4
LITTELFUSE INC.	
800 E. NORTHWEST HWY. DES PLAINES, IL 60016	
<b>The following sample(s) was/were submitted and identified by/on behalf of the client as :</b>	
Sample Description	: REEL BOX
Style/Item No	: 110233200
Manufacturer/Supplier Name	: LITTELFUSE INC.
Country of Destination	: TAIWAN
Country of Origin	: USA
Sample Received	: 2006/09/06
Testing Period	: 2006/09/06 TO 2006/09/13
=====	
<b>Test Requested</b>	: With reference to the RoHS Directive 2002/95/EC, and its amendment directives.
<b>Test Method</b>	: (1) With reference to BS EN 1122:2001, Method B for Cadmium Content. Analysis was performed by ICP-AES. (2) With reference to US EPA Method 3050B for Lead Content. Analysis was performed by ICP-AES. (3) With reference to US EPA Method 3052 for Mercury Content. Analysis was performed by ICP-AES. (4) With reference to US EPA Method 3060A & 7196A for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrometry. (5) With reference to US EPA 3540C, Analysis was performed by GC/MS and screening via US EPA 3550C with HPLC/DAD/MS.
<b>Test Result(s)</b>	: - Please see the next page(s) -
 Daniel Yeh, M.P., Operation Manager Signed for and on behalf of SGS TAIWAN LTD.	
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## Annex 8: Analysis Result of Packing Box (Page 2 of 4)




### Test Report

Report No : CE/2006/91636    Date : 2006/09/13

LITTELFUSE INC.

800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Page: 2 of 4



**Test Result(s)**

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


Test Item (s):	Method (Refer to)	Result	MDL
		No. 1	
Cadmium (Cd)	(1)	n.d.	2
Lead (Pb)	(2)	n.d.	2
Mercury (Hg)	(3)	n.d.	2
Chromium VI (Cr+6)	(4)	n.d.	2
<b>Total PBBs</b>		n.d.	-
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
<b>Total PBDEs(PBDEs)</b>	(5)	n.d.	-
Monobromobiphenyl ether		n.d.	5
Dibromobiphenyl ether		n.d.	5
Tribromobiphenyl ether		n.d.	5
Tetrabromobiphenyl ether		n.d.	5
Pentabromobiphenyl ether		n.d.	5
Hexabromobiphenyl ether		n.d.	5
Heptabromobiphenyl ether		n.d.	5
Octabromobiphenyl ether		n.d.	5
Nonabromobiphenyl ether		n.d.	5
Decabromobiphenyl ether		n.d.	5
<b>Total of Mono to Nona(Note 5)</b>		n.d.	-

**Test Part Description**


PART NAME NO.1                                    :    BROWN CARTON WITH BLACK PRINTING

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**Annex 8: Analysis Result of Packing Box (Page 3 of 4)**

## Test Report

Report No : CE/2006/91636    Date : 2006/09/13    Page: 3 of 4  
LITTELFUSE INC.      
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Note : (1) mg/kg = ppm, 0.1% = 1000 ppm(mg/kg), 0.0005% = 5 ppm(mg/kg)  
(2) n.d. = N.D. = ND = Not Detected  
(3) MDL = Method Detection Limit  
(4) Sample was totally digested for Pb, Cd, Hg  
(5) Sum of Mono to NonaBDE & according to 2005/717/EC DecaBDE is exempt.  
(6) "-" = Not Regulated

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**Annex 8: Analysis Result of Packing Box (Page 4 of 4)**

**SGS**

**Test Report**

Report No : CE/2006/91636    Date : 2006/09/13    Page: 4 of 4  
LITTELFUSE INC.      
800 E. NORTHWEST HWY. DES PLAINES, IL 60016



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**Annex 9: Analysis Result of Poly Tubing Bag (Page 1 of 4)**


	
<b>Test Report</b>	
Report No : CE/2006/91635    Date : 2006/09/13	Page: 1 of 4
LITTELFUSE INC.	
800 E. NORTHWEST HWY. DES PLAINES, IL 60016	
<b>The following sample(s) was/were submitted and identified by/on behalf of the client as :</b>	
Sample Description	: PKOLY TUBING BAG
Style/Item No	: 110428901
Manufacturer/Supplier Name	: LITTELFUSE INC.
Country of Destination	: TAIWAN
Country of Origin	: USA
Sample Received	: 2006/09/06
Testing Period	: 2006/09/06 TO 2006/09/13
=====	
<b>Test Requested</b>	: With reference to the RoHS Directive 2002/95/EC, and its amendment directives.
<b>Test Method</b>	: (1) With reference to BS EN 1122:2001, Method B for Cadmium Content. Analysis was performed by ICP-AES. (2) With reference to US EPA Method 3050B for Lead Content. Analysis was performed by ICP-AES. (3) With reference to US EPA Method 3052 for Mercury Content. Analysis was performed by ICP-AES. (4) With reference to US EPA Method 3060A & 7196A for Hexavalent Chromium. Analysis was performed by UV/Vis Spectrometry. (5) With reference to US EPA 3540C, Analysis was performed by GC/MS and screening via US EPA 3550C with HPLC/DAD/MS.
<b>Test Result(s)</b>	: - Please see the next page(s) -
 Daniel Yeh, M.P., Operation Manager Signed for and on behalf of SGS TAIWAN LTD.	
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## Annex 9: Analysis Result of Poly Tubing Bag (Page 2 of 4)

  <h3 style="text-align: center;">Test Report</h3>			
Report No : CE/2006/91635    Date : 2006/09/13 LITTELFUSE INC. 800 E. NORTHWEST HWY. DES PLAINES, IL 60016	Page: 2 of 4 		
<b>Test Result(s)</b> Test results by chemical method (Unit: mg/kg)			
Test Item (s):	Method (Refer to)	Result No. 1	MDL
Cadmium (Cd)	(1)	n.d.	2
Lead (Pb)	(2)	n.d.	2
Mercury (Hg)	(3)	n.d.	2
Chromium VI (Cr+6)	(4)	n.d.	2
<b>Total PBBs</b>		n.d.	-
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
<b>Total PBBEs(PBDEs)</b>	(5)	n.d.	-
Monobromobiphenyl ether		n.d.	5
Dibromobiphenyl ether		n.d.	5
Tribromobiphenyl ether		n.d.	5
Tetrabromobiphenyl ether		n.d.	5
Pentabromobiphenyl ether		n.d.	5
Hexabromobiphenyl ether		n.d.	5
Heptabromobiphenyl ether		n.d.	5
Octabromobiphenyl ether		n.d.	5
Nonabromobiphenyl ether		n.d.	5
Decabromobiphenyl ether		n.d.	5
<b>Total of Mono to Nona(Note 5)</b>		n.d.	-
<b>Test Part Description</b> PART NAME NO.1                                    :    TRANSPARENT-PINK PLASTIC BAG			
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**Annex 9: ICP/UV/GC Analysis Result of Poly Tubing Bag (Page 3 of 4)**



## Test Report

Report No : CE/2006/91636    Date : 2006/09/13    Page: 3 of 4  
LITTELFUSE INC.      
800 E. NORTHWEST HWY. DES PLAINES, IL 60016

Note : (1) mg/kg = ppm, 0.1% = 1000 ppm(mg/kg), 0.0005% = 5 ppm(mg/kg)  
(2) n.d. = N.D. = ND = Not Detected  
(3) MDL = Method Detection Limit  
(4) Sample was totally digested for Pb, Cd, Hg  
(5) Sum of Mono to NonaBDE & according to 2005/717/EC DecaBDE is exempt.  
(6) "-" = Not Regulated

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0088-2-22833319 (908.7) 2-294-2237    www.sgs.com.tw

**Annex 9: Analysis Result of Poly Tubing Bag (Page 4 of 4)**

**SGS**

**Test Report**

Report No : CE/2006/91635    Date : 2006/09/13    Page: 4 of 4  
LITTELFUSE INC.      
800 E. NORTHWEST HWY. DES PLAINES, IL 60016



**CE / 2006**  
**/ 91635**

**\*\* End of Report \*\***

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## Annex 10: Analysis Result of Packing Foam (Page 1 of 4)

**Test Report**

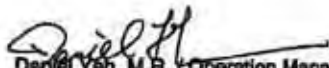
LITTELFUSE, INC.  
800 E. NORTHWEST HIGHWAY DES PLAINES, IL 60016  
USA

Report No. : CE/2006/34166  
Date : 2006/03/21  
Page : 1 of 4

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

Type of Product : PACKING FOAM (PINK)  
Style/Item No : I10202000  
Manufacturer/Supplier : LITTELFUSE INC.  
Name  
Country of Destination : TAIWAN  
Country of Origin : USA  
Sample Received : 2006/03/14  
Testing Date : 2006/03/14 TO 2006/03/21

-----  
Test Result : - Please see the next page -


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

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## Annex 10: Analysis Result of Packing Foam (Page 2 of 4)



### Test Report

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

Report No. : CE/2006/34166  
 Date : 2006/03/21  
 Page : 2 of 4

**Test Result**


PART NAME NO.1 : PINK FOAM

Test Item (s):	Unit	Method	MDL	Result	Spec.
				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.	-
<b>Total PBBs (Polybrominated biphenyls)/Sum of above</b>	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.	-
<b>Total PBBEs(PBDEs) (Polybrominated biphenyl ethers)/Sum of above</b>	ppm	-		N.D.	-
<b>Total of Mono to Nonabrominated biphenyl ether. (Note 4)</b>	ppm	-		N.D.	-

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## Annex 10: Analysis Result of Packing Foam (Page 3 of 4)



### Test Report

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


Report No. : CE/2006/34166  
Date : 2006/03/21  
Page : 3 of 4

**PASS**

Test Item (s):	Unit	Method	MDL	Result	Spec.
				No.1	
94/62/EC (Heavy metal content)					
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 as per EN 1122, method B:2001 or other acid digestion.	2	N.D.	-
Lead (Pb)	ppm	ICP-AES after as per US EPA 3050B or other acid digestion.	2	N.D.	-
Mercury (Hg)	ppm	ICP-AES after as per US EPA 3052 or other acid digestion.	2	N.D.	-
Total Lead+Cadmium+Mercury+Chromium VI	ppm	Total Lead+Cadmium+Mercury+Chromium VI (94/62/EC)	-	N.D.	100

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

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**Annex 10: Analysis Result of Packing Foam (Page 4 of 4)**

## Test Report

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


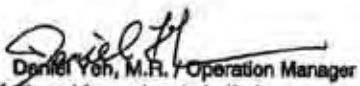
Report No. : CE/2006/34166  
Date : 2006/03/21  
Page : 4 of 4



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**Annex 11: Analysis Result of Packing Tube (page 1 of 4)**

	
<b>Test Report</b>	
LITTELFUSE, INC. 800 E. NORTHWEST HWY. DES PLAINES, IL 60016	Report No. : CE/2006/34186 Date : 2006/03/21 Page : 1 of 4
<b>The following merchandise was (were) submitted and identified by the client as :</b>	
<u>Type of Product</u>	: LOADING TUBE, TO-220
<u>Sample Received</u>	: 2006/03/14
<u>Testing Date</u>	: 2006/03/14 TO 2006/03/21
=====	
<u>Test Result</u>	: - Please see the next page -
 Daniel Yeh, M.R. / Operation Manager Signed for and on behalf of SGS TAIWAN LTD.	
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## Annex 11: Analysis Result of Packing Tube (page 2 of 4)



### Test Report


LITTELFUSE, INC. Report No. : CE/2006/34186  
 800 E. NORTHWEST HWY. DES PLAINES, IL 60016 Date : 2006/03/21  
Page : 2 of 4

**Test Result**


PART NAME NO.1 : TRANSPARENT-GRAY PLASTIC

Test Item (s):	Unit	Method	MDL	Result	Spec.
				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.	-
<b>Total PBBs (Polybrominated biphenyls)/Sum of above</b>	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.	-
<b>Total PBDEs(PBDEs) (Polybrominated biphenyl ethers)/Sum of above</b>	ppm		-	N.D.	-
<b>Total of Mono to Nonabrominated biphenyl ether. (Note 4)</b>	ppm	-	N.D.	-	

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## Annex 11: Analysis Result of Packing Tube (page 3 of 4)



### Test Report

LITTELFUSE, INC. Report No. : CE/2006/34186  
 800 E. NORTHWEST HWY. DES PLAINES, IL 60016 Date : 2006/03/21  
Page : 3 of 4

PASS

Test Item (s):	Unit	Method	MDL	Result	Spec.
				No.1	
94/62/EC (Heavy metal content)					
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 as per EN 1122, method B:2001 or other acid digestion.	2	N.D.	-
Lead (Pb)	ppm	ICP-AES after as per US EPA 3050B or other acid digestion.	2	N.D.	-
Mercury (Hg)	ppm	ICP-AES after as per US EPA 3052 or other acid digestion.	2	N.D.	-
Total Lead+Cadmium+Mercury+Chromium VI	ppm	Total Lead+Cadmium+Mercury+Chromium VI [94/62/EC]	-	N.D.	100

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

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**Annex 11: Analysis Result of Packing Tube (page 4 of 4)**

## Test Report

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

Report No. : CE/2006/34186  
Date : 2006/03/21  
Page : 4 of 4



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**Annex 12: Analysis Result of End Plug (Page 1 of 4)****Test Report**

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

Report No. : CE/2006/34172  
Date : 2006/03/21  
Page : 1 of 4

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

Type of Product : END PLUG, TO-220 TUBE  
Style/Item No : 410245000  
Manufacturer/Supplier Name : LITTELFUSE INC.  
Country of Destination : TAIWAN  
Country of Origin : USA  
Sample Received : 2006/03/14  
Testing Date : 2006/03/14 TO 2006/03/21

Test Result : - Please see the next page -


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

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## Annex 12: Analysis Result of End Plug (Page 2 of 4)



### Test Report

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

Report No. : CE/2006/34172  
 Date : 2006/03/21  
 Page : 2 of 4

**Test Result**


PART NAME NO.1 : GRAY RUBBER

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.
<b>Total PBBs (Polybrominated biphenyls)/Sum of above</b>	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.
<b>Total PBBEs(PBDEs) (Polybrominated biphenyl ethers)/Sum of above</b>	ppm		-	N.D.
<b>Total of Mono to Nona-brominated biphenyl ether. (Note 4)</b>	ppm		-	N.D.

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## Annex 12: Analysis Result of End Plug (Page 3 of 4)



### Test Report


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

Report No. : CE/2006/34172  
Date : 2006/03/21  
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) 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

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**Annex 12 Analysis Result of Cover Tape (Page 4 of 4)**

**SGS**

**Test Report**

LITTELFUSE, INC.  
800 E. NORTHWEST HIGHWAY DES PLAINES, IL 60016  
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Report No. : CE/2006/34172  
Date : 2006/03/21  
Page : 4 of 4



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## Annex 13: Applicable RoHS exemptions

