



ICP Test Report Certification Packet

Company name: Littelfuse, Inc.

Product Series: Midget Clips

Product #: 125xxx Series

Issue Date: January 9, 2012

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:


KRISTEEN BACILA

<Global EHS Engineer>

(1) Parts, sub-materials and unit parts

This document covers the Midget Fuse 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 :

Table 1: List of Raw Materials covered by this report

Total Parts	Raw Material Part Number	Raw Material Description	Page(s)
1	NA	01250001Z	3-6
2	NA	01250002Z	7-10
3	NA	01250003H	11-15



Report No.: MX11-0928-09
Date : 2011-06-16

RESULTS REPORT

INTERTEK TESTING SERVICES

DE MEXICO SA DE CV

LABORATORIO CD. DE MEXICO

DELIVER TO: [Littelfuse, S.A. de C.V.](#)
[Blvd. Fausto Z. Martínez 1800, Col. Magisterio Sección 38,](#)
[Piedras Negras, Coahuila](#)

ATTENTION: [Ing. María Valdez](#)

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1ª. Emisión Junio 2005, 1º Revisión Junio 26, 2009.

ILTA/003/GENS-F8

[Intertek Testing Services de México, S.A. de C.V.](#)

Poniente 134 No. 660, Col. Industrial Vallejo
C.P. 02300, Del. Azcapotzalco, México, D.F. Tel.: 50912150

www.intertek.com



Report No.: MX11-0928-09
Date : 2011-06-16

TEST REPORT

APPLICANT

Littelfuse, S.A. de C.V.
Blvd. Fausto Z. Martínez 1800, Col. Magisterio Sección 38, Piedras Negras, Coahuila
Ing. María Valdez

SAMPLE DESCRIPTION

One (1) group of submitted samples said to be :
Sample Description NP
Item No. 9) N/P 0125000 1Z
Country of Origin NP
Buyer's Name NP
Supplier's Name NP
Date sample received 2011-05-05
Testing period 2011-05-09 to 2011-05-13

TEST CONDUCTED

As requested by the applicant, for details please refer to attached pages.

CONCLUSION

<u>Sample Number</u>	<u>Testing item</u>	<u>Conclusion</u>	<u>Failed component</u>	<u>Failed result</u>
9 (Base)	N/P 0125000 1Z	Pass See Result summary	---	---
9 (Plated)	N/P 0125000 1Z	Pass See Result summary	---	---

TEST CONDUCTED

Samples:

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Intertek Testing Services de México, S.A. de C.V.

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9) Base N/P 0125000 1Z
9) Plated N/P 0125000 1Z

TEST RESULT SUMMARY FOR RoHS DIRECTIVE :

TESTING ITEM	Ω RESULT (ppm)		Limit
	(9) Base	(9) Plated	
Cadmium (Cd) content	ND	ND	0,01% (100 ppm)
Lead (Pb) content	9,913	ND	0,1% (1000 ppm)
Mercury (Hg) content	ND	ND	0,1% (1000 ppm)
Chromium (VI) (Cr ⁶⁺)	ND	ND	0,1% (1000 ppm)

ppm = parts per million based on dry weight of sample.

µg/cm² = microgram per square centimeter.

mg/kg WITH 50cm² = milligram per kilogram with 50 square centimeter.

< = less than.

ND = Not detected.

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

These Accreditations only apply for the methods listed in such. Not accredited under EMA Ω.

Prepared and checked by :
For Intertek

Laboratory Manager

The Official Mexican Standard NOM-008-SCFI-1993 establishes like separator decimal the comma (,).

NOTE : DecaBDE IN POLYMERIC APPLICATIONS IS EXEMPTED ACCORDING TO ROHS DIRECTIVE AMENDMENT 2005/717/EC.

=ACCORDING TO IEC 62321, A POSITIVE RESULT INDICATES THE PRESENCE OF Cr(VI) COATING. IT IS THE Cr(VI) CONCENTRATION DETECTED IN THE BOILING-WATER-EXTRACTION SOLUTION AND SHOULD NOT BE INTERPRETED AS THE Cr(VI) CONCENTRATION IN THE COATING LAYER OF THE SAMPLE.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX11-0928-09 WERE TESTED SEPARATED.

Test method :

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<u>Sample Number</u>	<u>Testing item</u>	<u>Ω Testing method</u>	<u>Quality control Batch:</u>	<u>Analysis Date:</u>	<u>Analyzed By:</u>	<u>Reporting limit ppm</u>
9	Chromium VI (Cr ⁶⁺) content	With reference to USEPA 3060, by EPA 7196	QHU2010-61p73	2011-05-13	MELA	20,0

<u>Sample Number</u>	<u>Testing item</u>	<u>Ω Testing method</u>	<u>Quality control Batch:</u>	<u>Analysis Date:</u>	<u>Analyzed By:</u>	<u>Reporting limit ppm</u>
9 (Base)	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p129	2011-05-11	MARY	5,0
9 (Plated)	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p129	2011-05-11	MARY	41,67

<u>Sample Number</u>	<u>Testing item</u>	<u>Ω Testing method</u>	<u>Quality control Batch:</u>	<u>Analysis Date:</u>	<u>Analyzed By:</u>	<u>Reporting limit ppm</u>
9 (Base)	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p129	2011-05-11	MARY	2,0
9 (Plated)	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p129	2011-05-11	MARY	16,7

<u>Sample Number</u>	<u>Testing item</u>	<u>Ω Testing method</u>	<u>Quality control Batch:</u>	<u>Analysis Date:</u>	<u>Analyzed By:</u>	<u>Reporting limit ppm</u>
9 (Base)	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-40p126	2011-05-10	RNC	0,25
9 (Plated)	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-40p126	2011-05-10	RNC	2,5

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C.P. 02300, Del. Azcapotzalco, México, D.F. Tel.: 50912150

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Report No.: MX11-0928-10
Date : 2011-06-16

RESULTS REPORT

INTERTEK TESTING SERVICES

DE MEXICO SA DE CV

LABORATORIO CD. DE MEXICO

DELIVER TO: **Littelfuse, S.A. de C.V.**
Blvd. Fausto Z. Martínez 1800, Col. Magisterio Sección 38,
Piedras Negras, Coahuila

ATTENTION: **Ing. María Valdez**

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Poniente 134 No. 660, Col. Industrial Vallejo
C.P. 02300, Del. Azcapotzalco, México, D.F. Tel.: 50912150

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Report No.: MX11-0928-10
Date : 2011-06-16

TEST REPORT

APPLICANT

Littelfuse, S.A. de C.V.
Blvd. Fausto Z. Martínez 1800, Col. Magisterio Sección 38, Piedras Negras, Coahuila
Ing. María Valdez

SAMPLE DESCRIPTION

One (1) group of submitted samples said to be :
Sample Description NP
Item No. 10) N/P 0125000 2Z
Country of Origin NP
Buyer's Name NP
Supplier's Name NP
Date sample received 2011-05-05
Testing period 2011-05-09 to 2011-05-13

TEST CONDUCTED

As requested by the applicant, for details please refer to attached pages.

CONCLUSION

<u>Sample Number</u>	<u>Testing item</u>	<u>Conclusion</u>	<u>Failed component</u>	<u>Failed result</u>
10 (Base)	N/P 0125000 2Z	Pass See Result summary	---	---
10 (Plated)	N/P 0125000 2Z	Pass See Result summary	---	---

TEST CONDUCTED

Samples:

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10) Base N/P 0125000 2Z
10) Plated N/P 0125000 2Z

TEST RESULT SUMMARY FOR RoHS DIRECTIVE :

TESTING ITEM	Ω RESULT (ppm)		<u>Limit</u>
	(10) Base	(10) Plated	
Cadmium (Cd) content	ND	ND	0,01% (100 ppm)
Lead (Pb) content	11,99	ND	0,1% (1000 ppm)
Mercury (Hg) content	ND	ND	0,1% (1000 ppm)
Chromium (VI) (Cr ⁶⁺)	ND	ND	0,1% (1000 ppm)

ppm = parts per million based on dry weight of sample.

$\mu\text{g}/\text{cm}^2$ = microgram per square centimeter.

mg/kg WITH 50cm² = milligram per kilogram with 50 square centimeter.

< = less than.

ND = Not detected.

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

These Accreditations only apply for the methods listed in such. Not accredited under EMA Ω .

Prepared and checked by :
For Intertek

Laboratory Manager

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=ACCORDING TO IEC 62321, A POSITIVE RESULT INDICATES THE PRESENCE OF Cr(VI) COATING. IT IS THE Cr(VI) CONCENTRATION DETECTED IN THE BOILING-WATER-EXTRACTION SOLUTION AND SHOULD NOT BE INTERPRETED AS THE Cr(VI) CONCENTRATION IN THE COATING LAYER OF THE SAMPLE.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX11-0928-10 WERE TESTED SEPARATED.

Test method :

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<u>Sample Number</u>	<u>Testing item</u>	<u>Ω Testing method</u>	<u>Quality control Batch:</u>	<u>Analysis Date:</u>	<u>Analyzed By:</u>	<u>Reporting limit ppm</u>
10	Chromium VI (Cr ⁶⁺) content	With reference to USEPA 3060, by EPA 7196	QHU2010-61p73	2011-05-13	MELA	20,0

<u>Sample Number</u>	<u>Testing item</u>	<u>Ω Testing method</u>	<u>Quality control Batch:</u>	<u>Analysis Date:</u>	<u>Analyzed By:</u>	<u>Reporting limit ppm</u>
10 (Base)	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p129	2011-05-11	MARY	5,0
10 (Plated)	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p129	2011-05-11	MARY	50,0

<u>Sample Number</u>	<u>Testing item</u>	<u>Ω Testing method</u>	<u>Quality control Batch:</u>	<u>Analysis Date:</u>	<u>Analyzed By:</u>	<u>Reporting limit ppm</u>
10 (Base)	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p129	2011-05-11	MARY	2,0
10 (Plated)	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-40p129	2011-05-11	MARY	20,0

<u>Sample Number</u>	<u>Testing item</u>	<u>Ω Testing method</u>	<u>Quality control Batch:</u>	<u>Analysis Date:</u>	<u>Analyzed By:</u>	<u>Reporting limit ppm</u>
10 (Base)	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-40p126	2011-05-10	RNC	0,25
10 (Plated)	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-40p126	2011-05-10	RNC	2,5

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Poniente 134 No. 660, Col. Industrial Vallejo
C.P. 02300, Del. Azcapotzalco, México, D.F. Tel.: 50912150

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Test Report

Number : TWNC00236695

Applicant: Littelfuse, S.A. de C.V.
Blvd. Fausto Z. Martinez #1800
Col. Magisterio Seccion 38 C.P.
26070 Piedra Negras, Coahuila,
Mexico

Date : Dec 16, 2011

Sample Description:

One (1) group of submitted samples said to be :

Part Description : ACS MIDGET EAR TYPE CLIP TIN PLTD
Part Number : 01250003H
Date Sample Received : Dec 13, 2011
Date Test Started : Dec 14, 2011

Test Conducted :

As requested by the applicant, for details please refer to attached pages.

Authorized By:

On Behalf Of Intertek Testing Services
Taiwan Limited



K. Y. Liang
Director

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except in full, without the written
approval of the laboratory.



Number : TWNC00236695

Test Conducted

(I) Test Result Summary :

<u>Test Item</u>	<u>Result (ppm)</u>	
	<u>(1)</u>	<u>(2)</u>
Heavy Metal		
Cadmium (Cd) content	ND	ND
Lead (Pb) content	18	ND
Mercury (Hg) content	ND	ND
Chromium VI (Cr ⁶⁺) content (mg/kg with 50cm ²)	Negative (< 0.02)	Negative (< 0.02)

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg
ND = Not detected
< = Less than
mg/kg with 50cm² = milligram per kilogram with 50 square centimetre
Negative = A negative test result indicated positive observation
was not found at the time of Test.

Tested Components

- (1) Coppery Metal Base Material
- (2) Silvery Plating Layer

Responsibility of Chemist : Irene Chiou / Kevin Liu

Date Sample Received : Dec 13, 2011

Test Period : Dec 14, 2011 To Dec 16, 2011

(II) RoHS Requirement:

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

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

Test Conducted

(III) Test Method:

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

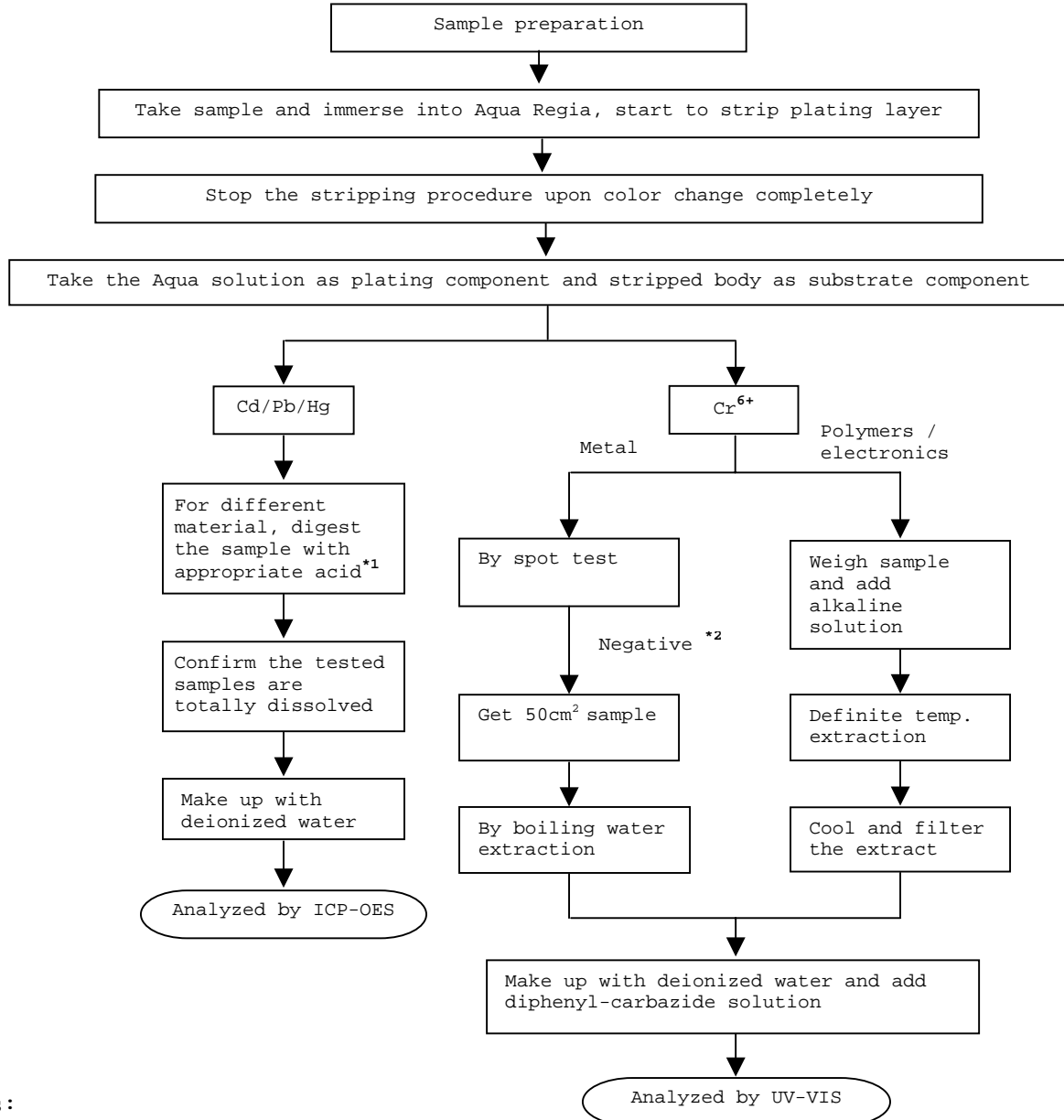
Remark: Reporting limit = Quantitation limit of analyte in sample

Test Conducted

(IV) Measurement Flowchart:

Test for Cd/Pb/Hg/Chromium (VI)

Reference Standard : IEC 62321 edition 1.0:2008



Remarks:

*1: List of Appropriate Acid:

Material	Acid Added for Digestion
Polymers	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃
Metals	HNO ₃ , HCl, HF
Electronics	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄

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

End of Report

Test Conducted

Number : TWNC00236695

Photo

