



## ICP Test Report Certification Packet

Company name: Littelfuse, Inc.

Product Series: FC51FL

Product #: Fuse Clip

Issue Date: January 27, 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/package 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/package materials, and the additives and the like in the manufacturing processes, are all composed of the following components.

Issued by:

\_\_\_\_\_  
<Environmental Data Analyst>

(1) Parts, sub-materials and unit parts

This document covers the FC51FL Fuse Clip 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**

<b>Total Parts</b>	<b>Raw Material Part Number</b>	<b>Raw Material Description</b>	<b>Page(s)</b>
1	FC51FL	Fuse Clip	3-7



# Test Report

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



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

Sample Description : FUSE CLIP  
Style/Item No. : FC51FL  
Sample Receiving Date : 2008/09/03  
Testing Period : 2008/09/03 TO 2008/09/09

=====  
Test Requested : In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.

Test Method : With reference to IEC 62321/2nd CDV (111/95/CDV) Procedures for the Determination of Levels of Regulated Substances in Electrotechnical Products.  
(1) Determination of Cadmium by ICP-AES.  
(2) Determination of Lead by ICP-AES.  
(3) Determination of Mercury by ICP-AES.  
(4) Determination of Hexavalent Chromium for metallic samples by Spot test / boiling water extraction Method.

Test Result(s) : Please refer to next page(s).

Nicole Chien / Supervisor  
Signed for and on behalf of  
SGS TAIWAN LTD.  
Chemical Laboratory - Taipei

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

Test Item (s):	Method (Refer to)	Result		MDL
		No.1	No.2	
Cadmium (Cd)	(1)	n.d.	n.d.	2
Lead (Pb)	(2)	61	28	2
Mercury (Hg)	(3)	n.d.	n.d.	2
Hexavalent Chromium Cr(VI) by Spot test / boiling water extraction	(4)	Negative	Negative	See Note 4

## TEST PART DESCRIPTION:

NO.1 : PLATING LAYER OF SILVER COLORED METAL  
NO.2 : BASE MATERIAL OF SILVER COLORED METAL

Note : 1. mg/kg = ppm

2. n.d. = Not Detected

3. MDL = Method Detection Limit

4. Spot-test:

Negative = Absence of Cr(VI) coating / surface layer,

Positive = Presence of Cr(VI) coating / surface layer;

(The tested sample should be further verified by boiling-water-extraction method if the spot test result cannot be confirmed.)

Boiling-water-extraction:

Negative = Absence of Cr(VI) coating / surface layer.

Positive = Presence of Cr(VI) coating / surface layer;

the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> sample surface area.

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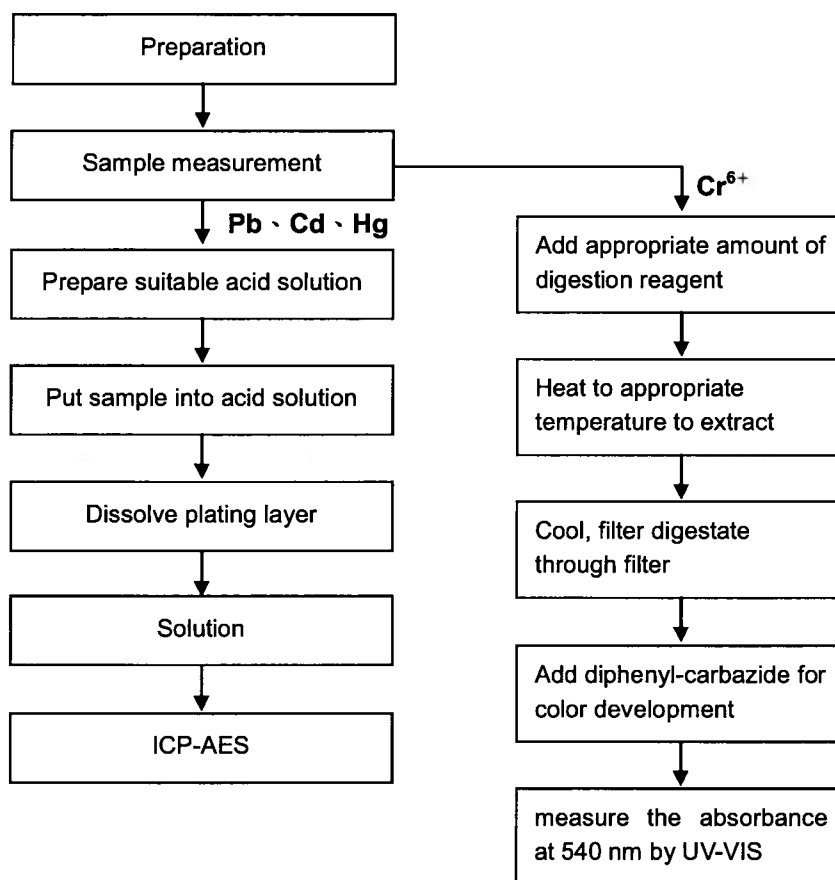
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- NO.1
- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)
  - 2) Name of the person who made measurement: Climbgreat Yang
  - 3) Name of the person in charge of measurement: Troy Chang

## Flow Chart of Stripping method for metal analysis



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# Test Report

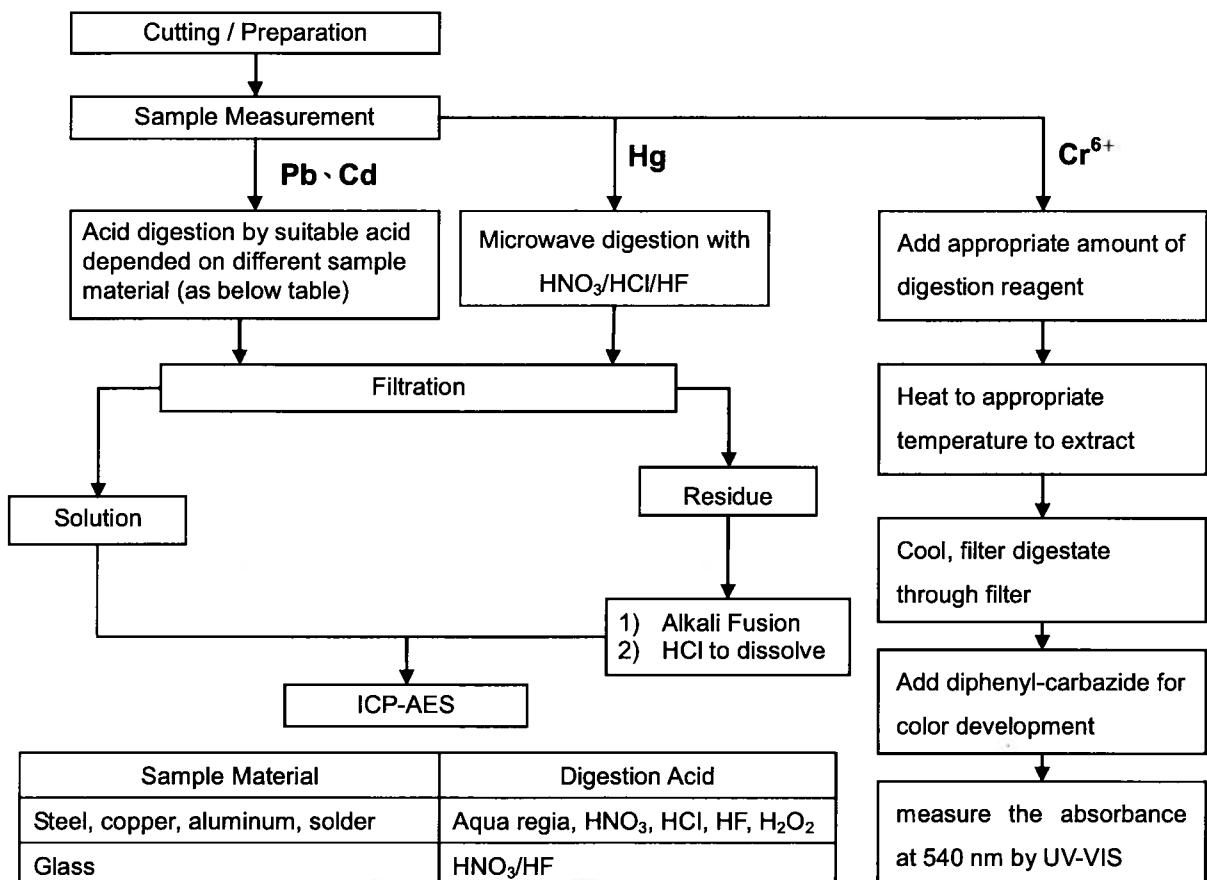
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800 E. NORTHWEST HIGHWAY, DES PLAINES, IL 60016



- NO.2
- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.  
(Cr<sup>6+</sup> test method excluded)
  - 2) Name of the person who made measurement: Climbgreat Yang
  - 3) Name of the person in charge of measurement: Troy Chang



Sample Material	Digestion Acid
Steel, copper, aluminum, solder	Aqua regia, HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub>
Glass	HNO <sub>3</sub> /HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO <sub>3</sub>
Plastic	H <sub>2</sub> SO <sub>4</sub> , H <sub>2</sub> O <sub>2</sub> , HNO <sub>3</sub> , HCl
Others	Any acid to total digestion

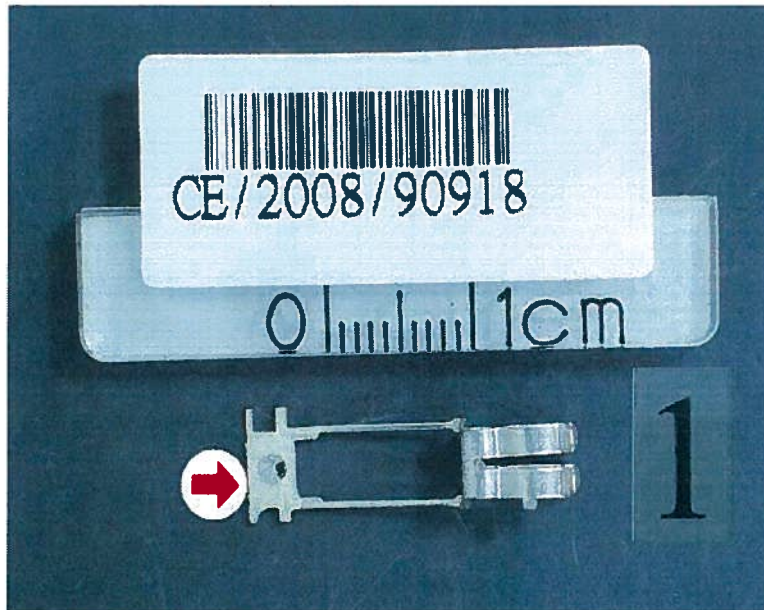
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**\*\* End of Report \*\***

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