



# Test Report

No. : CE/2009/27365

Date : 2009/03/05

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TAK CHEONG ELECTRONICS SHANWEI CO., LTD.  
BUBIAN INDUSTRIAL ZONE, SHANWEI CITY, GUANGDONG, P.R.C.



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

Sample Description : TO220 PRODUCT  
 SGS Ref No. : SZ11636917-2.2  
 Style/Item No. : TO220 FULL PACKAGE, TO220AB  
 Sample Receiving Date : 2009/02/27  
 Testing Period : 2009/02/27 TO 2009/03/05

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

**Test Method** : With reference to IEC 62321: 2008  
 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 by Spot test / boiling water extraction  
 Method.

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

*Nicole Chien*  
**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	
Cadmium (Cd)	(1)	n.d.	2
Lead (Pb)	(2)	7	2
Mercury (Hg)	(3)	n.d.	2
Hexavalent Chromium Cr(VI) by Spot test / boiling water extraction	(4)	Negative	See Note 4

## TEST PART DESCRIPTION:

NO.1 : MIXED SILVER COLORED METAL (INCLUDING THE PLATING LAYER) (2 TYPE)

Note : 1. mg/kg = ppm; 0.1wt% = 1000ppm

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.

5. The sample(s) was/were analyzed on behalf of the applicant as mixing sample in one testing. The above result(s) was/were only given as the informality value.

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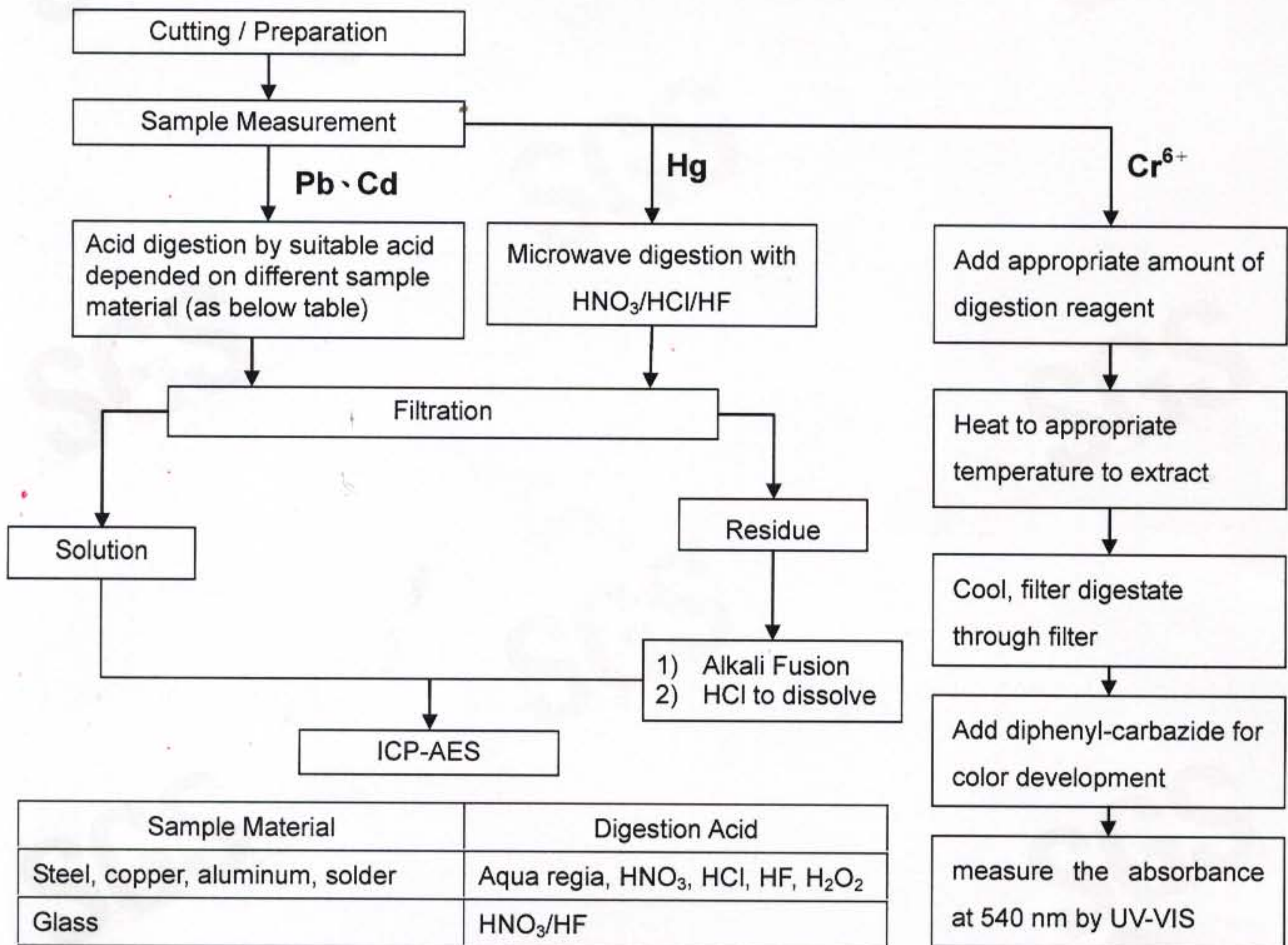
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- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.  
(Cr<sup>6+</sup> test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: 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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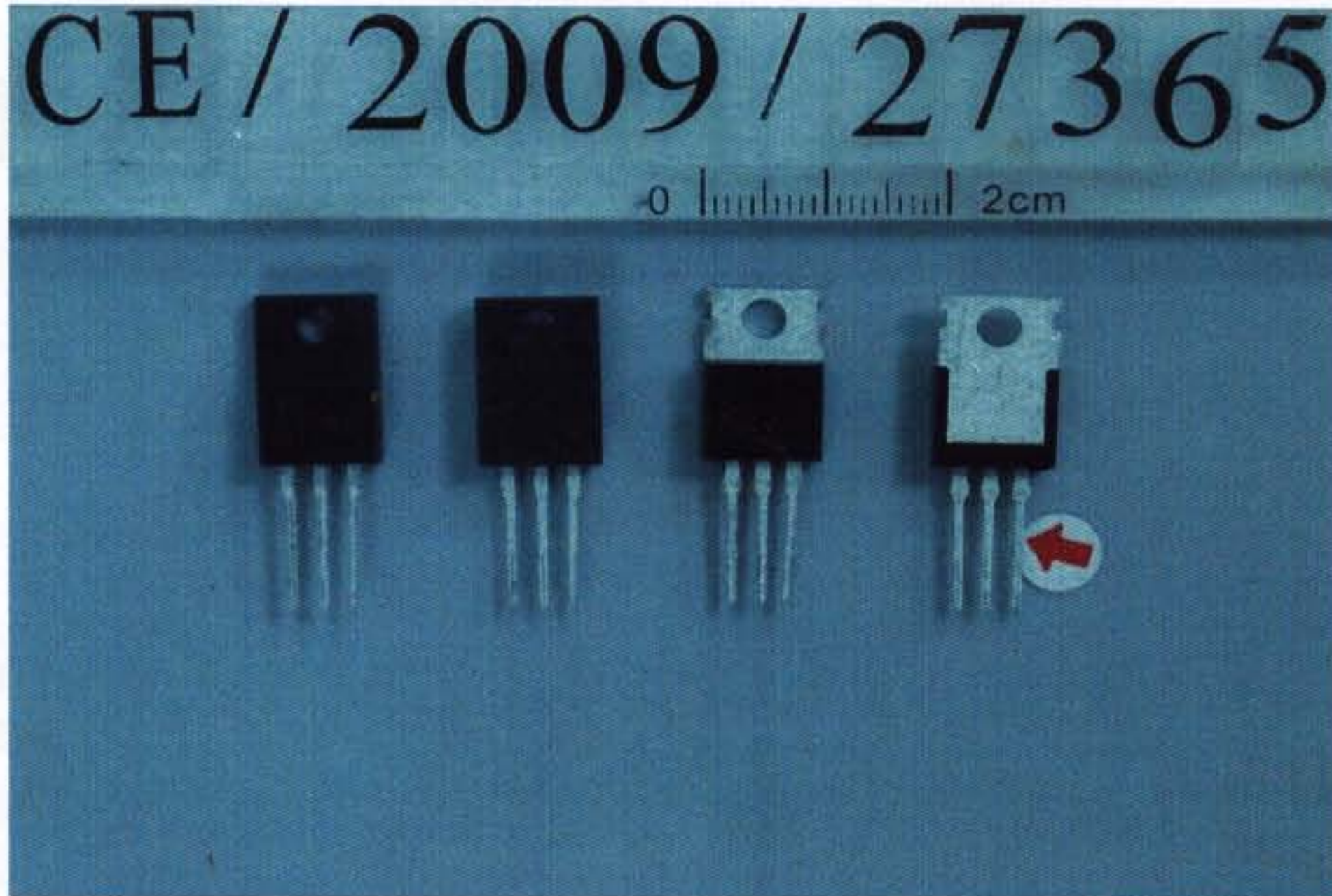
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\*\* End of Report \*\*

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