



Test Report

No. 4164665-CH11

Date: June 27, 2017

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**Samtech Inc.
520 Park East Blvd.
New Albany, IN 47151
United States**

Attention: Dick Bowyer

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

**Gold Plating on Graphite Rod
Color: Yellow Gold
Model/Part #: Gold Plate**

Sample Received Date: **6/22/2017**

Testing Period: **6/22/2017-6/27/2017**

Test Requested : Please refer to the test results.

Test Method & Results : Please refer to next page(s).

Result Summary :

Test Requested	Comment
1. RoHS Directive 2011/65/EU Annex II [amended by Directive (EU) 2015/863] – Lead, Cadmium, Mercury and Hexavalent Chromium Content	PASS

Signed for and on behalf of SGS North America, Inc.

Prepared By:

Jennifer Vaval
Laboratory Operations Supervisor, Chemistry Laboratory

Evan Mishner
Report Writer, Chemistry Laboratory

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1. RoHS Directive 2011/65/EU Annex II [amended by Directive (EU) 2015/863] – Lead, Cadmium, Mercury and Hexavalent Chromium Content

Test Item(s):	Unit	Test Method	Results	MDL	Limit
			1		
Cadmium(Cd)	mg/kg	With reference to IEC 62321-5:2013 (Determination of Cd and Pb by ICP-OES and /or ICP-MS)	ND	2	100
Lead (Pb)	mg/kg		40.6	2	1000
Mercury (Hg)	mg/kg	With reference to IEC 62321-4:2013 (Determination of Hg by ICP-OES and/ or ICP-MS)	12.7	2	1000
Hexavalent Chromium (CrVI) #	µg/cm ²	With reference to IEC 62321-7-1:2015 (Determination of CrVI by UV-VIS)	ND	0.10	-
Conclusion	/	/	PASS	/	/

Sample Description:

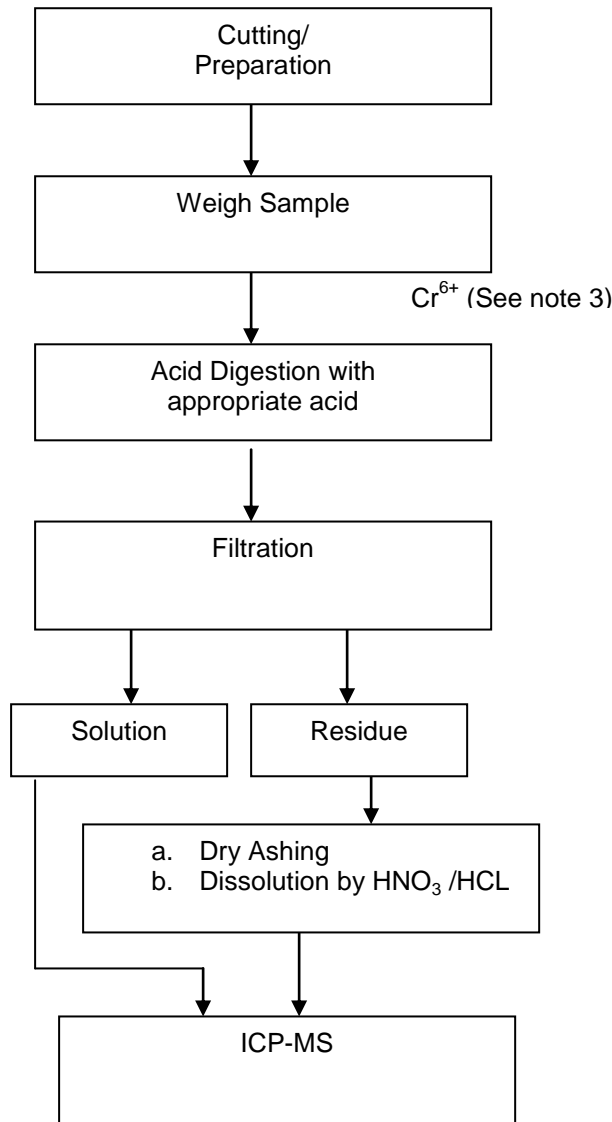
1. Gold Plating on Graphite Rod – Yellow Gold

Note :

- (a) mg/kg = ppm ; 0.1wt% = 1000ppm
- (b) ND= not detected
- (c) MDL = Method Detection Limit
- (d) # =
 - a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 - b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating.
 - c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination.
 - d. For corrosion protection coatings on metals: Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing represent status of the sample at the time of testing.
- (e) - = not regulated
- (f) * = Total Chromium analysis by ICP-MS and/or ICP-OES was not detected in submitted sample. Therefore, Hexavalent Chromium determination using UV-Visible Spectroscopy was not performed.
- (g) IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

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Flowchart for RoHS Heavy Metals



- Note : 1. For Cr(VI), spot test is adopted for metal sample.
 2. The Cd, Pb and Hg contents test on polymeric samples were dissolved totally by pre-conditioning method according to above flow chart.
 3. Cr⁶⁺ is performed only when total Cr is detected

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Sample Photo(s):



SGS authenticates the photo(s) on the original report only

*** End of Report ***

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