

Test Report

SGS Order No. [613571](#)

Date : [June 2, 2006](#)

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ECS, INC

1150 S. Ridgeview
Olathe Johnson, KS 66062
UNITED STATES

Attn: DAN KELLY

Report on the submitted samples said to be [1\) SMD Ceramic Crystal CSM-12](#)

- Test Requested : With reference to RoHS Directive 2002/95/EC
- 1) To determine the Cadmium Content in the submitted sample.
 - 2) To determine the Lead Content in the submitted sample.
 - 3) To determine the Mercury Content in the submitted sample.
 - 4) To determine the Hexavalent Chromium Content in the submitted sample.
 - 5) To Determine the PBBs (Polybrominated biphenyls) and PBDEs (Polybrominated diphenylethers) content in the submitted sample.
- Test Method : 1-3) With reference to Acid Digestion Method.
Analysis was performed by Inductively Coupled Argon Plasma-Atomic Emission Spectrometry (ICP-AES).
- 4) With reference to EPA Method 3060A & 7196A.
The sample was alkaline digested by using EPA Method 3060A, and then analyzed by using Colorimetric method 7196A (by UV-Vis Spectrophotometer).
 - 5) With reference to EPA Method 3540C/ 3550C. Analysis was performed by GC/MS.
- Test Results : 1-5) Please refer to next page.
- Compliance : **Yes**
- Standard : Commission Decision of 18 Aug 2005 amending Directive 2002/95/EC notified under document 2005/618/EC.

Signed for and on behalf of
SGS US Testing Co



Hing Wo Tsang/ Tang S. Peng, Ph.D.
Lab Manager

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Test Results :

1-4)

Test Item	1	Detection Limit	Limit
Cadmium (Cd)	ND	2 ppm	100 ppm
Lead (Pb)	29923 ppm**	2 ppm	1000 ppm
Mercury (Hg)	ND	2 ppm	1000 ppm
Hexavalent Chromium (Cr ⁶⁺)	ND	2 ppm	1000 ppm

5)

Flame Retardants	1	Detection Limit	Limit
Polybrominated Biphenyls (Mono – Deca)	ND	50 ppm	1000 ppm
Monobromobiphenyl	ND	5 ppm	--
Dibromobiphenyl	ND	5 ppm	--
Tribromobiphenyl	ND	5 ppm	--
Tetrabromobiphenyl	ND	5 ppm	--
Pentabromobiphenyl	ND	5 ppm	--
Hexabromobiphenyl	ND	5 ppm	--
Heptabromobiphenyl	ND	5 ppm	--
Octabromobiphenyl	ND	5 ppm	--
Nonabromobiphenyl	ND	5 ppm	--
Decabromobiphenyl	ND	5 ppm	--
Polybrominated Diphenylethers (Mono – Nona)	ND	45 ppm	1000 ppm
Monobromodiphenyl ether	ND	5 ppm	--
Dibromodiphenyl ether	ND	5 ppm	--
Tribromodiphenyl ether	ND	5 ppm	--
Tetrabromodiphenyl ether	ND	5 ppm	--
Pentabromodiphenyl ether	ND	5 ppm	--
Hexabromodiphenyl ether	ND	5 ppm	--
Heptabromodiphenyl ether	ND	5 ppm	--
Octabromodiphenyl ether	ND	5 ppm	--
Nonabromodiphenyl ether	ND	5 ppm	--
Decabromodiphenyl ether*	ND	5 ppm	See remark *

(Results shown are of the total weight of samples)

Note : ppm = mg/kg

ND = Not Detected

Not detected is reported when the reading is less than the detection limit value.

Remark: * Decabromodiphenyl ether (DecaBDE) in polymeric applications is exempted by the Commission Decision of 13 Oct 2005 amending Directive 2002/95/EC notified under document 2005/717/EC.

** RoHS exempt item Note 7 exemption for Pb in Piezo Electric Ceramic Device.

*** End of Report ***