



**Test Report No. F690501/LF-CTSAYA07-01022**

Date: January 17, 2007

Page 1 of 4

To: **KEC CORPORATION (SEOUL OFFICE)**  
517-4  
Gasam-dong  
Geumcheon-gu, [QA]CS-G  
SEOUL  
Korea

The following merchandise was submitted and identified by the client as :

**Product Name** : TO-92  
**SGS File No.** : AYA07-01022  
**Received Date** : January 11, 2007  
**Test Performing Date** : January 12, 2007  
**Test Performed** : SGS Testing Korea tested the sample(s) selected by applicant with following results  
**Test Results** : For further details, please refer to following page(s)  
**Buyer(s)** : sony flow chart

Pluto Kim  
Monet Jeong  
Jully Oh  
Jerry Jung  
/Testing Person

SGS Testing Korea Co. Ltd.

Jeff Jang / Chemical Lab Mgr

**Test Report No. F690501/LF-CTSAYA07-01022**

Date: January 17, 2007

Page 2 of 4

Sample No. : AYA07-01022.001

Sample Description : TO-92

Style/Item No. : N/A

**Heavy Metals**

Test Items	Unit	Test Method	MDL	Results
Cadmium (Cd)	mg/kg	US EPA 3050B(1996), US EPA 6010B(1996), ICP	0.5	N.D.
Lead (Pb)	mg/kg	US EPA 3050B(1996), US EPA 6010B(1996), ICP	5	N.D.
Mercury (Hg)	mg/kg	US EPA 3052(1996), US EPA 6010B(1996), ICP	2	N.D.
Hexavalent Chromium (Cr VI)	mg/kg	US EPA 3060A(1996), US EPA 7196A(1992), UV	1	N.D.

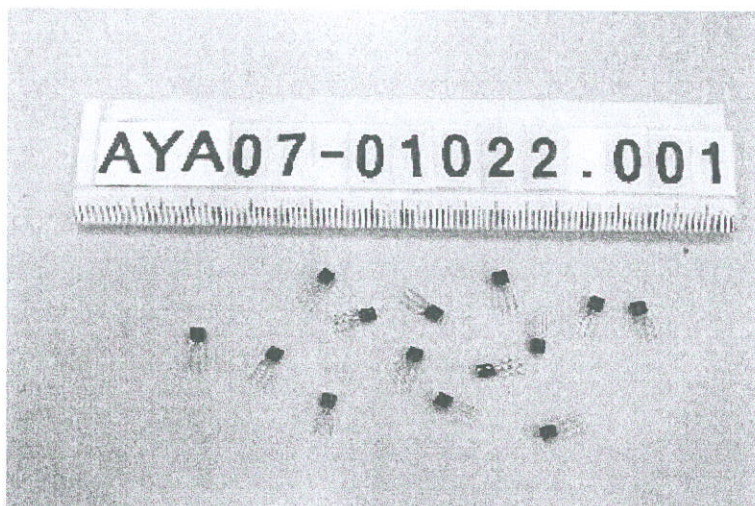
**Flame Retardants-PBBs/PBDEs**

Test Items	Unit	Test Method	MDL	Results
Monobromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Dibromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tribromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tetrabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Pentabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Hexabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Heptabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Octabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Nonabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Decabromobiphenyl	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Monobromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Dibromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tribromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Tetrabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Pentabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Hexabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Heptabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Octabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Nonabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.
Decabromodiphenyl ether	mg/kg	US EPA 3540C, GC/MS	5	N.D.

- NOTE: (1) N.D. = Not detected.(<MDL)  
(2) ppm = mg/kg  
(3) MDL = Method Detection Limit  
(4) - = No regulation  
(5) \*\* = Qualitative analysis (No Unit)  
(6) Negative = Undetectable / Positive = Detectable

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full, without prior written permission of the Company.

**Picture of Sample as Received:**

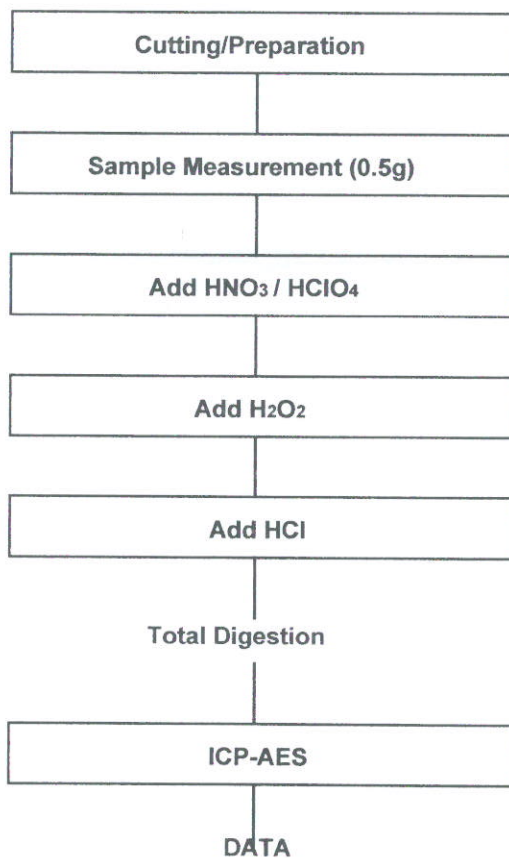


- NOTE:
- (1) N.D. = Not detected.( $<$ MDL)
  - (2) ppm = mg/kg
  - (3) MDL = Method Detection Limit
  - (4) - = No regulation
  - (5) \*\* = Qualitative analysis (No Unit)
  - (6) Negative = Undetectable / Positive = Detectable

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full, without prior written permission of the Company.

## Flow Chart of Digestion

(EPA 3050B for Cd, Pb)



The samples were dissolved totally by pre-conditioning method according to above flow chart.

Operator Lauren Kim

Section Chief Jeff Jang

\*\*\* End \*\*\*

- NOTE:
- (1) N.D. = Not detected.(<MDL)
  - (2) ppm = mg/kg
  - (3) MDL = Method Detection Limit
  - (4) - = No regulation
  - (5) \*\* = Qualitative analysis (No Unit)
  - (6) Negative = Undetectable / Positive = Detectable





# Test Report No. F690501/LF-CTSAYA07-02882

Date: February 05, 2007

Page 1 of 3

To: KEC Corporation.  
517-4  
Gasam-dong  
Geumcheon-gu [QA]CS-G  
SEOUL  
Korea

The following merchandise was submitted and identified by the client as :-

Product Name : SOT-23  
SGS File No. : AYA07-02882  
Received Date : January 30, 2007  
Test Performing Date : January 31, 2007  
Test Performed : SGS Testing Korea tested the sample(s) selected by applicant with following result.  
Test Requested : In accordance with the RoHS Directive 2002/95/EC, and its amendment directives  
Test Method : With reference to IEC 62321, Ed. 111/54/CDV  
Procedures for the Determination of Levels of Regulated Substances in Electrotechnical Products  
  
(1) Determination of Cadmium by ICP/ AAS  
(2) Determination of Lead by ICP/ AAS  
(3) Determination of Mercury by ICP/ CV-AAS  
(4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method  
(5) Determination of PBB and PBDE by GC/MS  
Test Result(s) : Please refer to next page(s).  
Conclusion : Based on the performed tests on submitted samples,  
the result **complies with**  
the RoHS Directive 2002/95/EC and its subsequent amendments.

SGS Testing Korea Co., Ltd.

Pluto Kim  
Monet Jeong  
Jully Oh  
Jerry Jung  
/Testing Person

  
Jeff Jang / Technical Mgr



# Test Report No. F690501/LF-CTSAYA07-02882

Date: February 05, 2007

Page 2 of 3

Sample No. : AYA07-02886.001

Sample Description : SOT-23

Item / Part No. : N/A

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

Test Item(s):	Method (refer to)	Result	MDL	RoHS Limit
Cadmium(Cd)	(1)	N. D.	0.5	100
Lead (Pb)	(2)	N. D.	5	1000
Mercury (Hg)	(3)	N. D.	2	1000
Hexavalent Chromium (CrVI)	(4)	N. D.	1	1000
Hexavalent Chromium (CrVI) by Spot test / boiling water extraction	(4)	---	See Note 5	#
<b>Sum of PBBs</b>	(5)	N. D.	-	1000
Monobromobiphenyl		N. D.	5	-
Dibromobiphenyl		N. D.	5	-
Tribromobiphenyl		N. D.	5	-
Tetrabromobiphenyl		N. D.	5	-
Hexabromobiphenyl		N. D.	5	-
Pentabromobiphenyl		N. D.	5	-
Heptabromobiphenyl		N. D.	5	-
Octabromobiphenyl		N. D.	5	-
Nonabromobiphenyl		N. D.	5	-
Decabromobiphenyl		N. D.	5	-
<b>Sum of PBDEs (Note 4)</b>		N. D.	-	1000
Monobromodiphenyl ether		N. D.	5	-
Dibromodiphenyl ether		N. D.	5	-
Tribromodiphenyl ether		N. D.	5	-
Tetrabromodiphenyl ether		N. D.	5	-
Pentabromodiphenyl ether		N. D.	5	-
Hexabromodiphenyl ether		N. D.	5	-
Heptabromodiphenyl ether		N. D.	5	-
Octabromodiphenyl ether		N. D.	5	-
Nonabromodiphenyl ether		N. D.	5	-
Decabromodiphenyl ether		N. D.	5	-
<b>Sum of PBDEs (Mono to Deca)</b>		N. D.	-	-

This document is issued by the Company under its General Conditions of Service accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any other holder of this document is advised that informati

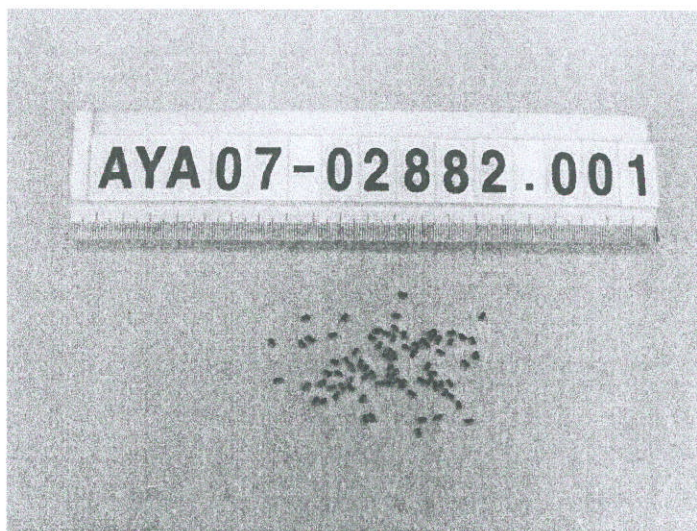
o  
dent and this document does not exonerate parties to a transaction  
from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



- Note.
1. mg/kg = ppm
  2. MDL = Method Detection Limit
  3. N. D. = Not Detected
  4. Sum of Mono to NonaBDE & according to 2005/717/EC DecaBDE is exempt.
  5. Spot-test:
    - Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;
    - (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 CrVI coating
    - Positive = Presence of CrVI coating; 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.
  6. # = Positive indicates the presence of Hexavalent Chromium on the tested areas and result be regarded as conflict with RoHS requirement.
  - Negative indicates the absence of CrVI on the tested areas and result be regarded as no conflict with RoHS requirement.
  7. ?? = Not Regulated
  8. ?--? = Not Conducted

### Picture of Sample as Received :

Sample Color : White



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