CMA Testing and Certification Laboratories

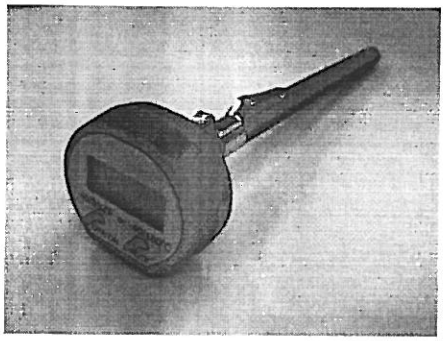
TEST REPORT

Report No. : AG029624-001 Date : 2006 December 22

Application No. : LG225405

zApplicant :

Sample Description : One(1) submitted sample stated to be Digital Thermometer.
Model No. : DT-11
Test Part : Details refer to Appendix I on page 5 to 6. ***



Date Received : 2006 November 15.

Test Period : 2006 November 15 - 2006 December 18.

Test Requested : Mercury, Cadmium, Lead, Hexavalent Chromium, PBBs and PBDEs content for the limits specified in 2002/95/EC Directive with amendment 2005/618/EC, 2005/717/EC and 2005/747/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).

Test Method : Refer to test method(s) on page 2.

Test Result : Refer to the results on page 2 to 4.

Conclusion : Based on the said tests, Mercury, Cadmium, Lead, Hexavalent Chromium, PBBs and PBDEs content are found to be within the limit(s) specified in 2002/95/EC Directive with amendment 2005/618/EC, 2005/717/EC and 2005/747/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).

For and on behalf of
CMA Industrial Development Foundation Limited

Authorized Signature : _____

Lee Koi Yung
Manager
Environmental Division

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Test Method : 1. XRF screening method:
Reference to IEC 62321 edition 1 ; Part 6 (Committee Draft Version).
2. Chemical test method:
Mercury, Cadmium and Lead content is analysed with reference to EPA 3052, followed by Atomic Absorption Spectrophotometry or Inductively Coupled Plasma Spectrometry (ICP-AES).
Hexavalent Chromium content is analysed with reference to EPA 3060A and EPA 7196A.
PBBs and PBDEs content is analysed with reference to EPA 3540, followed by Gas Chromatography Analysis.

Test Result of XRF Screening Method:

	Test Item				
Test Part	Bromine content	Chromium content	Lead content	Cadmium content	Mercury content
1A	Pass	Pass	Pass	Pass	Pass
1B	Pass	Pass	Pass	Pass	Pass
1C	Pass	**Inconclusive**	Pass	Pass	Pass
1D	Pass	Pass	Pass	Pass	Pass
1E	Pass	Pass	Pass	Pass	Pass
1F	Pass	Pass	Pass	Pass	Pass
1G	Pass	**Inconclusive**	Pass	Pass	Pass
1H	Pass	Pass	Pass	Pass	Pass
1I	Pass	Pass	Pass	Pass	Pass
1J	Pass	Pass	Pass	Pass	Pass
1K	Pass	**Inconclusive**	Pass	Pass	Pass
2A	Pass	Pass	Pass	Pass	Pass
2B	Pass	Pass	Pass	Pass	Pass
2C	Pass	Pass	Pass	Pass	Pass
2D	Pass	Pass	Pass	Pass	Pass
3A-1	Pass	Pass	Pass	Pass	Pass
3A-2	Pass	Pass	**Pass** Glass Ex	Pass	Pass
3B	Pass	Pass	Pass	Pass	Pass
3C	Pass	Pass	Pass	Pass	Pass
3D	Pass	Pass	Pass	Pass	Pass
3E	Pass	Pass	Pass	Pass	Pass
3F	Pass	Pass	Pass	Pass	Pass
4A	Pass	Pass	Pass	Pass	Pass
4B	**Inconclusive**	Pass	**Inconclusive**	Pass	Pass
4C	**Inconclusive**	Pass	Pass	Pass	Pass
4D	Pass	Pass	Pass	Pass	Pass
4E-1	**Inconclusive**	Pass	Pass	Pass	Pass
4E-2	Pass	Pass	Pass	Pass	Pass
4E-3	Pass	Pass	Pass	Pass	Pass

Note 1 : The threshold value of the Lead, Chromium, Mercury and Bromine content are ±500 mg/kg.

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The threshold value of the Cadmium content is ±50 mg/kg.

Note 2 : Pass denotes the submitted sample(s) are below the threshold value.

Note 3 : Fail denotes the submitted sample(s) are clearly higher the threshold value.

Note 4 : Inconclusive denotes the submitted sample(s) are required additional investigation, due to inconclusive analysis.

Note 5 : mg/kg denotes milligram per kilogram.

Note 6 : Pass of Chromium content denotes the submitted sample(s) contain less than 500 mg/kg Chromium (VI) content.

Note 7 : Pass of Bromine content denotes the submitted sample(s) contain less than 500 mg/kg Polybrominated Biphenyls (PBBs) and Polybrominated Diphenylethers (PBDEs).

Note 8 : Test Part 3A-1 = Silvery pins of thermistor.
Test Part 3A-2 = Glass envelope of thermistor.
Test Part 4E-1 = Printed circuit board (PCB) with green coating.
Test Part 4E-2 = Coppery metal track/wiring on 4E-1.
Test Part 4E-3 = Silvery solder joint on 4E-1.

Note 9 : Guideline for XRF Screening:

Test Item	Result (mg/kg)		
	Pass	Inconclusive	Fail
1. Bromine content	≤300	>300	--
2. Chromium content	≤500	>500	--
3. Lead content	≤500	501 – 1500	>1500
4. Cadmium content	≤50	51 – 150	>150
5. Mercury content	≤500	501 – 1500	>1500

Remark 1: **Pass** $^{\text{Glass Ex}}$ means pass by exemption according to the RoHS Directive 2002/95/EC ANNEX, Lead is exempted in glass of cathode ray tubes, electronic components and fluorescent tubes.

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Result of Chemical Test:

	Test item	Result (mg/kg) Test Part 1C	1G	1K	Limit (mg/kg)
(I)	Hexavalent chromium content	<10	<80	<10	1000

	Test item	Result (mg/kg) Test Part 4B	Limit (mg/kg)
(II)	Lead content	380	1000

	Test item	Result (mg/kg) Test Part 4B	4C	4E-1	Limit (mg/kg)
(III)	Polybrominated Biphenyls (PBBs)				1000
	- Monobromobiphenyl	<10	<10	<10	-
	- Dibromobiphenyl	<10	<10	<10	-
	- Tribromobiphenyl	<10	<10	<10	-
	- Tetrabromobiphenyl	<10	<10	<10	-
	- Pentabromobiphenyl	<10	<10	<10	-
	- Hexabromobiphenyl	<10	<10	<10	-
	- Heptabromobiphenyl	<10	<10	<10	-
	- Octabromobiphenyl	<10	<10	<10	-
	- Nonabromobiphenyl	<10	<10	<10	-
	- Decabromobiphenyl	<10	<10	<10	-
(IV)	Polybrominated Diphenylethers (PBDEs)[#]				1000
	- Monobromodiphenyl ether	<10	<10	<10	-
	- Dibromodiphenyl ether	<10	<10	<10	-
	- Tribromodiphenyl ether	<10	<10	<10	-
	- Tetrabromodiphenyl ether	<10	<10	<10	-
	- Pentabromodiphenyl ether	<10	<10	<10	-
	- Hexabromodiphenyl ether	<10	<10	<10	-
	- Heptabromodiphenyl ether	<10	<10	<10	-
	- Octabromodiphenyl ether	<10	<10	<10	-
	- Nonabromodiphenyl ether	<10	<10	<10	-
	- Decabromodiphenyl ether[#]	<10	<10	<10	-

Note 1 : < denotes less than

Note 2 : [#] The Decabromodiphenylether (DecaBDE) content in polymeric applications is excluded in accordance with the exemption of 2005/717/EC Directive.

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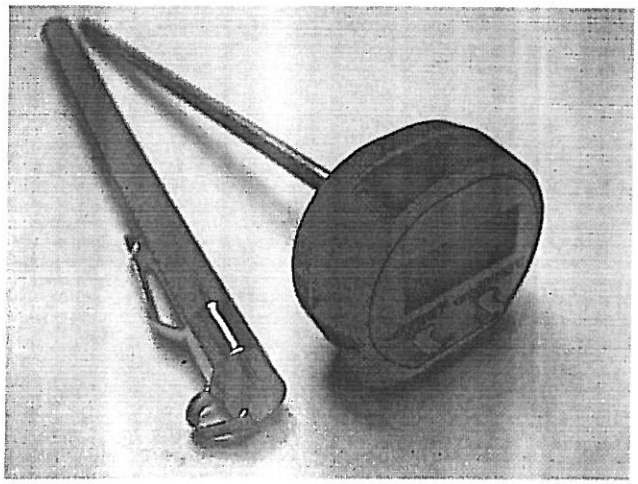
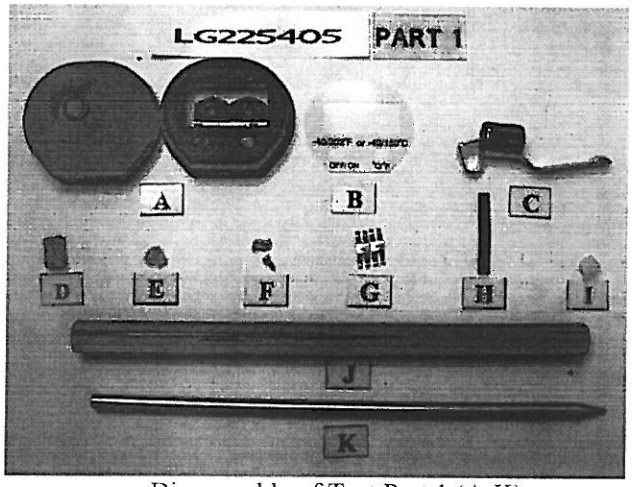
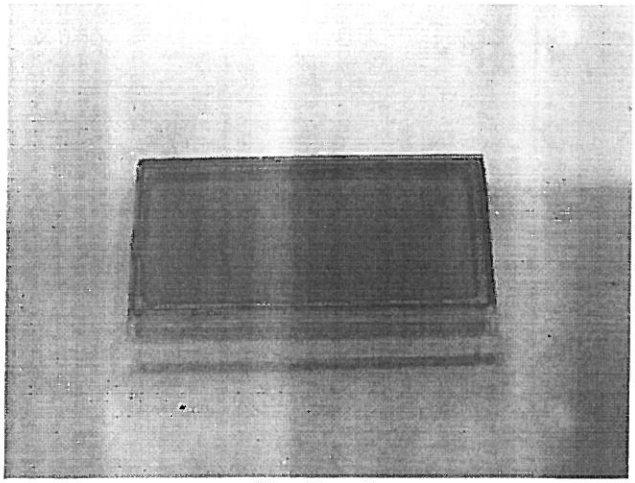
Appendix I



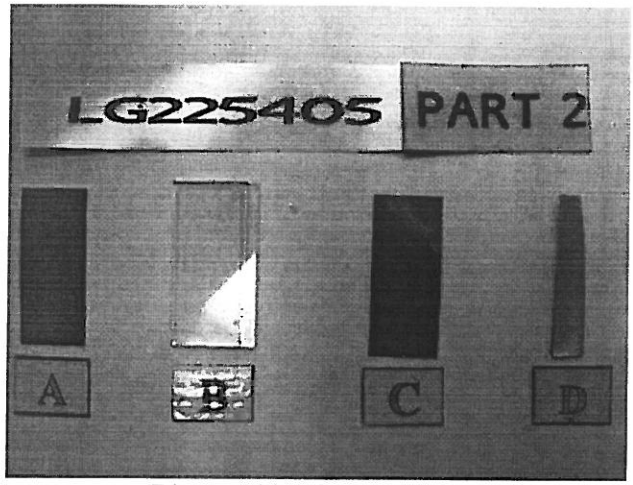
Test Part 1



Disassembly of Test Part 1 (A-K)



Test Part 2



Disassembly of Test Part 2 (A-D)

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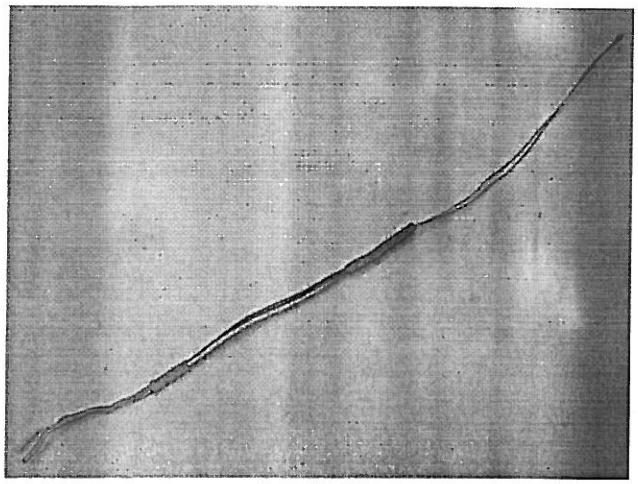
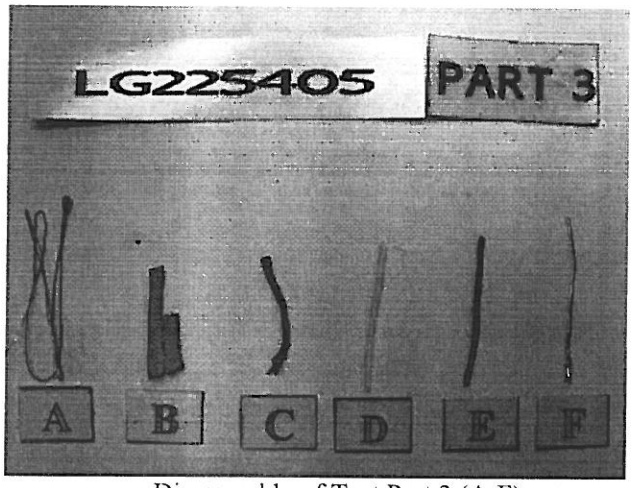
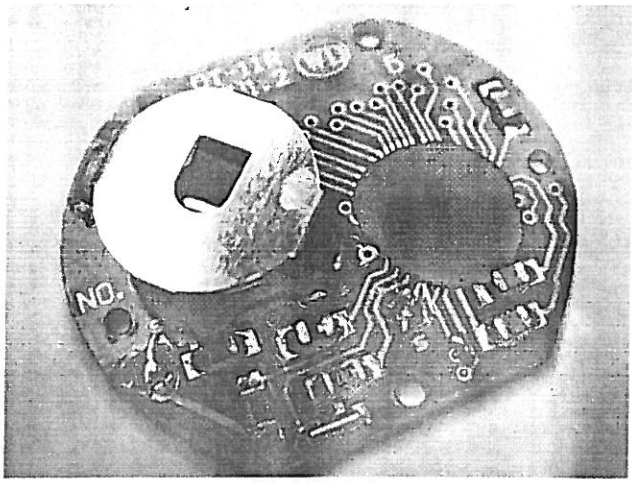


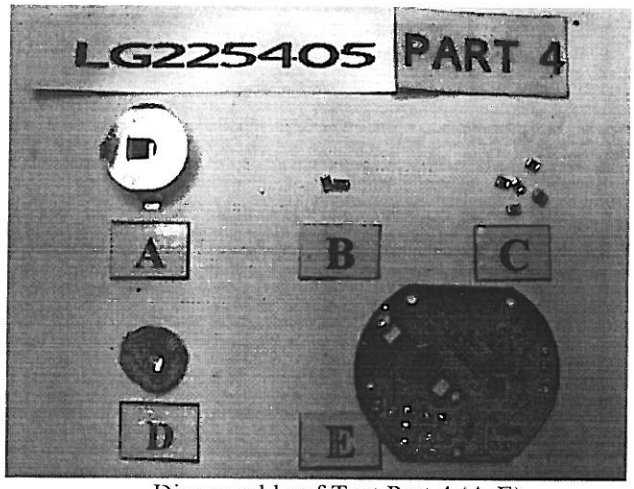
Test Part 3



Disassembly of Test Part 3 (A-F)



Test Part 4



Disassembly of Test Part 4 (A-E)

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