



## Test Report

No. 2129153/JL

Date : May 22 2009

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NEW LEADER BATTERY IND. LTD.  
FLAT A, 4/F, BLOCK 1, CAMELPAINT BUILDING  
62 HOI YUEN ROAD, KWUN TONG, KOWLOON,  
HONG KONG

The following samples were submitted and identified on behalf of the client as  
LR03 AAA SIZE 1.5 ALKALINE BATTERY  
LR6 AA SIZE 1.5 ALKALINE BATTERY

SGS Job No. : 3061466  
Sample Receiving Date : MAY 13 2009  
Testing Period : MAY 13 – 19 2009

Test Requested : 1) To determine Lead, Cadmium and Mercury Content in accordance with European Directive 2006/66/EC.  
2) To determine Mercury content in accordance with the US Mercury-Containing Battery Management Act Public Law No 104-142 (1996).  
3) To determine the Cadmium Content.  
4) To determine the Lead Content.  
5) To determine the Mercury Content.  
6) To determine the Hexavalent Chromium Content.  
7) Determination of PBBs (Polybrominated biphenyls), PBDEs (Polybrominated diphenylethers).

Test Method : 1) Acid digestion followed by Atomic Absorption Spectrometry or Inductively Coupled Argon Plasma Spectrometry analysis.  
2) Acid digestion, and then analyzed by Atomic Absorption or Inductively Coupled Argon Plasma Spectrometry.  
3-5) With reference to SGS in-house method.  
Acid digestion, and then analyzed by Atomic Absorption Spectrometry or Inductively Coupled Argon Plasma-Atomic Emission Spectrometry (ICP-AES).  
6) With reference to EPA Method 3060A & 7196A.  
The samples were alkaline digested by using EPA Method 3060A, and then analyzed by using Colorimetric method 7196A (by UV-Vis Spectrophotometer).  
7) With reference to EPA Method 3540C / 3550C. Analysis was performed by GC/MS or LC/MS.

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

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- Conclusion :
- 1) The submitted samples comply with the heavy metals content requirements stated in European Directive 2006/66/EC.
  - 2) The submitted battery samples comply with the Mercury content requirements stated in the US Mercury-Containing Battery Management Act Public Law No 104-142 (1996).

Signed for and on behalf of  
SGS Hong Kong Ltd.

Chan Yu Yan, Cyrus  
Section Manager

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### Test Results :

1)

#### For portable batteries:

<u>Test item</u>	<u>1</u>	<u>2</u>	<u>Labeling requirement</u>	<u>Regulatory limit</u>
Lead (Pb)	< 0.001%	< 0.001%	> 0.004%	---
Cadmium (Cd)	< 0.001%	< 0.001%	> 0.002%	0.002% ##
Mercury (Hg)	< 0.00001%	0.00019%	> 0.0005%	0.0005%

#### Sample Description :

1. LR03 AAA SIZE 1.5 ALKALINE BATTERY
2. LR6 AA SIZE 1.5 ALKALINE BATTERY

Note : 1. < = less than  
2. % = percentage by weight  
3. ## = Not applicable to portable batteries and accumulators intended to use in emergency and alarm systems, medical equipments and cordless power tools.

2)

#### For battery except alkaline manganese button cell :

<u>Test item</u>	<u>1</u>	<u>2</u>	<u>Requirement</u>
Mercury (Hg)	ND	ND	Absent #

#### Sample Description:

1. LR03 AAA SIZE 1.5 ALKALINE BATTERY
2. LR6 AA SIZE 1.5 ALKALINE BATTERY

Note : 1. mg/cell = milligram per cell  
2. ND = Not Detected  
3. Detection Limit = 0.1 ppm  
4. # = According to the US Mercury-Containing Battery Management Act, Public Law No. 104-142 (1996), battery should not contain mercury that was intentionally introduced.

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Test Results (Con't) :

Test Item	1	2	Detection Limit	Limit*
3) Cadmium (Cd)	ND	ND	5 mg/kg	100 mg/kg
4) Lead (Pb)	ND	ND	5 mg/kg	1000 mg/kg
5) Mercury (Hg)	ND	ND	5 mg/kg	1000 mg/kg
6) Hexavalent Chromium (Cr <sup>6+</sup> )	ND	ND	5 mg/kg	1000 mg/kg

7)

Flame Retardants	1	2	Detection Limit	Limit*
<b>Polybrominated Biphenyls (PBBs) (Mono – Deca)</b>	ND	ND	50 mg/kg	1000 mg/kg
Monobromobiphenyl	ND	ND	5 mg/kg	---
Dibromobiphenyl	ND	ND	5 mg/kg	---
Tribromobiphenyl	ND	ND	5 mg/kg	---
Tetrabromobiphenyl	ND	ND	5 mg/kg	---
Pentabromobiphenyl	ND	ND	5 mg/kg	---
Hexabromobiphenyl	ND	ND	5 mg/kg	---
Heptabromobiphenyl	ND	ND	5 mg/kg	---
Octabromobiphenyl	ND	ND	5 mg/kg	---
Nonabromobiphenyl	ND	ND	5 mg/kg	---
Decabromobiphenyl	ND	ND	5 mg/kg	---
<b>Polybrominated Diphenylethers (PBDEs) (Mono – Deca)</b>	ND	ND	50 mg/kg	1000 mg/kg
Monobromodiphenyl ether	ND	ND	5 mg/kg	---
Dibromodiphenyl ether	ND	ND	5 mg/kg	---
Tribromodiphenyl ether	ND	ND	5 mg/kg	---
Tetrabromodiphenyl ether	ND	ND	5 mg/kg	---
Pentabromodiphenyl ether	ND	ND	5 mg/kg	---
Hexabromodiphenyl ether	ND	ND	5 mg/kg	---
Heptabromodiphenyl ether	ND	ND	5 mg/kg	---
Octabromodiphenyl ether	ND	ND	5 mg/kg	---
Nonabromodiphenyl ether	ND	ND	5 mg/kg	---
Decabromodiphenyl ether**	ND	ND	5 mg/kg	---

### Sample Description :

1. LR03 AAA SIZE 1.5 ALKALINE BATTERY
2. LR6 AA SIZE 1.5 ALKALINE BATTERY

Note : 1. mg/kg = ppm  
2. ND = Not Detected

Remark : \* = Quoted limit is referred to RoHS Directive 2002/95/EC and 2005/618/EC. According to the document of Frequently Asked Questions on RoHS and WEEE published from European Commission in May 2005, the battery does not apply to RoHS Directive.  
\*\* = The exemption of DecaBDE in polymeric application according 2005/717/EC was overruled by the European Court of Justice by its decision of 01.04.2008. Subsequently DecaBDE will be included in the sum of PBDE after 01.07.2008.

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

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