



Test Report

No.T32012241667SC

Date: Jan 12, 2020

Page 1 of 5

The following samples were submitted and identified on behalf of the client as:

3 VOLT COIN TYPE LITHIUM MANGANESE DIOXIDE BATTERY

SGS Case No. : CA3201228389
Style / Item No. : NL-CR2477, NL-CR2450, NL-CR2430, +CR2330, NL-CR2032, NL-CR2025, NL-CR2016, L-CR2032, L-CR2025, L-CR2016, NL-CR1632, NL-CR1620, NL-CR1616, NL-CR1225, NL-CR1220, NL-CR1216, NL-CR927
Manufacturer :
Country of Origin : CHINA
Sample Receiving Date : JAN 05, 2020
Test Performing Date : JAN 05 - 12, 2020

Test Requested		Conclusion
1.	European RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC – Certain hazardous substances	--
	Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) Content	SEE RESULT
2.	European Directive 2006/66/EC and its amendments (Directive 2013/56/EU) – Lead, Cadmium and Mercury Content	PASS
3.	US Public Law 104-142 (1996) Title II – Mercury-Containing Battery Management Act – Mercury Content	PASS

***** FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S) *****

Signed for and on behalf of
SGS Hong Kong Ltd.

Che Wai Leuk, Jerry
Technical Manager

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Page 2 of 5

Test Results:

1. EU Directive 2011/65/EU (RoHS, Previously 2002/95/EC) - Wet Chemical

Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC62321-5:2013, IEC62321-7-1:2015, IEC62321-6:2015

For Lead, Cadmium and Mercury, analysis was performed by Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES) / Atomic Absorption Spectrometer (AAS)

For Hexavalent Chromium, analysis was performed by Ultraviolet Visible Spectrophotometer (UV-Vis)

For PBBs & PBDEs, analysis was performed by Gas Chromatography Mass Spectrometer (GC-MS)

Test Item(s)	Result (mg/kg)	MDL (mg/kg)	Permissible Limit (mg/kg)
	1		
Lead (Pb)	30	2	1000
Cadmium(Cd)	10	2	100
Mercury (Hg)	ND	2	1000
Hexavalent Chromium (CrVI) by boiling water extraction	Negative	See Note	#
Sum of PBBs	ND	--	1000
Monobromobiphenyl	ND	5	--
Dibromobiphenyl	ND	5	--
Tribromobiphenyl	ND	5	--
Tetrabromobiphenyl	ND	5	--
Pentabromobiphenyl	ND	5	--
Hexabromobiphenyl	ND	5	--
Heptabromobiphenyl	ND	5	--
Octabromobiphenyl	ND	5	--
Nonabromobiphenyl	ND	5	--
Decabromobiphenyl	ND	5	--
Sum of PBDEs	ND	--	1000
Monobromodiphenyl ether	ND	5	--
Dibromodiphenyl ether	ND	5	--
Tribromodiphenyl ether	ND	5	--
Tetrabromodiphenyl ether	ND	5	--
Pentabromodiphenyl ether	ND	5	--
Hexabromodiphenyl ether	ND	5	--
Heptabromodiphenyl ether	ND	5	--
Octabromodiphenyl ether	ND	5	--
Nonabromodiphenyl ether	ND	5	--
Decabromodiphenyl ether	ND	5	--
Comment	PASS	--	--

Specimen Description:

1. Silvery battery (CR 2032 NL Brand)

Note: - mg/kg = milligram per kilogram

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- MDL = Method Detection Limit
- ND = Not Detected (lower than MDL)
- -- = Not Conducted
- Negative = The Cr(VI) concentration is below 0.10ug/cm². The coating is considered a non- Cr(VI) based coating.
- # Positive indicates the presence of Cr(VI) on the tested areas and result be regarded as conflict with RoHS requirement. Negative indicates the absence of Cr(VI) on the tested areas and result be regarded as no conflict with RoHS requirement.

2. European Directive 2006/66/EC and its amendments (Directive 2013/56/EU) – Lead, Cadmium and Mercury Content

Method: With reference to IEC 62321-4:2013, IEC 62321-5:2013

Analysis was performed by Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES) / Atomic Absorption Spectrometer (AAS) / Direct Mercury Analyzer (DMA)

For Button Cells

Test Item(s)	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)
MDL (%)	0.001	0.001	0.0001
Labeling requirement (%)	> 0.004	> 0.002	--
Permissible Limit (%)	--	0.002	0.0005
Specimen Description	Result(s) (%)		
1. Silvery battery (CR 2032 NL Brand)	0.003	0.001	ND

- Note:
- % = percentage by weight
 - ND = Not Detected (lower than MDL)
 - 1% = 10000 mg/kg = 10000 ppm
 - > = greater than

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3. US Public Law 104-142 (1996) Title II – Mercury-Containing Battery Management Act – Mercury Content

Method: IEC 62321-4:2013

Analysis was performed by Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES) / Direct Mercury Analyzer (DMA)

For Alkaline Manganese Button Cell

Test Item(s)	Mercury (Hg)
MDL (mg/cell)	10
Permissible Limit (mg/cell)	25
Specimen Description	Result(s) (mg/cell)
1. Silvery battery (CR 2032 NL Brand)	ND

Note: - mg/cell = milligram per cell
- ND = Not Detected (lower than MDL)

Sample Photo:



SGS authenticate the photo on original report only

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Photo provided by client

*** End of Report ***

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