

### UN38.3 Test Summary

The products listed below are supplied with one of the lithium metal cells shown. All cells that Gemini supply have been tested in accordance with sub-section 38.3 of the UN Manual of Tests and Criteria and the test report or summary indicated is included in this document.

Gemini Products	Cell Type	Cell Branding	Manufacturer	Part Number	Unique Report ID
Talk 2 Ultra 2 Plus 2 Plus Re-Ed View 2	1/2 AA	Tekcell	Vitzrocell Co Ltd	SB-AA02	1118AI
		EVE	EVE Energy Co Ltd	ER14250	811900700447075
Service kit SER-9581	AA	Tekcell	Vitzrocell Co Ltd	SB-AA11	1119AI
Plus Radio (Lithium variants only '-L')	C	Saft	Saft SAS	LSH14 light	LSH14 light 12-2018-4
Transit 2	CR2325	Renata	Renata SA	CR2325	1117030312
Aquatic 2	CR2450N	Renata	Renata SA	CR2450N	1117030305
Splash 2	1/10th C	Tadiran	Tadiran Batteries Ltd	TLH-2450	15Q-658



# UN38.3 TEST SUMMARY

Test summary according to UN Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

<p>(a) Manufacturer : VITZROCELL Co., Ltd.</p> <p>(b) Address : 70 , Indusparkro, Hapdeok-eup, Dangjin-si, Dhung-Nam, Korea</p> <p>Phone number : +82 (0)2 2024 3244 Email address : overseas@vitzrocell.com Website : www.vitzrocell.com</p>	<p>(c) Test Laboratory : Reliability Test Center of Vitzrocell</p> <p>Address : 70 , Indusparkro, Hapdeok-eup, Dangjin-si, Dhung-Nam, Korea</p> <p>Phone number : +82 (0)2 2024 3244 Email address : overseas@vitzrocell.com Website : www.vitzrocell.com</p>
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(d) Unique test report ID-number: 1118AI, 1119AI, 1120AI, 1121AI, 1122AI (e) Date of test reports: 21<sup>st</sup> of Nov, 2019

(f) Description of cell or battery:

- (i) ☐ Li-ion cell ☒ **Li-metal cell** ☐ Li-ion battery ☐ Li-metal battery
- (ii) Mass, gram : SB-AA02(8.8g), SB-AA11(16g), SB-A01(21g), SB-C02(51g), SB-D02(94g)
- (iii) Watt-hour rating: or **Lithium content**, gram: SB-AA02(0.3g), SB-AA11(0.62g),  
SB-A01(0.97g), SB-C02(2.18g), SB-D02(4.9g)
- (iv) Physical description of the cell or battery: **TEKCELL brand, cylindrical cell**
- (v) Model number(s): **SB-AA02, SB-AA11, SB-A01, SB-C02, SB-D02**

(g) List of tests conducted and results (i.e., Pass/Fail):

Summary			
No.	Test Clause	Test Performed	Result
T1	38.3.4.1	Altitude simulation	Pass
T2	38.3.4.2	Thermal test	Pass
T3	38.3.4.3	Vibration	Pass
T4	38.3.4.4	Shock	Pass
T5	38.3.4.5	External Short Circuit	Pass
T6	38.3.4.6	Crush/Impact	Pass
T7	38.3.4.7	Overcharge	Not applicable
T8	38.3.4.8	Forced Discharge	Pass

(h) Reference to assembled battery testing requirements:

☒ Not Applicable ☐ UN38.3.3 (f) ☐ UN38.3.3 (g)

(i) Reference to the revised edition of the Manual of Tests and Criteria used and to amendments hereto, if any: **UN Manual of Tests and Criteria, acc to. UN38.3 Edition 6.0, amendment 1**

(j) Date : 21<sup>st</sup> of Nov, 2019

Name : Mr. Jung-Min, Kim

Title : Quality Manager

Signature:



Date of expiry:

31.12.2021





# UN38.3 试验概要

## UN38.3 Test Summary

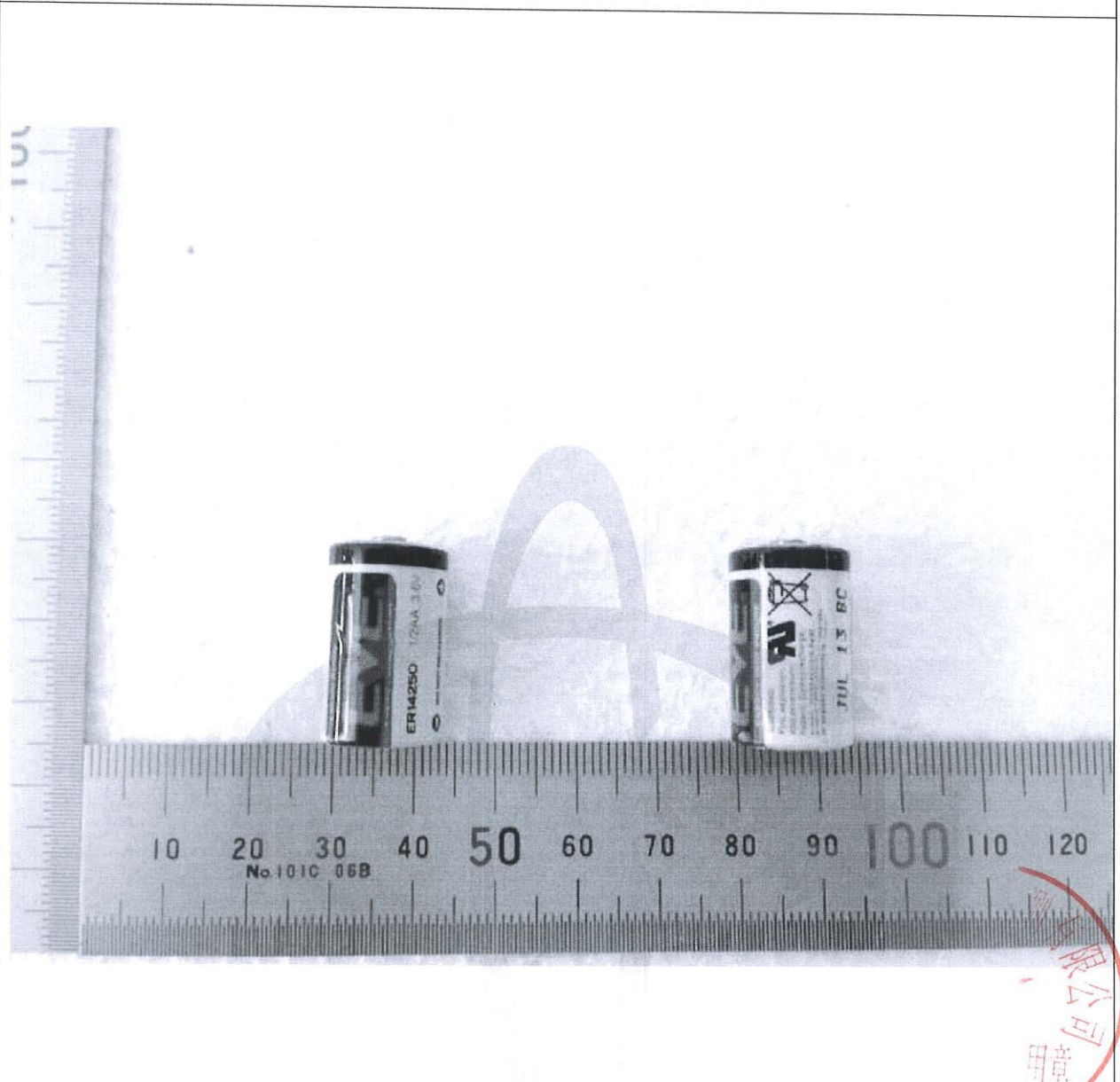


单位信息 Company information			
委托单位 Consignor	惠州亿纬锂能股份有限公司 EVE Energy Co., Ltd. 广东省惠州市仲恺高新区惠风七路 38 号 NO.38,HuiFeng 7th Road,Zhongkai Hi-Tech Zone,HuiZhou,Guangdong,China 18588408301 xurunzhi@evebattery.com https://www.evebattery.com/		
生产单位 Manufacturer	惠州亿纬锂能股份有限公司 EVE Energy Co., Ltd. 广东省惠州市仲恺高新区惠风七路 38 号 NO.38,HuiFeng 7th Road,Zhongkai Hi-Tech Zone,HuiZhou,Guangdong,China 18588408301 xurunzhi@evebattery.com https://www.evebattery.com/		
测试单位 Test lab	上海化工研究院检测中心 Shanghai Research Institute of Chemical Industry Testing Center 中国.上海.普陀区云岭东路 345 号, 200062 No.345 East Yunling Road, Putuo, Shanghai, China 200062 86-21-31765555 battery@ghs.cn www.ghs.cn		
电池信息 Battery information			
名称 Name	锂亚硫酰氯电池 Li/SOCL2 Battery	品牌 Brand	/
型号 Type	ER14250	原始测试型号 Original tested type	/
标称电压(V) Nominal voltage	3.6	容量/能量 Capacity/energy	1200mAh 4.32Wh
描述 Description	不可充电锂金属电池芯 Primary Li-metal cell	锂含量(g) Li content	0.31
质量(kg) Mass	0.00934	外观 Appearance	白色、黑色双色 圆柱型金属外壳 White and black Cylinder metal shell
测试信息 Test information			
原报告编号 Original test report No.	1113120165	测试报告日期 Date of test report	2014-02-17
测试标准 Test standard	联合国《关于危险货物运输的建议书 试验和标准手册》第 38.3 章 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria 38.3 ST/SG/AC.10/11/Rev.5/Amend.1		
T.1 高度模拟 Altitude simulation	合格 Passed	T.2 温度测试 Thermal test	合格 Passed
T.3 振动测试 Vibration	合格 Passed	T.4 冲击测试 Shock	合格 Passed
T.5 外部短路 External short circuit	合格 Passed	T.6 挤压 Crush	合格 Passed
T.7 过度充电 Overcharge	/	T.8 强制放电 Forced discharge	合格 Passed
38.3.3 (f)	/	38.3.3 (g)	/





样品图片 Sample Picture



结论 Conclusion	测试样品符合联合国《关于危险货物运输的建议书试验和标准手册》ST/SG/AC.10/11/Rev.5/Amend.1 38.3 标准要求。The tested samples meet the requirements of test items of the UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria ST/SG/AC.10/11/Rev.5/Amend.1 38.3		
备注 Remark	/		
签名 Signature 职务 Title	 王寅 副总工程师 Vice chief engineer	 签发日期 Issued date	2019-12-12

-验证码:538496-

\*\*\*报告结束\*\*\*



# UN 38.3 Test Summary Report

Lithium Cell or Battery Test Summary in Accordance with Section 2.9.4 UN Model Regulations and Sub-section 38.3 of the UN Manual of Tests and Criteria, Part III, subsection 38.3.5

[a] ☒ Cell ☐ Battery ☐ Product  
☒ **Tested Type Part** 05140W  
☒ **Same Type Part #** see list

[b] **Manufacturer**  
 Saft Civil Electronics Division  
 Saft SAS  
 Rue Georges Leclanché, BP1039  
 86000 Poitiers  
 T. +33 (0) 5. 49 55 48.48  
 Lithiumsales.fr@saftbatteries.com  
 https://www.saftbatteries.com

[d] Unique report ID: LSH14 light 12-2018-4

[e] Report date: 2013.12.18

[c] **Test Laboratory**  
 Saft Civil Electronics Division  
 Saft SAS  
 Rue Georges Leclanché, BP1039  
 86000 Poitiers  
 T. +33 (0) 5. 49 55 48.48  
 Lithiumsales.fr@saftbatteries.com  
 https://www.saftbatteries.com

☒ **Same Type Part Numbers # (all):** 05194C, 05485F, 06037F

[f] (i) ☐ Li-ion ☒ Li-metal.

(iv) **Description:** Primary C-sized spiral cell with a 5A protection fuse

(ii) Mass: 50 g

(iii) ☐ Watt hour rating or ☒ Lithium content: 0.97 g.

(v) ☒ Cell ☐ Battery ☐ Product. Model number/Part number: LSH14 light

[g] **List of Tests Conducted** **Result (Pass / Fail / N.A.)** **Test record reference**

38.3.4.1 T.1: Altitude simulation	Pass	P0152-03
38.3.4.2 T.2: Thermal test	Pass	P0152-03
38.3.4.3 T.3: Vibration	Pass	P0152-03
38.3.4.4 T.4: Shock	Pass	P0152-03
38.3.4.5 T.5: External short circuit	Pass	P0152-03
38.3.4.6 T.6: Impact/Crush (cell only test)	Pass	P0152-03
38.3.4.7 T.7: Overcharge (N.A for Li-metal only)	NA	NA
38.3.4.8 T.8: Forced discharge (cell only test)	Pass	P0152-03

[h] Battery assembly: ☒ Not Applicable. ☐ UN38.3.3 (f) ☐ UN38.3.3 (g)

[i] Test Reference: UN Manual of Tests and Criteria, Part III, sub-section 38.3 ST/SG/AC.10/27/Add.2/ Annexe 4, 18/01/01

[j] Signatory A. Date: 2019.09.19

Name: Cristophe Serre

Title: Quality Mgr – C.E. Div- Poitiers site

Signature:




[j] Signatory B. Date: 2019.09.19

Name: Antoine Derouet

Title: Primary Battery Technical Manager

Signature:



**Important!** The above signatory / signatories affirm that this document is a true and correct summary of the original individual tests and test data. The original test data is confidential information available to competent State Authorities with valid identification and only upon their formal request. Disclosure of the original test data to any other entity upon its request will be considered by Saft and, should Saft consider this request is with merit, may be subject to the prior execution of a nondisclosure agreement.



# LITHIUM CELLS OR BATTERIES TEST SUMMARY IN ACCORDANCE WITH SUB-SECTION 38.3 OF MANUAL OF TESTS AND CRITERIA

## TRANSPORTATION INFORMATION

Name of cell, battery or product manufacturer, as applicable: <input checked="" type="checkbox"/> Cell <input type="checkbox"/> Battery <input type="checkbox"/> Product  Item Number/Name: <b>CR2325</b> Item Description: <b>Primary Lithium Manganese Dioxide Cell (Li+MnO<sub>2</sub> → LiMnO<sub>2</sub>)</b> Nominal Voltage: <b>3V</b>		Cell, battery or product manufacturer's contact information to include address, phone number, email address and website for more information:  <b>Renata SA</b> <b>Kreuzenstrasse 30</b> <b>4452 Itingen</b> <b>Switzerland</b>  <b>+41 61 715 75 75 / <a href="mailto:logistics@renata.com">logistics@renata.com</a></b> <b><a href="http://www.renata.com">www.renata.com</a></b>	
Name of the test laboratory to include address, phone number, email address and website for more information:  <b>Shanghai Research Institute of Chemical Industry</b> <b>Testing Centre</b> <b>Room 101, Building 2</b> <b>No.345 East Yunling Road</b> <b>200062 Shanghai</b> <b>China</b> <b>+86-21-31015216 / <a href="mailto:xutingmsds@gmail.com">xutingmsds@gmail.com</a></b> <b><a href="http://www.qhs.cn">http://www.qhs.cn</a></b>		A unique test report identification number: <b>1117030312</b>	Date of the test report: <b>11-MAY-2017</b>
Description of cell or battery to include at a minimum: Lithium ion or Lithium metal cell or battery; Mass; Watt-hour rating, or lithium content; Physical description of the cell/battery:  Cell / battery Type: <b>Lithium metal</b> Cell or Battery: <b>Cell</b> Lithium contain: <b>0.055 Grams</b> Battery Weight: <b>3.0 Grams</b>		List of tests conducted and results (i.e., pass/fail):  Test T.1: Altitude Simulation <b>Pass</b> Test T.2: Thermal Test <b>Pass</b> Test T.3: Vibration <b>Pass</b> Test T.4: Shock <b>Pass</b> Test T.5: External short circuit <b>Pass</b> Test T.6: Impact/Crush <b>Pass</b> Test T.7: Overcharge <b>Not applicable</b> Test T.8: Forced discharge <b>Pass</b>  Testing additional comments:	
Reference to assembled battery testing requirements, if applicable (i.e., 38.3.3(1) and 38.3.3.(g)):  <b>Not Applicable</b>	Reference to the revised edition of the Manual of Tests and Criteria used and to amendments thereto, if any:  <b>ST/SG/AC. 10/11/Rev.5/Amend.1&amp;Amend.2 38.3.</b>	For air transport only: Does the cell or battery comply with the 30% State of Charge?  <b>Not Applicable</b>	
<b>PRODUCT CLASSIFICATION FOR TRANSPORT (According to UN - DGP)</b>			
UN Classification: <b>UN 3090</b>	Proper Shipping Name: <b>Lithium metal batteries</b>		
Signature with name and title of signatory as an indication of the validity of information provided:  <b>Jürgen Rüttger</b> <b>Head of Marketing &amp; Sales</b> <b>Member of the Management Board</b>		This document remains valid as long as no changes, modifications, or additions are made to the model(s) described in this document.  The model(s) has (have) been classified according to the applicable transport regulations and the UN Manual of Tests and Criteria as of the date of the certification. The model(s) must be packaged, labeled, and documented according to country and other international regulations for transportation.	
Date document was generated: <b>25-NOV-2019</b>  <small>Important! The above signatory / signatories affirm that this document is a true and correct summary of the original individual tests and test data. The original test data is confidential information available to competent State Authorities with valid identification and only upon their formal request. Disclosure of the original test data to any other entity upon its request will be considered by Renata SA and, should Renata SA consider this request is with merit, may be subject to the prior execution of a nondisclosure agreement.</small>			



# LITHIUM CELLS OR BATTERIES TEST SUMMARY IN ACCORDANCE WITH SUB-SECTION 38.3 OF MANUAL OF TESTS AND CRITERIA

## TRANSPORTATION INFORMATION

Name of cell, battery or product manufacturer, as applicable: <input checked="" type="checkbox"/> Cell <input type="checkbox"/> Battery <input type="checkbox"/> Product  Item Number/Name: <b>CR2450N</b> Item Description: <b>Primary Lithium Manganese Dioxide Cell (Li+MnO<sub>2</sub> → LiMnO<sub>2</sub>)</b> Nominal Voltage: <b>3V</b>		Cell, battery or product manufacturer's contact information to include address, phone number, email address and website for more information:  <b>Renata SA</b> <b>Kreuzenstrasse 30</b> <b>4452 Itingen</b> <b>Switzerland</b>  <b>+41 61 715 75 75 / <a href="mailto:logistics@renata.com">logistics@renata.com</a></b> <b><a href="http://www.renata.com">www.renata.com</a></b>	
Name of the test laboratory to include address, phone number, email address and website for more information:  <b>Shanghai Research Institute of Chemical Industry</b> <b>Testing Centre</b> <b>Room 101, Building 2</b> <b>No.345 East Yunling Road</b> <b>200062 Shanghai</b> <b>China</b> <b>+86-21-31015216 / <a href="mailto:xutingmsds@gmail.com">xutingmsds@gmail.com</a></b> <b><a href="http://www.qhs.cn">http://www.qhs.cn</a></b>		A unique test report identification number: <b>1117030305</b>	Date of the test report: <b>20-APR-2017</b>
Description of cell or battery to include at a minimum: Lithium ion or Lithium metal cell or battery; Mass; Watt-hour rating, or lithium content; Physical description of the cell/battery:  Cell / battery Type: <b>Lithium metal</b> Cell or Battery: <b>Cell</b> Lithium contain: <b>0.16 Grams</b> Battery Weight: <b>5.9 Grams</b>		List of tests conducted and results (i.e., pass/fail):  Test T.1: Altitude Simulation <b>Pass</b> Test T.2: Thermal Test <b>Pass</b> Test T.3: Vibration <b>Pass</b> Test T.4: Shock <b>Pass</b> Test T.5: External short circuit <b>Pass</b> Test T.6: Impact/Crush <b>Pass</b> Test T.7: Overcharge <b>Not applicable</b> Test T.8: Forced discharge <b>Pass</b>  Testing additional comments:	
Reference to assembled battery testing requirements, if applicable (i.e., 38.3.3(1) and 38.3.3(g)):	Reference to the revised edition of the Manual of Tests and Criteria used and to amendments thereto, if any:	For air transport only: Does the cell or battery comply with the 30% State of Charge?	
<b>Not Applicable</b>	<b>ST/SG/AC. 10/11/Rev.5/Amend.1&amp;Amend.2 38.3.</b>	<b>Not Applicable</b>	
<b>PRODUCT CLASSIFICATION FOR TRANSPORT (According to UN - DGP)</b>			
UN Classification: <b>UN 3090</b>	Proper Shipping Name: <b>Lithium metal batteries</b>		
Signature with name and title of signatory as an indication of the validity of information provided: <b>Jürgen Ruther</b> <b>Head of Marketing &amp; Sales</b> <b>Member of the Management Board</b>		This document remains valid as long as no changes, modifications, or additions are made to the model(s) described in this document.  The model(s) has (have) been classified according to the applicable transport regulations and the UN Manual of Tests and Criteria as of the date of the certification. The model(s) must be packaged, labeled, and documented according to country and other international regulations for transportation.	
Date document was generated: <b>25-NOV-2019</b>  <small>Important! The above signatory / signatories affirm that this document is a true and correct summary of the original individual tests and test data. The original test data is confidential information available to competent State Authorities with valid identification and only upon their formal request. Disclosure of the original test data to any other entity upon its request will be considered by Renata SA and, should Renata SA consider this request is with merit, may be subject to the prior execution of a nondisclosure agreement.</small>			



# UN 38.3 Test Summary Report

Lithium Cell or Battery Test Summary in Accordance with Section 2.9.4 UN Model Regulations and Sub-section 38.3 of the UN Manual of Tests and Criteria, Part III, subsection 38.3.5

[a] ☒ Cell ☐ Battery ☐ Product  
☒ **Tested Type Part #:** TLH-2450  
☐ **Same Type Part #:**

[b] **Manufacturer**  
Tadiran Batteries Ltd.  
P.O. Box 1  
Kiryat Ekron  
Israel 70500  
T. +972 8 9 44 560  
[sales@tadiran-batt.com](mailto:sales@tadiran-batt.com)  
[www.tadiran.com](http://www.tadiran.com)

[d] Unique report ID: 15Q-658

[e] Report date: 2004.07.01

[c] **Test Laboratory**  
Tadiran Batteries Ltd.  
P.O. Box 1  
Kiryat Ekron  
Israel 70500  
T. +972 8 9 44 560  
[sales@tadiran-batt.com](mailto:sales@tadiran-batt.com)  
[www.tadiran.com](http://www.tadiran.com)

☒ **Same Type Part Numbers # (all):** Pins (with insulation disc): 11 1 15763 02, Pins (without insulation disc): 11 1 15761 22, all other configurations with harness and cable of this cell with part number: 11 1 1576x xx

[f] (i) ☐ Li-ion ☒ Li-metal.

(iv) **Description:** Primary (non-rechargeable) 3.7 V Lithium Thionyl Chloride (Li-SOCl<sub>2</sub>) battery, assembled from 1 (one) "1/10 C" sized TLH-2450 cell. The TLH-2450 cell may come with optional suffixes consisting of a "/" followed by one or more letters and a digit. These suffixes indicate different types of finishing to the cell (for example, S-Standard, T-Tab, P-Pin, etc.).  
Tadiran manufactures all cells/batteries under a quality management system as required under this regulation.

(ii) Mass: 8.8 g

(iii) ☐ Watt hour rating or ☒ Lithium content: 0.18 g

(v) ☒ Cell ☐ Battery ☐ Product. Model number/Part number: TLH-2450

[g] List of Tests Conducted	Result (Pass / Fail / N.A.)	Test record reference
38.3.4.1 T.1: Altitude simulation	Pass	Page 5
38.3.4.2 T.2: Thermal test	Pass	Page 6
38.3.4.3 T.3: Vibration	Pass	Page 7
38.3.4.4 T.4: Shock	Pass	Page 8
38.3.4.5 T.5: External short circuit	Pass	Page 9
38.3.4.6 T.6: Impact/Crush (cell only test)	Pass	Page 10
38.3.4.7 T.7: Overcharge (N.A for Li-metal only)	N.A.	N.A.
38.3.4.8 T.8: Forced discharge (cell only test)	Pass	Page 11

[h] Battery assembly: ☒ Not Applicable. ☐ UN38.3.3 (f) ☐ UN38.3.3 (g)

[i] Test Reference: UN Manual of Tests and Criteria, Part III, sub-section 38.3. *fifth revised edition*

[j] Signatory A. Date: 2018.02.12  
Name: Marc Henn  
Title: Application Engineering Manager  
Signature.




[j] Signatory B. Date: 2018.02.12  
Name: Olaf G. Lichtlein  
Title: General Manager  
Signature.



**Important!** The above signatory / signatories affirm that this document is a true and correct summary of the original individual tests and test data. The original test data is confidential information available to competent State Authorities with valid identification and only upon their formal request. Disclosure of the original test data to any other entity upon its request will be considered by Tadiran and, should Tadiran consider this request is with merit, may be subject to the prior execution of a nondisclosure agreement.