

# LITHIUM BATTERY TEST SUMMARY AND SUPPLIER INQUIRY

IN ACCORDANCE WITH SUB-SECTION 38.3  
OF MANUAL OF TESTS AND CRITERIA

N/A = Not Applicable

|   |  |
|---|--|
| <b>1. Name/Description of battery</b>                           |  |
| SDI 2 - RadiumCal/ Radium Plus rechargeable lithium-ion battery |  |

|   |  |
|---|--|
| <b>1a. Name/Description of the cells inside the battery</b> |  |
| HYB 1CR18500NQ  |  |

The test summary of the cells inside the battery must either be presented or under checkpoint 9 and 9a it must be confirmed that the UN 38.3 test summary for the cells is available.

|                                   |  |
|-----------------------------------|--|
| <b>2. Manufacturer of battery</b> |  |
| Name                              | Co-Electric Company  |
| Address                           | Zhuzailin Industry zone, Nanhe Rd, Nanlany Town, Zhong, Guangdong, 52845, C+ |
| Phone                             | +86 (760)8521 0912   |
| Email                             | info@co-electronic.com   |
| Website                           | www.co-electronic.com  |

|   |  |
|---|--|
| <b>2a. Manufacturer of the equipment (if the battery is contained in equipment)</b> |  |
| Name  | Co-Electric Company  |
| Address   | Zhuzailin Industry zone, Nanhe Rd, Nanlany Town, Zhong, Guangdong, 52845, C+ |
| Phone   | +86 (760)8521 0912   |
| Email   | info@co-electronic.com   |
| Website   | www.co-electronic.com  |

|                                      |  |
|--------------------------------------|--|
| <b>3. Test laboratory of battery</b> |  |
| Name                                 | TUV SUD PSD Pty Ltd                    |
| Address                              | 1 Science Park Drive, Singapore 118221 |
| Phone                                | +65 6885 1529                          |
| Email                                | info@tuv-sud-psb.sg                    |
| Website                              | www.tuv-sud-psb.sg                     |

|  |                  |                     |            |
|--|------------------|---------------------|------------|
| <b>4. ID-number and date</b>             |                  |                     |            |
| Unique test report identification number | 7191175879-EEC18 | Date of test report | 26/10/2018 |

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|  |
|--|
| Name/Description of battery (taken from field 1) |
| SDI 2 - Radium/ Radium Plus rechargeable         |

## DESCRIPTION OF BATTERY

|  |   |
|--|---|
| 5. Mark the type of battery with an "●"              |   |
| <input checked="" type="radio"/> Lithium ion battery | Lithium metal battery <input type="radio"/> |
| <input type="radio"/> Lithium hybrid battery         |   |

|   |         |
|---|---------|
| 6. Parameters   |         |
| Mass in gram (g):   | 101     |
| Lithium ion: Indicate watt-hour rating (Wh):  | 14      |
| Lithium metal: Indicate lithium metal content in gram (g):                            |         |
| Lithium hybrid: Indicate lithium metal content in gram (g) and watt-hour rating (Wh): | g<br>Wh |

|   |
|---|
| 7. Physical description of battery                                      |
| Cell and protection circuits are encased within a white plastic housing |

|                  |
|------------------|
| 8. Model numbers |
| SDI 2            |

## TESTS AND RESULTS

| 9. List of tests conducted and results - Mark N/A, pass or fail with an "●"   | N/A                              | pass                             | fail                  |
|---|----------------------------------|----------------------------------|-----------------------|
| T1 - Altitude simulation  | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/> |
| T2 - Thermal Test   | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> |
| T3 - Vibration  | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> |
| T4 - Shock  | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> |
| T5 - External Short Circuit   | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> |
| T6 - Impact - for cylindrical cells having a diameter of at least 18 mm<br>See check point 1a and 9a.   | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/> |
| T6 - Crush - for prismatic cells, pouch cells, button cells and cylindrical cells<br>having a diameter of less than 18 mm. See check point 1a and 9a. | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> |
| T7 - Overcharge   | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> |
| T8 - Forced Discharge, only valid for cells. See check point 1a and 9a.   | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> |
|   | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/> |
|   | <input type="radio"/>            | <input type="radio"/>            | <input type="radio"/> |





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SDI 2 - RadiiCal/ Radii Plus rechargea

## 9a. UN 38.3 Test Confirmation for the Cells inside the battery

When no separate document for the cells is provided, this confirms that the cells inside the battery (see checkpoint 1.a.) have successfully passed the UN 38.3 test. In this case under checkpoint 9 the T.6 and T.8 must be marked as „passed“ and here under 9.a. „Cell UN 38.3 Test confirmed“ needs to be ticked.



Cell  
UN 38.3 Test  
confirmed

Cell  
UN 38.3 Test  
NOT  
confirmed



## 10. Reference to assembled battery testing requirements

N/A



## 11. Reference to the revised edition of the Manual of Tests and Criteria used and to amendments thereto

## ADDITIONAL SUPPLIER INQUIRY

### 12. Quality management system for manufacturing batteries

Does the manufacturer of the battery manufacture the products based on a documented quality management system according to transport regulations?



YES

NO



### 13. Are the following parameters exceeded?

Lithium ion battery: more than 100 Wh  
Lithium metal battery: more than 2 g Lithium  
Lithium hybrid Battery: more than 1,5 g Lithium and/or more than 10 Wh



YES

NO



### Check point 14 – 16 need to be answered when 13 has been ticked "YES":

14. Does each battery incorporates a safety venting device or is designed to preclude a violent rupture under normal conditions of carriage?



YES

NO



15. Is each battery equipped with an effective means of preventing external short circuits?



YES

NO



16. Is each battery containing cells or series of cells connected in parallel equipped with effective means as necessary to prevent dangerous reverse current flow (e.g. diodes, fuses, etc.)?



N/A



YES

NO



### 17. Only in air transport: State of Charge (SoC) for UN 3480 Lithium ion batteries and lithium polymer batteries

State of Charge (SoC) max. 30 %



N/A



YES

NO



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## BATTERIES INSTALLED IN EQUIPMENT

|  |                       |     |                                  |                                  |
|--|-----------------------|-----|----------------------------------|----------------------------------|
| 18. Check point 18 needs to be answered when the batteries are installed in articles:  |                       |     |                                  |                                  |
| 18.a) Only button cells enclosed?  | <input type="radio"/> | YES | NO                               | <input checked="" type="radio"/> |
| 18.b) Number of enclosed batteries per equipment   |                       |     |                                  | 1                                |
| When the equipment is intentionally active/switched on during transport e.g. data loggers:   |                       |     |                                  |                                  |
| 18.c) Confirmation that no dangerous amount of heat is emitted from the equipment  | <input type="radio"/> | N/A | <input checked="" type="radio"/> | YES                              |
|  |                       |     | NO                               | <input type="radio"/>            |
| 18.d) Confirmation that the equipment when transported by air fulfills the defined air transport standards for electromagnetic radiation according to DO-160 | <input type="radio"/> | N/A | <input checked="" type="radio"/> | YES                              |
|  |                       |     | NO                               | <input type="radio"/>            |

| 19. Place, Date     | 20. Title, Surname, First name | 21. Company stamp and signature   |
|---------------------|--------------------------------|---|
| Australia, 22/11/19 | CQCO, Cahill, Ray              |  |

