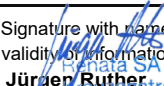


**LITHIUM CELLS OR BATTERIES TEST SUMMARY
IN ACCORDANCE WITH SUB-SECTION 38.3
OF MANUAL OF TESTS AND CRITERIA**

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: CR2032 MFR Item Description: Primary Lithium Manganese Dioxide Cell (Li+MnO₂ → LiMnO₂) Nominal Voltage: 3V		Cell, battery or product manufacturer's contact information to include address, phone number, email address and website for more information: Renata SA Kreuzenstrasse 30 4452 Itingen Switzerland +41 61 975 75 75 / logistics@renata.com www.renata.com	
Name of the test laboratory to include address, phone number, email address and website for more information: Shanghai Research Institute of Chemical Industry Testing Centre No.345 East Yunling Road 200062 Shanghai China +86-21-31765555 / battery@ghs.cn http://www.ghs.cn		A unique test report identification number: 1121110159	Date of the test report: 15-DEC-2021
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: Lithium metal Cell or Battery: Cell Lithium contain: 0.072 Grams Battery Weight: 2.8 Grams		List of tests conducted and results (i.e., pass/fail): Test T.1: Altitude Simulation Passed Test T.2: Thermal Test Passed Test T.3: Vibration Passed Test T.4: Shock Passed Test T.5: External short circuit Passed Test T.6: Impact/Crush Passed Test T.7: Overcharge Not applicable Test T.8: Forced discharge Passed Testing additional comments:	
Reference to assembled battery testing requirements, if applicable (i.e., 38.3.3(1) and 38.3.3(g)): Not Applicable	Reference to the revised edition of the Manual of Tests and Criteria used and to amendments thereto, if any: ST/SG/AC. 10/11/Rev.7 38.3	For air transport only: Does the cell or battery comply with the 30% State of Charge? Not Applicable	
PRODUCT CLASSIFICATION FOR TRANSPORT (According to UN - DGP)			
UN Classification: UN 3090	Proper Shipping Name: Lithium metal batteries		
Signature with name and title of signatory as an indication of the validity of information provided:  Jürgen Rützel Head of Marketing & Sales Member of the Management Board		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: 04-FEB-2022		<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>	

CERTIFICATE OF COMPLIANCE
with Regulation (EU) 2023/1542 of the European Parliament and of the Council of 12 July 2023 concerning batteries and waste batteries, and EU Battery Directive 2006/66/EC from 6 September 2006 with its amendment (Dir. 2008/12/EC, 2008/103/EC, 2013/56/EU, 2018/849/EU)

Renata SA's range of 3V Lithium Manganese Dioxide coin cells:

Renata CR1025 ^{1) 12)}	Renata CR2016.MFR ^{8) 12)}	Renata CR2430 ^{1) 12)}
Renata CR1216 MFR ^{6) 12)}	Renata CR2025 MFR ^{2) 12)}	Renata CR2430 MFR ⁵⁾
Renata CR1220 MFR ^{6) 12)}	Renata CR2032 MFR ^{2) 12)}	Renata CR2450N ^{1) 12)}
Renata CR1225 ^{1) 12)}	Renata CR2032.MFR ^{10) 12)}	Renata CR2477N ^{1) 12)}
Renata CR1616 ^{1) 12)}	Renata CR2025.MFR ^{9) 12)}	Renata CR2450N-MFR ^{7) 12)}
Renata CR1620 ^{1) 12)}	Renata CR2320 ^{1) 12)}	Renata CR2477N.MFR ¹¹⁾
Renata CR1632 ^{1) 12)}	Renata CR2325 ^{1) 12)}	
Renata CR2016 MFR ^{2) 12)}		

This document certifies that the battery models as stated above and provided by Renata SA comply with the above-mentioned legislations.

January 8, 2025

Daniela Mancino Püntener | Global Head Consumer Business

Weight limits according to Regulation 2023/1542

Substance	Weight limit (ppm)
Lead (Pb)*	100
Cadmium (Cd)	20
Mercury (Hg)	5

Weight limits according to EU 2006/66 is 40ppm

1) SGS Test Report EC405623000 dated Feb 16, 2007
 3) SGS Test Report CANEC0904976701 dated October 12, 2009
 5) SGS Test Report CE/2009/45328 dated April 22, 2009
 7) CTI Test Report RLSZD001049480001 dated October 10, 2011
 9) CTI Test Report SCL01H064838002
 11) CTI Test Report SCL01H064838005

2) SGS Test Report EC405697500 dated March 14, 2007
 4) SGS Test Report CANEC0904976702 dated October 12, 2009
 6) SGS Test Report CE/2013/72260 dated September 2, 2013
 8) CTI Test Report SCL01H064838001
 10) CTI Test Report SCL01H064838003
 12) TÜV Test Report 713334655_REV02 dated June 5, 2024

Applicability of RoHS / WEEE / End of Life Vehicles Directives on Batteries:

- **The RoHS Directive**
(EU) 2017/2102 and (EU) 2015/863, amending 2011/65/EU of the European Parliament and of the Council of June 08, 2011 on the restriction of the use of certain hazardous substances in electrical and electronics equipment (RoHS Directive).
→ Does not apply to batteries. (See preamble 14 of the directive 2011/65/EU)
- **The WEEE Directive**
Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE Directive) (including amendment 2018/849/EU).
→ Does apply to batteries and requires their removal and separate collection.
 Once removed from WEEE, used batteries are governed by the Battery Regulation 2023/1542/EU.
- **The "End of Life Vehicles" Directive**
Directive 2000/53/EC of the European Parliament and of the Council of September 18, 2000 on end of life vehicles (including amendment 2018/849/EU).
→ Does apply to batteries and requires their removal before treatment operations for depollution of end-of-life vehicles:
→ Once removed from end-of-life vehicle, used batteries are governed by the Battery Regulation 2023/1542/EU.

3V Lithium Batteries

Safety Guidelines and Precautions concerning the Use of 3V Lithium Batteries

Please observe the following warnings strictly. If misused, the batteries may explode or leak, causing injury or damage to the equipment.

- Keep batteries out of the reach of children, especially those batteries fitting within the limits of the truncated cylinder defined in ISO/DP 8124/2.2 page 17. In case of ingestion of a cell or battery, the person involved should seek medical assistance promptly.
- Equipment intended for use by children should have battery compartments which are tamper-proof.
- The circuits of equipment designed to use alternative power should be such as to eliminate the possibility of the battery being overcharged (see UL standard for diode use).
- The batteries must be inserted into the equipment with the correct polarity (+ and -).
- Do not attempt to revive used batteries by heating, charging or other means.
- Do not dispose of batteries in fire. Do not dismantle batteries.
- Replace all batteries of a set at the same time. Newly purchased batteries should not be mixed with partially exhausted ones. Batteries of different electrochemical systems, grades or brands should not be mixed. Failure to observe these precautions may result in some batteries in a set being driven beyond their normal exhaustion point and thus increase the possibility of leakage.
- Do not short circuit batteries.
- Avoid directly soldering to batteries.
- Do not expose batteries to high temperatures, moisture or direct sunlight.
- When discarding batteries with solder tags, insulate the tags by wrapping them with insulating tape.
- Improper welding can damage the internal components of batteries and impair their performance.
- Do not place batteries on a conductive surface (anti-static work mat, packaging bag or form trays) as it can cause the battery to short.

Rev. 10/02

CR2032 MFR

3V Lithium Battery

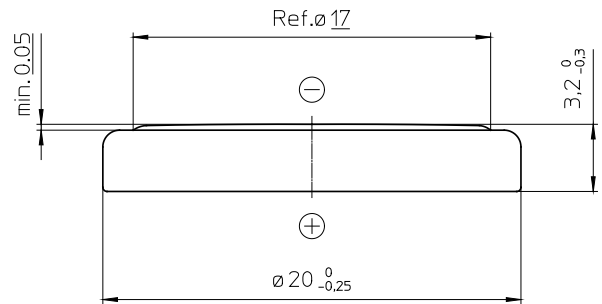
Technical Data Sheet

Specifications

Chemical System	Li / MnO ₂
Nominal Voltage	3 V
Rated Capacity	225 mAh
Standard Discharge Current	0.4 mA
Max. Cont. Discharge Current**	3.0 mA
Average Weight	~ 2.8 g
Temperature Range*	-30 - +85 °C *
Self Discharge at 23°C	< 1% / year

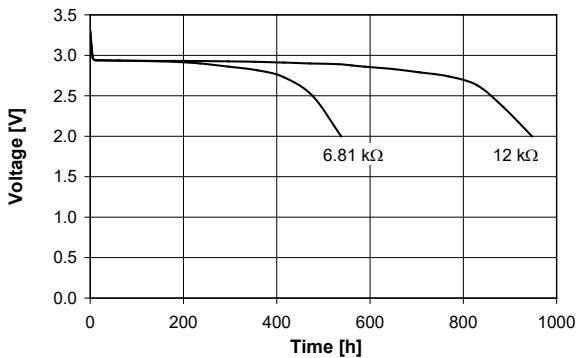
Dimensions

(According to IEC 60086)

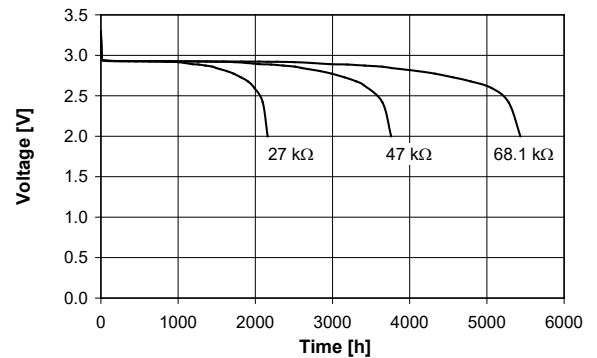


Performance

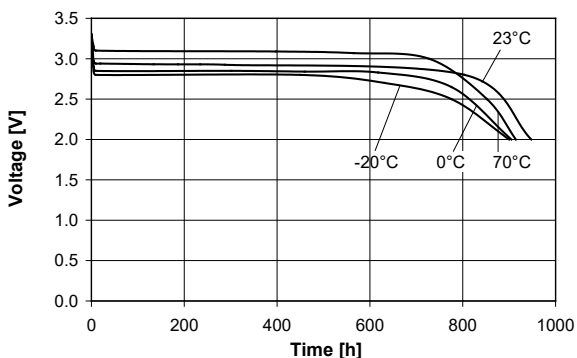
Discharge performance at 23°C



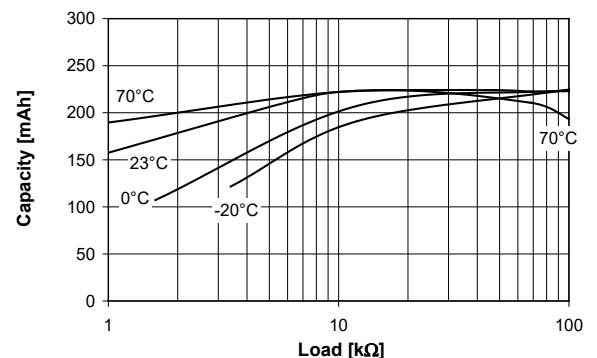
Discharge performance at 23°C



Temperature performance Load 12kΩ



Cell capacity at various loads



*In applications where the battery is exposed to temperatures above 60 °C, please contact Renata for consultancy.
**Average discharge current for a yield of 70% of the nominal capacity with cut-off voltage of 2.0V at 23°C.

Information and contents in this data sheet are for reference purpose only. They do not constitute any warranty or representation and are subject to change without notice. For most current information and further details, please contact your Renata representative. For safety related information please consult the ASDS document related to that product or product family. The Products of Renata SA are neither designed nor authorized for use in certain areas of application of environment. For further details we refer to our webpage www.renata.com/downloads/restriction_of_use