

# 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

<p>[a] <input checked="" type="checkbox"/> Cell <input type="checkbox"/> Battery <input type="checkbox"/> Product  <input checked="" type="checkbox"/> <b>Tested Type Part #:</b> 4144270205  <input checked="" type="checkbox"/> <b>Same Type Part #:</b> 4142070035</p>
<p>[b] <b>Manufacturer</b>                  Saft Connected Smart Energy (CSE) Division                  Friemann &amp; Wolf Batterietechnik GmbH                  Industriestr. 22                  63654 Büdingen, Germany                  T. +49 (0) 6042 954 150  <a href="mailto:info@friemann-wolf.de">info@friemann-wolf.de</a>  <a href="https://www.saft.com/">https://www.saft.com/</a></p>

<p>[d] Unique report ID: M52.1025</p>
<p>[e] Report date: 2025.10.20</p>
<p>[c] <b>Test Laboratory</b>                  Saft Connected Smart Energy (CSE) Division                  Friemann &amp; Wolf Batterietechnik GmbH                  Industriestr. 22                  63654 Büdingen, Germany                  T. +49 (0) 6042 954 150  <a href="mailto:info@friemann-wolf.de">info@friemann-wolf.de</a>  <a href="https://www.saft.com/">https://www.saft.com/</a></p>

**Same Type Part Numbers # (all):** 4142070035, 4142070043, 4142070046, 4142070203, 4142070403, 4142070703, 4142077103, 4142170203, 4142170403, 4142170703, 4142177036, 4142177103, 4142270203, 4142270403, 4142270703, 4142277103, 4142277104, 4142370203, 4142370403, 4142370703, 4142377103, 4144370203, 4142470203, 4144270203, 4162270403, MA45075

<p>[f] (i) <input type="checkbox"/> Li-ion <input checked="" type="checkbox"/> Li-metal                  (iv) <b>Description:</b> Primary (non-rechargeable) "C" sized lithium-manganese dioxide (Li-MnO<sub>2</sub>) cell with stainless steel housing and side vent, type <b>M52</b> including all variants (M52 EX SV, M52 HR SV, M52 HR SV LT, M52 SV, M52 SV BW, M52 VP SV) and contact layouts</p> <p>(ii) Mass: 60 g                  (iii) <input type="checkbox"/> Watt hour rating or <input checked="" type="checkbox"/> Lithium content: 1.6 g                  (v) <input checked="" type="checkbox"/> Cell <input type="checkbox"/> Battery <input type="checkbox"/> Product. Model number/Part number: 4144270205</p>
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[g] List of Tests Conducted	Result (Pass / Fail / N.A.)	Test record reference
38.3.4.1 T.1: Altitude simulation	Pass	UB629/03, page 3
38.3.4.2 T.2: Thermal test	Pass	UB629/03, page 5
38.3.4.3 T.3: Vibration	Pass	UB629/03, page 7
38.3.4.4 T.4: Shock	Pass	UB629/03, page 8
38.3.4.5 T.5: External short circuit	Pass	UB629/03, page 9
38.3.4.6 T.6: Impact/Crush (cell only test)	Pass	UB629/03, 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	UB629/03, 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, 3<sup>rd</sup> revised edition, Amend. 1  
 Friemann & Wolf Batterietechnik GmbH is certified according to ISO 9001 and thereby manufactures all cells and batteries under a quality management system as required by IATA, ADR, RID and IMDG transport rules.

<p>[j] Signatory A.                  Name: Dr. Torsten Oekermann                  Title: Product Engineering Manager                  Signature.</p>
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<p>[j] Signatory B.                  Name: Joachim Kirchner                  Title: Quality Manager                  Signature.</p>
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**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.