

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 #: 4449050132
 Same Type Part #: 4442080147

[b] **Manufacturer**
 Saft Connected Smart Energy (CSE) Division
 Friemann & Wolf Batterietechnik GmbH
 Industriestr. 22
 63654 Büdingen, Germany
 T. +49 (0) 6042 954 150
info@friemann-wolf.de
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[d] Unique report ID: 4M20.1025

[e] Report date: 2025.10.30

[c] **Test Laboratory**
 Saft Connected Smart Energy (CSE) Division
 Friemann & Wolf Batterietechnik GmbH
 Industriestr. 22
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Same Type Part Numbers # (all): 4442080147, 4442180163, 4443080149, 4443080168, 4443080169, 4443080170, 4443080174, 4445080147, MA45016, MA45065, MA45066, MA45093

[f] (i) Li-ion Li-metal

(iv) **Description:** Primary (non-rechargeable) lithium-manganese dioxide (Li-MnO₂) **battery assembled from 4 (four) "D" sized M20 cells** (including all cell variants) in a common housing / shrink sleeve

(ii) Mass: 500 g
 (iii) Watt hour rating or Lithium content: 14.4 g
 (v) Cell Battery Product. Model number/Part number: 4449050132

[g] List of Tests Conducted	Result (Pass / Fail / N.A.)	Test record reference
38.3.4.1 T.1: Altitude simulation	Pass	UB645/09, page 2
38.3.4.2 T.2: Thermal test	Pass	UB645/09, page 3
38.3.4.3 T.3: Vibration	Pass	UB645/09, page 4
38.3.4.4 T.4: Shock	Pass	UB645/09, page 5
38.3.4.5 T.5: External short circuit	Pass	UB645/09, page 6
38.3.4.6 T.6: Impact/Crush (cell only test)	Pass	UB645/09, page 7
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	UB645/09, page 8

[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, 4th revised edition, Amend. 2
 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.

[j] Signatory A.
 Name: Dr. Torsten Oekermann
 Title: Product Engineering Manager
 Signature.



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[j] Signatory B.
 Name: Joachim Kirchner
 Title: Quality 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.