

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 #: 4176080205
 Same Type Part #: 4142080033

[b] **Manufacturer**
 Saft Civil Electronics Division
 Friemann & Wolf Batterietechnik GmbH
 Industriestr. 22
 63654 Büdingen, Germany
 T. +49 (0) 6042 954 150
info@friemann-wolf.de
<https://friemann-wolf.de/>
<https://www.saftbatteries.com/>

[d] Unique report ID: M20.0219

[e] Report date: 2019.02.07

[c] **Test Laboratory**
 Saft Civil Electronics Division
 Friemann & Wolf Batterietechnik GmbH
 Industriestr. 22
 63654 Büdingen, Germany
 T. +49 (0) 6042 954 150
info@friemann-wolf.de
<https://friemann-wolf.de/>
<https://www.saftbatteries.com/>

Same Type Part Numbers # (all): 4142080033, 4142080034, 4142080037, 4142080038, 4142080039, 4142080044, 4142080047, 4142080203, 4142080403, 4142080503, 4142080703, 4142087103, 4142180203, 4142180403, 4142180703, 4142187103, 4142280045, 4142280203, 4142280403, 4142280703, 4142287103, 4143080105, 4143080205, 4144085205, 4172080403, 4174080205

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

(iv) **Description:** Primary (non-rechargeable) "D" sized lithium-manganese dioxide (Li-MnO₂) cell with stainless steel housing and side vent, type **M20** including all variants (M20 EX SV, M20 HR, M20 BW) and contact layouts

(ii) Mass: 110-120 g


(iii) Watt hour rating or Lithium content: 3.45-3.60 g

(v) Cell Battery Product. Model number/Part number: 4176080205

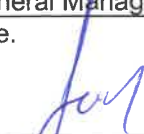
| [g] List of Tests Conducted | Result (Pass / Fail / N.A.) | Test record reference |
|--|-----------------------------|-----------------------|
| 38.3.4.1 T.1: Altitude simulation | Pass | UB641/06 |
| 38.3.4.2 T.2: Thermal test | Pass | UB641/06 |
| 38.3.4.3 T.3: Vibration | Pass | UB641/06 |
| 38.3.4.4 T.4: Shock | Pass | UB641/06 |
| 38.3.4.5 T.5: External short circuit | Pass | UB641/06 |
| 38.3.4.6 T.6: Impact/Crush (cell only test) | Pass | UB641/06 |
| 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 | UB641/06 |

[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, 6th revised edition, Amend. 1, 2017

[j] Signatory A. Date: 2019.02.07
 Name: Joachim Kirchner
 Title: Quality Manager
 Signature:




[j] Signatory B. Date: 2019.02.07
 Name: Dieter Lerch
 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 Saft and, should Saft consider this request is with merit, may be subject to the prior execution of a nondisclosure agreement.