



The Safety Company

UN 38.3 TEST SUMMARY REPORT

MSA Corporate Center

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Associated MSA Product(s): Altair® 2X Gas Detection Monitors

The attached test summary report(s) have been provided by the cell manufacturer(s) and have been prepared in accordance with *The UN Recommendations on the Transport of Dangerous Goods, Manual of Test and Criteria, Amendment to the 6th Edition, Section 38.3.5 – Lithium cell or battery test summary*. The attached summary report(s) indicates the successful completion of tests as required in the UN Manual of Tests and Criteria for the lithium metal cell(s) that may be used in all configurations of MSA **Altair® 2X Gas Detection Monitors**. The attached summary applies to all MSA Altair® 2X Gas Detection Monitor lithium metal batteries.

The attached test summary report(s) were provided by the cell manufacturer(s). A formal request for the original test data shall be made through the manufacturer of the cell.

Sincerely,

David F. Vogt

Global Environmental Program Manager

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 #: LS17330 (UK) *
 Same Type Part #:

[d] Unique report ID: C00011 (Rev 4)

[e] Report date: 05/11/2019

[b] **Manufacturer**
 Saft Civil Electronics Division
 Saft Ltd
 River Drive, South Shields, Tyne and Wear,
 NE33 2TR, UK
 T. +44(0) 191 456 1451
 Stephen.Clark@saftbatteries.com
 https://www.saftbatteries.com

[c] **Test Laboratory**
 Alphatech Environmental Test Laboratory
 Alphatech Ltd, Green House,
 Homefield Road Ind Est, Haverhill, Suffolk,
 CB9 8QP
 T. +44 (0) 1440 714 709
 info@alphatech.co.uk
 https://www.alphatech.co.uk

Same Type Part Numbers # (all): LS17330.STD, 0095-181-019, 0095-182-019, 0095-183-019, 0095-287-019, 0095-356-019, T32/8AA1, T32/8AA1 F, T32/8AA1/M, T32/8AA10, T32/8AA10 F, T32/8AA11, T32/8AA2, T32/8AA6, T32/8AA8, T32/8AA8 C, T32/8AA8 F, T32/8AA9, T32/8AA9 F, XST 5707/1, XST 5792, XST 5820, XST 5930.

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

(iv) **Description:** Primary (non-rechargeable) Lithium-Thionyl Chloride (Li-SOCl₂) "2/3 A" sized LS17330 cell.

(ii) Mass: 14.4g

(iii) Watt hour rating or Lithium content: 0.6g.

(v) Cell Battery Product. Model number/Part number: LS17330 (UK)

[g] List of Tests Conducted	Result (Pass / Fail / N.A.)	Test record reference
38.3.4.1 T.1: Altitude simulation	Pass	102102
38.3.4.2 T.2: Thermal test	Pass	102102
38.3.4.3 T.3: Vibration	Pass	102102
38.3.4.4 T.4: Shock	Pass	102102
38.3.4.5 T.5: External short circuit	Pass	102102
38.3.4.6 T.6: Impact/Crush (cell only test)	Pass	T0185-13
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	T0185-13

[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 2015

[j] Signatory A. Date: 05/11/2019

Name: Stephen Clark

Title: Saft CE, Senior Battery Engineer

Signature:

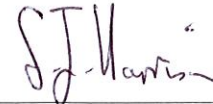



[j] Signatory B. Date: 05/11/2019

Name: Stephen Harrison

Title: Saft CE, Company Secretary

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.