U.S. Department
of Transportation

Pipeline and
Hazardous Materials
Safety Administration

ANNOUNCING

NEW UN REQUIREMENT

FOR LITHIUM BATTERY TEST SUMMARIES (TS)

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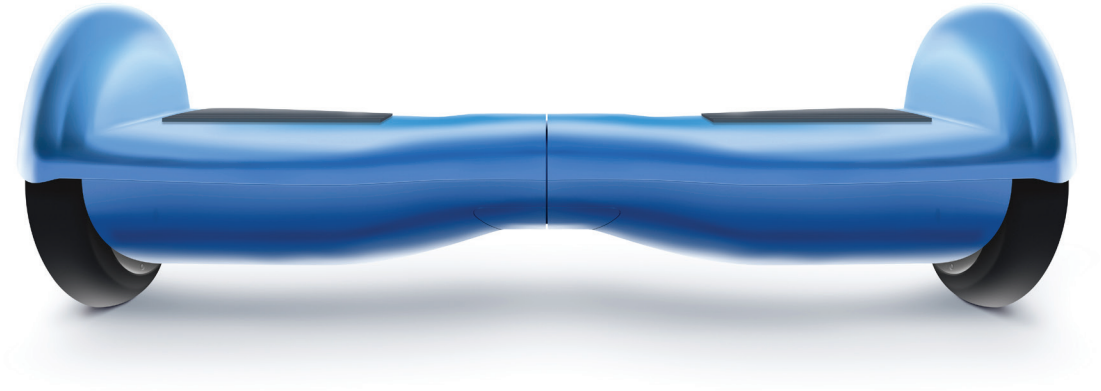


BACKGROUND

For safety reasons, lithium batteries must be subject to a series of design tests per sub-section 38.3 of the UN Manual of Tests and Criteria. Downstream shippers and consumers, however, often cannot confirm if their battery was successfully tested. To address this issue, some lithium battery and device manufacturers provide product information sheets with this information, although, this is not a wide-spread practice. The UN Model Regulations now have a requirement for lithium battery manufacturers and distributors to make available lithium battery test summaries (TS) using a standardized set of elements.

PHMSA developed this draft guidance document to assist manufacturers and distributors with understanding and implementing the UN Model Regulation's requirement. PHMSA has proposed adopting this requirement as part of its HM-215O international harmonization rulemaking (Docket Number PHMSA-2017-0108) and is requesting comments as described in the Notice of Proposed Rulemaking.

WHAT IS THE REQUIREMENT FOR A LITHIUM BATTERY TEST SUMMARY (TS)?:

The UN Model Regulations, 20th Revised Edition, 2.9.4 now includes the following requirement:

"MANUFACTURERS AND SUBSEQUENT DISTRIBUTORS OF CELLS OR BATTERIES SHALL MAKE AVAILABLE THE TEST SUMMARY AS SPECIFIED IN THE MANUAL OF TESTS AND CRITERIA, PART III, SUBSECTION 38.3, PARAGRAPH 38.3.5."

"Manufacturers and subsequent distributors of cells or batteries shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, subsection 38.3, paragraph 38.3.5."

WHAT INFORMATION MUST BE INCLUDED IN THE LITHIUM BATTERY TEST SUMMARY?

The following graphic displays the required information on lithium battery TS:

LITHIUM CELL/BATTERY TS IN ACCORDANCE WITH SUB-SECTION 38.3 OF MANUAL OF TESTS AND CRITERIA The following information shall be provided in the TS:	
A.	Name of cell, battery, or product manufacturer, as applicable;
B.	Cell, battery, or product manufacturer's contact information to include address, telephone number, e-mail address, and website for more information;
C.	Name of the test laboratory to include address, telephone number, e-mail address, and website for more information;
D.	A unique test report identification number;
E.	Date of test report;
F.	Description of cell or battery to include at a minimum:
	i. Lithium ion or lithium metal cell or battery; ii. Mass of cell or battery; iii. Watt-hour rating, or lithium content; iv. Physical description of the cell/battery; and v. Cell or battery model number or, alternatively, if the test summary established for a product containing a cell or battery, the product model number;
G.	List of tests conducted and results (i.e., pass/fail);
H.	Reference to assembled battery testing requirements, if applicable (i.e., 38.3.3 (f) and 38.3.3 (g));
I.	Reference to the revised edition of the Manual of Tests and Criteria used and to amendments thereto, if any; and
J.	Signature with name and title of signatory as an indication of the validity of information provided.

Availability of TS Information

Lithium battery TS can be made available in a variety of ways, for example, via the following type of product information sheet, or by making it available on a website.

Test Summary Examples

UN 38.3 Lithium Battery Test Summary

Cell, Battery or Product Model Number

Item **Number**:
Item **Name**:

Cell, battery, or product manufacturer's contact information

Name:			
Address:			
City:	State:	ZIP:	Country:
Telephone:	E-mail:	Website:	

Test Laboratory

Name:			
Address:			
City:	State:	ZIP:	Country:
Telephone:	E-mail:	Website:	

Cell or Battery Description

Cell or Battery:	Physical Description (dimensions, appearance):
Cell or Battery Type:	
Watt-hour rating or Lithium Content:	
Completed Cell or Battery Weight:	
Unique Test Report ID Number:	Date of test report:

List of Tests Completed:

Yes	No		Pass	Fail	*Additional Comments (or indicate compliance with other standards, e.g., Underwriters Laboratory):*
		Test T.1: Altitude simulation			
		Test T.2: Thermal test			
		Test T.3: Vibration			*Reference to assembled battery testing requirements, if applicable (i.e., 38.3.3 (f) and 38.3.3 (g)).*
		Test T.4: Shock			
		Test T.5: External short circuit			
		Test T.6: Impact/Crush			*Reference to the revised edition of the Manual of Tests and Criteria used and to amendments thereto, if any:*
		Test T.7: Overcharge			
		Test T.8: Forced discharge			

Signature with name and title of signatory as an indication of the validity of information provided: _____ Date: _____

QUESTIONS/ANSWERS RELATED TO THE LITHIUM BATTERY TS:

Q1: Does the TS apply to stand-alone cells or batteries and cells or batteries contained within products?

A1: The TS applies to cells or batteries including those contained in a product.

Q2: I manufacture a product powered by lithium batteries. Must I produce a TS?

A2: You would have to make available information about the lithium battery contained in your product. You can obtain information about the lithium batteries contained in your product from your supplier.

Q3: I distribute a product that contains batteries produced from more than one manufacturer. May I include multiple batteries/manufacturers/products on one report?

A3: Yes, it is acceptable to have a single document that covers multiple batteries/manufacturers/products, provided all required information is included.

Q4: It is acceptable to list the various test laboratories, tests, and range of revisions tested to for the UN 38.3 revision and amendments?

A4: Yes, it is acceptable to have multiple test laboratories and products provided all required information is included. The test laboratory is not required to be aligned to a specific battery or product on TS when the TS covers multiple batteries/products. It is required to have the test report number and date of test for each cell/battery/product listed on the TS.

Q5: What is meant by physical description of cell/battery/product?

A5: A physical description is intended to provide information on the general characteristics of the battery including shape, size, and the intended product application. Pictures or product sketches are especially helpful here. For example: a cylindrical cell measuring 180 mm in length and 65 mm in diameter or a lithium pouch battery permanently installed in a cellular telephone. Alternatively, the description could be the invoice description or marketing name of the product.

Q6: When must the TS be made available?

A6: The TS should be made available to an individual or entity in the supply chain upon request.

Q7: Must a manufacturer or distributor include the TS with product shipments?

A7: No, the product manufacturer or distributor would have to make the information available. This may be achieved by placing this information on a website or through alternative means.

Q8: Is a TS necessary for all batteries currently in the supply chain or just batteries manufactured after the proposed start date for the TS? (Currently scheduled for January 1, 2020.)

A8: The TS requirement will apply for all batteries manufactured after June 30, 2003. If PHMSA adopts these requirements through HM-215O, the expected effective date would be January 1, 2020.

Q9: Will there be a grace period for shippers to comply?

A9: Yes, the international standards addressing transportation of hazardous materials by vessel and air have provided a one-year grace period until January 1, 2020. This also includes TSs for products not manufactured but distributed by entities in the supply chain.

Q10: What is the model number and how can I find it?

A10: The model number is a unique identifier that links a battery or product to a TS.

--If the TS is for a product containing batteries, the model number(s) would be found on the product.

--If the TS is for stand-alone batteries/stand-alone cells, the model number would be found on the batteries/cells.

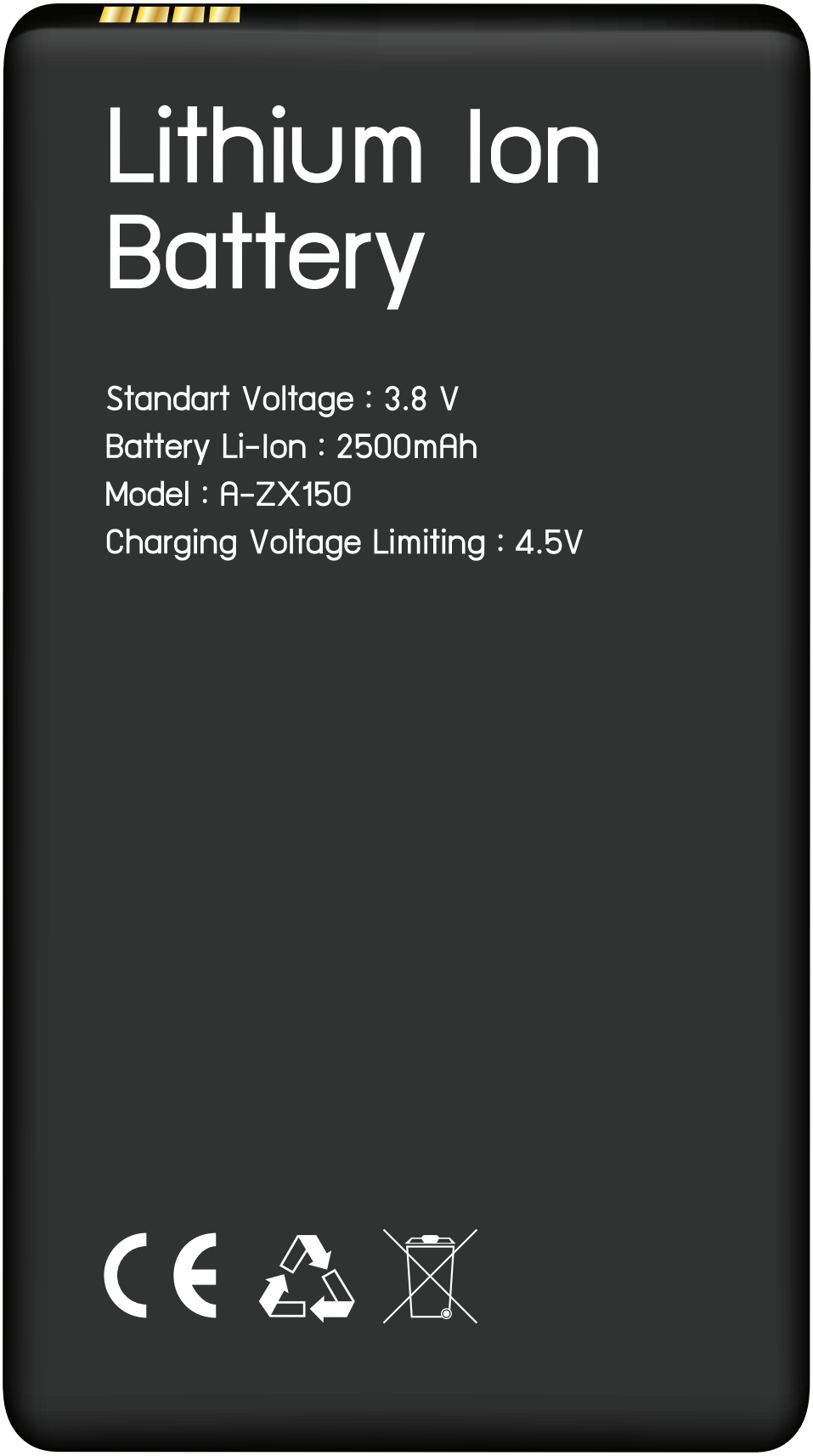
Q11: If a manufacturer considers their suppliers, test laboratory, and battery data confidential and competitive information, how would TS compliance be achieved?

A11: All 10 data elements and listed subsets of information must be on the TS. Test laboratory information may cover a range of products.

FOR MORE INFORMATION:

https://www.phmsa.dot.gov/lithiumbatteries

E-mail: infocntr@dot.gov


Lithium Ion
Battery
Standart Voltage : 3.8 V
Battery Li-Ion : 2500mAh
Model : A-ZX150
Charging Voltage Limiting : 4.5V

For additional information contact:

The Hazardous Materials Info Center

1-800-HMR-4922

(1-800-467-4922)

E-mail: infocntr@dot.gov

http://hazmat.dot.gov

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