

Summary Table of Tests and Requirements

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Transport safety
of lithium cells and batteries
IEC TC35/SC21A**





Background

- ▶ This IWG is seeking the best way to present the test methods and requirements for UN transport testing in a way that is clear and easy to understand – such as a table
- ▶ Tables have so far been proposed by
 - RECHARGE
 - Shanghai Research Institute of Chemical Industry
- ▶ The IEC has published similar tables in its 62281 standard. They are presented on the following slides, harmonized with the current UN battery definition.



Table 1 – Number of primary test cells and batteries for type testing

Tests	Discharge state	Cells ^a	Batteries
Tests T-1 to T-5	Undischarged	10	4
	Fully discharged	10	4
Test T-6	Undischarged	5	5 component cells
	Fully discharged	5	5 component cells
Test T-8	Fully discharged	10	10 component cells
Total for all tests		40	8 batteries and 20 component cells

^a Single cell batteries containing one tested component cells do not require re-testing unless the change could result in a failure of any of the tests.



Table 2 – Number of rechargeable test cells and batteries for type testing

Tests	Cycles and discharge state	Cells	Single cell batteries ^a		Batteries	
			Small	Large	Small	Large
Tests T-1 to T-5	At first cycle, fully charged	10	10	10	4	2
	After 25 cycles, fully charged	N/A ^b	N/A ^b	N/A ^b	N/A ^b	2
	After 50 cycles, fully charged	N/A ^b	N/A ^b	N/A ^b	4	N/A ^b
Test T-6	At first cycle, at 50 % DOD	5	5	5	5 component cells	5 component cells
Test T-7	At first cycle, fully charged	N/A ^b	4 ^c	2 ^c	4 ^c	2 ^c
	After 25 cycles, fully charged	N/A ^b	N/A ^b	2 ^c	N/A ^b	2 ^c
	After 50 cycles, fully charged	N/A ^b	4 ^c	N/A ^b	4 ^c	N/A ^b
Test T-8	At first cycle, fully discharged	10	10	10	10 component cells	10 component cells
	After 50 cycles, fully discharged	10	10	10	10 component cells	10 component cells
Total for all tests		35	43	39	16 batteries and 25 component cells	8 batteries and 25 component cells

^a single cell batteries containing one tested component cell do not require re-testing unless the change could result in a failure of any of the tests, except for test T-7 where only batteries are tested.

^b N/A = not applicable.

^c batteries not equipped with overcharge protection that are designed for use only in a battery assembly, which affords such protection, are not subject to the requirements of this test.



THANK YOU
for your attention