

Research of test parameters of heating

Research progress

Item	18650-3.0Ah-10.95Wh-80W			18650-3.0Ah-10.95Wh-100W			18650-3.0Ah-10.95Wh-120W			More heating power conditions
No.	Heating time/s	Trigger temp./°C	Introduced energy/Wh	Heating time/s	Trigger temp./°C	Introduced energy/Wh	Heating time/s	Trigger temp./°C	Introduced energy/Wh	
1	108.00	116.60	2.40	66.00	148.00	1.83	70.00	165.60	2.33	
2	107.00	160.70	2.38	62.00	140.50	1.72	77.00	199.20	2.57	
3	110.00	145.30	2.44	96.00	185.20	2.67	50.00	117.10	1.67	
4	104.00	133.30	2.31	96.00	197.20	2.67	87.00	227.30	2.90	
5	106.00	150.20	2.36	fail			80.00	189.80	2.67	
Standard deviation	OICA questions: a) What does "fail" mean in the middle of the table? b) If "fail" means that the cell didn't show a thermal runaway at all, is there a reason for this lack of reproducibility?									
Average										
Standard deviation coefficient										

More tests to do to get the best conditions

Recommendations on evaluation criteria of thermal propagation

Evaluation Criteria

- | | |
|--|------|
| 1. No thermal runaway after initiation | pass |
| 2. No propagation at all | pass |
| 3. Total containment | pass |
| 4. Egress test | |

The objective is sufficient egress time. This can vary for different vehicles.

We can study the sufficient egress time for different types of vehicles according to the research method in Phase I.

“hazardous situation” should be quantitated or proofed more clearly.

OICA questions:

- 1) If no thermal runaway after initiation is considered as a "PASS", can cell tests be used instead of module or battery pack or complete vehicle tests?
- 2) Can China provide a more detailed definition for “hazardous situation”?