



## *Test Report*



# Recommendations on the TRANSPORT OF DANGEROUS GOODS

(Manual of Tests and Criteria, Fourth revised edition)

**Customer : ACER**

**Model : AS10C7E**

**Rating : 14.8V, 6000mAh / 88Wh**

Approved By	Checked By	Prepared By
 10/21/09	 10/21/09	DAVE 10.21.09

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## 1. Purpose of the Test :

To test each cell/battery is of the type proved to meet the requirements in the Recommendations on the TRANSPORT OF DANGEROUS GOODS, Manual of Tests and Criteria, Fourth revised edition.

## 2. Test Quantity :

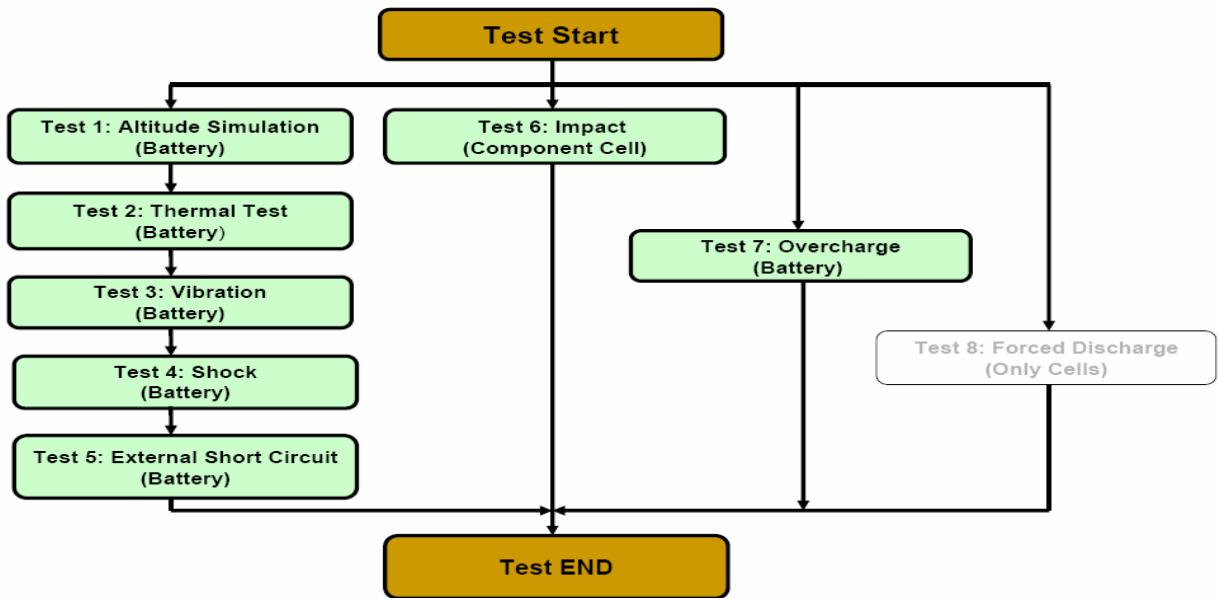
- 2.1 Four batteries, at first cycle, in fully charged states. (T.1~T.5 test only)
- 2.2 Four batteries, at first cycles, in fully discharged states. (T.1~T.5 test only)
- 2.3 Four batteries, after fifty cycles ending in fully charged states. (T.1~T.5 test only)
- 2.4 Four batteries, after fifty cycles ending in fully discharged states. (T.1~T.5 test only)
- 2.5 Five component cells, at first cycle at 50% of the design rated capacity. (T.6 test only)
- 2.6 Five component cells, after fifty cycles ending in fully discharged states. (T.6 test only)
- 2.7 Four batteries, at first cycle, in fully charged states. (T.7 test only)
- 2.8 Four batteries, after fifty cycles ending in fully charged states. (T.7 test only)

## 3. Test Equipment :

- 3.1 SMP -711 life cycles test system × 32 channel(ML-052,ML-053)
- 3.2 Vacuum Tank x1(ML-308)
- 3.3 Agilent -Digit-multi-meter 6 1/2 34401A x1(ML-257)
- 3.4 Micro-Electronic scale x1(TD-166)
- 3.5 WIT-Thermal shock chamber x1(ML-018)
- 3.6 King Design -Vibration Testerx1 (ML-233)
- 3.7 King Design -Shock tester x1 (ML-056)
- 3.8 WITGROUP- Programmable Temperature & Humidity Chamberx1 (ML-010)
- 3.9 YOHAGOWA –DR230 Hybrid Recorder x1 (ML-198)
- 3.10 YOHAGOWA –MX100 Recorder x1 (ML-068)
- 3.11 JYI SHENG-Impact tester x1 (ML-076)
- 3.12 ABM –GCD-5030D-Large power supply x4 (ML-140, ML-141, ML-142, ML-143)

#### 4. Test procedure :

- 4.1 All detail related test procedure shall be follow Standard Operation Procedure of SMP subjected W11-001 Rev.2 issue documentation.
- 4.2 Test flow shall be follow below statement.



#### 5. Test Result :

##### 5.1 T.1 ~T4 Test results: **Pass**

- 5.1.1 Batteries meet requirement regard mass loss was less then 0.1% and voltage loss less 10% relating original situation.
- 5.1.2 No leakage, No venting, No disassembly, No rupture and no fire.

##### 5.2 T.5 Test result: **Pass**

- 5.2.1 All Batteries can meet requirement subjected external temperature does not exceed 170°C.
- 5.2.2 All Batteries no disassembly, no rupture and no fire within six hours

##### 5.3 T.6 Test results: **Pass**

- 5.3.1 All cells can meet requirement subjected external temperature does: not exceed 170°C.
- 5.3.2 All cells no disassembly and no fire within six hours of this test.

##### 5.4 T.7 Test results: **Pass**

- 5.4.1 All batteries can meet no disassembly and no fire within seven days of the test.

All detail evidence will be confirmed follow appendix described.



A1. T.1~T7 detail reports:

Test During: 09/10/07-09/10/21

Prepared by: Esmond Huang

Customer : ACER Model : 2010C 4S2P		T-1 Before test	T-1 After test	T-2 After test	T-3 After test	T-4 After test	T-5 After test Max Temp. (°C)	Max Mass Loss (%) ((T.1 before-T.4 after)/T.1 before)*100%	Result	
Sample No.										
1	Mass (g)	435.3	435.2	435.2	435.1	435.1	55.1	0.05%	Mass Loss<0.1%	Pass
	OCV (V)	16.772	16.771	16.738	16.738	16.737		0.21%	OCV >90%	Pass
2	Mass (g)	435.2	435.1	435.1	435.1	435.1	55.4	0.02%	Mass Loss<0.1%	Pass
	OCV (V)	16.765	16.764	16.723	16.723	16.723		0.25%	OCV >90%	Pass
3	Mass (g)	435.6	435.5	435.5	435.5	435.4	55.2	0.05%	Mass Loss<0.1%	Pass
	OCV (V)	16.762	16.762	16.723	16.723	16.722		0.24%	OCV >90%	Pass
4	Mass (g)	435.4	435.3	435.3	435.3	435.2	55.2	0.05%	Mass Loss<0.1%	Pass
	OCV (V)	16.768	16.767	16.728	16.728	16.728		0.24%	OCV >90%	Pass
5	Mass (g)	435.5	435.4	435.4	435.3	435.3	55.3	0.05%	Mass Loss<0.1%	Pass
	OCV (V)	16.771	16.771	16.732	16.732	16.732		0.23%	OCV >90%	Pass
6	Mass (g)	435.2	435.2	435.1	435.1	435.1	55.1	0.02%	Mass Loss<0.1%	Pass
	OCV (V)	16.765	16.764	16.727	16.727	16.726		0.23%	OCV >90%	Pass
7	Mass (g)	435.7	435.7	435.6	435.6	435.6	55.4	0.02%	Mass Loss<0.1%	Pass
	OCV (V)	16.773	16.771	16.736	16.736	16.736		0.22%	OCV >90%	Pass
8	Mass (g)	435.5	435.4	435.3	435.3	435.3	55.2	0.05%	Mass Loss<0.1%	Pass
	OCV (V)	16.766	16.765	16.724	16.724	16.724		0.25%	OCV >90%	Pass
9	Mass (g)	435.4	435.3	435.3	435.3	435.3	55.4	0.02%	Mass Loss<0.1%	Pass
	OCV (V)	12.562	12.562	12.517	12.517	12.517		0.36%	OCV >90%	Pass
10	Mass (g)	435.4	435.3	435.3	435.3	435.2	55.1	0.05%	Mass Loss<0.1%	Pass
	OCV (V)	12.570	12.570	12.532	12.532	12.531		0.31%	OCV >90%	Pass
11	Mass (g)	435.7	435.6	435.6	435.6	435.6	55.0	0.02%	Mass Loss<0.1%	Pass
	OCV (V)	12.563	12.563	12.525	12.525	12.524		0.31%	OCV >90%	Pass
12	Mass (g)	435.4	435.3	435.3	435.3	435.3	55.0	0.02%	Mass Loss<0.1%	Pass
	OCV (V)	12.573	12.573	12.533	12.533	12.533		0.32%	OCV >90%	Pass
13	Mass (g)	435.3	435.2	435.2	435.1	435.1	55.4	0.05%	Mass Loss<0.1%	Pass
	OCV (V)	12.575	12.575	12.531	12.531	12.530		0.36%	OCV >90%	Pass
14	Mass (g)	435.4	435.3	435.3	435.2	435.2	55.1	0.05%	Mass Loss<0.1%	Pass
	OCV (V)	12.566	12.565	12.523	12.523	12.523		0.34%	OCV >90%	Pass
15	Mass (g)	435.6	435.5	435.4	435.4	435.4	55.3	0.05%	Mass Loss<0.1%	Pass
	OCV (V)	12.566	12.566	12.521	12.521	12.521		0.36%	OCV >90%	Pass
16	Mass (g)	435.7	435.6	435.5	435.5	435.5	55.3	0.05%	Mass Loss<0.1%	Pass
	OCV (V)	12.573	12.572	12.536	12.536	12.536		0.29%	OCV >90%	Pass

Customer : ACER Model : 2010C 4S2P		T-6 After test Max Temp. (°C)	Result
Sample No.			
1	RSOC=50%	32.3	Pass
2	RSOC=50%	31.5	Pass
3	RSOC=50%	31.7	Pass
4	RSOC=50%	32.4	Pass
5	RSOC=50%	33.2	Pass
6	RSOC=0%	33.4	Pass
7	RSOC=0%	32.1	Pass
8	RSOC=0%	32.5	Pass
9	RSOC=0%	32.2	Pass
10	RSOC=0%	33.2	Pass

Customer : ACER Model : 2010C 4S2P		T-7 After test Result
Sample No.		
1		Pass
2		Pass
3		Pass
4		Pass
5		Pass
6		Pass
7		Pass
8		Pass

Prepared by: Esmond Huang

Criteria:

T-1~T4 Test

- Batteries meet requirement regard mass loss was less then 0.1% and voltage loss less 10% relating original situation.
- No leakage, No venting, No disassembly, No rupture and no fire.

T-5 Test

- All Batteries can meet requirement subjected external temperature does not exceed 170°C.
- All Batteries no disassembly, no rupture and no fire within six hours.

T-6 Test

- All Batteries can meet requirement subjected external temperature does not exceed 170°C.
- All Batteries no disassembly and no fire within six hours.

T-7 Test

- All batteries can meet no disassembly and no fire within seven days of the test.

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A2. Equipment for test:

