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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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**Safety code for inspection of hazardous properties for
dangerous goods of lithium batteries**

锂电池组危险货物危险特性检验安全规范

(English Translation)

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Foreword

Chapter 4 and Chapter 5 in this standard are mandatory and the rest are voluntary.

This standard is not equivalent to the "UN Recommendations on the Transport of Dangerous

Goods--Model Regulation" (Thirteenth revised edition) and the "UN Recommendations on the Transport of Dangerous Goods--Manual of Tests and Criteria" (Fourth revised edition); its

relevant technical contents are consistent with the abovementioned regulations and some editorial changes are made in the format of the standard text according to GB/T 1.1-2000.

This standard was proposed by and is under the jurisdiction of the National Technical Committee on Dangerous Chemicals Management of Standardization Administration of China (SAC/TC 251).

Chief drafting organization of this standard. Hazardous Products Central Laboratory of the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China.

Participating drafting organizations of this standard. Tianjin Entry-Exit Inspection and Quarantine Bureau, Asia-Pacific Region Hazardous Products Association and Jiangnan University.

Chief drafting staffs of this standard. Wang Libing, Gao Weiping, Li Ningtao, Liu Jun, Li Dequan, Zhao Haolibao.

This standard was formulated for the first time.

Safety Code for Inspection of Hazardous Properties for

Dangerous Goods of Lithium Batteries

1 Scope

This standard specifies the requirements, tests and inspection rules for dangerous goods of lithium-ion cells or batteries.

This standard is applicable to the inspection of hazardous properties for dangerous goods of

lithium-ion cells or batteries.

2 Normative References

The following documents contain provisions which, through reference in this text, constitute provisions of this standard. For dated reference, subsequent amendments to (excluding correction to), or revisions of, any of these publications do not apply. However, the parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. For undated references, the latest

edition of the normative document referred to applies.

GB 19458 "Safety Code for Inspection of Hazardous Properties for Dangerous Goods-General Specifications"

IEC 60050 (482) "International Electrotechnical Vocabulary - Part 482.Primary and Secondary Cells and Batteries"

"UN Recommendations on the Transport of Dangerous Goods--Model Regulation" (Thirteenth revised edition)

"UN Recommendations on the Transport of Dangerous Goods--Manual of Tests and Criteria" (Fourth revised edition)

3 Terms and Definitions

The terms and definitions established in the "UN Recommendations on the Transport of Dangerous Goods--Manual of Tests and Criteria" (Fourth revised edition) and in IEC 60050

(482) as well as the following ones are applicable to this standard.

3.1

Aggregate lithium content

It refers to the sum (g) of the content of lithium of all the cells that constitute the battery.

3.5

First cycle

It refers to the initial charge and discharge cycle after completing all the manufacturing procedures.

3.6

Fully charged

It refers to that the rechargeable cell or battery is charged to its designed initial conditions.

3.7

Fully discharged

It refers to one of the following two conditions.

3.8

Large cell

It refers to the cell for which the content of lithium at its anode is larger than 12g at the fully charged state.

3.9

Large battery

It refers to the battery for which the aggregate lithium content at all the anodes is larger than

500g at the fully charged state.

4.1.1 The marks, signs and dangerous goods colored labels incused, printed or pasted on the

package of dangerous goods of lithium batteries shall be accurate and clear, and shall meet the

requirements of the relevant provisions specified in GB 19458.

4.2 Test Requirements

The test requirements for lithium cell and battery are detailed in Table 1.

5.1.1 Test equipments

This test needs the following equipments. balance, vacuum chamber, electric furnace, refrigerator box, conductors with total resistance no larger than 0.05ohm, thermocouple and self-recording millivoltmeter.

5.1.3.1 Altitude simulation

The cell and battery shall be stored for at least 6h at the absolute pressure of 11.6kPa and temperature of 20°C.

5.2.1 Test equipments

This test needs the following equipments. vibration machine, impact testing apparatus, conductors with total resistance no larger than 0.05ohm, thermocouple and self-recording millivoltmeter. The impact testing apparatus shall meet the requirements stated in 38.3.4.2.2.1

of the "UN Recommendations on the Transport of Dangerous Goods--Manual of Tests and Criteria" (Fourth revised edition).

5.2.2 Specimen preparation

The test specimens shall be prepared according to the requirements stated in 38.3.4.2.2 of the

"UN Recommendations on the Transport of Dangerous Goods--Manual of Tests and Criteria"

(Fourth revised edition).

5.2.3.1 Vibration

The cell and battery shall be clipped onto the platform of vibration machine fixedly and tightly without any surface deformed.