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MATERIAL SAFETY DATA SHEET

1、Product and Company Identification

Product Identification:

Battery Pack Lithium-ion Rechargeable Battery Pack/10S4P

Manufacturer :

HIGHCELL TECH CO., LTD.

3F, No. 196-12, Ta-Tung Rd., Sec. 3,Hsi-Chih City, Taipei Hsien, Taiwan, R.O.C.

TEL: 886-2-8647-2345 FAX: +886-2-8647-3324

2、Hazards Identification

Primary routes of entry : Skin contact, Skin absorption ; Eye contact, Inhalation and ingestion: NO

Symptoms of exposure : Skin contact, No effect under routine handling and use.

Skin absorption : No effect under routine handling and use.

Eve contact : No effect under routine handling and use.

Inhalation : No effect under routine handling and use.

Reported as carcinogen : Not applicable

3、Composition/ Identification on Ingredients

Substance : Lithium Ion Battery

UN Class : Even classified as lithium batteries, they are exempted from dangerous goods.

UN-Recommendations on the Transport of Dangerous Goods Model Regulations.

※Lithium ion cells and batteries may be offered for transport if they meet the following :

※for cells, the Watt-hour rating is not more than 20Wh ;

※for batteries, Watt-hour rating is not more than 100Wh. The Watt-hour rating must be marked on the outside of the battery case except those manufactured before 1 January 2009 which may be transported without this marking until 31 December 2010 ;

※each cell battery is of the type proven to meet the type proven to meet the requirements of each test in the UN Manual of Tests and Criteria, Part III, subsection 38.3.

※General Requirements and Additional Requirements, Please see packing instruction 965 of IATA latest Revision or UN 3480, UN3481.

Lithium equivalent content and Watt-hours :

Model	Type	Nominal Voltage	Power	Nominal Capacity	Lithium equivalent content
MBP-BR36S6M03.L4 **MBP-BR36S5M03.L4**	Battery	36V	374.4Wh	10.4Ah	31.2g
LG INR18650 M26	Cell	3.6V	9.36Wh	2.6Ah	0.78g

Composition：

3-1. Cases：Plastic Not Dangerous

3-2. Prnted Circuit Board Assembly Not Dangerous

3-3. Lithium Ion Cell：

Name	CAS No.	%[weight]
Cobalt lithium manganese nickel oxide	182442-95-1	34
carbon	7440-44-0	10-30
1,3-Dioxolan-2-one	96-49-1	2-10
Lithium hexafluorophosphate(1-)	21324-40-3	2-10
Aluminium	7429-90-5	2-10
1,1-Difluoroethene homopolymer	24937-79-9	<5
Ethenylbenzene polymer with 1,3-butadiene	9003-55-8	<5
1,3-Propanesultone	1120-71-4	<1

4、First Aid Measures

Inhalation： Make the victim blow his/her nose, gargle. Seek medical attention if necessary.

Skin contact： Remove contaminated clothes and shoes immediately. Wash extraneous matter or contact region with soap and plenty of water immediately.

Eye contact： Do not rub one’ s eyes. Immediately flush eyes with water continuously for at least 15 minutes. Seek medical attention immediately.

Ingestion： Make the victim vomit. When it is impossible or the feeling is not well after vomiting, seek medical attention.

5、Fire Fighting Measures

Extinguishing Media： Use suitable extinguishing media.

Firefighting Equipment：Use NIOSH/MAHA approved full-face self-contained breathing apparatus (SCBA)with full protective gear.

6、Accidental Release Measures

On Land：Place material into containers and call local fire/ police department.

In Water：If possible, Remove from water and call local fire/police department.

7、Handling and Storage

Handling：

Do not expose the battery to excessive physical shock or vibration. Short-circuiting should be avoided. However, accidental short-circuiting for a few seconds will not seriously affect the battery.

Prolonged short circuits will cause the battery to rapidly lose energy, could generate enough heat to burn skin.

Sources of short circuits include jumbled batteries in bulk containers, coins, metal jewelry, metal covered tables, or metal belts used for assembly of batteries in devices. To minimize risk of short-circuiting, the protective case supplied with the battery should be used to cover the terminals when transporting or storing the battery. Do not disassemble or deform the battery. Should an individual cell within a battery

become ruptured, do not allow contact with water.

Storage：

The lithium ion battery should be between 25% and 75% of full charge when stored for a long period of time.

Store in a cool, dry, well ventilated area. And temperature above 100 degree can result in loss of battery performance, leakage, or rust. Do not expose the battery to open flames.

8、Exposure Controls / Personal Protection

Engineering Controls：Keep away from heat and open flame. Store in a cool dry place.

Personal Protection:

Respirator：Not required during normal operations. SCBA required in the event of a fire.

Eye/Face Protection：Not required beyond safety practices of employer.

Gloves：Not required for handling of battery.

Foot Protection：Steel toed shoes recommended for large container handling.

9、Physical and Chemical Properties

State	Solid
Odor	N/A
PH	N/A
Vapor pressure	N/A
Vapor density	N/A
Boiling point	N/A
Solubility in water	Insoluble
Specific gravity	N/A
Density	N/A

10、Stability and Reactivity

Reactivity：None

Incompatibilities：None during normal operation. Avoid exposure to heat, open flame, and corrosives.

Conditions to Avoid：Avoid exposure to heat and open flame. Do not puncture, crush or incinerate.

11、Toxicological Information

This product does not elicit toxicological properties during routine handling and use.

12、Ecological Information

Lithium, Ion battery pack can be disposable in accordance with appropriate federal, state and local regulations.

13、Disposal Consideration

Recommended methods for safe and environmentally preferred disposal：
Product (waste from residues):
Do not throw out a used battery cell. Recycle it through the recycling company.
Contaminated packaging:
Neither a container nor packing is contaminated during normal use. When internal materials leaked from a battery cell contaminates, dispose as industrial wastes subject to special control.

14、Transport Information

The Lithium Ion batteries are considered to be "Rechargeable batteries" and meet the requirements of transportation by the U.S. Department of Transportation(DOT), International Civil Aviation Administration(ICAO), International Air Transport Association(IATA) Dangerous Goods Regulations (Lastest Edition, Section IA of package instruction 965 for lithium ion batteries) and meets all requirements under UN Manual of Tests and Criteria Part III, subsection 38.3.

15、Regulatory Information

Regulations specifically applicable to the product：

- The transport of the lithium batteries is regulated by the United Nations, "Model Regulations on Transport of Dangerous Goods Special Provisions A188".
- Lithium batteries are subject to shipping requirements exceptions under 49 CFR 173.185(paragraph c).
- Shipping of Lithium batteries in aircrafts are regulated by the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA) requirements.
- Shipping of lithium batteries on sea are regulated the International Maritime Dangerous Goods (IMDG) requirements of UN 3480, UN 3481 and UN3171.

16、Other Information

The information contained in this Safety data sheet is based on the present state of knowledge and current legislation.
This safety data sheet provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

No	Item	Result	Remark
1	Altitude simulation	PASS	
2	Thermal test	PASS	

3	Vibration	PASS	
4	Shock	PASS	
5	External short circuit	PASS	
6	Impact	PASS	
7	Overcharge	PASS	
8	Force discharge	N/A	For cell only