MATERIAL SAFETY DATA SHEET

Reference No.: 20160102003
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Section 1: Chemical Product and Company Identification

Product Identification:
Trade Name: lithium polymer cell (UN Number: UN3480)
Model: all prismatic
Watt-hour Rating: ≥2.70Wh≤100Wh
Distributor information:
ACCU ITALIA S.p.A.
Via Armaroli 10/12
40012 Calderara di Reno (Bologna), Italy
TEL: (+39) 051 722502
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Section 2 Composition/Information on Ingredients

INGREDIENTS	Weight Percentage%(about)	CAS NO.
Cobaltic lithium oxide	35.05%	12190-79-3
Graphite powder	15.98%	7782-42-5
Rubber	10.36%	69028-37-1
Carbon black	0.79%	1333-86-4
Styrene-butadiene rubber(SBR)	0.71%	61789-96-6
Polypropylene	1.74%	9003-07-0
Polyethylene	1.27%	9002-88-4
Lithium hexafluorophosphate	1.27%	21324-40-3
Ethylene carbonate(EC)	6.34%	96-49-1
Diethyl carbonate(DEC)	4.76%	105-58-8
Propylene carbonate(PC)	1.11%	108-32-7
Polycaprolactam(NYLON6)	1.11%	25038-54-4
Copper	8.39%	7440-50-8
Aluminium	11.12%	7429-90-5

Section 3: Hazards Identification

The lithium polymer cells are not hazardous when used according to the instructions of manufacturer under normal conditions. In case of abuse, there's risk of explode rupture, fire, heat, leakage of internal components, which could cause casualty loss. Abuses include but not limited to the following cases: charge for a long time, short circuit, put into fire, whack with hard object, puncture with acute object, crush, break.

Section 4: First-Aid Measures

The lithium polymer cells are not hazardous with eye and skin contact under normal circumstance, In case of fire or rupture, the leakage of internal hazardous substance and formation of hazardous substance would occur, take the following measures if contact with it:

Eye: Check for and remove any contact lenses. Immediately flush with plenty of clean water for at least 15 minutes; seek medical assistance;
Skin: Immediately flush with plenty of clean water for 15 minutes; seek medical assistance if severe;
Inhalation: If inhaled, remove to fresh air immediately, seek medical assistance, and ventilate the contaminated area.
Ingestion: Rinse mouth with clean water immediately, activate vomit under the direction of expert, and seek medical assistance.

Section 5: Fire- Fighting Measures
Extinguish with plenty of water, dry powder extinguishers, sands, earth. Combustion products and decomposed products by contact of water or air with internal substance include: carbon monoxide, carbon dioxide, hydrogen fluoride, phosphorus fluoride.

Section 6: Accidental Release Measures
When leakage of cells happens, liquid could be absorbed with sands, earth or other inert substance, and the contaminated area should be ventilated meantime.

Section 7: Handling and storage
Don't handle and store cell with metalwork, Store and use far away from hest, sparks, open flame, or any other ignition sources, and under room temperature ($<30^0$C) in ventilating and dehumidifying environments.

Section 8: Exposure Controls/Personal Protection
There is no need for protect under normal conditions. In engineering aspect, ventilation equipment should be installed. Gas mask, blinkers, gloves enduring chemical erosion and exposure suit are required when dealing with fire and leakage.

Section 9: Physical and Chemical properties
Cells are not single chemical material; there are no specific physical and chemical properties such as melting point and boiling point.
Main purpose of lithium polymer cell: used in portable and digital products.

Section 10: Stability and Reactivity
Cells are safe under normal conditions. The following substance might appear after catching fire or leakage: organic carbonate, hydrogen fluoride, carbon monoxide, carbon dioxide, phosphorus fluoride.

Section 11: Toxicological Information
Cells are not hazardous when used properly. If the Cell catch fire or the internal substance leaks, combustion products and decomposed products might have irritation and toxicity to skin, eye and respiratory systems, Toxicity data of some substance are listed following;
Hydrogen fluoride:
Extremely toxic, May be fatal if inhaled or ingested. Readily absorbed through the skin-skin contact may be fatal. Possible mutagen. LCL_0:50 ppm/30m (human beings), LC50; 1276 ppm/1h(rats).
Carbon and graphite:
Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation. Cause chronic damage to upper respiratory tract and cardiovascular system.
Copper:
Dust may cause respiratory irritation. LD50:3.5 mg kg^{-1}(mouse).

AI: There is on hazard.

Section 12: Ecological Information

There is no influence to ecology and environment when used properly.

Section 13: Disposal

Deserted cell couldn't be treated as ordinary trash. Be put to garbage box which recycle cell after being placed into plastic bags or be dealt as special trash. Couldn't be thrown into fire or placed in high temperature. Couldn't be dissected, pierced, crushed or treated similarly, The package and plastic box used for containing cell could be treated as ordinary trash. Best way is recycling.

Section 14: Transport Information

For the international transport of lithium cell, they must comply with these regulations. the international Maritime dangerous Goods (IMDG) Code by international Maritime Organization (IMO), Dangerous Goods Regulations (DGR) by international Air Transport Association (IATA) and Technical instructions for the safe Transport of Dangerous Goods by Air(TI) by international Civil Aviation Organization(ICAO).These regulations are based on the UN recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria.

Lithium cell which meet the requirements of UN38.3 (UN Manual of Tests and Criteria, Part III, subsection 38.3) could be transported by air and by sea. if the package meets the instruction of IATA-DGR, could be transported as ordinary goods, otherwise should be transported according to Class 9, Packing Group 1 hazardous goods.

According to UN classification: However this product's shipping name is "lithium polymer cell"(or "lithium polymer cell packed with equipment "or "lithium polymer cell contained in equipment"),it is not recognized as "DANGROUS GOODS" when its transport condition accords with "packing instruction 965 section II of IATA-DGR"(or "Packing instruction 966 section II" or "Packing instruction 967 section II") or "special provision 188 of IMO-IMDG Code", it could be transported as ordinary goods.

1. For lithium polymer cell, UN ID number is 3480.For lithium polymer cell contained in equipment or lithium polymer cell packed with equipment UN ID number is 3481.
2. The consignment should be fully described by proper shipping name and packed, marked and in proper condition for carriage by air. The consignment is not classified as dangerous under the current edition of the IATA 56th Effective 01 January 2016， Dangerous goods regulation and applicable carrier and government regulations.
3. For transported by air, Lithium polymer Cell shipped as "Not Restricted"
   Cargo: Must comply with Part II of PI 965-PI967 accordingly; For cell, the Watt-hour rating should not be more than 20Wh; For cells, the Watt-hour rating should not be more than 100Wh.Watt-hour rating must be marked on the outside of the cell case (marked by manufacturer),
4. Each consignment must be accompanied with a document such as an air waybill with an indication. For those Lithium polymer cell contained in equipment, the equipment must be equipped with an effective means of preventing accidental activation. The telephone number for additional information for BAK cell is 86-755-83476578.
5. For very small cell, up to 2.7Wh for lithium polymer, the limit quantity per package shall not exceed 2.5kg. For 2.7Wh to 100Wh cells, the limit quantity per package shall not exceed 2pcs.
6. For lithium polymer cell contained in equipment or lithium polymer cells packed with equipment, the cell limit quantity per package shall not exceed 5kg.
7. Each package must be capable of withstanding a 1.2m drop test in any orientation without damage

of cell contained therein.

8. Lithium cell which meet the requirements of A154 could be transported by air ,and the cell manufactured by BAK meet these requirements (A154 Lithium cells identified by the manufacturer as being defective for safety reasons, or that have been damaged, that have the potentially of producing a dangerous evolution of heat, fire or short circuit are forbidden for transport.)
9. Cell must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to short circuit.
10. Transport condition should accord with “special provision 188 of IMO-IMDG Code”.

Section 15: Regulatory Information

OSHA hazard communication standard (20 CFR 1910.1200)

_____ Hazardous ____√____ Non-hazardous

Section 16: Other Information

This information is not effective to all cell manufactured by BAK, This information comes from reliable sources, but no warranty is made to the completeness and accuracy of information contained. BAK doesn’t assume responsibility for any damage or loss because of misuse of cells.

Users should grasp the correct use method and be responsible for the use of cell.