Material Safety Data Sheet

Section 1- Chemical Product and Company Identification

Product Identification: Li-Polymer Battery
Fax: +86-756-8596577
Preparation Date: *January 7, 2016*
Reference Number: SN201601002

Section 2 – Hazards Identification

Preparation hazards and classification	Not dangerous with normal use. Do not dismantle, open or shred Li-Ion Battery. Exposure to the ingredients contained within or their combustion productscould be harmful.
Apperance, Color, and Odor	Solid object with no odor, no color.
Primary Route(s) of Exposure	These chemicals are contained in a sealed stainless steel enclosure. Risk of exposure occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, exposure to the electrolyte solution contained within can occur by Inhalation, Ingestion, Eye contact and Skin contact
Potential Health Effects:	**ACUTE (short term): see** Section 8 for exposure controls In the event that thisbattery has been ruptured, the electrolyte solution contained within the battery would be corrosive and can cause burns. **Inhalation:** Inhalation of materials from a sealed battery is not an expected route of exposure. Vapors or mists from a ruptured battery may cause respiratory irritation. **Ingestion:** Swallowing of materials from a sealed battery is not an expected route of exposure. Swallowing the contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract. **Skin:** Contact between the battery and skin will not cause any harm. Skin contact with contents of an open battery can cause severe irritation or burns to the skin. **Eye:** Contact between the battery and the eye will not cause any harm. Eye contact with contents of an open battery can cause severe irritation or burns to the eye.

	CHRONIC (long term): see Section 11 for additional toxicological data
Medical Conditions Aggravated by Exposure	Not applicable
Reported as carcinogen	Not applicable

Section 3 – Composition/Information on Ingredients

Li-Polymer Battery is a mixture.

Hazardous Ingredients (Chemical Name)	Concentration or concentration ranges (%)	CAS Number
Aluminum Foil(Al)	5%	7429-90-5
Copper Foil (Cu)	10%	7440-50-8
Cobalt lithium dioxide (CoO2.Li)	40%	12190-79-3
Graphite(C)	20%	7782-42-5
Electrolyte	15%	N/A
Aluminium plastic film	5%	N/A
PCB	5%	N/A

Labeling according to EC directives.

No symbol and risk phrase are required.

Note: CAS number is Chemical Abstract Service Registry Number.

N/A=Not apply.

Section 4 – First-aid Measures

Inhalation	If contents of an opened battery are inhaled, remove source of contamination or move victim to fresh air. Obtain medical advice.
Skin contact	If skin contact with contents of an open battery occurs, as quickly as possible remove contaminated clothing, shoes and leather goods. Immediately flush with lukewarm, gently flowing water for at least 30 minutes. If irritation or pain persists, seek medical attention. Completely decontaminate clothing, shoes and leather goods before reuse or discard.

Eye contact	If eye contact with contents of an open battery occurs, immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes while holding the eyelids open. Neutral saline solution may be used as soon as it is available. If necessary, continue flushing during transport to emergency care facility. Take care not to rinse contaminated water into the unaffected eye or onto face. Quickly transport victim to an emergency care facility.
Ingestion	If ingestion of contents of an open battery occurs, never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 60 to 240 mL (2-8 oz.) of water. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Have victim rinse mouth with water again. Quickly transport victim to an emergency care facility.

Section 5 – Fire-fighting Measures

Flammable Properties	In the event that this battery has been ruptured, the electrolyte solution contain within the battery would be flammable. Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of flammable or corrosive materials.
Suitable extinguishing Media	Use extinguishing media suitable for the materials that are burning.
Unsuitable extinguishing Media	Not available
Explosion	**Sensitivity to Mechanical Impact:** This

Data	may result in rupture in extreme cases **Sensitivity to Static Discharge:** Not Applicable
Specific Hazards arising from the chemical	Fires involving li-polymer battery can be controlled with water. When water is used, however, hydrogen gas may evolve. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended to extinguish the fire
Protective Equipment and precautions for firefighters	As for any fire, evacuate the area and fight the fire from a safe distance. Wear a pressure-demand, self-contained breathing apparatus and full protective gear. Fight fire from a protected location or a safe distance. Use NIOSH/MSHA approved full-face self-contained breathing apparatus(SCBA) with full protective gear.
NFPA	Health: 0 Flammability: 0 Instability: 0

Section 6 – Accidental Release Measures

Personal Precautions, protective equipment, and emergency procedures	Restrict access to area until completion of clean-up. Do not touch the spilled material. Wear adequate personal protective equipment as indicated in Section 8.
Environmental Precautions	Prevent material from contaminating soil and from entering sewers or waterways.
Methods and materials for Containment	Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately.
Methods and materials for cleaning up	Absorb spilled material with an inert absorbent(dry sand or earth). Scoop contaminated absorbent into an acceptable waste container. Collect all contaminated absorbent and dispose of according to directions in Section 13. Scrub the area with detergent and water; collect all contaminated wash water for proper disposal.

Section 7 – Handling and Storage

Handling	Don’t handling Li-Polymer Battery with metalwork. Do not open, dissemble, crush or burn battery. Ensure good ventilation/ exhaustion at the workplace. Prevent formation of dust. Information about protection against explosion sand fires: Keep ignition sources away- Do not smoke.

Section 8 – Exposure Controls and Personal Protection

Engineering Controls	Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor.Keep away from heat and open flame. Store in a cool, dry place.
Personal Protective Equipment	**Respiratory Protection:** Not necessary under normal conditions. **Skin and body Protection:** Not necessary under normal conditions, Wear neoprene or nitrile rubber gloves if handling an open or leaking battery. **Hand protection:** Wear neoprene or natural rubber material gloves if handling an open or leaking battery. **Eye Protection:** Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery.
Other Protective Equipment	Have a safety shower and eye wash fountain readily available in the immediate work area.
Hygiene Measures	Do not eat, drink, or smoke in work area. Maintain good housekeeping.

Section 9 - Physical and Chemical Properties

Physical State	Form: Solid	
	Color: Silvery white	
	Odor: Monotony	
Change in condition:		

pH, with indication of the concentration	Not applicable
Melting point/freezing point	Not available.
Boiling Point, initial boiling point and Boiling range:	Not available.
Flash Point	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapor Pressure:	Not applicable
Vapor Density: (Air = 1)	Not applicable
Density/relative desity	Not available.
Solubility in Water:	Insoluble
n-octanol/water partition coefficient	Not available.
Auto-ignition temperature	130°C
Decomposition temperature	Not available.
Odout threshold	Not available.
Evaporation rate	Not available.
Flammability (soil, gas)	Not available.
Viscosity	Not applicable

Section 10 - Stability and Reactivity

Stability	The product is stable under normal conditions.
Conditions to Avoid (e.g. static discharge, shock or vibration)	Do not subject Li-Polymer Battery to mechanical shock. Vibration encoutered during transportation does not cause leakage, fire or explosion. Do not disassemble, crush, short or install with incorrect polarity. Avoid mechanical or electrical abuse.
Incompatible Materials	Not Available
Hazardous Decomposition Products	This material may release toxic fumes if burned or exposed to fire
Possibility of Hazardous Reaction	Not Available

Section 11 - Toxicological Information

Irritation	Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur.
Sensitization	Not Available
Neurological Effects	Not Available
Teratoaenicitv	Not Available
Reproductive Toxicity	Not Available
Mutagenicity (Genetic Effects)	Not Available
Toxicologically Synergistic Materials	Not Available

Section 12 - Ecological Information

General note:	Water hazard class 1(Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Anticipated behavior of a chemical product in environment/possible environmental impace/ecotoxicity	Not Available
Mobility in soil	Not Available
Persistence and Degradability	Not Available
Bioaccumulation potential	Not Available
Other Adverse Effects	Not Available

Section 13 – Disposal Considerations

Product disposal recommendation: Observe local, state and federal laws and regulations.
Packaging disposal recommendation: Be aware discarded batteries may cause fire, tape the battery terminals to insulate them. Don’t disassembly the battery. Completely discharge containers(no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local, state and federal laws and regulations.

Section 14 – Transport Information

Comply with the UN Recommendations on the Transport of Dangerous Goods; IATA Dangerous Goods regulations, and applicable U.S. DOT regulations for the safe transport of Li-Ion Battery. The Battery have been tested under provisions of the UN Manual of Tests and Criteria, Part III, sub-section 38.3 and are classified as non-dangerous goods.

Lithium ion cell/battery :

lithium ion cell/battery = UN3480 with Section II of PI965

lithium ion cell/battery packed with equipment = UN3481 with Section II of PI966

Lithium ion cell/battery contained in equipment = UN3481 with Section II of PI967

Lithium ion :

Content in Watt-hour (Wh) AND

lithium ion cell = less than 20Wh per cell

lithium ion battery = less than 100Wh per battery

Transport fashion: Land transport ADR/RID (cross-border)

Sea transport IMDG

Air transport ICAO-TI and IATA-DGR

Li-Ion Battery according to NEW PACKING INSTRUCTION 965-970 of IATA DGR 57th Edition of transportation.

Section 15 - Regulatory Information

OSHA hazard communication standard (29 CFR 1910.1200)

_____ Hazardous _____V_____ Non-hazardous

Section 16 - Other Information

This information has been compiled from sources considered to be dependable and is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty (either expressed or implied) or guarantee is made to the accuracy, reliability or completeness of the information contained herein.

This information relates to the specific materials designated and may not be valid for such material used in combination with any other materials or in any process. It is the user's responsibility to satisfy himself as to the suitability and completeness of this information for his particular use.