UNIONFORTUNE POWER INDUSTRIES CO., LTD
ROOM 8003A, 8/F.,FAR EAST CONSORTIUM BLD, 121 DES VOEUX ROAD CENTRAL HK

MATERIAL SAFETY DATA SHEET

Reference No. UF010109

Product Name	Lithium Battery

1. Product Identification;

Product Name	Lithium Battery
Company of Producing	UNIONFORTUNE

2. Composition/Information on Ingredients

Composition	Wt%
Lithium Cobalt Oxide	25-28
PVDF	0.6-1.0
Carbon	11-13
PTFE	0.5-0.8
Electrolyte(EC/EMC/DEC/1molLiPF6)	11-13
PP+PE	3-3.5
Copper	9-11
Aluminum	4-5
Nickel	0.1-0.3
Steel	28-32

3. Hazard Identification

Material	Emergency Overview (Appearance)	Toxicity (Potential Health Effects)
Lithium Cobalt Oxide	Blue-Black Powder (odorless)	Cobalt and Cobalt compounds are considered to be possible human carcinogen(s). By IARC: May irritate eyes, skin, nose, throat, and respiratory system May cause allergic skin sensitization (rash).
Carbon	Black Powder (odorless)	No cases of carbon being harmful to humans have been reported. WHO and ILO have never verified that carbon irritation of the skin and mucous membrane, etc. In some individuals.
Bond	Odorless White Powder	Inhalation and skin contact are expected to be the primary routes of occupational exposure to this material. As a finished product, it is a synthetic, high molecular weight polymer. Due to

CAUTION! MELT PROCESSING RELEASES VAPORS WHICH MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.	it's chemical and physical properties, this material does not requires special handing other than the goods industrial hygiene and safety practical employed with any industrial material of this type. Under normal processing conditions, this material release fame or vapor components of these release may vary with processing time and temperatures. These process releases may produce eye, skin and /or respiratory tract irritation and, with repeated or prolonged exposures.,nausea, drowsiness, headache and normal handling conditions, if this material is heated in excess of 600F(315C) hazardous, decomposition products will be produced. Hazardous decomposition products include hydrogen fluoride and oxides of carbon, the concentrations of with vary with temperature and heating regimens.
Electrolyte Colorless Liquid WARNING! FLAMMABLE. REACTS WITH WSTER TO FROM HYDROFLUORIC ACID. MAY CAUSE BURNS TO SKIN AND EYES EFFECTS MAY BE DELEYED. MAY CAUSE BLINDNESS. PROBABLE REPPODUCTIVE HAZARD.	May cause moderate to severe irritation, burring, and dryness of the skin. May cause eye irritation or buring. Breathing of the mists, vapors or fumes may irritate the nose, throat and lungs or fumes may irritate the nose throat and lungs Exposure of material with areas which contain water may generate hydrofluoric acid which can cause immediate burns on skin, severe eye bums burns to the mouth and gastrointestinal tract if ingested, and laryngeal edema if inhaled. Direct exposure to areas of the body need to be treated immediately to prevent injury.

4. First Aid Measures

Eyes: Flush with water for at least 15 minutes. If irritation occurs and persists, contact a medical doctor.

Skin: Remove contaminated clothing and thoroughly wash with soap and plenty of water. If

irritation persists, contact a medical doctor.

Inhalation: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, see a medical doctor. If breathing has stopped, give artificial respiration and see a medical doctor IMMEDIATELY.

5. Fire Fighting Measures

Hazardous Combustion Products: When burned, hazardous products of combustion including fames of carbon monoxide, carbon dioxide, and fluorine can occur Extinguishing Media: Water, carbon dioxide, dry chemical, or foam.

Basic Fire Fighting Procedures: Wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Unusual Fir & Explosion Hazards: This material does not represent and unusual fire or explosion hazards.

Autolgnition Temperatue: No Data.

Flammability Limits in Air, Lower, % by Volumes: 1.4

Flammability Limits in Air, Upper, % by Volumes: 11

6. Accidental Release Measures

Procedure for Release and Sill:

Sweep up and place in a suitable container, Dispose or waste according to all local, state and Federal Laws and Regulations.

Before cleanup measures begin, review the entire MSDS with particular attention Potential Health Effects; and on Recommended Personal Protective Equipment.

7. Handling and storage

Handling: Avoid contact with eyes, skin or clothing, use with adequate ventilation. Wear safety glasses and rubber gloves. Wash thoroughly after handling.

Material	Storage
Lithium Cobalt Oxide	Keep away from strong acids. Keep container closed.
Carbon	Store this material in a sealed enclosure to avoid dispersion of carbon fiber dust. Keep container closed.
Bond	Store in a cool, dry place. This material is not hazardous under normal storage condition; however, material should be stored in closed container, in a secure area to prevent container damage and subsequent spillage.
Electrolyte	Store in tightly closed containers in a cool, dry, isolated, well-ventilated area away from heat, sources of ignition and in compatibles. Store in original container. Keep from freezing.

Avoid exposure to high temperatures.

8. Exposure Controls/Person Protection.

Engineering controls: Investigate engineering techniques to reduce exposures use with adequate ventilation a Recommended personal protective Equipment

Eye/Face protection: Use good industrial practice to avoid eye contact. Processing of this product releases vapors or fumes which may cause eye irritation. Where eye contact may be likely wear chemical goggles and have eye flushing equipment available.

Skin protection: Minimize skin contamination by following good industrial hygiene practices Wearing protective gloves is recommended Wash hands and contaminated skin thoroughly after handling.

Respiratory protection: Avoid breathing dust and processing vapors When adequate ventilation is not available wear a NIOSH/MSHA respirator approved for protection against inorganic dusts.

Special clothing: Robber gloves.

Other: Quick-drench eye wash and safety shower.

9. Physical and Chemical Properties

Material	Appearance	Odor	Molecular Weight	Vapor Pressure
LicoO2	Solid, Blue-Black Powder	Odorless	97.88	_
Carbon	Black Powder	Odorless	12.01	-
PTFE	Latex	Odorless	-	-
PVDF	Powder	Odorless	-	-
Copper	Metal	Odorless	63.55	-
Nickel	Metal	Odorless	58.69	-
Aluminum	Metal	Odorless	26.98	-
Electrolyte (EC/DEC/EMC/ 1molLiPF6)	Colorless Liquid, Volatile	with a mild organic order	-	-

Material	Sublimating Point	Freezing Point/ Melting Point	Solubility in water	Density (Specific Gravity)
LiCoO2	-	>1000 deg.C	Insoluble	-

		(1280 deg.F)		
Carbon	3000° C or more	-	Insoluble	2.2g/ml
PTFE	-	-	Soluble	-
PVDF	-	165-172° C	Negligible	1.76-1.8g/ml
Nickel	-	1555° C	Insoluble	8.91g/ml
Aluminum	-	660° C	Insoluble	2.7g/ml
Electrolyte	126° C	-	Partial	1.22(20/20° C)
(EC/EMC/DEC/1 molLiPF6)				WATER=1

10. Stability and Reactivity

Material	Stability	Incompatibility	Hazardous Polymerization	Hazardous Decomposition Products
LiCoO2	Stable	Acids	Dose not polymerize	None
Carbon	Stabl	Strong oxidants	-	-
Bond	Stable	Strong base, ester, Ketones,Sillca, Titanium.	Dose not occur	HF, possible oxides of carbon
Electrolyte	Volatile	Strong reducers, Bases, strong acids, Oxidizing agents, Moist air or water.	Will not occur	Volatile pentafluoride component, Hydrogen fluoride,carbon monoxide Carbon dioxide and other Decomposition products,etc.

11. Ecological Information

Eco Toxicological Information: No information available.
Chemical Fate Information: No data are available.
Environment Effects: No data are available.

12. Disposal Information

Ensure disposal of material in compliance with all local. State and Federal-Laws and Regulations.

13. Toxicological Information

Acute toxicity: None

14. Transport Information

All Unionfortune Lithium batteries comply with the necessary testing requirements under the UN Manual of Tests and Criteria as referenced in the following transportation regulations:

1, UN Recommendations on the Transportation of Dangerous Goods Model Regulations

2, U.S. Department of Transportation hazardous material regulations (HMR),

3, International Civil Aviation Organization (ICAO) Technical Instructions,

4, International Air Transportation Association (IATA) Dangerous goods Regulations,

5. LITHIUM BATTERY (NOT RESTRICTED) meets with all the requirements of UN manual of tests and criteria Part III, subsection 38.3.

Unionfortune batteries are exempted from these regulations since they meet all UN Testing requirements and contain no more than 1 gram of equivalent lithium content.

Batteries should be packaged in accordance with these transportation regulations. It's especially important to ensure that batteries are packed in such a way to prevent short circuits.

15. Regulatory Information

IATA(International Air Transport Association): Dangerous Goods Regulations 50th Edition, Effective 1 January 2009.

16. Other Information

The material safety data sheet is furnished to every manufacturer as a reference to secure the safe handling of chemical. Every manufacturer is requested to carry out appropriate actions for chemical handling as their own responsibility. The supplier makes no warrantee, either express or implied. Concerning of this products. User assumes all risks resulting from its use.

;last data revised 2009/1/1

For and on behalf of
UNIONFORTUNE POWER INDUSTRIES CO,LIMITED

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Authorized Signature(s)

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