

# SAFETY DATA SHEET

## 1. **Product and Company Identification**

**Important Note:** As a solid, manufactured article, exposure to hazardous ingredients is not expected with normal use. This battery is an article pursuant to 29 CFR 1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard requirement. The information contained in this Safety Data Sheet contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product. **The information contained in this page is relevant to the Battery Pack and the information in subsequent pages is relevant for the cell used within this Battery Pack. This information is provided as a service to the customer.**

### PRODUCT IDENTIFICATION

Battery Name	ITECH P/N	Customer P/N	Description	Nominal Voltage (V)	Nominal Capacity (mAh)	Minimum Capacity (mAh)
MACH-5XL	B00860LF	Z9A820-3	MACH-5XL BATTERY PACK, BLACK	3.7V	9,480	7560

### **MANUFACTURER:**

iTECH  
9454 Waples St.  
San Diego, CA 92121  
TEL: 858-458-1500

## 2. **Transport Information:**

In regards to transport, the MACH-5XL Battery Pack is certified to UN38.3 and is packaged for transport no more than two batteries per package meeting the requirements of ICAO/IATA Packing Instruction 965 Section II.

## 3. **SDS for Cell:**

The following pages are the **SDS information provided by the cell manufacturer** for the cell(s) used in this battery pack.



## SAFETY DATA SHEET

*This Safety Data Sheet meets or exceeds the requirements of the Canadian Controlled Product Regulations (WHMIS), the United States Occupational Safety and Health Administration (OSHA) hazard communication standard, and the applicable European Union Commission Directives.*

### 1. Product and Supplier Identification

**Products:**

ICR18650H Cells (2.2Ah)	IBR18650BB Cells (1.5Ah)
ICR18650J Cells (2.4Ah)	IBR18650BC Cells (1.5Ah)
ICR18650K Cells (2.6Ah)	IBR26700A Cells (2.8Ah)
ICR18650M Cells (2.8Ah)	IMR18650E Cells (1.4Ah)
IHR18650A Cells (2.0Ah)	IMR18650F Cells (1.2Ah)
IHR18650AG Cells (2.2Ah)	IMR26700A Cells (2.9Ah)
IHR18650B Cells (2.2Ah)	ICP1003450B Cells (1.8Ah)
IHR18650BL Cells (2.0Ah)	ICP1003450B with PTC Cells (1.8Ah)
IHR18650BN Cells (2.2Ah)	ICP103450CA Cells (2.0Ah)
IHR18650C Cells (2.0Ah)	ICP103450DA Cells (2.2Ah)
IBR18650A Cells (1.5Ah)	
IBR18650B Cells (1.5Ah)	

**Supplier:** E-One Moli Energy (Canada) Ltd,  
 20000 Stewart Crescent,  
 Maple Ridge, BC, Canada, V2X 9E7  
 Telephone: (604) 466-6654  
 Facsimile: (604) 466-6600  
 24-hour number +1 (613) 996-6666 (Transport Emergencies Only)

### 2. Composition

Canada: This is not a controlled product under WHMIS. This product meets the definition of a "manufactured article" and is not subject to the regulations of the Hazardous Products Act.

USA: This battery is an article pursuant to 29 CFR 1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard requirement. The information contained in this Material Safety Data Sheet contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

EU: Not classified as a dangerous preparation.

### 3. Hazards Identification

#### Routes of Entry:

<b>Skin Contact:</b>	No
<b>Skin Absorption:</b>	No
<b>Eye Contact:</b>	No
<b>Inhalation:</b>	No
<b>Ingestion:</b>	No

#### Overview:

##### Notice to reader:

*These cells have passed the quality, performance and manufacturing tests outlined in the United Nations Manual of Tests and Criteria, Part 38.3. Since these cells meet the highest standards they are unlikely to vent causing injury.*

When cells are handled as recommended by the manufacturer, there is no risk of injury. Risk of exposure exists only if the battery is mechanically or electrically abused. Cells must not be crushed, punctured, incinerated, immersed in water, or heated over 100°C. If, perchance, accidental exposure occurs, wash affected area with copious amounts of water for at least 15 minutes and seek medical attention. Fires involving batteries should be extinguished by use of CO<sub>2</sub>, dry chemical powder, or foam.

### 4. First Aid Measures

**EYE CONTACT:** If eye contact with contents of an open cell occurs, immediately flush eyes with large volumes of water for at least 15 minutes, holding eyelids open while flushing. Care must be taken not to cross contaminate the eyes. In all cases of eye contact seek immediate medical attention. Continue to flush during transport to a medical facility.

**SKIN CONTACT:** If skin contact with contents of an open cell occurs, immediately wash skin with soap and copious amounts of water for at least 15 minutes. Remove contaminated clothing and administer a safety shower if contamination of the torso or legs above the knee has occurred. Relief from pain and swelling may be obtained by applying topical ointments after washing. Seek immediate medical advice if significant areas of the body have been affected, or if a severe skin reaction occurs. Treatment must be immediate due to the formation of hydrofluoric acid on moist skin. Launder clothing before reuse and discard any contaminated leather footwear, gloves or clothing. Soak permeable belongings in benzalkonium chloride after washing.

**INHALATION:** If contents of an opened cell are inhaled remove victim to fresh air. If breathing is difficult a trained person may administer oxygen at a rate of 10 to 15 litres per minute. If breathing has stopped administer artificial respiration by use of a pocket mask or bag valve mask. Do NOT give mouth-to-mouth artificial respiration. Get medical attention immediately.

**INGESTION:** If ingestion of contents of an open cell occurs, do not give anything by mouth to a victim who is either unconscious or is losing consciousness. If swallowed, wash mouth with water and have victim spit the wash water out. Repeat. Give one to two glasses of water to wash the throat. Do NOT induce vomiting. If vomiting occurs naturally, have victim lean forward to avoid aspiration. Seek medical attention.

## 5. Fire Fighting Measures

**Incompatibility:** Water, strong oxidizing agents, strong reducing agents, strong acids and strong alkalis. Despite water incompatibility, it is the most effective fire fighting tool to control the spread of fire to other batteries and combustibles.

**Hazardous Combustion Products:** Hydrogen fluoride, phosphorus oxides, sulphur oxides, lithium hydroxide and oxides of carbon.

**Extinguishing Media:** Dry chemical, carbon dioxide, and foam. Water acts as a cooling agent.

**Fire Fighting Instructions:** In case of fire where lithium ion batteries are present, flood the area with water. If any batteries are burning, water may not extinguish them, but will cool the adjacent batteries and control the spread of fire. CO<sub>2</sub>, dry chemical, and foam extinguishers may be preferred for small fires, but also may not extinguish burning lithium ion batteries. Burning batteries will burn themselves out. Virtually all fires involving lithium ion batteries can be controlled with water. When water is used, however, hydrogen gas may be evolved which can form an explosive mixture with air. LITH-X (powdered graphite) or copper powder fire extinguishers, sand, dry ground dolomite or soda ash may also be used. These materials act as smothering agents.

In the case of a fire and the release of hydrogen fluoride, it is critical to protect the skin from any contact. Fire fighters should wear a self-contained breathing apparatus. Burning lithium ion batteries can produce toxic fumes including HF, oxides of carbon, aluminum, lithium, copper, and cobalt. Volatile phosphorus penta fluoride may form at a temperature above 230° Fahrenheit.

## 6. Accidental Release Measures

**Overview:** Evacuate area if fire is present or likely. Spills of this electrolyte from cells pose a risk to the safety of responders if water is present. Contact with water causes the production of extremely toxic and corrosive hydrofluoric acid. Remove all sources of ignition. Electrolyte will remove or soften painted surfaces causing slipperiness to be a hazard.

**Personal Protection:** Restrict access to area until completion of clean-up. For all spills, protect skin and eyes from contact with electrolyte. In all cases, wear self-contained breathing apparatus.

**Environmental Precautions:** Prevent from migration into soil and natural waterways. Absorb spilled material with non-reactive absorbent such as vermiculite, clay or earth.

**Cleanup Procedures:** Evacuate spill area immediately and remove sources of ignition. Do NOT touch spilled material. Cleanup personnel must be trained in the safe handling of this product. If possible ventilate area by means of non-sparking, grounded ventilation system. Spills may be absorbed on non-reactive absorbents such as vermiculite. Place cells into individual plastic bags and then place into appropriate containers and close tightly for disposal. Ensure that cleanup procedures do not expose spilled material to any moisture. Immediately transport closed containers outside.

Lined steel drums are suitable for storage of damaged cells until proper disposal can be arranged.

## 7. Handling and Storage

**Handling Procedures:** Do not short-circuit, open, disassemble, crush or burn cell. Do not expose cell to extreme heat or fire.

**Storage:** Store in a cool, dry, well-ventilated area, out of direct sunlight and away from heat and ignition sources.

## 8. Exposure Controls, Personal Protection

**Engineering Controls:** Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fume and vapour.

**Respiratory Protection:** Not necessary under normal conditions of use.

**Skin Protection:** Not necessary under normal conditions of use.

**Eye and Face Protection:** Not necessary under normal conditions of use.

**Other:** Have a safety shower and eye wash station readily available.

## 9. Physical and Chemical Properties

<b>Appearance:</b>	Cylinder	<b>Vapour Density:</b>	Not applicable
<b>Odour:</b>	None, unless leaking then medium sweet and fruity odour	<b>Melting Point:</b>	Not applicable
<b>pH:</b>	Not applicable	<b>Boiling Point:</b>	Not applicable
<b>Vapour Pressure:</b>	Not applicable	<b>Relative Density:</b>	Not applicable
<b>Solubility:</b>	Not applicable	<b>Partition Coefficient:</b>	Not applicable
		<b>Evaporation Rate:</b>	Not applicable
		<b>Percent Volatiles:</b>	Not applicable

## 10. Stability and Reactivity

**Chemical Stability:** Stable.

**Incompatibility:** Not available.

**Hazardous Decomposition Products:** May decompose to produce hydrogen fluoride, phosphorus oxides, sulphur oxides, sulphuric acid, lithium hydroxide, carbon monoxide and carbon dioxide.

**Hazardous Polymerization:** Hazardous polymerization will not occur.

## 11. Toxicological Information

<b>Acute Exposure:</b>	See Section 3
<b>Chronic Exposure:</b>	See Section 3.
<b>Exposure Limits:</b>	See Section 2.
<b>Irritancy:</b>	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.
<b>Sensitization:</b>	Not applicable.
<b>Carcinogenicity:</b>	Not applicable under normal use, however electrolyte contains a suspected cancer hazard.
<b>Teratogenicity:</b>	Not applicable.
<b>Reproductive toxicity:</b>	Not applicable.
<b>Mutagenicity:</b>	Not applicable.
<b>Synergistic Products:</b>	None reported.

## 12. Ecological Information

**Environmental toxicity:** No data available.

**Biodegradability:** No data available.

## 13. Disposal Considerations

**Canadian Environmental Protection Act:** Spent cells are not considered hazardous waste. Cells involved in a fire may be considered to be hazardous waste. Comply with all provincial and local regulations.

**Resource Conservation and Recovery Act (RCRA):** Spent cells are not considered hazardous waste. Cells involved in a fire may be considered to be hazardous waste. Comply with all state and local regulations.

## 14. Transport Information

**Canadian Transportation of Dangerous Goods Regulations:** These cells have passed the tests listed in the United Nations Manual of Tests and Criteria, Part 38.3. Not regulated for transport under Special Provision 34 of the Canadian Transport of Dangerous Goods Regulations

**United States Hazardous Materials Regulations (49 CFR):** These cells have passed the tests listed in the United Nations Manual of Tests and Criteria, Part 38.3. Not regulated for transport by Special Provision 188 of the United States Code of Federal Regulations Title 49.

**International Air Transport Association (IATA):** These cells have passed the tests listed in the United Nations Manual of Tests and Criteria, Part 38.3. Quantities of lithium-ion cells and batteries that exceed the "per package" limits described in Section II of the packing instruction 965 to 967 must be assigned to class 9 and shipped as "Section IB". Packages must bear the Class 9 Hazard label in addition to the lithium battery handling label. Lithium-ion batteries larger than those permitted by Section II of the applicable packing instruction must be assigned to Class 9 and offered for consignment as UN 3480 (Lithium-ion batteries) or UN3481 (Lithium-ion Batteries contained in Equipment or Lithium-ion Batteries packed with Equipment). All applicable requirements contained in the IATA Dangerous Goods Regulations

relating to these commodities must be complied with, including the training requirements; a "Shipper's Declaration of Dangerous Goods" must be issued and packages must bear the class 9 hazard label.

These cells must be packaged in accordance with Packing instruction 965-967 and Special Provisions A88, A99, A154, A164 or A183, as applicable.

**International Maritime Organization (IMO):** These cells have passed the tests listed in the United Nations Manual of Tests and Criteria, Part 38.3. Not regulated for transport under Special Provision 188 of the International Maritime Dangerous Goods Code (IMDG).

**Any Lithium-ion cells or batteries subsequently repackaged or reshipped are required to meet all of the requirements specified above. Any cells that have subsequently been manufactured into batteries must be re-tested to pass the tests in the United Nations Manual of Tests and Criteria, Part 38.3 and any other applicable safety certifications.**

## 15. Regulatory Information

### Canadian Federal Regulations:

**Canadian Environmental Protection Act:** All ingredients in the electrolyte are on the Domestic Substances List.

**WHMIS Classification:** Not controlled, manufactured article

### United States Federal Regulations:

**Toxic Substances Control Act:** All ingredients are listed in the inventory.

**OSHA:** Does not meet criteria as per Part 1910.1200, manufactured article.

**CERCLA:** Does not meet criteria

**SARA 313:** Does not meet criteria

**SARA 311/312 EPA Hazard Categories:** Does not meet criteria

### EU Regulations

**EINECS:** Not applicable

**EU Classification:** Not classifiable

**Labels:** None

## 16. Other Information

**Preparation Date:** October 30, 2013

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**Disclaimer:** This Material Safety Data Sheet was prepared in accordance with criteria and requirements of the Hazardous Products Act and the Controlled Products Regulations, European Union Commission Directives and the Occupational Safety and Health Administration using information provided by the manufacturer and other sources including CCINFO (Chemical Information published by the Canadian Centre for Occupational Health and Safety). The

information in the Material Safety Data Sheet is offered for your consideration and guidance when exposed to this product. E-One Moli Energy (Canada) Ltd. expressly disclaims all expressed or implied warranties and assumes no responsibilities for the accuracy or completeness of the data contained herein. The data in this MSDS does not apply to use with any other product or in any other process.

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