



**1. Identification**

**Product Identifier:** LITHIUM ION BATTERIES and LITHIUM ION POLYMER BATTERIES  
**Common Name:** Lithium Ion Batteries and Lithium Ion Polymer Batteries  
**Synonyms:** Li-Ion Batteries, Li-Ion Secondary Batteries, Li-Ion Rechargeable Batteries  
**Recommended Use:** Energy source for electronic device

**Manufacturer:**

Motorola Mobility LLC  
 222 Merchandise Mart Plaza, Suite 1800  
 Chicago, IL 60654 USA  
**Phone:** 1-847-523-5000

**2. Hazard(s) Identification**

Hazard Classification	Batteries are considered "articles" under 29 CFR 1910.1200(c) and are not subject to the 29 CFR 1910.1200 OSHA requirements, Canadian WHMIS requirements or GHS requirements.
Hazard / Caution Statement	WARNING – Batteries may explode in a fire.
Precautionary statement	To prevent exposure to internal contents and potentially hazardous materials, do not open, disassemble, crush, burn, expose to high temperatures (> 60 C or 140 F), or subject to other types of abuse.

**3. Composition / Information on Ingredients**

Li-ion cells are composed of the following major ingredients:

Cell component	Common chemical name / General name	CAS number	Concentration range
Positive electrode	Lithiated cobalt oxides, Lithiated manganese oxides, and/or Proprietary lithiated metal oxides	12190-79-3 12057-17-9 N/A	20-40%
Negative electrode	Graphite	7782-42-5	10-20%
Binders	Polyvinylidene difluoride and/or polytetrafluoroethylene	24937-79-9 9002-84-0	0-3%
Electrolyte salt	Lithium salt (one or more of lithium hexafluorophosphate and lithium tetrafluoroborate)	21324-40-3 14283-07-9	1-5%
Electrolyte solvent	Organic solvents including one or more of the following: ethylene carbonate, diethylcarbonate, dimethylcarbonate, ethylmethylcarbonate, and propylene carbonate.	96-49-1 105-58-8 616-38-6 623-53-0 108-32-7	5-20%
Other components	Copper	7440-50-8	5-10%
	Aluminum	7429-90-5	5-40%
	Nickel	7440-02-0	0-5%
	Polyethylene and/or polypropylene	9002-88-4 9003-07-0	1-3%

As manufactured, Li-ion cells do not contain lithium metal.

**4. First-Aid Measures**

Batteries do not present a health hazard under normal use and handling. First-aid measures in the event of exposure to internal cell contents are:

Inhalation	Avoid inhaling any vented gases. Remove to fresh air immediately. If breathing is difficult, seek emergency medical attention.
Eyes and Skin	Eyes: May cause eye irritation. Rinse with running water for at least 15 minutes and seek medical attention. Skin: May cause skin irritation. Wash with running water for at least 15 minutes.
Ingestion	Ingestion of battery chemicals can be harmful. Drink milk/water and induce vomiting. Seek medical attention.

## 5. Fire-Fighting Measures

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Fires involving these types of battery packs should be flooded with water or use CO<sub>2</sub>, foam, or dry chemical extinguishing media. Fires involving large quantities of batteries may produce toxic, corrosive, or irritating fumes including HF.

## 6. Accidental Release Measures

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If batteries are spilled and damaged, they should be disposed of according to the disposal section.

## 7. Handling and Storage

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The battery pack and enclosed cells should not be opened, disassembled, crushed, burned, or exposed to high temperatures (> 60°C or 140°F).

## 8. Exposure Controls / Personal Protection

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No personal protection is required during normal handling and use. Exposure to the ingredients contained within the cells within the battery pack could be harmful under some circumstances. In case of exposure to cell contents, wash affected area for at least 15 minutes with generous amounts of water and seek medical attention.

## 9. Physical and Chemical Properties

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These batteries are solid articles. Properties such as odor, pH, vapor pressure, solubility, etc. are not applicable.

## 10. Stability and Reactivity

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Reactivity	None during normal handling and use
Incompatibility	None during normal handling and use
Hazardous Decomposition Products	None during normal handling and use
Conditions to Avoid	The battery pack and enclosed cells should not be opened, disassembled, crushed, burned, or exposed to high temperatures.

## 11. Toxicological Information

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There are no known toxicological properties of the batteries during normal handling and use.

## 12. Ecological Information

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There are no known ecological risks of the batteries during normal handling and use.

## 13. Disposal Considerations

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Batteries contain recyclable materials. Recycling options available in your local area should be considered when disposing of this product. Do not dispose of in fire.

## 14. Transport Information

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Batteries comply with all applicable shipping regulations as prescribed by industry and legal standards.

Batteries are less than 100 Watt-hours and meet the requirements for transportation under:

- 1) International Civil Aviation Organization (ICAO) Technical Instructions and the International Air Transport Association (IATA) Dangerous Goods Regulations (58th Edition 2017) Packing Instructions 965 Section IB or Section II (UN 3480, batteries), 966 Section II (UN 3481, batteries packed with equipment), and 967 Section II (UN 3481, batteries contained in equipment);
- 2) International Maritime Organization (IMO) Special Provisions 188 and 230;
- 3) U.S. Department of Transportation (DOT) 49 CFR 173.185.

These products are tested, packaged and labeled in accordance with all applicable requirements as outlined in these transportation regulations. Batteries are tested in accordance with the *UN Manual of Tests and Criteria*, Part III, Subsection 38.3.

**For transportation emergencies involving Motorola Mobility battery products, call CHEMTREC at 1-800-424-9300.**

## 15. Regulatory Information

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The products referenced herein are "articles" under 29 CFR 1910.1200(c) and are not subject to OSHA's requirements for safety data sheets under its Hazard Communication Standard, 29 CFR 1910.1200.

## 16. Other Information

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Notice: The information and recommendations set forth are made in good faith and are believed to be accurate at the date of preparation. Motorola Mobility makes no warranty expressed or implied with respect to this information and recommendations and disclaims all liability from reliance on it. "Equivalent lithium content" information is available from the manufacturer.

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