


<b>Product Safety Data Sheet</b>	<b>Document No.</b>	
	<b>Issue</b>	<b>01.02</b>
	<b>Date Last Amended</b>	<b>January 2018</b>
	<b>Last Amended by</b>	<b>DCS</b>
<b>Document Title</b>	<b>LB12M Lithium Battery PSDS</b>	



<b>Product Name:</b> Lithium Battery Pack	<b>Type №:</b> LB12M
<b>For use with:</b> M100 and M100X MSLD	
<b>Chemistry:</b> LiMnO <sub>2</sub>	<b>Total Weight:</b> 35g <b>Nominal Voltage:</b> 6V
<b>Construction:</b> Battery containing three Energizer 123 cells connected in series	
<b>Lithium weight/cell:</b> 0.55g	<b>Total lithium weight/battery:</b> 1.1g

### Section 1 – Manufacturer Information

**Manufactured by:** Ocean Signal Ltd., Unit 4, Ocivan Way, Margate, Kent, CT9 4NN, United Kingdom

**Telephone number:** +44 (0)1843 282930

### Section 2 – Hazards Identification

This battery module is a self contained unit. In this condition there are no hazards identified. Should the battery be damaged to cause leakage of the cell contents, the following hazards should be noted.

**Ingestion:** Swallowing the contents of a damaged battery can be harmful

**Inhalation:** Contents of a damaged battery can cause respiratory irritation

**Skin Contact:** Contents of a damaged battery can cause irritation

**Eye Contact:** Contents of a damaged battery can cause severe irritation


### Section 3 – Ingredients

Important Note: This battery should not be opened or burned. Exposure to the contents may be harmful.

<b>Material or Ingredient</b>	<b>PEL (OSHA)</b>	<b>TLV (ACGIH)</b>	<b>%/wt.</b>
Lithium (CAS# 7439-93-2)	None Established	None established	<6
Lithium Trifluoromethanesulfonate (CAS# 33454-82-9)	None Established	None Established	<3
Lithium Trifluoromethanesulfonimide (CAS# 90076-65-6)	None Established	None Established	<3
Manganese Dioxide (CAS# 1313-13-9)	5mg/m <sup>3</sup> Ceiling (as Mn)	0.2mg/m <sup>3</sup> TWA (as Mn)	<42
1,2-Dimethoxyethane (CAS# 110-71-4)	None Established	None Established	<6
1,3-Dioxolane (CAS# 646-06-0)	None Established	None Established	<8
Propylene Carbonate (CAS# 108-32-7)	None Established	None Established	<8
Carbon Black (CAS# 1333-86-4)	3.5mg/m <sup>3</sup> TWA	3.5mg/m <sup>3</sup> TWA	<1

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<b>Material or Ingredient</b>	<b>PEL (OSHA)</b>	<b>TLV (ACGIH)</b>	<b>%/wt.</b>
Graphite (CAS# 7782-42-5)	15mg/m <sup>3</sup> TWA (total dust) 5mg/m <sup>3</sup> TWA (respirable fraction)	5mg/m <sup>3</sup> TWA (respirable fraction)	<3
Non Hazardous Components			
Steel (CAS#7439-89-6)	None Established	None Established	<20%
Plastic and other	None Established	None Established	Remainder

#### **Section 4 – First Aid Measures**

- Ingestion:** Seek medical advice. Do not induce vomiting or give food or drink.
- Inhalation:** Seek medical attention. Provide fresh air
- Skin Contact:** Remove any contaminated clothing and wash affected areas with soap and water.
- Eye Contact:** Seek medical attention. Immediately flush eyes with water for a minimum of 15minutes. Ensure that both upper and lower eyelids are lifted during the flushing process.

#### **Section 5 – Fire Fighting Measures**

In case of fire involving lithium batteries, flood the area with water or smother with a class D fire extinguishing material suitable for lithium metal. (e.g. Lith-X)

Note: Water may not completely extinguish burning lithium batteries but will keep adjacent batteries cool reducing the risk of the fire spreading. As burning batteries will burn themselves out, flooding with water will control virtually all fires involving lithium batteries. However, the contents of lithium batteries will react with water to release hydrogen gas. In enclosed spaces this can cause an explosive mixture. Use a smothering agent in enclosed spaces which will extinguish burning lithium batteries.

Fire responders should wear self contained breathing apparatus. Burning lithium manganese dioxide batteries produce toxic and corrosive lithium hydroxide fumes.

#### **Section 6 - Accidental Release Measures**

Should batteries leak the following actions are recommended.


- Ventilation:** Keep room containing leaking lithium batteries well ventilated
- Respiratory Protection:** Avoid exposure to fumes from open or leaking batteries
- Eye protection:** Wear safety glasses with side shields when handling leaking batteries
- Gloves:** Neoprene or natural rubber gloves should be worn when handling leaking batteries
- Storage:** Leaking batteries should be stored in a leak proof container

#### **Section 7 – Handling and Storage**

- Storage:** Store in a cool, well ventilated area. Elevated temperature may result in shortened battery life.

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**Handling:** Avoid accidentally short circuiting batteries. Prolonged short circuiting cause the battery temperature to rise and significantly reduce battery life.

**Charging:** These batteries are not designed for charging. Do not attempt to recharge the battery. Recharging may result in cell venting or rupture.

### **Section 8 – Exposure Controls / Personal Protection**

No special requirements are required for this battery under normal circumstances.

### **Section 9 – Physical and Chemical Properties**

Boiling Point at 760mm Hg (°C)	Not applicable for this item
Vapour Pressure (mm Hg at 25°C)	Not applicable for this item
Vapour Density	Not applicable for this item
Density (g/cm <sup>3</sup> )	
Percent volatile by volume (%)	Not applicable for this item
Evaporation Rate	Not applicable for this item
Physical State	Solid
Solubility in water	Not applicable for this item
pH	Not applicable for this item
Appearance and odour	Solid object / no odour

### **Section 10 – Stability and Reactivity**

No stability or reactivity issues identified

### **Section 11 – Toxicological Information**

This battery module is not classified as hazardous waste. This battery module has been manufactured in accordance with the EU ROHS directive, 2002-95-EC.

### **Section 12 – Ecological Information**

No ecological issues have been identified for this battery

### **Section 13 – Disposal Considerations**

Dispose of battery module in accordance with applicable local regulations


### **Section 14 – Transport Information**

This battery module has been tested in accordance with subsection 38.3 of part III of the UN Manual of Tests and Criteria.

This battery module should be transported by air in accordance with the IATA dangerous goods regulations 59<sup>th</sup> edition, class 9, UN3090, proper name "Lithium metal batteries" and packed according to packing instruction 968 section II (<3) or section Ib (<2).

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When supplied with equipment it is class 9, UN3091, proper name "Lithium metal batteries contained in equipment" and should be packed in accordance with packing instruction 970 section II.

The M100 can be carried as personal luggage on board aircraft under the conditions of clause 2.3.5.9 of the IATA regulations.

The battery modules may be transported by road under special provision 188 of the ADR.

### **Section 15 Regulatory Information**

No additional regulatory requirements are identified for this battery module.

### **Section 16 – Other**

No information

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