Product Safety Data Sheet	Document No.	925S-06057
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	Last Amended by	D.Heath
Document Title	LB12M Lithium Battery PSDS	

Product Name:	Lithium Battery Pack			**Type №:**	LB12M
For use with:	M100 and M100X MSLD				
Chemistry:	$LiMnO_2$	**Total Weight:**	35g	**Nominal Voltage:**	6V
Construction:	Battery containing two Energizer 123 cells connected in series				
Lithium weight/cell:	0.55g	**Total lithium weight/battery:**			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.

Material or Ingredient	PEL (OSHA)	TLV (ACGIH)	%/wt.
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^3 Ceiling (as Mn)	0.2mg/m^3 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^3 TWA	3.5mg/m^3 TWA	<1

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Material or Ingredient	PEL (OSHA)	TLV (ACGIH)	%/wt.
Graphite (CAS# 7782-42-5)	15mg/m^3 TWA (total dust) 5mg/m^3 TWA (respirable fraction)	5mg/m^3 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 of 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 can 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^3)	
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, 2011/65/EU.

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. Summary test reports are available from Ocean Signal on request.

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This battery module should be transported by air in accordance with the IATA dangerous goods regulations 65th edition, class 9, UN3090, proper name "Lithium metal batteries" and packed according to packing instruction 968 section II (<3) or section Ib (<2).

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 2.3.5.8 of the IATA regulations.

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

Section 15 Regulatory Information

No additional regulatory requirements are identified for this battery module.

Section 16 – Other

No information

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