Product Safety Data Sheet	Document No.	925S-06053
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	Last Amended by	D. Heath
Document Title	LB7P Lithium Battery Module PSDS	

Product Name:	rescueME PLB1 Lithium Battery Module		**Type №:**	LB7P 901S-01227	
For use with:	rescueME PLB1				
Chemistry:	$LiMnO_2$	**Total Weight:**	51g	**Nominal Voltage:**	9V
Construction:	Battery module containing three CR123A cells connected in series.				
Lithium weight/cell:	0.55g		**Total lithium weight/battery:**		1.65g

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 sealed unit. The batteries are not hazardous when used according to the instructions of the manufacturer under normal conditions. In case of abuse, there is hazard of rupture, fire, heat, leakage of internal components which could cause casualty loss. Abuses including, but not limited to, the following cases: charged for long time, short circuited, put into fire, whacked with hard object, punctured with acute object, crushed and broken. 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 module should not be opened or burned. Exposure to the contents may be harmful.

Material / Ingredient	CAS Number	PEL (OSHA)	TLV (ACGIH)	%/wt.
Lithium	7439-93-2	None Established	None Established	<6%
Lithium Trifluoromethanesulfonate	33454-82-9	None Established	None Established	<3%
Manganese Dioxide	1313-13-9	5mg/m^3 Ceiling (as Mn)	0.2mg/m^3 TWA (as Mn)	<42%
1,2-Dimethoxyethane	110-71-4	None Established	None Established	<6%
1,3-Dioxolane	646-06-0	None Established	None Established	<8%
Propylene Carbonate	108-32-7	None Established	None Established	<8%
Carbon Black	1333-86-4	3.5mg/m^3 TWA	3.5mg/m^3 TWA	<1%
Graphite	7782-42-5	15mg/m^3 TWA (total dust) 5mg/m^3 TWA (respirable fraction)	2mg/m^3 TWA (respirable fraction)	<3%
Non-Hazardous Components: Steel Plastic and Other	65997-19-5	None Established None Established	None Established None Established	<20% Remainder

Section 4 – First Aid Measures

The following advice applies only to damaged battery packs that are leaking:

Ingestion: Seek medical attention. DO NOT induce vomiting or give food or drink.

Inhalation: Seek medical attention. Remove from exposure and move to fresh air immediately. Use oxygen if available.

Skin Contact: Seek medical attention. Remove any contaminated clothing and rinse skin with plenty of water or shower for 15 minutes.

Eye Contact: Seek medical attention. Immediately flush eyes with water for a minimum of 15 minutes. Ensure that both upper and lower eyelids are lifted during the flushing process.

Section 5 – Fire Fighting Measures

Characteristics of Hazard	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapours.
Hazardous Combustion Products	Carbon Dioxide.
Fire-extinguishing methods and extinguishing media	Use extinguishing measures that are appropriate to local circumstances and surrounding environment.*
Attention in Fire-extinguishing	Wear self-contained breathing apparatus and full protective gear.

*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.

Section 6 – Accidental Release Measures

Attention! Corrosive Material. In case of rupture the following actions are recommended:

Personal precautions, protective equipment and emergency procedures:	Avoid contact with skin, eyes and clothing, Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Refer to protective measures in Section 7 and Section 8.
Environmental precautions:	Prevent product from contaminating soil and from entering sewers or waterways.
Methods and materials for containment:	Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately.
Methods and materials for cleaning up:	Absorb spilled material with an inert absorbent (dry sand or earth). Scoop contaminated absorbent into an acceptable waste container. Collect all contaminated absorbent and dispose according to directions in Section 13. Scrub the area with detergent and water; collect all contaminated wash water for proper disposal.

Section 7 – Handling and Storage

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Elevated temperature may result in shortened battery life. Store locked up. Keep out of reach of children.

Handling: The battery may explode or cause burns if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity. Prolonged short-circuiting can cause the battery temperature to rise and significantly reduce battery life.

Charging: Non-rechargeable batteries: Do not attempt to recharge as may result in rupture.

Other Precautions: In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection equipment.

Section 8 – Exposure Controls / Personal Protection

No special requirements are required for this battery under normal circumstances. In case of rupture the following actions are recommended:

Exposure Control: Use adequate ventilation to keep airborne concentrations low. If it is used under conditions that generate particulates, the ACGIH TLV-TWA of 3mg/m^3 respirable fraction (10mg/m^3 total) should be observed.

Personal Protective Equipment:

Eye and Face Protection. If there is a hazard of contact use tight sealing safety goggles and face protection shield.

Skin and Body Protection. If there is a hazard of contact wear protective gloves and protective clothing.

Respiratory Protection. If exposure limits are exceeded or irritation is experienced ventilation and evacuation may be required.

Section 9 – Physical and Chemical Properties

Physical State	State: Solid Appearance: Rounded cuboid Colour: Black Odour: None (if leaking, smells of medical ether)
pH	Not applicable for this item
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
Relative Density	Not applicable for this item
Percent volatile by volume (%)	Not applicable for this item
Evaporation Rate	Not applicable for this item
Solubility (water)	Not applicable for this item
Solubility (other)	Not applicable for this item

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:

Waste Treatment: Recycle or dispose of in accordance with government, state and local regulations.

Attention for Waste Treatment: Deserted batteries shouldn't be treated as ordinary trash; shouldn't be thrown into fire or placed in high temperature; shouldn't be dissected, pierced, crushed or treated similarly. The best disposal method is recycling.

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.

The packaging used for our battery products has been successfully tested and complies with the 3 metre stack test requirement outlined in the IATA Dangerous Goods Regulation (DGR). The test verified the ability of the packaging to withstand a superimposed load representative of stacking during transport.

This battery module should be transported by air in accordance with the IATA dangerous goods regulations 67th edition, class 9, UN3090, proper name "Lithium metal batteries" and packed according to packing instruction 968 section Ib.

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 LB7P battery can be carried as personal luggage with the rescueME PLB1 on board aircraft under the conditions of clause 2.3.5.8 of the IATA dangerous goods regulations.

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

Section 15 – Regulatory Information

This battery module has been manufactured in accordance with applicable requirements of:

- Regulation (EU) 2023/1542 concerning batteries and waste batteries;
- Directive 2011/65/EU (RoHS);
- EC REACH Regulation EC1907/2006
- applicable transport regulations including UN38.3, IATA DGR, ADR and IMDG.

No additional regulatory requirements are identified for this battery module under normal conditions of use.

Section 16 – Other

No information