MATERIAL SAFETY DATA SHEET
Products: L6 / L6A / L7A

SECTION 1: IDENTIFICATION.

Product Name.	Marine safety light systems Types L6, L6A, L7A
Manufacturers Name.	**Daniamant Limited**
Address.	Unit 3, The Admiral Park, Airport Service Road, Portsmouth, Hants, PO3 5RQ UK
Telephone No.	+44 (0) 23 9267 5100 (Switchboard)
Fax.	+44 (0) 23 9267 5101 (Fax)
Emergency Nos.	FOR CHEMICAL EMERGENCY,SPILL,LEAK,FIRE,EXPOSURE or ACCIDENT CALL CHEMTREC Day or Night 00 1 703-527-3887 (Shipment to and from USA) Chemtrec Office. 800-424-9300 (Internal N. America movements) Chemtrec Office D806 Chemtrec Company Code 205617 Company Number
Description.	Lithium powered marine safety light systems are designed to be stored for up to five years before use. The battery cells are hermetically sealed pressurised primary Lithium / Manganese Dioxide and as supplied are electronically protected by a fuse and from external environment by a moulded plastic casing. In this state the units constitute no definable hazard to health. However disassembly, abuse or destruction of the battery cell will expose the contents and the following Health And Safety Hazards.

SECTION 2: INFORMATION OF INGREDIENTS.

Hazardous components:	CAS No.	% optional	OSHA/PEL	ACGIH TLV 5 TEL
Carbon	**1333-86-4**	**2.25%**		
Lithium Metal	**7439-93-2**	**3.24%**	**n/a**	**n/a**
Manganese Dioxide	**1313-13-9**	**40.56%**	**5 mg/m3**	**5 mg/m3**
Propylene carbonate	**108-32-7**	**6.75%**	**n/a**	**n/a**
1.2 Dimethoxyethane	**110-71-4**	**5.78%**	**n/a**	**n/a**
Lithium Perchlorate	**7791-03-9**	**1.53%**	**n/a**	**n/a**
Tetrahydrofuran	**109-99-9**	**5.89%**	**200 ppm**	**200 ppm**

SECTION 3: HAZARD IDENTIFICATION.

Lithium Metal: This is flammable when in contact with water. It reacts violently to produce hydrogen and lithium hydroxide. Use only soda ash, sodium chloride or graphite to extinguish flames.

Manganese Dioxide: Poison by intravenous and intratracheal routes moderately toxic by subcutaneous route. Experimental reproductive effects. A powerful oxidiser, flammable by chemical reaction. Must not be heated or rubbed in contact with easily oxidizable matter

Propylene Carbonate:

1.2 Dimethoxyethane: Experimental teratogen. Other experimental reproduction effects readily forms an explosive peroxide. A very dangerous fire hazard when exposed to flame, heat or oxidisers. When heated to decomposition it emits acrid smoke and fumes.

Lithium Perchlorate: Moderately toxic. Skin, eye, and mucous membrane irritant an oxidiser which is incompatible with nitromethane acetone hydrogen and oxygen. When heated to decomposition it emits very toxic fumes.

SECTION 4: FIRST AID MEASURES.

EYES: Irrigate thoroughly with water for at least 15 minutes. Obtain medical attention.

INHALATION: Remove from exposure, rest and keep warm. In severe cases, or if exposure has been great. Obtain medical attention.

SKIN: Wash off skin thoroughly with water. Remove contaminated clothing and wash before re-use. Unless contact has been slight , Obtain medical attention.

INGESTION: Wash out mouth thoroughly with water and give plenty of water to drink. Obtain medical attention.

FURTHER TREATMENT: All cases of eye contamination, persistent skin irritation and casualties who have swallowed this substance or been affected by breathing its vapours should be seen by a doctor.

Emergency and first aid procedures: If cell vents, personnel should be evacuated from contaminated areas. Other materials are either inert or have low hazard associated with their exposure.

SECTION 5: FIRE FIGHTING MEASURES.

If cells are directly involved in fire, DO NOT USE SAND, DRY POWDER OR SODA ASH, GRAPHITE, METAL CLASS D EXTINGUISHERS OR A FIRE BLANKET. Copious quantities of a water based foam is the only recommended extinguishing media for fires involving cells. If a fire is in an adjacent area, and cells are packed in their original containers, the fire can be fought based on fuelling material e.g. paper and plastic products. Avoid fume inhalation.

In the case where significant quantities of Lithium / Manganese Dioxide batteries have been involved in a fire, account must be taken of the possibility that flammable gases might be evolved should water come into contact with the cold battery residues. These gases might include Acetylene, Hydrogen, and Cyanide. It is recommended that ventilation should be maximised should this scenario be realised.

EXTINGUISHING MEDIA: copious quantities of a water based foam.

SECTION 6: ACCIDENTIAL RELEASE MEASURES.

Do not breathe vapours or touch liquid with bare hands. If the skin has come into contact with the electrolyte it should be washed thoroughly with water. Earth or sand should be used to absorb the exudation, seal leaking battery and earth in a heavy-duty polythene bag and dispose of as special waste.

SECTION 7: HANDLING AND STORAGE.

Handle and store in cool well-ventilated area keep out of direct sunlight.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

HANDLING: Do not short circuit or expose to temperatures above the temperature rating of the battery. Do not recharge, over-discharge, force discharge, immerse, puncture or crush.

STORAGE: Store in a cool place but prevent condensation on cells and batteries. Elevated temperatures can result in shortened battery life and degrade performance. Do not store batteries in high humidity environments for long periods. External corrosion of the Nickle plated can and tags could result in the formation of toxic metal salts. Avoid ingestion, observe personal hygiene wash hands after contact.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

Appearance:	Light in a plastic housing.
Odour:	If leaking, smells of medical ether.
Stability in Water:	Product is waterproof.
Reaction with Water:	Only if damaged.
Flash point:	Not applicable unless individual components exposed.
Flammability:	Not applicable unless individual components exposed.
Relative density:	Not applicable unless individual components exposed.
Solubility in water:	Not applicable unless individual components exposed.
Solubility other:	Not applicable unless individual components exposed.

SECTION 10: STABILITY AND REACTIVITY.

Hazardous materials are housed within a hermetically sealed unit, under normal conditions this unit is Non-hazardous.

Hazardous reactions: Lithium metal reacts with water to produce highly flammable gasses.

Hazardous Decomposition Reaction: Toxic fumes , and may form peroxides.

SECTION 11: TOXICOLOGICAL INFORMATION.

Signs & Symptoms:	None, unless battery ruptures. In event of exposure to internal contents, corrosive fumes will be very irritating to skin, eyes and mucous membranes. Over exposure can cause symptoms of non-fibrotic lung injury and membrane irritation.
Inhalation:	Lung irritant.
Skin Contact:	Skin irritant.
Eye contact:	Eye irritant.
Ingestion Medical conditions:	Poisoning if swallowed.
Generally aggravated by exposure:	In the event of exposure to internal contents, eczema, skin allergies, lung injuries, asthma and other respiratory disorders may occur.

SECTION 12: ECOLOGICAL INFORMATION.

Mammalian effects:	None known at present.
Eco-toxicity:	None known at present.
Bioaccumulation Potential:	Slowly bio-degradable.
Environmental Fate:	None known environmental hazards at present.

SECTION 13: DISPOSAL

Disposal.	DO NOT INCINERATE or subject cells to temperature in excess of 90℃. Such abuse can result in loss of seal, leakage, and/or cell explosion. Dispose of in accordance with appropriate local regulations. DO NOT ATTEMPT TO DISMANTLE THIS PRODUCT.

SECTION 14: TRANSPORT INFORMATION

UN Hazard Code.	Excepted from transport packing, marking and labelling regulations under surface ADR & IMDG Special Provision 188, IATA Packing Instruction 970 Section II. Meets the conditions of IMDG Special Provision 230.
UN Number	3091
UN Proper Shipping Name	Lithium Metal Batteries Contained in Equipment
Packing Group.	II
Lithium Content L6/L6A/L7A	1.08g (lithium metal battery)
Watt hour rating	9.30wh
Note	Packages should be labelled with the Lithium Battery Handling label.

SECTION 15: REGULATORY INFORMATION	
Classification.	Non Hazardous.
Hazard Symbol.	N/A
Risk Phrases.	R8 Contact with combustible material may cause fire. R11, Highly flammable. R14/15 Reacts violently with water liberating extremely flammable gases. R17 Spontaneously flammable in air. R19 May form explosive peroxides. R20 Harmful by inhalation. R22 Harmful if swallowed. R34 Causes burns. R36/37/38 Irritating to eyes, respiratory system and skin. R41 Risk of serious damage to the eyes.
Safety Phrases.	S1/2 keep locked up and out of the reach of children. S8, keep away from moisture. S16 keep away from sources of ignition - no smoking. S17 keep away from combustible material. S24/25 when using do not eat drink or smoke. S26/27 in case of contact with eyes, rinse immediately with plenty of water. S29 do not empty into drains. S33 take precautionary measures against static discharges. S36, wear suitable protective clothing. S37 wear suitable gloves. S38 in case of insufficient ventilation wear suitable respiratory equipment. S43 in case of fire, see fire fighting precautions. S45 in case of incident, seek medical attention.

SECTION 16: OTHER INFORMATION.	
	N/a

The above information is given based on the present state of our knowledge of this product and is, to the best of our knowledge and belief, accurate at the time of publication. No warranty given, either express or implied, with respect to the accuracy, reliability or completeness of the information contained herein and we will assume no liability resulting from its use. The users must satisfy themselves that the information provided is entirely suitable for their particular use.

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