PRODUCT SAFETY DATA SHEET
PRODUCTS: DAN M3/MR3/ML3/W3/WR3/WL3/W3 Polar

SECTION 1: IDENTIFICATION	
PRODUCT NAME	Marine Safety Light Systems DAN M3/MR3/ML3/W3/WR3/WL3/W3 Polar
MANUFACTURERS NAME	**DANIAMANT A/S**
ADDRESS **TELEPHONE NO.** **FAX NO.**	Industrivej 24C, DK-3550 Slangerup, Denmark. +45 47 37 38 00 +45 47 37 38 09
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/sulphur 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 NUMBER	EC Number	% OPTIONAL	OSHA/PEL	ACGIH TLV 5 TEL
Lithium Metal	**7439-93-2**	**231-102-5**	**3.24%**	**N/A**	**N/A**
Manganese Dioxide	**1313-13-9**	**215-202-6**	**40.56%**	**5 mg/m3**	**5 mg/m3**
Propylene Carbonate	**108-32-7**	**203-572-1**	**6.75%**	**N/A**	**N/A**
1.2 Dimethoxyethane	**110-71-4**	**203-794-9**	**5.78%**	**N/A**	**N/A**
Lithium Perchlorate	**7791-03-9**	**232-237-2**	**1.53%**	**N/A**	**N/A**
Tetrahydrofuran	**109-99-9**	**203-726-8**	**5.89%**	**200 ppm**	**200 ppm**

Reference: Sax's dangerous properties of industrial materials.

NOTE: These products do not contain asbestos.

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.
1.2 Dimethoxyethane:	Experimental teratogen. Other experimental reproduction effects readily form 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:	Drench the 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.
NOTES:	

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: ACCIDENTAL 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 was 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 REACTIONS	Toxic fumes and may form peroxides.

SECTION 11: TOXICOLOGICAL INFORMATION

SIGNS & SYMPTOMS	NONE, unless battery ruptures. In the 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 irritation.
SKIN CONTACT	Skin irritation.
EYE CONTACT	Eye irritation.
INGESTION	Poisoning if swallowed.
MEDICAL CONDITIONS GENERALLY AGGREVATED 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 if used / disposed of correctly.
ECO-TOXICITY	None known if used / disposed of correctly.
BIOACCUMULATION POTENTIAL	Slowly biodegradable.
ENVIRONMENTAL FATE	None known if used / disposed of correctly.

SECTION 13: DISPOSAL

DISPOSAL	DO NOT INCINERATE or subject cells to temperatures in excess of 90°C. Such abuse can result in loss of seal, leakage, and/or cell explosion. Dispose only through a recognised disposer. DO NOT ATTEMPT TO DISMANTLE THIS PRODUCT.

SECTION 14: TRANSPORT INFORMATION

UN Hazard Code	Class 9
UN Number	UN3091
UN Proper Shipping Name	Lithium Metal Batteries Contained in Equipment.
IATA Packing Instructions for air	970, Section II

IMDG Packing instructions for road and sea	Special Provision 188 & 230
Lithium Content	0.54g (≤ 1 gram lithium metal cell)
Total Battery Weight	15,5g (Weight of Individual Cell 15,5g)
Labelling	As per IATA, IMDG & ADR requirements - Precautionary label
Battery Test Criteria	Tested to UN ST/SG/AC.10/11/Rev.5/Amend.1 Criteria III Section 38.3. (Test Certificate available on request). Each cell and battery incorporate a safety venting device. Each cell and battery is equipped with an effective means of preventing external short circuits and reverse current flow.

SECTION 15: REGULATORY INFORMATION

Classification	Class 9	
Hazard Symbol	N/A	
Risk Phrases	R8 R11 R14/15 R17 R19 R20 R22 R34 R36/37/38 R41	Contact with combustible material may cause fire. Highly flammable. Reacts violently with water liberating extremely flammable gasses. Spontaneously flammable in air. May form explosive peroxides. Harmful by inhalation. Harmful if swallowed. Causes burns. Irritating to eyes, respiratory system and skin. Risk of serious damage to the eyes.
Safety Phrases	S1/2 S8 S16 S17 S24/25 S26/27 S29 S33 S36 S37 S38 S43 S45	Keep locked up and out of the reach of children. Keep away from moisture. Keep away from sources of ignition – no smoking. Keep away from combustible material. When using do not eat drink or smoke. In case of contact with eyes, rinse immediately with plenty of water. Do not empty into drains. Take precautionary measures against static discharges. Wear suitable protective clothing. Wear suitable gloves. In case of insufficient ventilation wear suitable respiratory equipment. In case of fire, see firefighting precautions. In case of incident, seek medical attention.

SECTION 16: OTHER INFORMATION

Disclaimer	This PSDS is provided for information only. The information and recommendations set forth herein are made in good faith and are believed to be accurate as of the date of preparation. However, the company makes no warranty, either expressed or implied with respect to this information and disclaims all liability from reliance on. It is the shippers responsibility to ensure that they are trained and competent in handling and shipping lithium batteries by all transport modes.

19 May 2025