

PRODUCT SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

Product Name	Fastfind/Plus/Max/MaxG PLBs and Battery Spares Kits (-20deg.C & -40deg.C)
Manufacturers Name	McMurdo, a division of Signature Industries Ltd
Address	Silver Point, Airport Service Road, Hilsea, Portsmouth, Hants; PO3 5PB UK
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Description	McMurdo Lithium powered marine safety beacon systems are designed to be stored for up to five years before use. The battery cells are hermetically sealed. Pressurised primary lithium/iron disulphide 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	% optional wt	OSHA/PEL	ACGIH TLV 5TEL	L D 50 oral rat
Carbon Black	1333-86-4	0-4	3.5mg/m3 TWA	3.5mg/m3 TWA	n/a
Lithium Metal,	7439-93-2	6-7	n/a	n/a	n/a
1,2 Dimethoxyethane	110-71-4	5-8	n/a	n/a	n/a
1,3 Dioxolane	646-06-0	2-5	n/a	n/a	3000mg/m3
Iron Disulfide	1309-36-0	24-27	n/a	n/a	n/a
Graphite	7782-42-5	0-4	15mg/m3 TWA total dust 5mg/m3 TWA respirable fraction	2mg/m3 TWA respirable fraction	n/a
Lithium Iodide	10377-51-2	0-3	n/a	n/a	n/a

Reference : sax's dangerous properties of industrial materials

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 Flame.
CARBON BLACK:	Listed as a possible carcinogen by international agency for research on cancer (IARC)
1,2 DIMETHOXYETHANE:	Highly Flammable, Harmful To Skin By Absorption, Harmful If Ingested Or Inhaled. Use only CO2 or Halon to extinguish flame.
1,3 DIOXOLANE:	Moderately toxic by ingestion and intraperitoneal routes mildly toxic by skin contact and inhalation a skin and severe eye irritant. A dangerous fire hazard when exposed to heat

or flame. Mutation data reported.

EYES: Contents of any open battery can cause severe irritation and /or chemical burns
INHALATION: Contents of an open battery can cause respiratory irritation;
SKIN ABSORPTION: Dimethoxyethane and Dioxolane may be absorbed through the skin causing localised inflammation;
SKIN CONTACT: Contents of an open battery can cause skin irritation and /or chemical burns.
INGESTION: Swallowing a battery can be harmful, contents of an open battery can cause serious chemical burns of mouth oesophagus and gastrointestinal tract.

SECTION 4: FIRST AID MEASURES

EYES: . Immediately flush eyes thoroughly with water for at least 15mins lifting upper and lower eyelids, until no evidence of the chemicals remains seek medical attention
INHALATION: remove from exposure, rest and keep warm. In severe cases, or if exposure has been great, Obtain medical attention.
SKIN: Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical
INGESTION: If battery or open battery is ingested, do not induce vomiting or give food or drink. Seek medical attention immediately
Other materials are either inert or have low hazard associated with their exposure.

ROUTES FOR ENTRY: Hydrogen Sulphide,

Inhalation: yes, **Skin:** yes, **Ingestion:** yes,

HEALTH HAZARDS(ACUTE & CHRONIC):

Carcinogenicity: yes, carbon black **Signs And Symptoms of Exposure:** Hydrogen Sulphide - irritation of nose, throat, yes, and/or skin. suffocating odour.

Medical Conditions: Generally aggravated by exposure - sulphur dioxide - asthma and other respiratory diseases.

Emergency and first aid procedures: If cell vents, personnel should be evacuated from contaminated areas. Artificial respiration should be given if breathing stops flush any material from skin.

SECTION 5: FIRE FIGHTING MEASURES

In the case where significant quantities of lithium Iron Disulphide 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 Hydrogen Sulphide, Sulphur Dioxide, Toxic And Corrosive Lithium Hydroxide Fumes. It is recommended that ventilation should be maximised should this scenario be realised.

Flash Point: n/a flammable , explosion
Extinguishing Media: Use water or CO2 on burning lithium iron disulphide cells or batteries. Use a class D fire extinguisher agent only on a raw lithium fire.

Special Fire Fighting Procedures: Use self-contained breathing apparatus.

Unusual Fire And Explosion Hazards: Battery may vent when subject to excessive heat- exposing Contents.

IF cells are directly involved in a fire, DO NOT USE WATER, SAND, CO2, DRY POWDER OR SODA ASH EXTINGUISHERS

SECTION 6: ACCIDENTIAL RELEASE MEASURES

Dispose only via approved landfill site or incineration by an approved source. Steps to be taken in case material is released or spilled: remove personnel from area until fumes dissipate .
 Provide maximum ventilation to clear any hazardous gases, waste disposal method: dispose of cell or battery in accordance with local, state, and federal environmental regulations.

SECTION 7: HANDLING AND STORAGE

Handle and store in cool well-ventilated area keep out of direct sunlight. Elevated temperatures can result in shortened battery life. The battery is manufactured in a charged state. It is not designed for recharging. Recharging can cause battery leakage or, in some cases high pressure rupture. Inadvertent charging can occur if a battery is installed backwards.
 Accidental short circuit for a few seconds will not seriously affect the battery, however prolonged periods will cause the battery to loose energy and can cause the safety release vent to open

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

External corrosion of the 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	Device is housed in a plastic housing
STABILITY IN WATER	Product is waterproof
REACTION WITH WATER	Only if damaged
BOILING POINT :	N/A (
VAPOUR PRESSURE :MM HG	N/A
VAPOUR DENSITY:	N/A
SOLUBILITY IN WATER:	Not soluble in water
APPEARANCE & ODOUR:	N/A
SPECIFIC GRAVITY	N/a
MELTING POINT:	N/a
EVAPORATION RATE	N/a

SECTION 10: STABILITY AND REACTIVITY

Hazardous reactions: flammable when in contact with moisture.
Hazardous decomposition reactions: toxic fumes

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.
INHALATION	Lung Irritation
SKIN CONTACT	Skin Irritation
EYE CONTACT	Eye irritation
INGESTION	Tissue damage to throat and gastro/respiratory tract if swallowed .
MEDICAL CONDITIONS GENERALLY AGGREGATED 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: none known if used /disposed of correctly.
Environmental fate: none known if used /disposed of correctly.

SECTION 13: DISPOSAL

Disposal	Only through a recognised disposer. DO NOT ATTEMPT TO DISMANTLE THIS PRODUCT.
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SECTION 14: TRANSPORT INFORMATION

UN Hazard Code:	Class 9
UN Number	UN3090 – Battery Spares Kits (-20deg.C or -40deg.C) UN3091 – Fastfind/Plus/Max/MaxG, complete with Lithium Batteries
UN Name	Lithium Batteries Lithium Batteries Contained In Equipment
Packing Group	II
Packing Instruction	85-FF20MB1-P - Battery Spares Kits -20deg.C 85-FF40MB1-P - Battery Spares Kits -40deg.C 85-FF-P - Fastfind/Fastfind Plus 85-FFM-P - Fastfind Max/Fastfind MaxG

SECTION 15: REGULATORY INFORMATION

Classification	CLASS 9
Hazard Symbol	Miscellaneous
Risk Phrases	R11, highly flammable R14/15, reacts violently with water liberating extremely flammable gases R21, harmful in contact with skin R22, harmful if swallowed R36/37, irritating to respiratory system R35, causes burns R41, risk of serious damage to the eyes R42/43, may cause sensitisation by inhalation and skin contact
Safety Phrases	S2, keep out of the reach of children S8, keep away from moisture S22, do not breathe dust S24, avoid contact with skin S26, in case of contact with eyes, rinse immediately with plenty of water. S36, wear suitable protective clothing S37, wear suitable gloves S45, in case of incident, seek medical attention.

SECTION 16: OTHER INFORMATION	
Eye Protection	Not necessary under normal conditions. Wear safety glasses with side shields if handling an open or leaking battery.
Gloves	Not necessary under normal conditions. Use neoprene or natural rubber gloves if handling an open or leaking battery
<p>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 user must satisfy themselves that the information provided is entirely suitable for their particular use.</p>	