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SAFETY DATA SHEET

Issue 44896-4

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Section 1- Identification of the material and supplier

Product identifier:	MT410, MT410G
Other names:	Personal Locator Beacon (PLB), ACCU**SAT**™
Recommended use:	1. The unit is a Personal Locator Beacon (PLB) and is designed to provide a distress alerting and location function. When activated the PLB flashes and radio signals are emitted on internationally recognised VHF and UHF distress channels. 2. MT410G variant is equipped with an integral GPS receiver which can provide location co-ordinates for inclusion in the UHF distress transmission. 3. A PLB may find typical application in air, sea and land deployments which require a robust and portable emergency beacon which will be manually activated when required. The MT410 and MT410G will not sink when in water, but are not designed to operate without assistance when floating. 4. The integral power source, which cannot normally be accessed without opening the unit, is comprised of two (2) batteries, which are electrically isolated from one another using components on the main circuit board. Current limiting circuitry is provided in case of circuit fault. A battery consists of two (2) series connected $LiMnO_2$ Lithium (high energy density) long life cells. The batteries are not to be removed or tampered with – to be used for purpose only.
Supplier Details **Name:** **Address:** **Telephone no.:** **Emergency phone number:**	 Standard Communications Pty Ltd 17 Gibbon Road, Winston Hills, NSW, 2153, Australia 61 2 8867 6000 61 2 8867 6000

Section 2- Hazard(s) identification

- The PLB is designed to withstand moderately high levels of shock and vibration consistent with the expected long-term conditions of installation and subsequent deployment.
- In an undamaged state the chassis forms an environmentally sealed enclosure which protects the printed circuit board, electronic components and integral battery.
- Should the chassis be penetrated then the $LiMnO_2$ cells may be exposed to damage and could exhibit the following:
  - In contact with water releases flammable gases, which may ignite spontaneously – Category 1
  - Causes severe skin burns and eye damage – Category 1B
  - Harmful if swallowed – Category 4
  - Harmful if inhaled – Category 4
- Cell / Battery Composition:
  - 0.58 grams (typ.) Lithium per cell (4 cells in total = 2.32g Lithium per unit)

Section 3- Composition / Information on ingredients

Components – Chemical name and common names (Hazardous components 1% or greater, Carcinogens 0.1% or greater)	**%** *(typical)*	**CAS Number**	**GHS Hazard Statement**
Manganese Dioxide (MnO_2)	9.0%	1313-13-9	H302, H332
Lithium (Li)	0.9%	7439-93-2	H260, H314
Organic Electrolyte	3.5%	-	-
Non-Hazardous Ingredients	86.6%	-	-
TOTAL	100%		

Section 4 - First aid measures

Under normal conditions of use:

After inhalation:	Not a health hazard
After skin contact:	Not a health hazard
After eye contact:	Not a health hazard
After ingestion:	Drink plenty of water. Avoid vomiting. Seek medical assistance, contact a doctor or Poisons Information Centre immediately.

If exposed to internal materials within unit due to damaged outer casing, the following actions are recommended:

After inhalation:	Fresh air. Seek medical assistance.
After skin contact:	Remove solid particles immediately. Flush affected area with plenty of water (at least 15 min). Remove contaminated cloth. Seek medical assistance.
After eye contact:	Flush eye gently with plenty of water (at least 15min). Seek medical assistance.
After ingestion:	Drink plenty of water. Avoid vomiting. Seek medical assistance, contact a doctor or Poisons Information Centre immediately.

Seek medical assistance for further treatment, observation and support if necessary.

Section 5 - Fire fighting measures

Extinguisher Media:	For lithium metal fires (marked by deep red flames) use metal fire extinction powder extinguisher - class D or rock salt or dry sand shall be used. If only water is available, it can be used in large amounts as a cooling agent. Carbon dioxide CO_2 is not suitable for lithium metal fires but may be used as a general extinguishing media.
Special Fire-Fighting Procedures:	Protective clothing and including breathing apparatus.
Special Hazard:	Battery cells may explode and release metal parts. At contact of anode material with water extremely flammable hydrogen gas and caustic liquid are released.

Section 6 - Accidental release measures

Steps to be taken if Material Is Spilled Or Released

Personal Precautions & Emergency Procedures:	In the case of the battery cells venting/out-gasing provide as much ventilation as possible and avoid confined spaces. Wear personal protective equipment appropriate to the situation (protective gloves & clothing, eye & face protection and breathing protection)
Environmental Precautions:	Bind/contain released materials with powder (rock salt or sand). Prevent released materials penetrating into the earth or ground water system.
Methods, Materials for Containment and Cleaning up:	Package the unit tightly including any released materials with lime, sand or rock salt. Dispose of according to the local laws and regulations. Then clean the contaminated area with water.

Section 7 - Handling and storage

Precautions to be Taken in Handing and Storage

Precautions for Safe Handling :	No special protective clothing is required for handling of an undamaged PLB. Do not puncture, incinerate or crush PLB and/or batteries. Do not short-circuit the batteries. Do not recharge the batteries. Improper handling of lithium ion batteries may result in injury or damage from electrolyte leakage, heating, ignition or explosion.
For Safe Storage:	Store in a cool, dry place.

Section 8 -Exposure controls and Personal protection

When the PLB chassis or battery cells are not compromised and under normal operating conditions, the release of the hazardous material does not occur. Should the cells be compromised, any contact of electrolyte and extruded lithium with the skin and eyes should be avoided. Inhalation should also be avoided.

Section 9 - Physical and chemical properties

When the PLB chassis or battery cells are not compromised and under normal operating conditions, the release of the hazardous material does not occur.

Section 10 - Stability and Reactivity

Dangerous Reactions:	Heating above 100°C may cause the batteries to burst, releasing the contents; and Heating above 170°C will melt lithium resulting in a severe fire and explosion hazard.

Section 11 - Toxicological Information

This product does not elicit toxicological properties during routine handling and use.

Sensitization	Teratogenicity	Reproductive Toxicity
NO	NO	NO

If the cells are opened through misuse or damage, discard immediately. Internal components of cell are irritants and sensitizers.

Section 12 - Ecological Information

The Lithium batteries used in the PLB do not contain heavy metals as defined by the European directives 2006/66/EC Article 21.
Some materials within the cell are bio-accumulative. Under normal conditions, these materials are contained and pose no risk to persons or the surrounding environment.

Section 13 - Disposal considerations

Waste Disposal Methods
Dispose in accordance with the appropriate Federal, State and Local Regulations.
Opened cells should be treated as hazardous waste.
Lithium batteries and cells are best disposed of as a non-hazardous waste when discharged, if they are partially or fully charged they considered a reactive hazardous waste because of significant amounts of un-reacted lithium in the battery.

Section 14 - Transport Information

U.N Number :	3091		
Shipping Name :	Lithium Metal Batteries Contained in Equipment. Weight – 77g		
DG Class :	Class 9 - Miscellaneous		
Packaging Group:	IATA: NIL	IMDG: Group II	
Packaging Instruction:	IATA: PI 970 Section II	IMO: N/A	
Hazchem Code :	4W		
Emergency Guidelines:	ICAO: ERG Code: 9FZ	IMO: EmS Codes: F-A, S-I	IERG No: SAA/SNZ HB 76: 26

Air Transport (Domestic and International):
Classified as Dangerous Goods by the criteria of International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

- UN No.: 3091
- Class : 9
- Shipping Name : LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT
- Packing Group : None
- Packing Instruction : 970 Section II
- Special Provisions : A48, A99, A154, A164, A181, A185

Road and Rail Transport (Domestic):
Classified as Dangerous Goods by the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail.

- UN No.: 3091
- Class : 9
- Shipping Name : LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT
- Packing Group : None
- Packing Instruction : P903, P908, P909, LP903, LP904
- Special Provisions : A188, A230, A360, A376, A377

Marine Transport (Domestic and International):
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods code for transport by sea.

- UN No.: 3091
- DG Class : 9
- Shipping Name : LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT
- Packing Group : II
- Packing Instruction : P903
- Special Provisions : 188, 230, 957
- EmS Codes: F-A, S-I
- IMDG Marine Pollutant : N

Section 15 - Regulatory information

Battery chemistry not classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals *(GHS)* including Work, Health and Safety regulations, Australia.
Battery chemistry not classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons *(SUSMP)*.

Section 16 - Other information

Other Precautions and /or Special Hazards: N/A

------- END OF SDS -------