Battery - Containing Product Information Data Sheet

Lithium Metal Battery

This data sheet is applicable to Lithium Metal batteries contained in Garmin Aviation (GDU) and Marine products (GPS®, GPSMap®, GNC®, GNS®, GDL®, GIA®, GTN®, echoMAP™); and Outdoor/Fitness products (Oregon® 550, eTrex® H/HC, Edge® 305, Vector™, FR 50, 60 & 70, Swim™, Footpod, Running Dynamics Pod, Heart Rate Monitor and Chirp®, vivofit™, vivoki™, BarkLimiter™); and Auto / Truck/Motorcycle products (nüvi® 5000, 855, 885T, Zumo®550, Tire Pressure Monitor Sensor), HRM-Dual™, HRM-Run™, HRM-Tri™, HRM-Swim™, vívomove®, eBike Remote. This data sheet also applies to product replacement Lithium Metal batteries when available.

Garmin is providing this Data Sheet as a service to its customers for general information purposes only. The information in this Data Sheet has been provided to Garmin by the battery manufacturers, and Garmin has not independently evaluated its accuracy or completeness. This Data Sheet is not intended to be a comprehensive exposition of the properties of Lithium Metal batteries. No guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein.

Section 1: Product and Company Identification

Product Name: Lithium Metal Batteries located within above products.

Company Name: Garmin International, Inc. 1200 E. 151st Street, Olathe, KS 66062
Product Category: Article

CHEMTREC® 24 hr Emergency: US 800-424-9300
CHEMTREC® 24 hr Emergency: International 703-527-3887

Section 2: Hazard(s) Identification

Emergency Overview:

Not considered dangerous as manufactured. If battery is damaged, exposure to product components may cause eye, skin and respiratory tract irritation. Combustion products from a fire involving batteries may be harmful.

Potential Health Effects: Eyes
None anticipated under normal product use and handling conditions. If battery is damaged, exposure may cause severe irritation or burns.

Potential Health Effects: Skin
None anticipated under normal product use and handling conditions. If battery is damaged, exposure may cause severe irritation or burns.

Potential Health Effects: Ingestion

Not considered a likely route of exposure under normal product use and handling conditions. Ingestion of material from a damaged battery may cause serious burns to mouth, esophagus, and gastrointestinal tract.

Potential Health Effects: Inhalation
None anticipated under normal product use and handling conditions. If battery is damaged, exposure to vapors or mist may cause respiratory irritation.

HMIS Ratings: Health: 0 Fire: 0 HMIS Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

Section 3: Composition/Information on Ingredients

Substance	wt percent	CAS #
Manganese Dioxide	40.0%	1313-13-9
Nickel Plated Steel	33.0%	12671-80-6
Polyethylene	8.0%	9002-88-4
Polypropylene	7.0%	9003-07-0
Propylene Carbonate	6.0%	108-32-7
1,2 Dimethoxy Ethane (DME)	2.8%	110-71-4
Lithium Metal	2.5%	7439-93-2
Lithium Perchlorate	0.7%	7791-03-9

Section 4: First-Aid Measures

Symptoms of Exposure: Under conditions of normal use there should be no exposure to hazardous materials.

In the event of an opened battery situation:

Inhalation: Contents of an opened battery cell can cause respiratory irritation

Ingestion: Contents of battery cell can cause stomach irritation / burns. Seek medical help immediately

Skin Contact: Contents of an opened battery cell can cause skin irritation

Eye Contact: Contents of an opened battery cell can cause eye irritation

Section 5: Fire-Fighting Measures

Extinguishing Media: Class D or Lith-X fire extinguisher or dry sand. Avoid using water as an extinguishing media.

Unusual Fire & Explosion Hazards: Fires in confined spaces or involving large quantities of batteries may produce dangerous fumes. Do not open, crush, disassemble, or incinerate battery. Do not expose any battery to extreme heat or fire. Mishandling of batteries can result in the spontaneous release of flammable gasses. Burning of these batteries will generate toxic and corrosive fumes. Firefighters should use self-contained breathing apparatus.

Section 6: Accidental Release Measures

Remove personnel from area until fumes dissipate. If the skin has come into contact with the electrolyte, it should be washed thoroughly with water.

Sand or earth should be used to absorb any exuded material. Seal leaking battery and contaminated absorbent material in plastic bag and dispose of as Special Waste in accordance with local regulations.

Section 7: Handling and Storage

Handling: Short circuit will bring high temperature elevation to the battery as well as shorten the battery life. Avoid short circuits as the heat can burn attendant skin and rupture the battery cell case.
Batteries packaged in bulk containers should not be shaken.

Charging: The lithium metal batteries contained in rechargeable products are designed for recharging. Charge battery before use. Observe the specified charge rate since higher rates can cause a rise in internal gas pressure which may result in damaging heat generation or cell rupture and/or venting. Non-rechargeable batteries: Lithium metal batteries in some Garmin products are not designed to be recharged. Do not attempt to charge a battery that is not designed for recharging.

CAUTION: Do not puncture or otherwise damage the battery or dispose in fire, mix with other battery types, charge above specified rate, connect improperly, or short circuit, which may result in overheating, explosion or leakage of cell contents.

Section 8: Exposure Controls/Personal Protection

No protective equipment is necessary under conditions of normal use. In the event of a fire or opened cell:

Eye/Face Protection: Goggles and face shield

Skin Protection: Gloves and protective clothing

Respiratory Protection: Inorganic dust respirator

Section 9: Physical and Chemical Properties

Appearance: Cylindrical or prismatic shape

Odor: none

pH: Not Applicable

Flash point: Not applicable unless individual components exposed

Flammability: Not applicable unless individual components exposed

Relative density: Not applicable unless individual components exposed

Solubility (water:) Not applicable unless individual components exposed

Section 10: Stability and Reactivity

Product is stable when used under normal conditions.

Conditions to avoid: Heat above 70°C or incinerate. Deform. Mutilate. Crush. Pierce. Disassemble Short circuit. Expose over a long period to humid conditions.

Materials to avoid: none

Hazardous decomposition Products: Carbon Monoxide, Hydrofluoric Acid

Section 11: Toxicological Information

Acute Dose Effects

A: General Product Information

If product is ruptured, material may cause irritation to the skin, eyes and respiratory tract.

B: Component Analysis - LD50/LC50

No LD50/LC50's are available for this product's components.

Carcinogenicity

A: General Product Information

No information available for the product.

B: Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Section 12: Ecological Information (non-mandatory)

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 Considerations (non-mandatory)

Recycle or dispose in accordance with applicable Federal, state and local regulations. Do not incinerate or heat batteries to temperatures above 100°C (212°F).

Section 14: Transport Information (non-mandatory)

Lithium metal batteries used in Garmin products are of a type eligible for transport under the exceptions set forth in Section II of Packing Instructions 968-970 of the International Air Transport Association Dangerous Goods Regulations. Lithium metal batteries used in Garmin products have lithium metal content no more than 1 g per cell and 2 g per battery or battery pack.

Lithium metal batteries used in Garmin products are of a type that has been demonstrated to pass the tests set forth in the UN Manual of Tests and Criteria, Part III, Subsection 38.3.

Batteries shipped as individual or bulk batteries (separate from equipment) under Packing Instruction 968 are forbidden from carriage on passenger aircraft and must bear the Cargo Aircraft Only label.

Section 15: Regulatory Information (non-mandatory)

OSHA Hazardous Communication Standard (29CFR 1910.1200): Non-Hazardous

Section 16: Other Information

This information has been compiled from sources considered to be dependable and is, to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty (either expressed or implied) or guarantee is made to the accuracy, reliability or completeness of the information contained herein.