

**GARMIN.**

# **GARMIN NICKEL METAL HYDRIDE BATTERY INFORMATION**

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**GARMIN LTD. OR ITS SUBSIDIARIES  
C/O GARMININTERNATIONAL  
1200 E. 151ST STREET  
OLATHE, KS 66062 USA**

# GARMIN NICKEL METAL HYDRIDE BATTERY INFORMATION

## NICKEL METAL HYDRIDE BATTERY

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This data sheet is applicable to Nickel Metal Hydride (NiMH) batteries contained in Garmin GPSMAP® 695/696; Oregon®; NavTalk®; iQue®, GNX™; gWind™ 2; VHF®, and Rechargeable NiMH Battery Kit products.

### I. PRODUCT AND COMPANY IDENTIFICATION

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Product Name: Nickel Metal Hydride Batteries located within above products

Company Name: Garmin International, Inc. 1200 E. 151<sup>st</sup> Street, Olathe, KS 66062

Product Category: Article

CHEMTREC® 24 hr Emergency: US 800-424-9300

CHEMTREC® 24 hr Emergency: AUS 61-290372994, Toll-Free: 1-800-262-8200

CHEMTREC® 24 hr Emergency: International 703-527-3887

### II. HAZARD(S) IDENTIFICATION

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A sealed Nickel-Metal hydride cell/battery is not hazardous in normal use.

In case of mistreatment (abusive over charge, reverse charge, external short circuit...) and in case of fault, some electrolyte can leak from the cell through the safety device. In these cases refer to the risks of potassium hydroxide solution or sodium hydroxide solution (corrosive, pH > 14). The electrode materials are only hazardous, if the materials are released by mechanical damaging of the cell or if exposed to fire.

### III. COMPOSITION/INFORMATION ON INGREDIENTS

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The following constituents are potentially present in Nickel Metal Hydride batteries used in Garmin products. The concentrations given are an approximation. Specific battery chemistries and concentrations will vary by the particular battery and battery manufacturer.

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Substance	WT Percent	CAS #
Nickel Oxyhydroxide	32.0%	1314-06-3
Stainless Steel	15.0%	12671-80-6
Potassium Hydroxide	15.0%	1310-58-3
Nickel	6.0%	7440-02-0
Nylon	5.5%	60-80-0
Polyolefin	5.5%	9002-84-0
Aluminum	4.2%	7429-90-5
Silicon	4.2%	7440-21-3
Titanium	4.2%	7440-32-6
Zirconium	4.2%	7440-67-7
Lanthanum + Nickel	4.2%	12196-72-4

## IV. FIRST-AID MEASURES

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Symptoms of Exposure: Under conditions of normal use there should be no exposure to hazardous materials. In the event of an opened battery:

- **Inhalation:** Contents of an opened battery cell can cause respiratory irritation
- **Ingestion:** Contents of an opened battery cell can cause stomach irritation / burns. Seek medical help immediately if ingested.
- **Skin Contact:** Contents of an opened battery cell can cause skin irritation.
- **Eye Contact:** Contents of an opened battery cell can cause eye irritation.

## V. FIRE-FIGHTING MEASURES

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- **Extinguishing Media:** Water, CO2, Dry chemical or foam.
- **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 any battery. Do not expose any battery to extreme heat or fire.

## VI. ACCIDENTAL RELEASE MEASURES

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- **Personal related measures:** wear protective equipment adapted to the situation (protection gloves, cloth).
- **Environment protection measures:** In the event of battery rupture, prevent skin contact and collect all released material in a plastic lined container. Dispose off according to the local law and rules. Avoid leached substances to get into the earth,

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canalization or waters.

- **Treatment for cleaning:** If battery casing is dismantled, small amounts of electrolyte may leak. Pack the battery including ingredients as described above. Then clean with water.

## VII. HANDLING AND STORAGE

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- **Storage:** Store in a cool place, prevent condensation on cell or battery terminals. Elevated temperatures may result in reduced battery life. Optimum storage temperatures are between -31°F and 95°F.
- **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:** This battery is 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.
- **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.

## VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

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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

## IX. PHYSICAL AND CHEMICAL PROPERTIES

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Not applicable if closed.

## X. STABILITY AND REACTIVITY

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Dangerous Reactions: When heated above 150°C the risk of rupture occurs.

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## XI. TOXICOLOGICAL INFORMATION

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Under normal conditions (during charge and discharge) release of ingredients does not occur. If accidental release occurs see information in Section 2, 3, and 4.

## XII. ECOLOGICAL INFORMATION (NON-MANDATORY)

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- **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

## XIII. DISPOSAL CONSIDERATIONS (NON-MANDATORY)

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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).

## XIV. TRANSPORT INFORMATION (NON-MANDATORY)

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Sealed NMH batteries used in Garmin products are not subjected to hazardous materials (dangerous goods) regulations for the purpose of transportation provided they are securely packaged in a manner that prevents dangerous evolution of heat and protects against short circuit. Shipments under ICAO and IATA, Special Provision A123 are forbidden from transportation unless they are disconnected from equipment and exposed battery terminals are effectively insulated to prevent short – circuit and dangerous evolution of heat.

## XV. REGULATORY INFORMATION (NON-MANDATORY)

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Nickel Metal Hydride batteries are not classified as dangerous goods by the US Department of Transportation or the major international regulatory bodies and are therefore not regulated.

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## XVI. OTHER INFORMATION

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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.