



Ascent Battery Supply, LLC
 925 Walnut Ridge Drive
 Hartland, Wisconsin 53029

Material Safety Data Sheet

Nickel Metal Hydride

The information and recommendations below are believed to be accurate at the date of preparation. Ascent Battery makes no warranty of merchantability or any other warranty, express or implied, with respect to such information and we assume no liability resulting from its use. This MSDS sheet provides guidelines for safe use and handling of the product. It does not and cannot advise all possible situations. Your specific use of this product should be evaluated to determine if additional precautions must be taken.

Manufacturer's Name	Ascent Battery Supply, LLC	Emergency Number	INFOTRAC (800) 535-5053
Address	925 Walnut Ridge Dr. Hartland, WI 53029	Overseas Emergency Number	INFOTRAC (352)-353-3500 (Collect)
Date Prepared	01/2012		

SECTION 1 – IDENTITY

Product Name	Nickel Metal Hydride Battery
Common	NiMH
Synonyms	
DOT Description	Dry Battery
Chemical Name	Nickel Metal Hydride; Secondary Battery Battery

SECTION 2 – HAZARDOUS INGREDIENTS

Chemical Name	CAS No.	Percentage %
Nickel	7440-02-0	30 – 40
Cobalt	7440-48-4	4 – 8
Manganese	7439-96-5	<2
Potassium Hydroxide	1310-58-3	10 – 15
Sodium Hydroxide	1310-73-2	4
Lithium Hydroxide	1310-65-2	0 – 4
Other	N/A	<13

SECTION 3 – PHYSICAL AND CHEMICAL CHARACTERISTICS

Boiling Point	NA	Melting Point	NA
Vapor Pressure	NA	Vapor Density	NA
Specific Gravity	NA	Percent Volatile By Volume	NA
Solubility in Water	NA	Reactivity in Water	NA
Appearance and Odor	Geo-metric, solid object	Evaporation Rate	NA
Flash Point	NA	Flammable Limits in Air % by Volume	NA
Extinguisher Media	Use Water, foam or dry powder	Auto-Ignition Temperature	NA
Special Fire Fighting Procedures	Wear self-contained breathing apparatus to avoid inhalation of hazardous decomposition products.		
Unusual Fire and Explosion Hazards	Cells may rupture when exposed to excessive heat. This could result in the release of flammable or corrosive materials.		

SECTION 4 – PHYSICAL HAZARDS

Stable or Unstable	Stable	Conditions to Avoid	Electrical shorting the cell.
Incompatibility (Materials to Avoid)	NA		
Hazardous Decomposition Products	NA		
Hazardous Polymerization	Will Not Occur		

SECTION 5 – HEALTH HAZARDS

Threshold Limit Value	NA
Signs and Symptoms of Exposure	None (In fire or rupture situation see section 2 and section 4.)
Medical Conditions Generally Caused by Exposure	Chemicals may cause burns to skin, eyes, gastrointestinal tract and mucous membranes. Contact with skin may cause chronic eczema or nickel itch. Electrolyte is extremely corrosive to eye tissue and may cause permanent blindness. If swallowed it may cause choking, nausea, persistent vomiting, diarrhea, abdominal pain, dizziness, faintness, unconsciousness, and possible liver and kidney injury.
Routes of Entry	Skin, Eyes, Swallowing
Emergency and First Aid Procedures for	Nickel Metal Hydride Chemicals
1. Inhalation	Get fresh air. If symptoms persist seek medical attention
2. Eyes and Skin	If a cell ruptures, flush with copious quantities of flowing lukewarm water for a minimum of 15 minutes. Get immediate medical attention for eyes. Wash skin with soap and water.
4. Ingestion	Ingestion of battery chemicals can be harmful. Call The National Battery Ingestion Hotline (202-625-3333) 24 hours a day, for procedures treating ingestion of chemicals. Do not induce vomiting. Dilute by giving milk and water.

SECTION 6 – SPECIAL PROTECTION INFORMATION

Respiratory Protection	NA				
Ventilation	NA	Local Exhaust	NA	Mechanical (General)	NA
Gloves	Wear gloves if cell ruptures, is corroded or leaking chemicals.	Safety Glasses	Always wear safety glasses when working with batteries and cells.		
Other Protective Equipment	NA				

SECTION 7 – SPECIAL PRECAUTIONS – SPILL AND LEAKAGE PROCEDURES

Precautions to be Taken when Handling and Storing	Store in dry place. Storing unpacked cells together could result in cells shorting and heating to the point of rupturing.
Other Precautions	If packaging materials are not available place masking taped on positive and negatives ends of the cells.
Steps to be Taken if chemicals are spilled	If cells are leaking or rupture, prevent skin and eye contact and collect all released material in a plastic lined metal container.
Waste Disposal	Cells must be recycled.

SECTION 8 – TRANSPORTATION

Nickel Metal Hydride cylindrical cell/batteries are considered to be “dry batteries” and are unregulated for purpose of transportation by the U.S. Department of Transportation (DOT), International Civil Aviation Administration (ICAO) and the International Air Transport Association (IATA).

USA: 49 CFR 172.102 Special Provisions 130 and 340: Nickel Metal Hydride cylindrical cells/batteries are not subject to requirements of this subchapter except for the following – “Batteries and battery-powered devices(s) containing batteries must be prepared and packaged for transport in a manner to prevent (1) A dangerous evolution of heat; (2) Short circuits, including but not limited to the following methods: (i) packaging each battery or each battery-powered device when practicable, in fully enclosed inner packaging made of non-conductive material; (ii) Separating or packaging batteries in a manner to prevent contact with other batteries, devices, or conductive material (e.g., metal) in the packaging...”

IATA DGR: Special Provision A123: Examples of such batteries are: alkali-manganese, zinc-carbon, nickel-metal hydride, and nickel-cadmium batteries. Any electrical battery...having the potential of a dangerous evolution of heat must be prepared for transport as to prevent (a) a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals...) is forbidden from transport; and (b) accidental activation. The words “Not Restricted” and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6, when an Air Waybill is issued.

EU (ADR/RID): Chapter 3.2 Table A: “Batteries, nickel-metal hydride, UN3496, not subject to ADR”

International Maritime Organization (IMO), IMDG Code: Regulated as “Batteries, nickel-metal hydride, UN3496”, Special Provision 963: “...nickel-metal hydride cells or batteries shall be securely packed and protected from short-circuit. They are not subject to other provisions of this Code provided that they are loaded in a cargo transport unit in a total quantity of less than 100Kg gross mass. When loaded in a cargo transport unit in a total quantity of 100Kg gross mass or more, they are not subject to other provisions of this Code except those of 5.4.1, 5.4.3, and column (16) of the Dangerous Goods list in Chapter 3.2.”

Code of practice for packaging and shipment of secondary batteries given in IEC 62133: The packaging shall be adequate to avoid mechanical damage during transport, handling, and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals, and ingress of moisture.