Nickel Metal Hydride Battery

Safety Data Sheet

Version: 1.3

SECTION 1. Product and Company identification

Product Name : Nickel Metal Hydride Battery

Synonyms : NiMH – [See APPENDIX A]

Use of the substance/preparation : Nickel Metal Hydride rechargeable cells

Company identification : Vertical Partners West
14028 North Ohio Street
Rathdrum, ID 83858

Telephone number for information : 1-800-705-0620 (USA)

24 hour emegency contact : Chemtrec 1-800-424-9300

SECTION 2. Hazards identification

2.1. OSHA Regulatory Status

The batteries are hermitically sealed articles under normal conditions of use. The products referenced herein are exempt articles and are not subject to OSHA's Hazard Communication Standard requirements for preparation of safety data sheets This information is provided as a service to our customers.

2.2. Potential health effects

Risk of exposure occurs only if the battery is mechanically or electrically abused.

Health hazards : Contact of electrolyte and extruded substance with skin or eyes should be avoided. A shorted battery can cause thermal and chemical burns upon contact with the skin; may be a reproductive hazard.

2.3. Potential environmental effects

No additional information available.

SECTION: 3. Composition/information on ingredients

Name	CAS number	%
Nickel (Ni)	7440-02-0	4.9
Nickel hydroxide	1254-48-7	23.9
Nickel (plated steel)	1254-48-7	16.9
Mischmetal powder (CoNiNaCe)		34.3
Cobalt monoxide	11104-61-3	2.7
Copper (Cu)	7440-50-8	5.4
Rubber	63394-00-3	0.3
Nylon	24937-16-4	0.6
Polypropylene	9003-07-002	2.0
Potassium (K)	13966-00-2	3.2
Sodium (Na)	7440-23-5	3.2
Lithium (Li)	7439-93-2	3.2
Water (H_2O)	7732-18-5	5.5

SECTION: 4. First aid measures

4.1. First aid procedures

First-aid measures general : The following first aid measures are required in the case of exposure to interior battery components after damage of the external battery casing. Undamaged, closed cells do not represent a danger to health.

First-aid measures after inhalation : Contents of an open battery can cause respiratory irritation. Hypersensitivity to nickel can cause allergic pulmonary asthma. Remove from exposure and provide fresh air. Seek medical attention.

First-aid measures after skin contact : Contents of an open battery can cause respiratory irritation and/or chemical burns. Nickel, nickel compound, cobalt, and cobalt compounds can cause skin sensitation and an allergic contact dermatitis. Remove contaminated clothing and thoroughly rinse with plenty of water for 15 minutes. Seek medical attention.

First-aid measures after eye contact : Rinse thoroughly with plenty of water for at least 15 minutes, occassionally lifting both upper and lower eyelids. Seek medical attention immediately.

First-aid measures after ingestion : Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract. If open battery is ingested, do not induce vomiting or give food or drink. Seek medical attention immediately.

SECTION: 5. Firefighting measures

5.1. Extinguishing media

Hazardous combustion : Carbon monoxide, carbon dioxide, metal oxide, irritant fumes, and toxic gas

Firefighting procedures : Fire fighters should wear self-contained breathing apparatus.

Unusual fire and explosion hazards : Cells may vent when subjected to excessive heat, exposing the battery's contents. In case of cell/battery venting avoid confined areas and provide maximum ventilation. Refer to section 8 for personal protective equipment.

5.2. Extinguishing media

Suitable extinguishing media : Carbon dioxide, dry chemical or foam

Protection during firefighting : Wear protective clothing and self-contained breathing apparatus to avoid fume inhalation.

SECTION: 6. Accidental release measures

6.1. Personal precautions

Evacuate personnel to safe areas, ventilate the area. Refer to protective measure listed in section 7 and 8.

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Inhalation of any vapor that may be emitted should be avoided. Wear self-contained breathing apparatus to avoid fume inhalation. Rubber gloves should be used to handle the contents of crushed or opened batteries.

6.2. Environmental precautions

Sweep and wipe up and place in a suitable container, dispose of waste according to local, state and federal laws and regulations.

SECTION: 7. Handling and storage

7.1. Handling

Battery charge: Charge according to manufacturer's specifications. Overcharging of the battery can cause overheating and fire.

Battery disassembly: The batteries should never be disassembled, destroyed, or incinerated. Should a battery unintentionally be crushed or opened evacuate the area and provide maximum ventilation until the vapors dissipate and allow battery to cool. Wear rubber gloves and protective clothing to clean up and handle battery components. The inhalation of any vapor that may be emitted should be avoided. Dispose of waste according to all applicable regulations. Do not crush, puncture, immerse in liquid, or burn.

Short circuiting of a battery: As with any battery, short circuit causes heating. In addition, short circuit reduces the life of the battery and can lead to ignition of surrounding materials. Physical contact with a short-circuited battery can cause skin burns.

Reverse polarity: Do not install with incorrect polarity. Avoid reversing the polarity of a battery within a battery pack, which can cause the battery or battery pack to be damaged or cause fire.

7.2. Storage

Storage conditions	:	Store in a cool, dry and ventilated area. Do not place the battery near heating equipment, or expose to direct sunlight for long periods of time. Elevated temperatures can result in shortened battery life and degrade performance.

SECTION: 8. Exposure controls/personal protection

Personal protective equipment	:	None required under normal use.
Eye protection	:	Use ANSI approved chemical work safety goggles or face shield, when handling a leaking or ruptured battery.
Skin protection	:	Use rubber apron and/or other protective clothing when handling a ruptured battery.
Hand protection	:	In case of spill use PVC, neoprene or nitrile gloves of 15 mils (0.015 inch) or thicker.
Respiratory protection	:	Use a self-contained breathing apparatus when exposed to venting batteries.

SECTION: 9. Physical and chemical properties

Physical state	:	solid article
Color	:	silvery grey
Melting point	:	N/A
Boiling point	:	N/A
Vapor pressure	:	N/A
Vapor density	:	N/A
Solubility in water	:	insoluble
pH	:	no material
Flash point	:	N/A
Evaporation rate	:	N/A
Burning hot (kJ/mol)	:	No material

SECTION: 10. Stability and reactivity

10.1. Stability

Stable

10.2. Conditions to avoid

Keep away from open flames, hot surfaces, and sources of ignition. Do not puncture, crush, or incinerate. Avoid mechanical and electrical abuse.

10.3. Incompatible materials

Incompatible with water, moisture, strong oxidizing agents, reducing agents, acids and bases.

10.4. Hazardous decomposition products

None, under normal operating conditions. Keep leaking batteries away from contact with strong oxidizers, mineral acids, strong alkalis, and halogenated hydrocarbons..

SECTION: 11. Toxicological information

Under normal conditions of use nickel metal hydride batteries are non-toxic and are not hazardous waste. Inhalation, skin and eye contact are possible when the battery is opened. The corrosive fumes will be very irritating to skin, eyes, and mucous membranes when exposed to internal contents of the batteries. Over exposure can cause symptoms of non-fibrotic lung injury and membrane irritation.

SECTION: 12. Ecological information

12.1 Ecotoxicity

The batteries when properly used or disposed of do not present environmental hazard. When disposed, keep away from water, rain, and snow. The batteries do not contain mercury, cadmium or lead.

SECTION: 13. Disposal considerations

13.1. Waste treatment methods

Do not incinerate. Waste disposal must be in accordance with any and all applicable regulations. Disposal of lithium rechargeable batteries should be performed by permitted, professional disposal firms knowledgeable in federal, state or local requirements. Lithium batteries should be discharged to 0.00mAh prior to disposal. Nickel metal hydride batteries can also be collected as part of the Rechargeable Battery Recycling Corporation (RBRC) program. Visit www.RBRC.org for the nearest recycling center.

SECTION: 14. Transport information

14.1. Basic shipping description

UN3496 Nickle metal hydride batteries are not subject to the Department of Transportation (DOT), International Air Transport Association (IATA), and International Maritime Dangerous Goods (IMDG) regulations when all the requirements of the appropriate special provisions are met. All batteries must be securely packaged in a safe and responsible manner. Regulatory concerns from all agencies for safe packaging require that batteries be prepared and packaged in a manner that prevents a dangerous evolution of heat, short circuits, and damage to the batteries' terminals.

DOT	: Special Provision 340
IATA	: Special Provision A199
IMDG	: Special Provision 963

14.2 Additional information

IATA regulations require the words "not restricted" and the Special number A199 be provided on the air waybill when one is issued.

SECTION: 15. Regulatory information

No additional information available.

SECTION: 16. Other information

The information and recommendations set forth are made in good faith and are believed to be accurate at the date of preparation. Venom makes no warranty expressed or implied with respect to this information. Venom does not accept liability for any loss or damage that may occur, whether direct, incidental or consequential, from the use of this information.

APPENDIX A

ITEM	DESCRIPTION
1500	6V 1200mAh NiMH Flat Receiver
1501	6V 1200mAh NiMH Hump Receiver
1502	6V 3000mAh NiMH Large Scale Receiver
15022	7.2V 1600mAh 2/3A NiMH - UNI 2.0-L
1503	6V 1600mAh NiMH Flat Receiver
1504	6V 1600mAh NiMH Hump Receiver
1505	6V 4200mAh NiMH Hump Receiver - HPI Baja
15050	7.2v 3000mah NiMH Battery - EC3 Plug
15051	8.4v 3000mah NiMH Hump Battery-EC3 Plug
15052	9.6v 3000mah NiMH Hump Battery w/ EC3
1506	6V 5000mAh NiMH Hump Receiver - HPI Baja
1510	7.2V 1000mAh NiMH Micro - Micro/Molex
1511	7.2V 1200mAh NiMH Micro - Micro/Molex
1512	7.2V 1200mAh NiMH Flat Micro - Micro/Molex
1515	7.2V 1200mAh 2/3A NiMH - Micro/Molex
1521	2400mAh NiMH AA (4pcs)
1522	9.6V 2000mAh NiMH - Tamiya
1525-7	8.4V 3000mAh NiMH Flat Pack - UNI 2.0-L
1526-7	8.4V 4200mAh NiMH Flat Pack - UNI 2.0-L
1527-7	8.4V 5000mAh NiMH Flat Pack - UNI 2.0-L
15205	7.2V 1600mAh Flat Micro – UNI 2.0-L
15300	8.4V 1600mAh NiMH Stick - Airsoft
15301	9.6V 1600mAh NiMH Stick - Airsoft
15302	8.4V 1600mAh NiMH Saddle - Airsoft
15303	9.6V 1600mAh NiMH Saddle - Airsoft
1531	7.2V 2400mAh NiMH - UNI
1532	7.2V 3000mAh NiMH - UNI 2.0-L
1532-7	8.4V 3000mAh NiMH Hump Pack - UNI 2.0-L
1532-8	9.6V 3000mAh NiMH Hump Pack - UNI
1534	8.4V 1200mAh NiMH Flight Pack - Mini Tamiya
1538	7.2V 900mAh NiMH Flight Pack - Mini Tamiya
1539	7.2V 3000mAh NiMH - Tamiya for Starter
1539HXT4	7.2V 3000mAh NiMH - HXT 4.0mm
1540	7.2V 3300mAh NiMH - UNI 2.0-L
1542	8.4v 800mah NiMH Heli Pack - JST
1544	7.2V 3600mAh NiMH - UNI 2.0-L
1546	7.2V 4200mAh NiMH - UNI 2.0-L
1546-7	8.4V 4200mAh NiMH Hump Pack - UNI 2.0-L
1546-8	9.6V 4200mAh NiMH Hump Pack - UNI
1546T	7.2v 4200mah NiMH Battery - TRX Plug
1547	7.2V 4600mAh NiMH - UNI 2.0-L
1548	7.2V 5000mAh NiMH - UNI 2.0-L
1548-7	8.4V 5000mAh NiMH Hump Pack - UNI 2.0-L
1548-8	9.6V 5000mAh NiMH Hump Pack - UNI
1548HXT4	7.2V 5000mAh NiMH - HXT 4.0mm