

## MATERIAL SAFETY DATA SHEET

The batteries are exempt articles and are not subject to the OSHA Hazard Communication Standard Requirement. This sheet is only provided as technical information and is referred normal use of the product in question. Zeus makes no warranty expressed or implied.

### SECTION 1 - Product and Company Identification

<b>⚡ Product Name:</b> Nickel Metal Hydride Battery	<b>Sizes:</b> All NiMH Series
<b>⚡ Company:</b> PowerCell LLC dba ZEUS Battery Products	<b>Telephone Number:</b> +1 (630) 295-6800
<b>⚡ Address:</b> 191 Covington Dr. Bloomington, IL 60108 USA	<b>Fax Number:</b> +1 (630) 295-6801
	<b>Date of Preparation:</b> February 4th, 2021

### SECTION 2 - Hazardous Ingredients / Identity Information

Hazardous Components:

A) The content of elements are based on homogeneous materials level of NiMH battery:

Element	CAS#	Limit (mg/kg)
Lead	7439-92-1	<1000
Cadmium	7440-43-9	<100
Hexavalent Chromium (Cr6+)	18540-29-9	<1000
Mercury	7439-97-6	<1000
Polybrominated Biphenyls (PBBs)	59536-65-1	<1000
Polybrominated Diphenyls Ethers (PBDEs)	---	<1000

B) The content of elements are based on total weight of NiMH battery:

Element	CAS#	Limit (mg/kg)
Lead	7439-92-1	<40
Cadmium	7440-43-9	<20
Hexavalent Chromium (Cr6+)	18540-29-9	<5
Mercury	7439-97-6	<5
Polybrominated Biphenyls (PBBs)	59536-65-1	Nil
Polybrominated Diphenyls Ethers (PBDEs)	---	Nil
Ni(OH) <sub>2</sub> (Nickel Hydroxide)	12054-48-7	<30%
30% KOH Solution (Potassium Hydroxide)	1310-58-3	<20%
30% NaOH Solution (Sodium Hydroxide)	1310-73-2	<20%
Non-Hazardous Materials	---	<30%

### SECTION 3 - Physical / Chemical Characteristics

Boiling Point:	NA	Solubility Water: NA
Vapor Pressure (mm Hg):	NA	Appearance and Odor: Cylindrical Shape, odorless
Vapor Density (AIR=1):	NA	
Melting Point:	NA	
Specific Gravity (H <sub>2</sub> O=1):	NA	
Evaporation Rate (Butyl Acetate):	NA	

### SECTION 4 - Hazard Classification

Classification: NA

### SECTION 5 - Reactivity Data

Stability	Stable	Conditions to Avoid: NA
Incompatibility (Materials to Avoid)	NA	
Hazardous Decomposition or Byproducts	NA	
Hazardous Polymerization	Will not occur	Conditions to Avoid: NA

### SECTION 6 - Health Hazard Data

#### Route(s) of Entry

Inhalation: NA

Skin: NA

Ingestion: NA

#### Health Hazard (Acute and Chronic) / Toxicological information

In case of electrolyte leakage, skin will be itchy when contaminated with electrolyte.

Contact with electrolyte can cause severe irritation and chemical burns.

Inhalation of electrolyte vapors may cause irritation of the upper respiratory tract and lungs.

### SECTION 7 - First Aid Measures

If electrolyte leakage occurs and makes contact with skin, wash with plenty of water immediately.

If electrolyte comes into contact with eyes, wash with copious amounts of water for fifteen (15) minutes, and contact a physician.

If electrolyte vapors are inhaled, provide fresh air and seek medical attention if respiratory irritation develops. Ventilate the contaminated area.

## SECTION 8 - Fire and Explosion Hazard Data

Flash Point (Method Used):	NA
Ignition Temp:	NA
Lower Explosive Limit:	NA
Upper Explosive Limit:	NA
Flammable Limits:	NA

### Extinguishing Media:

It is permissible to use Carbon Dioxide, Dry Chemical or Foam extinguishers on the batteries or their packing material, BUT water extinguisher is not suitable. Cool exterior of batteries if exposed to fire to prevent rupture.

### Special Fire Fighting Procedures:

Fire fighters should wear self-contained breathing apparatus.

### Unusual Fire and Explosion Procedures:

- Do not dispose of battery in fire – may explode.
- Do not short-circuit battery – may cause burns.

## SECTION 9 - Accidental Release or Spillage

### Steps to Be Taken in Case Material is Released or Spilled:

- Batteries that are leakage should be handled with rubber gloves.
- Avoid direct contact with electrolyte.
- Wear protective clothing and positive pressure Self-Contained Breathing Apparatus (SCBA).

## SECTION 10 - Handling and Storage

### Safe handling and storage advice:

- Batteries should be handled and stored carefully to avoid short circuits.
- Do not store in disorderly fashion, or allow metal objects to be mixed with stored batteries.
- Never disassemble a battery.
- Do not breathe cell vapors or touch internal material with bare hands.
- Keep batteries between -20°C and 35°C for prolong storage. When the cells are closed to fully charged, the storage temperature should be between -20°C and 30°C and should be controlled at 10-20°C during transportation and packed with efficient air ventilation.

**SECTION 11 - Exposure Controls / Person Protection**

Occupational Exposure Limits - LTEP	NA
- STEP	NA
Respiratory Protection (Specify Type)	NA
Ventilation - Local Exhausts	NA
- Mechanical (General)	NA
- Special	NA
- Other	NA
Protective Gloves	NA
Eye Protection	NA
Other Protective Clothing or Equipment	NA
Work / Hygienic Practices	NA

**SECTION 12 - Ecological Information**

NA

**SECTION 13 - Disposal Method**

Dispose of batteries according to government regulations.

**SECTION 14 - Transportation Information**

**Nickel Metal Hydride Battery  
Dry Cell**

**Nickel Metal Hydride Batteries have passed UN38.3 testing.**

**U.S DOT:** The Transportation of Nickel Metal Hydride batteries (Dry Cell) are governed by US DOT CFR49 Part 171-185 of the US Hazardous Materials Regulations (HMR). "Dry Cell" batteries are unregulated for purposes of transportation by the U.S. Department of Transportation (DOT).

**IATA Dangerous Goods Regulations DGR:** The International Air Transportation of Nickel Metal Hydride batteries (Dry Cell) are governed International Air Transport Association IATA. The Transportation of "Dry Cell" batteries are "NOT RESTRICTED" in accordance with Special Provision A 123.

**IMDG:** The international Sea Transportation of Nickel Metal Hydride batteries (Dry Cell) are governed by the International Maritime Dangerous Goods (IMDG) regulations.

## **SECTION 15 - Regulatory Information**

Special requirement be according to the local regulatories.

## **SECTION 16 - Other Information**

The data in this Material Safety Data Sheet relates only to the specific material designated herein. If you need further information, please contact a Zeus sales representative.