

# MSDS NIMH POWER TOOL BATTERIES

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## Section I – Chemical product and company identification

Product Name : Nickel Metal Hydride Battery  
 Trade Name : HFR  
 Sample Code : 7.2V- 24V  
 Manufacture : ENIX ENERGIES

Address : 38522 SAINT EGÈVE CEDEX - BP231 - FRANCE

Website : [www.enix-energies.com](http://www.enix-energies.com)

## Section II – Composition/Information on Ingredient

Chemical Name	CAS No.	OSHA PEL (mg/m <sup>3</sup> )	ACGIH TLV (mg/m <sup>3</sup> )
Nickel (powder)	7440-02-0	1TWA	1 TWA
Nickel hydroxide	12054-48-7	1 TWA	1 TWA
Cobalt	7440-48-4	0.1 TWA	Dust & Fume 0.005
Manganese	7439-96-5	Fume: 5 Ceiling Limit	Dust: 5 Fume: 1
Lanthanum	7439-91-0	NA	NA
Cerium	7440-45-1	NA	NA
Neodymium	7440-00-8	NA	NA
Potassium hydroxide	1310-58-3	NA	2 Ceiling Limit
Sodium hydroxide	1310-73-2	2 TWA	2 Ceiling Limit
Lithium hydroxide	1310-65-2	NA	NA

The information and recommendations set forth are made in good faith and believed to be accurate as of the date of preparation. We make no warranty, expressed or implied, with respect to this information and disclaims all liabilities from reliance on it.

- Notes: 1. Concentrations vary depending on the state of charge or discharge.  
 2. TWA is the time weighted average concentration over an 8-hour period.

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### **Section III — Hazards Identification**

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#### **Routes of Entry**

Inhalation, Skin, Ingestion

#### **Health Hazards**

Nickel has been identified by the National Toxicology Program (NTP) as reasonably anticipated to be a carcinogen. Cobalt has been identified by IARC as a 2B carcinogen. Chronic overexposure to nickel may result in cancer; dermal contact may result in dermatitis in sensitive individuals.

#### **Sign/Symptoms of exposure**

Exposure to the electrolyte contained inside the battery may result in chemical burns.

#### **Medical Conditions Generally Aggravated by Exposure**

A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.

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### **Section IV First Aid Measures**

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#### **skin**

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

#### **eyes**

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

#### **Inhalation**

If potential for exposure to fumes or dusts occurs, remove immediately to fresh air and seek medical attention.

#### **Swallowing**

Do not induce vomiting. Seek medical attention immediately.

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### **Section V - Fire Fighting Measures**

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Flash Point: NA Lower Explosive Limit: NA Upper Explosive Limit: NA

Extinguishing Media: Any class of extinguishing medium may be used on the batteries or their packing material.

Special Fire Fighting Procedures: Exposure to temperatures of above 212°F can cause venting of the liquid electrolyte.

Internal shorting could also cause venting of the electrolyte. There is potential for exposure to iron, nickel, cobalt, rare earth metals (cerium, lanthanum neodymium, and praseodymium), manganese, and aluminum fumes during fire; use self-contained breathing apparatus.

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### **Section VI – Accidental Release Measures**

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#### **Steps to be taken in case Material is Released or Spilled**

Spill and leaks are unlikely because cells are contained in an hermetically-sealed case. If the battery case is breached, don protective clothing that is impervious to caustic materials and absorb or pack spill residues in inert material. Dispose in accordance with applicable state and federal regulations.

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## **Section VII – Handling and Storage**

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Batteries packaged in bulk containers should not be shaken. Metal covered tables or belts used for assembly of batteries into devices can be the source of short circuits; apply insulating material to assembly work surface. If soldering or welding to the case of the battery is required, consult your Shenzhen Unite-fortune technology Co., Ltd.representative for proper precautions to prevent seal damage or external short circuit.

### **Precautions to be taken in handling and storing**

. **Storage:** Store in a cool place, but 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:** Accidental short circuit will bring high temperature elevation to the battery as well as shorten the battery life. Be sure to avoid prolonged short circuit since the heat can burn attendant skin and even rupture of the battery cell case.

### **Other precautions**

Do not 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.

Be sure to avoid prolonged short circuit since the heat can burn attendant skin and even rupture of the battery cell case.

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## **Section VIII – Exposure Controls,Personal Protection**

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**Respiratory Protection:** Not required under normal use.

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### **Ventilation**

Not required under normal use.

### **Gloves:**

Not required under normal use.

### **Other Protective Clothing or Equipment**

Not required under normal use

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## **Section VIX –Physical and Chemical Properties**

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**Nominal Voltage :** 1.2V

**Rated Capacity:** 1050mAH

**Solubility Characters:**Insoluble

**Appearance Characters:** white

**Sample Nature:** Electrion product

**Chemical Uses:** Power supply

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## **Section X-Stability and Reactivity**

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### **Stability**

Stable

### **Conditions to Avoid**

Do not dispose in fire, mix with other battery types, charge above specified rate, connect improperly, or short circuit

### **Hazardous Polymerization**

N/A

### **Hazardous Decomposition Products**

N/A

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## **Section XI – Toxicological Information**

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Inhalation, skin contact and eye contact are possible when the battery is opened, Exposure to internal contents, the corrosive fumes will be very irritation to skin, eyes and mucous membranes, Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation

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## **Section XII – Ecological information**

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N.A

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## **Section XIII - Disposal Considerations**

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Shenzhen Unite-fortune encourages battery recycling. Our Nickel Metal Hydride batteries are not defined by the federal government as hazardous waste and are safe for disposal in the normal municipal waste stream. ,

DO NOT INCINERATE or subject battery cells to temperatures in excess of 212°F. Such treatment can cause cell rupture.

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## **Section XIV – Transportation Information**

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Sealed Nickel Metal Hydride Battery are considered to be "dry cell" batteries and are not subject to dangerous goods regulation for the purpose of transportation by the U.S. Department of Transportation (DOT), the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) according to special provision A123 under 51th edition 2010 IATA dangerous goods regulation.

or the International Maritime Dangerous Goods regulations (IMDG) regulate them for ocean transportation under Special provision 304 which says

"Batteries, dry, containing corrosive electrolyte which will not flow out the battery if the battery case is cracked are not subject to the provisions of this Code provided the batteries are securely packed and protected against short-circuits. Examples of such batteries are : alkali-manganese, zinc carbon, nickel metal hydride and nickel-cadmium batteries." IATA requires that batteries being transported by air must be protected from short-circuiting and protected from movement that could lead to short-circuiting.

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## **Section XV – Regulatory Information**

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Special requirement be according to the local regulatories

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## **Section XVI –Additional information**

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The data in this Material Safety Data Sheet relates only to the specific material designated herein