

SHENZHEN UNITE-FORTUNE DEVELOPMENT CO., LTD

Material safety data sheet

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Revision: 1/A

Page 1 of 5

Section I – Chemical product and company identification

Product Name :Nickel Metal Hydride Battery
Trade Name :HFR
Samples : Ni-Mh Rechargeable Battery BD-3.6
Manufacture : SHENZHEN UNITE-FORTUNE DEVELOPMENT CO.,LTD
Address : 30TH FLOOR,TOWER A,WORLD FINANCE CENTER,NO.4003 SHENNAN EAST ROAD,LUOHU DISTRICT ,SHENZHEN ,CHINA
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Section II – Composition/Information on Ingredient

Chemical Name	CAS No.	OSHA PEL (mg/m ³)	ACGIH TLV (mg/m ³)	wt%
Nickel (powder)	7440-02-0	1TWA	1 TWA	6
Nickel hydroxide	12054-48-7	1 TWA	1 TWA	26
Cobalt	7440-48-4	0.1 TWA	Dust & Fume 0.005	33
Manganese	7439-96-5	Fume: 5 Ceiling Limit	Dust: 5 Fume: 1	2
Lanthanum	7439-91-0	NA	NA	1
Cerium	7440-45-1	NA	NA	1
Neodymium	7440-00-8	NA	NA	1
Potassium hydroxide	1310-58-3	A	2 Ceiling Limit	24
Sodium hydroxide	1310-73-2	2 TWA	2 Ceiling Limit	3
Lithium hydroxide	1310-65-2	NA	NA	3

The information and recommendations set forth are made in good faith and believed to be accurate as of the date of preparation. **Shenzhen Unite-Fortune Development Co., Ltd.** makes 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.



SHENZHEN UNITE-FORTUNE DEVELOPMENT CO., LTD

Material safety data sheet

Document Number:

Revision:1/A

Page 2of 5

Effective Date: Jan. 1st. 2018

Section III — Hazards Identification

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.

Section IV First Aid Measures

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.

Section V - Fire Fighting Measures

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.

Section VI – Accidental Release Measures

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.



SHENZHEN UNITE-FORTUNE DEVELOPMENT CO., LTD

Material safety data sheet

Document Number:

Revision: 1/A

Page 3 of 5

Effective Date: Jan. 1st. 2018

Section VII – Handling and Storage

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.

Section VIII – Exposure Controls, Personal Protection

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

Section VIX – Physical and Chemical Properties

Nominal Voltage : 3.6V

Rated Capacity: 2100mAH

Solubility Characters: Insoluble

Appearance Characters: black

Sample Nature: Electronics

Chemical Uses: Power supply



SHENZHEN UNITE-FORTUNE DEVELOPMENT CO., LTD

Material safety data sheet

Document Number:

Revision:1/A

Page 4of 5

Effective Date: Jan. 1st. 2018

Section X-Stability and Reactivity

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

Section XI – Toxicological Information

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

Section XII – Ecological information

N.A

Section XIII - Disposal Considerations

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.

Section XIV – Transportation Information

Shenzhen Unite-fortune sealed Nickel Metal Hydride batteries 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 A199 under 57th, edition 2017 ITAT dangerous goods regulation.

or the International Maritime Dangerous Goods regulations (IMDG). Regulate them for ocean transportation under special provision 963 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.



SHENZHEN UNITE-FORTUNE DEVELOPMENT CO., LTD

Material safety data sheet

Document Number:

Revision:1/A

Page 5of 5

Effective Date: Jan. 1st. 2018

Section XV – Regulatory Information

Special requirement be according to the local regulatory

Section XVI –Additional information

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

