Shenzhen Anbotek Compliance Laboratory Limited

TEST REPORT

Report No.....: R011503326B

Client.....: SHENZHEN FBTECH CO., LTD.

Address.....: No.8, Tongfuyu Industrial Zone, Kukeng, Guanlan Town, Bao'an District, Shenzhen, Guangdong, China

Manufacturer.....: SHENZHEN FBTECH CO., LTD.

Address.....: No.8, Tongfuyu Industrial Zone, Kukeng, Guanlan Town, Bao'an District, Shenzhen, Guangdong, China

Written by : Bob Wang

Approved by : Mark zhu

Date(s) of Report : **2015-03-16 to 2015-03-25**

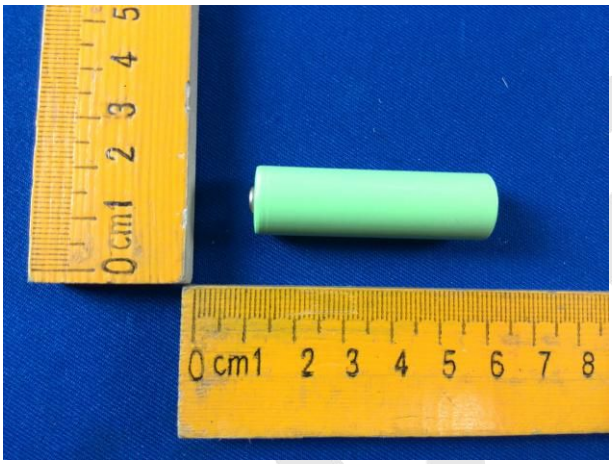
MSDS
MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Products Name: Nickel Metal Hydride Battery

Model Number: AA1800

Sample Photo:



Rating: Nominal Voltage: 1.2V
Rated Capacity: 1800mAh 2.16Wh
Weight: 25.4g

Manufacture Name:SHENZHEN FBTECH CO., LTD.

Address: No.8, Tongfuyu Industrial Zone, Kukeng, Guanlan Town, Bao'an District, Shenzhen, Guangdong, China

Telephone No.:13613065960

E-mail: 597101611@qq.com

Section 2. Composition/Information on Ingredients

Substance/preparation: preparation				
Chemical Name	**Percent (by weight)**	**CAS No.**	**MAC(mg/m3)/China**	**MAC(mg/m3)/USSR (TLV)**
Cobalt Oxide	2%~6%	1307-96-6	0.1	0.5
Nickel Hydroxide	23%~28%	12054-48-7	0.5	0.05

Hydrogen absorbing alloy	30%~35%	N.A	N.A	N.A
Potassium hydroxide	<2%	1310-58-3	N.A	0.5
Sodium hydroxide	<1%	1310-73-2	0.5	0.5
Lithium hydroxide	<1%	1310-66-3	N.A	N.A
Paper	<1%	N.A	N.A	N.A
Steel Casing	20%~25%	N.A	N.A	N.A
Plastic	<1%	N.A	N.A	N.A
Other	<1%	N.A	N.A	N.A

Section 3. Hazardous description

Inhalation: During normal use inhalation is an unlikely route of exposure due to containment of hazardous materials within the battery case. However, should the batteries be exposed to extreme heat or pressures causing a breach in the battery cell case, exposure to the constituents may occur. skin and eyes will be heat injured when contacted with the substances contained in the battery, because it is strongly corrosive. Take it by accident can cause chemical burn of the alimentary canal, anabrosis and bleeding of the mucous membrane, and shock. Nickel compounds are carcinogenic. Cobalt compounds could cause erythremia, cardiomyopathy and goiter.

Ingestion: If the battery case is breached in the digestive tract, the electrolyte may cause localized burns.

Skin Absorption: No evidence of adverse effects from available data.

Skin Contact: Exposure to the electrolyte contained inside the battery may result in chemical burns. Exposure to nickel may cause dermatitis in some sensitive individuals.

Eye Contact: Exposure to the electrolyte contained inside the battery may result in severe irritation and chemical burns.

Carcinogenicity: 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.

Other Effects of Repeated (Chronic) Exposure: Chronic overexposure to nickel may result in cancer; dermal contact may result in dermatitis in sensitive individuals.

Medical Conditions Aggravated by Overexposure: A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure in unlikely to aggravate existing medical conditions.

Section 4. First Aid Procedures

Swallowing: Do not induce vomiting. Seek medical attention immediately.

Skin: If the internal cell materials of an opened battery cell comes into contact with the skin, immediately flush with water for at least 15 minutes.

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

Eyes: If the contents from an opened battery comes into contact with the eyes, immediately flush eyes with water continuously for at least 15 minutes. Seek medical attention.

Section 5. Fire fighting Procedures

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

Fire Fighting Procedures: Exposure to temperatures of above 100℃ can cause evaporation of the liquid content of the alkality electrolyte resulting in the rupture of the cell. Potential for exposure to metal alloy fumes during fire; use self-contained breathing apparatus.

Section 6. Spill and Leak Procedures

Spill and leaks are unlikely because cells are contained in a hermetically-sealed case. If the battery case is breached, do protective clothing that is impervious to caustic materials and absorb or pack spill residues in inert material. Dispose of as a hazardous waste in accordance with applicable state and federal regulations. Resultant spill residues may be characterized as caustic. See Section VII for response to fires or explosions. If there is a great deal leaked, collect and transport them to the professional waste treatment, and wash the ground with plenty of water which should be flushed to the waste water system.

Section 7. Precautions for Safe Handling and Use

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 -20℃ and35℃. Optimum storage humidity are 65±20%.

Mechanical Containment: If there are special encapsulation or sealing requirements, consult your McNair company. representative about possible cell hazard precautions or limitations.

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. 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 McNair company. representative for proper precautions to prevent seal damage or external short circuit.

Charging: This battery is designed for recharging. A loss of voltage and capacity of batteries due to self-discharge during prolonged storage is unavoidable. Charge battery before use. Observe the specified charge rate since higher rates can cause a rise in internal gas pressure that may result in damaging heat generation or cell rupture and/or venting.

Labeling: If normal label warnings are not visible, it is important to provide a device label stating: CAUTION: 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.

Soldering/welding: If soldering or welding to the case of the battery is required, consult your McNair company. representative for proper precautions to prevent seal damage or external short circuit.

Section 8. Safe Handling and Use /Person Protection

Threshold Limit Values: See Section III.
Ventilation Requirements: Not required under normal use.
Respiratory Protection: Not required under normal use.
Eye Protection: Not required under normal use.
Gloves: Not required under normal use.

Section 9. Physical/ Chemical Characteristics

External appearance: Silvery white metal shell
Relative Density (Water=1): N.A
Relative Vapor Density(Air=1): N.A
Solubility in Water: Insoluble
Flash Point: N.A
Lower Explosive Limit: N.A
Upper Explosive Limit: N.A

Section 10. Stability and Reactivity

The batteries are stable under normal operating conditions.

Hazardous polymerization will not occur.

Hazardous decomposition products: oxides of nickel and cobalt.

Conditions to avoid: heat, open flames, sparks, and moisture.

Potential incompatibilities (i.e., materials to avoid contact with): The battery cells are encased in a non-reactive container; however, if the container is breached, avoid contact of internal battery components with acids, aldehydes, and carbamate compounds.

Section 11. Toxicology Data

During normal use, hazardous materials are fully contained inside the battery cell. However, If the battery case is breached, hazardous materials may be released. The following information is provided for the user's information only.

Acute toxicity: Cobalt oxide: LD50：1700 mg/kg (Swallowing of big mouse)
Nickel hydroxide: LD50：1500 mg/kg (Swallowing of big mouse)

Section 12. Ecological Information

Other hazardous effect: During normal use, It is not hazardous. If the battery case is breached, the substances inside the battery is hazardous to the environment. There should especially pay attention to the pollution to the waters.

Section 13. Recycling and Disposal

Cell encourages battery recycling. Our Nickel Metal Hydride batteries are recyclable through the professional waste disposal company. Nickel Metal Hydride batteries must be handled in accordance with all applicable state and federal laws and regulations.

Don't incinerate or subject battery cells to temperatures in excess of 100℃. Such treatment can vaporize the liquid electrolyte causing cell rupture. Incineration may result in metal alloy fumes emissions.

Section 14. Transportation Information

Cell sealed Nickel Metal Hydride batteries are considered to "dry cell" batteries and not subject to hazardous materials (dangerous goods) regulations 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) or the International Maritime Organization (IMO).

The only DOT requirement for shipping Nickel Metal Hydride batteries are contained in Special Provision 130 which states, "Batteries, dry" are not subject to the requirements of this subchapter when they are securely packaged and offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals) and protects against short circuits." A similar requirement is contained in 49 CFR 173.21(c) of the U.S. DOT hazardous materials regulations.

This battery is a Nickel-Metal Hydride Battery, it belongs to non-spiliable battery. According to 2015 IATA DGR 56th edition, this battery can be classified as "NOT RESTRICTED, AS PER SPECIAL PROVISION A199, "This entries applies to Batteries, electric storage, not otherwise listed in Subsection 4.2 – List of Dangerous Goods. Any electrical battery or battery powered device having the potential of dangerous evolution of heat that is not prepared so as to prevent a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or, in the case of equipment, by disconnection of the battery and protection of exposed terminals) is forbidden from transport." As of 1/1/97 IATA requires that batteries being transported by air must be protected from short-circuiting and protected from movement that could lead to short-circuiting. Codes and classifications according to international regulations for transport air IATA-DGR: special provision A45((a)-(e)).

Failure to comply with these requirements may result in substantial civil penalties.

Section 15. Statute Information

Statute information: No detail definite Rules issued by the Government.

Section 16. Other Information

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