

MSDS

MATERIAL SAFETY DATA SHEET

Documents No.: MSDS-TPNIMH01-2023

Section 1- Chemical Product and Manufacturer Identification

Product name	Nickel Metal Hydride Batteries. (NI-MH Batteries)		
Model	All		
Manufacturer Name:	Toptech Battery (HK) Limited		
Address:	Building 1, Launch Industrial Park, Wuhe Road North BanTian, Bu Ji, ShenZhen, China		
Fax	86-755 8473 9850	Company emergency phone	+86 (755) 8473 9528
Issue date	January 1 st ,2023		

Section 2 - Composition/Information on Ingredient

CHEMICAL NAME	Molecular Formula	CAS No.	Weight(%)
Nickel	Ni	7440-02-0	30-40
Zinc	Zn	7440-66-6	5-19.0
Potassium Hydroxide (Liquid)	KOH	1310-58-3	10-15
Cobalt	Co	7440-48-4	4-8
Manganese	Mn	7439-96-5	<2
Aluminum	Al	7429-90-5	<1
Iron	Fe	7439-89-6	<1
Water, paper, plastic, other		Balance	

Section 3 - Hazards Identification

No specific health hazards for normal use.

Routes of Entry

Eyes, Skin, Inhalation, Ingestion

Health Hazards

These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery

is mechanically or electrically abused. The most likely risk is acute exposure when a battery vents. Leaking material exposure to skin, eyes may cause irritation. Inhalation of fumes may cause respiratory irritation.

Sign/Symptoms of Exposure

Leaking can cause thermal and chemical burns upon contact with the skin

Section 4 - First Aid measures**Eyes**

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin

Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

Inhalation

Remove from exposure and move to fresh air immediately. Use oxygen if available.

Ingestion

Do not induce vomiting. Call a physician immediately.

Section 5 - Fire Fighting Measures

Flash Point: N/A

Auto-Ignition Temperature: N/A.

Extinguishing Media

CO₂, dry chemical.

Special Fire-Fighting Procedures

Self-contained breathing apparatus.

Unusual Fire and Explosion Hazards

Cell may vent when subjected to excessive heat-exposing battery contents.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide, other metallic oxide fumes.

Section 6 - Accidental Release Measures**Steps to be Taken in case Material is Released or Spilled**

If the battery is accidentally broken and leaks out, wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the batteries to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled material with absorbent.

Waste Disposal Method

It is recommended to discharge the battery to the end, recycle copper and other metal, handing in the abandoned batteries to related department unified, dispose of the batteries in accordance

with approved local, state, and federal requirements. Consult state environmental protection agency and/or federal EPA.

Section 7- Handling and Storage

The batteries should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container. Do not short circuit terminals, or charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.

Precautions to be taken in handling and storing

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

Other Precautions

Do not short or install with incorrect polarity.

Section 8- Exposure Controls, Personal Protection

Respiratory Protection

In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting batteries. Respiratory Protection is not necessary under conditions of normal use.

Other Protective Clothing or Equipment

Not necessary under conditions of normal use.

Personal Protection is recommended for venting batteries: Respiratory Protection, Protective Gloves, Protective Clothing and Safety Glass with side shields.

Section 9- Physical and Chemical Properties

Boiling Point:	N/A	Melting pointing:	N/A
Vapor Pressure:	N/A	Vapor Density:	N/A
Specific Gravity:	1.17-1.250(electrolyte)	Evaporation Rate:	Not determined
Solubility in water:	Electrolyte solution is completely soluble		
REMAINDER:	INSOLUBLE		

Appearance Characters: white, cylindrical, with odorless battery.

Chemical Uses: Consumer electronics & industrial electronics.

Section 10- Stability and Reactivity

Stability

Stable .

Conditions to Avoid

Heating, fire, mechanical abuse and electrical abuse.

Hazardous Decomposition Products

When exposed to fire or extreme heat, batteries may emit toxic fumes.

Section 11- Toxicological Information

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

Section 12- Ecological Information**Environment Effect**

When promptly used or disposed the battery does not present environmental hazard.

When disposed, keep away from water, rain and snow.

Section 13- Disposal Considerations**Appropriate Method of Disposal of Substance or Preparation**

Dispose of the batteries in accordance with approved local, state, and federal requirements.

Consult state environmental agency.

Section 14-Transportation Information

Ni-MH battery is exempt from dangerous goods. It is considered non-dangerous goods by the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) DGR 64nd, IATA Special Provisions A199, International Maritime Dangerous Goods Regulations (IMDG) (40-20), IMDG Special Provisions 963, or the «Recommendations on the Transport of Dangerous Goods Model Regulations» (21st)

S.P.A199 The UN number UN3496 is only applicable in sea transport. Nickel-metal hydride batteries Or nickel-metal hydride battery-powered devices, equipment or vehicles have the potential of a dangerous evolution of heat are not subject to these Regulations provided they are prepared for transport so as to prevent:

- (a) A short-circuit (e.g. is 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); and (b) unintentional activation.

The words "Not restricted" and the Special Provision numbers must be included in the description of the substance on the Air Waybill as required by 8.2.6, when an Air Waybill is issued..

Transportation Mode: By air, by sea, by railway, by road.

Packaging Information: PV sleeve.

Section 15- Regulatory Information**Law Information**

《Dangerous Goods Regulation》

《Recommendations on the Transport of Dangerous Goods Model Regulations》

《International Maritime Dangerous Goods》

《Technical Instructions for the Safe Transport of Dangerous Goods》

《Classification and code of dangerous goods》

《Occupational Safety and Health Act》 (OSHA)

《Toxic Substances Control Act》 (TSCA)

《Consumer Product Safety Act》 (CPSA)

《Federal Environmental Pollution Control Act》 (FEPCA)

《The Oil Pollution Act》 (OPA)

《Superfund Amendments and Reauthorization Act Title III (302/311/312/313)》 (SARA)

《Resource Conservation and Recovery Act》 (RCRA)

《Safety Drinking Water Act》 (CWA)

《California Proposition 65》

《Code of Federal Regulations》 (CFR)

In accordance with all Federal, State and Local laws.

Section 16 - Additional Information

The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

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