

**MSDS**

**MATERIAL SAFETY DATA SHEET**

Documents No.: MSDS-TPNIMH01-2019

**Section 1- Chemical Product and Manufacturer Identification**

<b>Product name</b>	Nickel Metal Hydride Batteries. (NI-MH Batteries)		
<b>Model</b>	All		
<b>Manufacturer Name:</b>	Toptech Battery (HK) Limited		
<b>Address:</b>	Building 1, Launch Industrial Park, Wuhe Road North BanTian, Bu Ji, ShenZhen, China		
<b>Fax</b>	86-755 8473 9850	Company emergency phone	+86 (755) 8473 9528
<b>Issue date</b>	January 4 <sup>th</sup> ,2019		

**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**

CO<sub>2</sub>, 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), International Maritime Dangerous Goods Regulations (IMDG), or the «Recommendations on the Transport of Dangerous Goods Model Regulations» .

Separate batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport.

According to IATA special provisions A199 not dangerous goods

The consignment can be shipped as NOT RESTRICTED in accordance with the 60<sup>th</sup> Edition of IATA DANGEROUS GOODS REGULATIONS and all applicable carriers and government regulations. The product safety conditions met the IATA DGR- Special Provision A199.

**Transport Fashion:** 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.

**Date issued: 2018/1/4**

**Last Date Revised: 2019/1/4**

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