Material Safety Data Sheet

Section 1 Chemical Product and Company Identification

Product Name: Ni-MH Battery

Application of the substance / the preparation: Consumable

Manufacturer: YUNTONG Power Co., Ltd

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Section 2 Hazards identification

Hazard description: A sealed Ni-Mh Battery is not hazardous in normal use on principle.

Information concerning particular hazards for human and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification system:

The classification is according to the latest editions of 1907/2006/EC, EU Commission Directive 1999/45/EC,67/548/EEC, and extended by company and literature data.

Section 3 Composition/Information on Ingredients

· **Chemical characterization**
· **Description:**The substance listed below with nonhazardous additions.
For the wording of listed risk phrases refer to section 16.

· Dangerous components:		
CAS: 7440-02-0 EINECS: 231-111-4 EU number: 028-002-00-7	nickel Carc. Cat. 3; T, Xi; R 40-43-48/23	15%-30%
CAS: 11113-74-9 EINECS: 234-348-1 EU number: 028-008-00-X	nickel hydroxide Carc. Cat. 1, Muta. Cat. 3, Repr. Cat. 2; T, Xi, N; R 49-61-20/22-38-42/43-48/23-68-50/53	20%-40%
CAS: 7439-96-5 EINECS: 231-105-1	manganese Xn; R 48	4.0%-5.5%
CAS: 1310-58-3 EINECS: 215-181-3 EU number: 019-002-00-8	potassium hydroxide C, Xn; R 22-35	3%-6%
CAS: 7440-48-4 EINECS: 231-158-0 EU number: 027-001-00-9	cobalt Xn, Xi; R 42/43-53	1%-5%
CAS: 7440-00-8 EINECS: 231-109-3	neodymium Xi, F; R 11-14/15-36/37/38	0%-2.5%
CAS: 7429-90-5 EINECS: 231-072-3 EU number: 013-002-00-1	aluminium F; R 11-15	0.2%-1.2%
CAS: 7440-10-0 EINECS: 231-120-3	Praseodymium F; R 170,	1.5%-6.0%
· Non-dangerous components:		
CAS: 7439-89-6 EINECS: 231-096-4	iron	10%-20%
CAS: 7439-91-0 EINECS: 231-099-0	lanthanum	5%-10%
CAS: 9003-07-0	Polipropene 25	0.1%-1.0%
CAS: 7732-18-5 EINECS: 231-791-2	pure water	5%-10%
CAS: 7440-45-1 EINECS: 231-154-9	cerium	2%.-4.0%
CAS: 32131-17-2	Nylon-66	0.2%-6.0%
CAS: 8052-42-4 EINECS: 232-490-9	Asphalt	0.01%-0.3%
CAS: 7440-50-8 EINECS: 231-159-6	copper	0.01%-0.10%

Remark:
Polipropene 25 (CAS No.: 9003-07-0)
Synonym:Polypropylene

Asphalt (CAS No.: 8052-42-4)
Synonym: Asphaltum

Section 4 First-aid Measures

General information:
If exposure to internal materials within battery due to damaged outer casing, the fol owing actions are recommended.
After inhalation:
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
After skin contact: Rinse with water.
After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing: Drink plenty of water and provide fresh air. Call for a doctor immediately.

Section 5 Fire-fighting Measures

Suitable extinguishing agents:
CO_2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Protective equipment: Wear fully protective suit.

Section 6 Accidental release measures

Person-related safety precautions: Wear protective equipment. Keep unprotected persons away.
Measures for environmental protection:
Do not allow product to reach sewage system or any water sourse.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
Measures for cleaning/collecting:
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.

Section 7 Handling and Storage

Handling

Information for safe handling: No special measures required.

Information about fire - and explosion protection:

Keep respiratory protective device available.

Protect against electrostatic charges.

Prevent impact and friction.Protect from heat

Storage

Requirements to be met by storerooms and receptacles: Store in a cool location.

Information about storage in one common storage facility: Store away from flammable substances.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

Section 8 Exposure Controls/Personal Protection

Additional information about design of technical facilities: No further data; see item 7.

Ingredients with limit values that require monitoring at the workplace:	
7440-02-0nickel	
PEL (USA) REL (USA) TLV (USA) MAK (Germany)	1 mg/m³ 0,015 mg/m³ Elemental 1,5* mg/m³ elemental;*as inhalable fraction einatembare Fraktion; vgl.Abschn.XIII
7440-50-8copper	
PEL (USA) REL (USA) TLV (USA) MAK (Germany)	1* 0,1** mg/m³ as Cu *dusts and mists **fume 1* 0,1 R** mg/m³ as Cu *dusts and mists **fume Short-term value: 0,1** mg/m³ Long-term value: 1* 0,2** mg/m³ *dusts and mists; **fume; as Cu0, 1E mg/m³
7439-96-5manganese	
PEL (USA) REL (USA) TLV (USA) AGW (Germany)	Short-term value: C 5* ** mg/m³ as Mn *and inorganic compounds **fume Short-term value: 3* ** mg/m³ Long-term value: 1* ** mg/m³ as Mn *and inorganic compounds **fume 0,2* ** mg/m³ as Mn *and inorganic compounds **fume 0,5E mg/m³ DFG,Y,10
1310-58-3potassium hydroxide	
REL (USA) TLV (USA)	C2 mg/m³ Short-term value: C 2 mg/m³
7440-48-4cobalt	
PEL (USA) REL (USA) TLV (USA) MAK (Germany)	0,1* mg/m³ as Co; *for metal dust & fume, as Co 0,05* mg/m³ inorg. compds.: *metal dust & fume, as Co 0,02 mg/m³ as Co; BEI einatembare Fraktion; vgl.Abschn.XIII
7429-90-5aluminium	

PEL (USA) REL (USA) TLV (USA) AGW (Germany)	15* 5** mg/m³ Metal dust *total dust **respirable fraction 10* 5** mg/m³ Metal dust *total dust **respirable fraction 1* mg/m³ *as respirable fraction 3* 10** mg/m³ 2(II);*alveolengängige **einatembare Fraktion; AGS
8052-42-4Asphalt	
REL (USA) TLV (USA) MAK (Germany)	Short-term value: C 5* mg/m³ *15-min 0,5* mg/m³ *inh. fraction; as benzene-soluble aerosol; BEIp Dampf und Aerosol

DNELs: Not available
PNECs: Not available
Additional information: The lists valid during the making were used as basis.
Personal protective equipment
General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.
Respiratory protection:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposureuse self-contained respiratory protective device.
Protection of hands:
Protective gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Material of gloves: The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Penetration time of glove material:
The exact break through time has to be found out by the manufacturer of the protective gloves and has to beobserved.
Eye protection:
Tightly sealed goggles

Section 9 Physical and chemical properties

General Information	
Form: **Colour:** **Odour:**	Columniform, solid battery Green fruit Odourless
Change in condition **Melting point/Melting range:** **Boiling point/Boiling range:**	Not available Not available
Flash point:	Not available
Flammability (solid, gaseous):	Not available
Ignition temperature:	Not available
Self-igniting:	Product is not selfigniting.
Danger of explosion:	Extreme risk of explosion by fire or other sources of ignition.
Explosion limits: **Lower:** **Upper:** **Oxidizing properties**	 Not available Not available Not available
Vapour pressure:	Not available
Density: **Relative density** **Vapour density** **Evaporation rate**	Not available Not available Not available Not available
Solubility in / Miscibility with water:	Not available
pH-value:	Not available
Segregation coefficient (n-octanol/water):	Not available
Viscosity: **Dynamic:**	Not available

Section 10 Stability and reactivity

Thermal decomposition/conditions to be avoided: No decomposition if used according to specifications.
Dangerous decomposition products: No dangerous decomposition products known

Section 11 Toxicological information

Acute toxicity
LD/LC50 values relevant for classification:
1310-58-3potassium hydroxide
Oral LD50 273 mg/kg (rat)
7440-48-4cobalt
Oral LD50 6170 mg/kg (rat)
7439-96-5manganese
Oral LD50 9000 mg/kg (rat)
7439-89-6iron
Oral LD50 30 mg/kg (rat)
Primary irritant effect
on the skin: No irritant effect.
on the eye: No irritating effect.
Sensitization: No sensitizing effects known.
Toxicokinetics, metabolism and distribution: Not available
Acute effects (acute toxicity, irritation and corrosivity): Not available
Repeated dose toxicity: Not available
CMR effects (carcinogenity, mutagenicity and toxicity for reproduction): Not available

Section 12 Ecological information

Information about elimination (persistence and degradability): Not available
Behaviour in environmental systems
Mobility and bioaccumulation potential: Not available
Ecotoxical effects
Aquatic toxicity: Not available
Remark: Toxic for fish
Additional ecological information:
General notes:
No ecological impacts expected under normal use conditions.
The materials contained in this product may only represent below ecological impact if the integrity of the battery is
compromised; physically or electrical y abused.
Do not allow product to reach ground water, water course or sewage system, even in smal quantities.
Must not reach sewage water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even extremely smal quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms
Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
PBT assessments: Not available

Section 13 Disposal considerations

Product

Recommendation:

Must not be disposed together with household garbage. Do not alow product to reach sewage system

Uncleaned packaging

Recommendation: Disposal must be made according to official regulations.

Section 14 Transport information

Land transport ADR/RID (cross-border)

ADR/RID class:

Danger code (Kemler):-

UN-Number:

Packaging group:

Hazard label:

Description of goods:

Limited quantities (LQ):

Transport category:

Tunnel restriction code:

Maritime transport IMDG

IMDG Class:9

UN Number:UN3496

Label:

Packaging group:SP117,SP963

EMS Number:F-A,S-I

Marine pollutant:no

Segregation groups: keep away from heat

Proper shipping name:

Air transport ICAO-TI and IATA-DGR

ICAO/IATA Class:-

UN/ID Number:-

Label:-

Packaging group:-

Proper shipping name:-

Transport/Additional information:

According to the IATA dangerous goods regulations(IATA DGR)(55th), the product complies with IATA DGR Special Provisions A123 requirement ,and the product are not regulated for air transportion as "dangerous goods",. Such batteries must be packed in inner packagings in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short circuits.

Section 15Regulatory information

Sara

Section 335(extremely hazadous substances):

None of the ingredients is listed.

Section 313(specific toxic chemical listings):

7440-02-0 nickel
7440-50-8 copper
7439-96-5 manganese
7440-48-4 cobalt
7429-90-5 aluminium

TSCA(Toxic Substances Control Act):

7440-02-0 nickel
7440-50-8 copper
7439-89-6 iron
7439-91-0 lanthanum
9003-07-0 Polipropene 25
7732-18-5 pure water
7439-96-5 manganese
1310-58-3 potassium hydroxide
7440-45-1 cerium
7440-48-4 cobalt
32131-17-2 Nylon-66
7440-00-8 neodymium
7429-90-5 aluminium
7440-10-0 Praseodymium
8052-42-4 Asphalt

Proposition 65

Chemical known to cause cancer:

7440-02-0 nickel
7440-48-4 cobalt

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity foe males:

None of the ingredients is listed.

Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

Cancerogenity categories

EPA(Environmental Protection Agency)

7440-50-8 copper D
7439-96-5 manganese D

IARC(International Agency for Research on Cancer)

7440-02-0 nickel 2B
9003-07-0 Polipropene 25 3
7440-48-4 cobalt 2B, 2A
8052-42-4 Asphalt 3

NTP(National toxicology Program)

7440-02-0 nickel R

TLV(Threshold Limit Value established by ACGIH)

7440-02-0 nickel A5
7440-48-4 cobalt A3
7429-90-5 aluminium A4
8052-42-4 Asphalt A4

NIOSH-Ca(National Institution for Occupational Safety & Health)

7440-02-0 nickel
8052-42-4 Asphalt

OSHA-Ca(Occupational Safety & Health Administration)

None of the ingredients is listed.

Section 16Other information

Relevant R-phrases

11	Highly flammable.
14/15	Reacts violently with water, liberating extremely flammable gases.
15	Contact with water liberates extremely flammable gases.
17	Spontaneously flammable in air.
20/22	Harmful by inhalation and if swallowed.
22	Harmful if swal owed.
35	Causes severe burns.
36/37/38	Irritating to eyes, respiratory system and skin.
38	Irritating to skin.
40	Limited evidence of a carcinogenic effect.
42/43	May cause sensitisation by inhalation and skin contact.
43	May cause sensitization by skin contact.
48	Danger of serious damage to health by prolonged exposure.
48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation.
49	May cause cancer by inhalation.
50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
53	May cause long-term adverse effects in the aquatic environment.
61	May cause harm to the unborn child.
68	Possible risk of irreversible effects.·

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The contents and format of this MSDS/SDS are in according with REGULATION(EC) No.1907/2006, EUCommission Directive 1999/45/EC, 67/548/EEC.

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