

SAFETY DATA SHEET

1. Product and Company Identification

Product identifier

Product Name: Nickel Metal Hydride Rechargeable cell or battery pack

Other means of identification

Synonyms: None

Recommended use of the chemical and restrictions on use

Recommended Use: Nickel Metal Hydride (NiMH) Battery

Uses advised against: No information available

Details of the supplier of the safety data sheet

Supplier Name: Dison Power Supplies

Supplier Address: Rm 2703, Well Tech Centre
9 Pat Tat Street
Sanpokong
Hong Kong

Supplier Phone Number: Phone: 852 28851100
Contact Phone: 852 60530300

Supplier Email: rw.dison.hk@gmail.com

Emergency telephone number: 852 60530300

2. Hazards Identification

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is an article which is a sealed battery and as such does not require an SDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.

Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 1B
Specific target organ toxicity (repeated exposure)	Category 1

GHS Label elements, including precautionary statements

Emergency Overview

Signal word: Danger

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Hazard Statements: Causes severe skin burns and eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Suspected of causing genetic defects.
May cause cancer.
May damage fertility or the unborn child.

This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. Intended use of the product should not result in exposure to the chemical substance. This is a battery. In case of rupture: the above hazards exist.

Appearance: Metallic **Physical state:** Solid containing liquid
Solid **Odor:** Odorless

Precautionary Statements
– **Prevention:** Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use personal protective equipment as required.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash face, hands and any exposed skin thoroughly after handling.
In case of inadequate ventilation wear respiratory protection.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves.
Do not eat, drink or smoke when using this product.

Precautionary Statements
– **Response:** Immediately call a POISON CENTER or doctor/physician.

Eyes: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing immediately call a POISON CENTER or doctor/physician.

Skin: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower wash contaminated clothing before reuse.
If skin irritation or rash occurs: Get medical advice/ attention.

Inhalation: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing immediately call a POISON CENTER or doctor/physician.

Ingestion: IF SWALLOWED: Rinse mouth. DO NOT induce vomiting.

Precautionary Statements
– **Storage:** Store locked up.

Precautionary Statements
– **Disposal:** Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC): Not applicable.

Unknown Toxicity: 18% of the mixture consists of ingredient(s) of unknown toxicity.

Other information: May be harmful if swallowed.
Very toxic to aquatic life with long lasting effects.
Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Interactions with Other Chemicals: Use of alcoholic beverages may enhance toxic effects.

3. Compositions/ Information

CAS No.	Chemical	Weight/ Percent *
	Cobalt	2.0 – 6.5
7440 – 48 – 4	Cobalt metal	
1307 – 96 – 6	Cobalt oxide	
21041 – 93 – 0	Cobalt hydroxide	
1310 – 65 – 2	Lithium hydroxide	0 – 3
7439 – 96 – 5	Manganese metal	<4
	Rare Earth Metal	<14
7439 – 91 – 0	Lanthanum	
7440 – 45 – 1	Cerium	
7440 – 00 – 8	Neodymium	
7440 – 10 – 0	Praseodymium	
	Nickel	30 – 50
7440 – 02 – 0	Nickel powder	
1313 – 99 – 1	Nickel oxide	
12054 – 48 – 7	Nickel hydroxide	
1310 – 58 – 3	Potassium hydroxide	<6
1310-73-2	Sodium hydroxide	0 – 5

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First Aid Measures

First aid measures

General Advice: First aid is upon rupture of sealed battery.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention/advice.

Skin contact: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek immediate medical attention/advice. May cause an allergic skin reaction.

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Inhalation:	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get medical attention immediately if symptoms occur. May cause allergic respiratory reaction. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.
Ingestion:	Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. May produce an allergic reaction. If an allergic reaction occurs, stop use and seek medical help right away.
Self-protection of the first aider:	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Most Important Symptoms And Effects:	Burning sensation. Itching. Rashes. Hives. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing and/ or wheezing.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician:	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization of susceptible persons. Treat symptomatically.
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5. Fire-Fighting Measures

Suitable Extinguishing media:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media:	CAUTION: Use of water spray when fighting fire may be inefficient.
Specific hazards arising from the chemical:	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. Product is or contains a sensitizer. May cause sensitization by inhalation and skin contact.
Explosion Data	
Sensitivity to Mechanical Impact:	None

Sensitivity to Static Discharge: None.

Protective equipment and precautions for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal precautions : Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other Information: Refer to protective measures listed in Sections 7 and 8.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment: Prevent further leakage or spillage if safe to do so.

Methods for cleaning up: Pick up and transfer to properly labeled containers.

7. Handling and Storage

Precautions for safe handling

Handling: In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage: Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Incompatible Products: Acids. Bases. Oxidizing agent.

8. Exposure Control/ Personal Protection

Control parameters: Under normal conditions and normal operations, release of ingredients does not occur.

Appropriate engineering controls

Engineering Measures: Showers.
Eyewash stations.
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection:	Face protection shield.
Skin and body protection:	Wear protective gloves and protective clothing. Long sleeved clothing. Chemical resistant apron. Impervious gloves.
Respiratory protection:	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hygiene Measures:	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. For environmental protection, remove and wash all contaminated protective equipment before re-use.

9. Physical and Chemical Properties

Physical and Chemical Properties

Physical state	Solid containing liquid, Solid		
Appearance	Metallic	Odor	Odorless
Color	No information available	Odor Threshold	No information available

Property	Values	Remarks	Method
pH	No data available	None known	
Melting / freezing point	No data available	None known	
Boiling point / boiling range	No data available	None known	
Flash Point	No data available	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	
Vapor density	No data available	None known	
Specific Gravity	No data available	None known	
Water Solubility	Soluble in water	None known	
Solubility in other solvents	No data available	None known	
Partition coefficient: n-octanol/ water	No data available	None known	
Autoignition temperature	No data available	None known	
Decomposition temperature	No data available	None known	
Kinematic viscosity	No data available	None known	
Dynamic viscosity	No data available	None known	
Explosive properties	No data available		
Oxidizing properties	No data available		

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	No data available

10. Stability and Reactivity

Reactivity:	No data available.
Chemical stability:	Stable under recommended storage conditions.
Possibility of Hazardous Reactions:	None under normal processing.
Conditions to avoid:	Exposure to air or moisture over prolonged periods.
Incompatible materials:	Acids. Bases. Oxidizing agent.
Hazardous Decomposition Products:	None known based on information supplied.

11. Toxicological Information

Information on likely routes of exposure

Product Information:	Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture:
Inhalation:	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause sensitization of susceptible persons.
Eye contact:	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.
Skin contact:	Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

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Ingestion: Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause additional affects as listed under "Inhalation".

Information on toxicological effects

Symptoms: Erythema (skin redness). Burning. May cause blindness. Coughing and/ or wheezing. Itching. Rashes. Hives. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization: May cause sensitization of susceptible persons. May cause sensitization by skin contact. May cause sensitization by inhalation.

Mutagenic Effects: There is no data available for this product. Contains a known or suspected mutagen.

Carcinogenicity: Nickel metal is classified by IARC as "Possibly Carcinogenic to Humans" (Group 2B) and by NTP as "Reasonably Anticipated to be a Carcinogen". Soluble nickel compounds are classified by IARC as "Carcinogenic to Humans" (Group 1), by NTP as "Known to be a Human Carcinogen" and by ACGIH as "Not Classifiable as a Human Carcinogen" (A4). Insoluble nickel compounds are classified by IARC as "Carcinogenic to Humans" (Group 1), by NTP as "Known to be a Human Carcinogen" and by ACGIH as "Confirmed Human Carcinogen" (A1). Cobalt and cobalt compounds are classified by IARC as "Possibly Carcinogenic to Humans" (Group 2B). None of the other components of this product are listed as carcinogens by ACGIH, IARC, NTP or OSHA.

Reproductive toxicity: Contains a known or suspected reproductive toxin.

STOT - single exposure: No information available.

STOT - repeated exposure: Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE).

Chronic Toxicity: Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Prolonged exposure may cause chronic effects. Repeated contact may cause allergic reactions in very susceptible persons. Contains a known or suspected mutagen. Possible risk of irreversible effects. Contains a known or suspected carcinogen. Contains a known or suspected reproductive toxin. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system.

Target Organ Effects: Blood. Central Nervous System (CNS). Eyes. Kidney. Lungs. Nasal cavities. Respiratory system. Skin. Gastrointestinal tract (GI). May affect the genetic material in germ cells (sperm and eggs). Reproductive System.

Aspiration Hazard: No information available.

Numerical measures of toxicity: Not determined.

12. Ecological Information

Ecotoxicity: Harmful to aquatic life. Very toxic to aquatic life with long lasting effects.

Dison Nickel metal hydride cylindrical cells/ batteries do not contain heavy metals as defined by the European directive 2006/66/EC Article 21; they comply with the chemical composition requirements of this Directive.

Mercury has not been "intentionally introduced (as distinguished from mercury that may be incidentally present in other materials)" in the sense of the U.S.A. "Mercury-Containing and Rechargeable Battery Management Act" (May 13 1996).

Persistence and Degradability: No information available.

Bioaccumulation: Not determined.

Other adverse effects: No information available.

13. Disposal Considerations

Waste treatment methods

Disposal methods: This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements. Dispose of contents/containers in accordance with local regulations.

Contaminated Packaging: Do not reuse empty containers.

USA: Nickel metal hydride cylindrical cells/ batteries are classified by the federal government as non-hazardous waste and are safe for disposal in the normal municipal waste stream. These batteries, however, do contain recyclable materials and are accepted for recycling by the Rechargeable Battery Recycling Corporation's (RBRC) Battery Recycling Program. Please go to the RBRC website at www.rbrc.org for additional information.

California Hazardous Waste Codes: 181

This product contains one or more substances that are listed with the State of California as a hazardous waste.

In the European Union, manufacturing, handling and disposal of batteries is regulated on the basis of the DIRECTIVE 2006/66/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC. Customers find detailed information on disposal in their specific countries using the web site of the European Portable Batteries Association (http://www.epbaeurope.net/legislation_national.html).

14. Transportation Information

Dison sealed Nickel Metal Hydride batteries are considered to be "dry cell" batteries and is not regulated by International Maritime Dangerous Goods Regulation (IMDG). Improperly packed cells or battery packs when exposed to the vibration of long-distance transportation can be caused short circuit. The keys to proper shipment are as the follows:

- a. Possible insulate the tables to prevent contact.
- b. Cells or battery packs are heavy and deserve the protection of adequate strength boxes.
- c. If stacking cells vertically, insulation between layers of cells must resist breaking down under the stress of transportation.
- d. Avoid over stacking boxes of cells or battery packs so that the packaging of the lower tier is damaged.
- e. During the transportation of a large amount of batteries by ship, trailer or railway, do not leave them in the places of high temperatures and do not allow them to be exposed to condensation.
- f. During the transportation do not allow packages to be fallen down or damaged.
- g. "Dry cell" batteries 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) or the International Maritime Dangerous Goods regulations (IMDG). The only DOT requirement for shipping Nickel Metal Hydride batteries is Special Provision A199 which states: "Batteries, dry are not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals)." IATA requires that batteries being transported by air must be protected from short-circuiting and protected from movement that could lead to short-circuiting.

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DOT:	NOT REGULATED
Proper Shipping Name:	NON REGULATED
Hazard Class:	N/A
TDG:	Not regulated
MEX:	Not regulated
ICAO:	Not regulated
IATA:	Not regulated
Proper Shipping Name:	NON REGULATED
Hazard Class:	N/A
IMDG/IMO:	Not regulated
Hazard Class:	N/A
RID:	Not regulated
ADR:	Not regulated
ADN:	Not regulated

15. Regulatory Information

International Inventories

TSCA:	Complies.
DSL:	All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory.

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List.

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard:	No
Chronic Health Hazard:	No
Fire Hazard:	No
Sudden release of pressure hazard:	No
Reactive Hazard:	No

CWA (Clean Water Act)

This product contains one or more substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

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US State Regulations**California Proposition 65:**

This product contains one or more Proposition 65 chemicals (Carcinogen).

Canada**WHMIS Hazard Class:**

Not determined.

16. Other Information

NFPA	Health Hazards 1	Flammability 0	Instability 0	Physical and Chemical Hazards –
HMIS	Health Hazards 0	Flammability 0	Physical Hazard 0	Personal Protection X

Prepared By:

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Revision Note:

No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet