



光宇国际有限公司
Coslight International Co., Ltd

Add: 16th Floor, the center,99 Queen' s Road Central, Hong Kong

MSDS Report NO.:C170101

Material safety data sheet

1. Identification

1.1 Product

Product Name: Nickel Metal Hydride Battery
Chemical System : Nickel/Metal Hydride
Nominal Voltage : 1.2V
Designated for Recharge : Yes

Supplier

Manufacture's name: Coslight International Co., Ltd
Address: 16th Floor, the center,99 Queen's Road Central, Hong Kong
Emergency Telephone Number:
Telephone Number for Information:

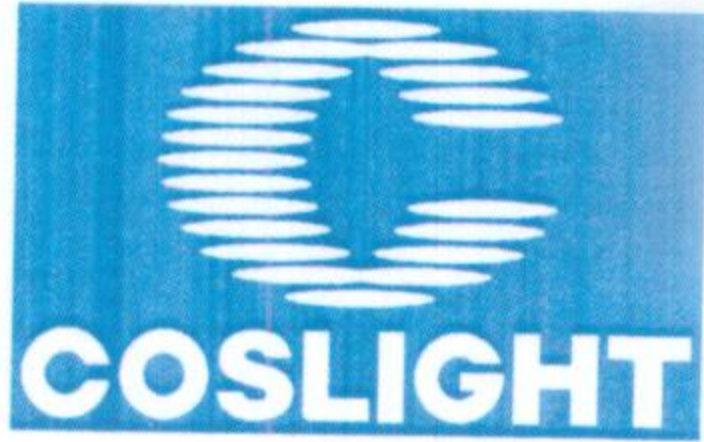
2. Hazards identification:

Nickel Metal Hydride Battery are exempted from
Dangerous Goods
UN- Recommendations on the Transport of Dangerous
Goods:
(ST/SG/AC.10/C3/70,Annex
and ST/SG/AC,10/C,3/74/Add.1)

3. Composition/information on ingredients

IMPORTANT NOTE

The battery should not be opened or exposed to heat beasure
exposure of the following ingredients contained within could
be harmful under some circumstances.



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| Composition | CAS No. | Content(%) |
|----------------------------|-------------------------|------------|
| Nickel-hydroxide [Ni(OH)2] | 12054-48-7 | 27.2wt% |
| Cobalt [Co] | 7440-48-4 | 3.8wt % |
| Manganese | 7439-96-5 | 4.5wt% |
| Lanthanum | 7439-91-0 | 22.5wt% |
| Cerium | 7440-45-1 | 8.5% |
| Potassium-hydroxide [KOH] | 1310-58-3 71769-53-4 | 2.0wt% |
| Polypropylene [PP] | 9003-07-0 | 1.8wt% |
| Iron [Fe] | 7439-89-6 | 22.7wt% |
| Water [H2O] | 7732-18-5 | 6.4wt % |
| Polyamide [PA66] | 63428-84-2 | 0.6wt% |
| Rubber [EPDM] | 25038-36-2 | 0.0wt% |

Note: The above information is provided for the user's information only.

4. First Aid Measures



The product contains corrosive electrolyte, in case of electrolyte leakage from the battery, action described below are required.

Skin contact

: Wash this contacted areas off immediately with plenty of water. If appropriate procedures are not taken, this may cause sores on the skin.

Eye contact

: Flush the eyes with plenty of clean water without rubbing. Take a medical treatment. If appropriate



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| | |
|--------------------------|--|
| Inhalation | procedures are not taken, this may cause an eye irritation. : Remove to fresh air immediately. Take a medical treatment. |
| Extinguishing method | : Since vapor, generated from burning batteries may make eyes, nose and throat irritate, be sure to extinguish the fire on the windward side. Wear the respiratory protection equipment in some cases. |
| Fire extinguishing agent | : Dry chemical, alcohol-resistant form, carbon dioxide and plenty of water area effective. |

5. Fire-fighting Measures

| | |
|----------------------------------|--|
| Flash Point | : NA |
| Lower Explosive Limit | : NA |
| Upper Explosive Limit | : NA |
| Extinguishing Media | : Water, Foam, Dry .Any class of extinguishing medium may be used on the batteries or their packing material. |
| Special Fire Fighting Procedures | : Exposure to temperatures of above 100°C can cause venting of the liquid electrolyte. Internal shorting could also cause venting of the electrolyte. There is potential for exposure to iron, nickel, cobalt, rare earth metals, manganese, and aluminum fumes during fire; use self-contained breathing apparatus. |



6. Accidental Release Measures

Steps to be taken in case material is released or spilled:

The preferred response is to leave the area and allow the batteries to cool and the vapours to dissipate. Avoid skin and eye contact or inhalation of vapours. Collect all released material in a plastic lined metal container and remove spilled liquid with absorbent. Doing this, protect your skin and eyes with gloves and protection glasses.



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7. Handling and storage

- 1) When packing the batteries, do not allow battery terminals to contact each other, or contact with other metals. Be sure to pack batteries by providing in the packaging box, or in a separate plastic bag so that the single batteries are not mixed together.
- 2) Use strong materials for packaging boxes so that they will not be damaged by vibration, impact, dropping and stacking during their transportation.
- 3) Do not let water penetrate into packaging boxes during their storage and transportation.
- 4) The batteries will be stored at room temperature.
- 5) Do not store the battery in places of the high temperature exceeding 35deg.C or under direct sunlight or in front of a stove. Please also avoid the places of high humidity. Be sure not to expose the battery to condensation, water drop or not to store it under lower temperature than -20°C.
- 6) Batteries are sure to be packed in such a way to prevent short circuits under conditions normally encountered in transport.
- 7) Please avoid storing the battery in the place where it is exposed to the electricity, so that no damage will be caused to the protection circuit of the battery pack.

8. Exposure controls/personal protection

| | |
|---|--|
| Respiratory protection(specify type) | Not necessary under conditions of normal use |
| Ventilation: | Not necessary under conditions of normal use |
| Protective gloves: | Not necessary under conditions of normal use |
| Eye protection: | Not necessary under conditions of normal use |
| Other protective clothing or equipment: | Not necessary under conditions of normal use |

9. Physical and chemical properties

| | |
|-----------------------|------|
| Melting point(°C) | : NA |
| Boiling point(°C) | : NA |
| %Volatile by Volume | : NA |
| Vapor pressure (mmHg) | : NA |





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| | |
|------------------------|-----------|
| Evaporation Rate | : NA |
| Vapor Density (Air=1) | : NA |
| Specific Gravity (H2O) | : NA |
| Solubility in water | : NA |
| Appearance and Odor | : No Odor |

The chemicals mentioned in Section 3 are contained in a hermetically sealed can. Under conditions of normal use, the chemicals will not be released.

10. Stability & reactivity

Nickel Metal Hydride Batteries are contained in a stable steel container and are hermetically sealed to avoid any chemical release under conditions of normal use.

- 1) The batteries are stable under normal operating condition.
- 2) Hazardous polymerization will not occur
- 3) Hazardous decomposition products: Nickel-hydroxide, cobalt, Metal hydride
- 4) Conditions to avoid: heat, open flames, sparks, and moisture.
- 5) Incompatibilities (materials to avoid): The battery cells are encased in a non-reactive container; if the container is breached, avoid contact of internal battery components with acids, aldehydes, and carbonate compounds.

11. Toxicological information

Not available



12. Ecological information

Ni-MH cells contain no cadmium, no mercury, no lead and no toxic metals.

13. Disposal considerations

- | | |
|---------------|--|
| Incineration: | Never incinerate NI-MH batteries. |
| Landfill: | Never dispose NI-MH batteries as landfill. |
- Dispose in accordance with all applicable nations, federal, state and local regulations.



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14. Transport Information

Transported by air:

Not classified as dangerous goods in the meaning of air transport regulations.

| Regulatory body | Special provision |
|-------------------------------------|-------------------|
| IATA(58 th Edition-2017) | A199 |

International Civil Aviation Organization (ICAO) and International Air Transport Association(IATA), Special Provision A199 state: An electrical battery or battery powered device having the potential of dangerous evolutions 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 transportation.

Coslight sealed Nickel Metal Hydride batteries are not subject to these regulations and special provision as their terminals are protected from short-circuit when packaged for transport.



Transported by sea:

Classified as dangerous goods in the meaning of sea transport regulations.

According to the meeting of Committee of Experts on the Transport of Dangerous Goods in Geneva, 29 November-7 December 2010, mainly discuss about the draft amendments to the Recommendations on the Transport of Dangerous Goods (Model Regulations and Manual of Tests and Criteria) adopted at the thirty-fifth, thirty-sixth and thirty-seventh sessions. The content includes that adding the Batteries. Nickel-Metal Hydride for transport of dangerous goods only when transported by sea. The hazardous level is the 9th level and the UN number is UN3496.

(Reference documents:ST/SG/AC.10/C 3/70, Annex and ST/SG/AC,10/C,3/74/Add.1)

| Regulatory body | Special provision |
|--------------------------------------|-------------------|
| IMDG (37 th Edition-2014) | 117 |

SP 117 state: subject to these regulations only when transported by sea.



15. Regulatory Information:

- IATA DGR A199-2017 dangerous goods regulations.
- ICAO Technical Instructions for the safe transport of dangerous goods by air.
- in inner packing in such matter as to effectively prevent Short circuits and to prevent movements which could lead to short circuits.

Reference

- UN- Recommendations on the Transport of Dangerous Goods (Model Regulations and Manual of Tests and Criteria)

(ST/SG/AC.10/C 3/70,Annex and ST/SG/AC,10/C,3/74/Add.1)

16. Other information

Date of preparation :

Jan.03.2017

Signature of Preparer :

Yuan Yuan Wei

Technology Department

