

PRODUCT SAFETY DATA SHEET

Manufacturer

Name of Company : Panasonic Corporation Energy Company
 Address : 1-1, Matsushita-cho, Moriguchi, Osaka 570-8511 Japan
 Department : Energy device Business Unit, Product Engineering Group
 Contact Person : Yoshio Nakatani
 Telephone number : +81-6-6991-1141
 Facsimile number : +81-6-6998-3271
 For emergency : Tel. +81-6-6991-1141

Document number : PMH-PSDS03E-13-006

Issued : Jan.15, 2013

Name of product : Nickel-Metal Hydride Storage Battery
 (Model Name) The models described as HHR-240SCP, HHR-300SCP

Substance Identification

Substance : Nickel-Metal Hydride Storage Battery
 CAS No. : Not Specified.

Hazardous and Toxicity Class:

Class name : Not applicable
 Hazard : In case of battery shortage, there is possibility of heat up of battery and/or leakage.
 Toxicity : In case of burning of plastic parts there is possibility of gas generation, which has toxic for eyes, nose and throat.

Composition and ingredient information

Common Chemical name	CAS number	Concentration/ Percentage Range
Nickel Hydroxide	12054-48-7	15-25%
Cobalt Hydroxide	21041-93-0	1-5%
Hydrogen absorbing alloy	7440-02-0(Ni) 7440-48-4(Co) 7439-96-5(Mn) 7429-90-5(Al)	} 20-35%
Nickel	7440-02-0	3-10%
Iron	7439-89-6	10-25%
Potassium Hydroxide	1310-58-3	} 0-15%
Sodium Hydroxide	1310-73-2	
Lithium Hydroxide	1310-65-2	

First Aid Measures

In case of electrolyte leakage from the battery, necessary actions to be taken are described as follows.

- Eye contact : Flush the eyes with plenty of clean water such as tap water for more than 15 minutes without rubbing and immediately take a medical treatment.
If appropriate procedures are not taken, it may cause a loss of sight.
- Skin contact : Wash the contact skin area off immediately with plenty of clean water such as tap water using soap, otherwise it might cause sore on the skin.
- Inhalation : Move the exposed person to fresh air area immediately.
And take a medical treatment immediately.
-

Fire Fighting Measures

1. Suitable fire extinguishing media are dry sand and chemical powder fire extinguisher.
 2. When in firefighting, the air respiratory protection should be used because acrid or harmful gas might be generated when fire is extinguished.
 3. Remove combustibles at once from a firefighting area.
 4. Remove the batteries to safe area at once from firefighting place.
-

Measures for electrolyte leakage (Accidental release measures)

(When the electrolysis liquid leaks from the product)

1. Wiping it off with the dry towel.
 2. The fire should not be brought close to it.
 3. The protection glasses and rubber gloves are put on if necessary.
-

Handling and Storage

- 1) The terminals of the battery pack should be protected in the packing form to be able to prevent them from external short circuit.
- 2) They are packed by the material with enough strength to prevent them from destroyed by vibrates, impact, fall and accumulation, etc. while transporting them.
- 3) Keep batteries out of water and wet when in storage and transported.
- 4) Keep batteries out of fire and avoid the high temperature atmosphere when in storage and transported.

An example of the high temperature : The high temperature storage like in the car exposed to blazing sun should be avoided.

Exposure control (in case of electrolyte leakage from the battery)

Acceptable concentration : Not specified in Japanese industrial hygienic association and ACGIH

Facilities : Ventilation should be noted such as equipped with the limited

Protective clothing : spot area exhaust device used for the battery storage place.
: The protection glasses, the mask for disaster prevention,
and the protection gloves are used.

Physical and Chemical Properties

Externals : The nickel hydrogen storage battery is stored in the plastic resin case or tube.
The voltage value depends on the number of built-in batteries used in battery
pack.

Stability and Reactivity

The external short, the crushing transformation, and the high temperature exposure of 100℃ or
more cause abnormal heat generation and the fire.

Toxicological information

When the electrolyte leaks from the product

Acute toxicity : LD50 2g/Kg oral rat

(Based on material safety data sheet of liquid potassium hydroxide)

Stimulation : The cornea inflammation is caused when the electrolyte gets in eye.
The long time exposure to the electrolyte stimulates mucous membranes
of the bronchial tube and eye.

Exposure control (in case of electrolyte leakage from the battery)

Acceptable concentration : Not specified in Japanese industrial hygienic association
and ACGIH

Facilities : Ventilation should be noted such as equipped with the limited
spot area exhaust device used for the battery storage place.

Protective clothing : The protection glasses, the mask for disaster prevention,
and the protection gloves are used.

Ecological Information

Heavy metal quantity for cell

Mercury(Hg) ,Cadmium(Cd) and Lead(Pb) are neither contained nor used in cell.

Disposal Considerations

When the battery is worn out, dispose of it under the ordinances of each local government or the related laws and regulations.

Transport Information

1. 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 dew condensation.
 2. Avoid transportation with the possibility of the collapse of cargo piles and the packing damage.
 3. Protect the terminals of batteries and prevent them from short circuit so as not to cause dangerous heat generation.
-

Regulatory Information

- IATA Dangerous Goods Regulations 54th Edition Effective 1 January-31 December 2013
 - ICAO Technical Instructions for the safe transport of dangerous goods by air
 - The product is handled as Non-Dangerous Goods by based on IATA(A123) for air shipment .
 - The product is handles as following by basted on UN3496 (SP963) for sea shipment.
Nickel-metal hydride button cell or nickel-metal hydride cells or batteries packed with or contained in equipment are Non-Dangerous Goods.
All other nickel-metal hydride cells or batteries shall be securely packed and protected from short circuit. They are Non-Dangerous Goods provided they are loaded in a cargo transport unit in a total quantity of less than 100Kg gross mass. When loaded in cargo transport unit in a total quantity of 100kg gross mass or more, they are Dangerous Goods (Class 9).
-

Others

References

- Ni-Cd, Ni-MH Panasonic Catalogue and technical handbook.
 - MSDS of Nickel hydro oxide and potassium hydro oxide and sodium hydro oxide from supplier.
 - Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations Volume 1. 17th revised edition.
 - IATA Dangerous Goods Regulations 54th Edition Effective 1 January – 31 December 2013
 - Technical Instructions for the Safe Transport of Dangerous Goods by Air (Approved and published by decision of the Council of ICAO) 2003-2004 Edition
-