

Product Information Sheet

Panasonic Batteries

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Product: Nickel Metal Hydride Batteries (Ni-Mh)

Applicable models/sizes: All

Revision: E; Dated 08/07/06

The batteries referenced herein are exempt articles and are not subject to the OSHA Hazard Communication Standard requirement. This sheet is provided as a service to our customers.

MSDS

Material Safety Data Sheets (MSDS) are a sub-requirement of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR Subpart 1910.1200. This Hazard Communication Standard does not apply to various subcategories including anything defined by OSHA as an "article". OSHA has defined "article" as a manufactured item other than a fluid or particle; (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g. minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.

Because all of our batteries are defined as "articles", they are exempt from the requirements of the Hazard Communication Standard; hence a MSDS is not required.

The following components are found in a Panasonic Nickel-Metal Hydride battery:

| Component | Material | Formula | CAS # |
|--------------------|---------------------|---------------------------------|---------------------------------|
| Positive Electrode | Nickel II Hydroxide | Ni(OH) ₂ | 12054-48-7 |
| Negative Electrode | Metal Hydride Alloy | AB ₅ Type (See Note) | AB ₅ Type (See Note) |
| Electrolyte | Potassium Hydroxide | KOH | 1310-58-3 |
| | Sodium Hydroxide | NaOH | 1310-73-2 |

NOTE: Components of AB₅ alloy include: Lanthanum (La) – CAS# 7439-91-0, Cerium (Ce) – CAS#7440-45-1, Neodymium (Nd) – CAS#7440-00-8, Praseodymium (Pr) – CAS#7440-10-0)

The overall reaction is: $MH + NiOOH \rightleftharpoons M + Ni(OH)_2$

Disposal



All Panasonic Nickel Metal Hydride batteries are classified by the federal government as a non-hazardous waste and are safe for disposal in the normal municipal waste stream. Exception: California, which requires these batteries to be disposed of in accordance with the California Universal Waste Rules. These batteries, however, do contain recyclable materials and are accepted for recycling anywhere in the US and Canada by the Rechargeable Battery Recycling Corporation's (RBRC) Battery Recycling Program. Please call 1-800-8-BATTERY for information on recycling your used Nickel Metal Hydride battery or go to the RBRC website at www.rbrc.org for additional information.

Notice: The information and recommendations set forth are made in good faith and are believed to be accurate at the date of preparation. Panasonic Industrial Company makes no warranty expressed or implied.

Transportation

Panasonic sealed Nickel Metal Hydride batteries are considered to be “dry cell” batteries and are unregulated for purposes of transportation by the U.S. Department of Transportation (DOT), International Civil Aviation Administration (ICAO), International Air Transport Association (IATA) and the International Maritime Organization (IMO). The only requirements for shipping these batteries by DOT is Special Provision 130 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). The only requirements for shipping these batteries by ICAO and IATA is Special Provision A123 which states: “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.” The International Maritime Dangerous Goods Code (IMDG) regulate them for ocean transportation under Special Provision 304 which says: “Batteries, dry, containing corrosive electrolyte which will not flow out of the battery if the battery case is cracked are not subject to the provisions of this Code provided the batteries are securely packed and protected against short-circuits. Examples of such batteries are: alkali-manganese, zinc-carbon, nickel metal hydride and nickel-cadmium batteries.

First Aid

If you get electrolyte in your eyes, flush with water for 15 minutes without rubbing and immediately contact a physician. If you get electrolyte on your skin wash the area immediately with soap and water. If irritation continues, contact a physician. If a battery is ingested, call the National Capital Poison Center (NCPC) at 202-625-3333 (Collect) or your local poison center immediately

General Recommendations

CAUTION: May explode or leak if short-circuited, inserted improperly, mixed with different battery types or disposed of in fire. Do not open battery.

Fire Safety

In case of fire, use a smothering agent such as dry sand, dry ground dolomite or soda ash. If you use water, use enough to smother the fire. Using an insufficient amount of water could possibly make the fire worse. Cooling the exterior of the batteries will help prevent rupturing. Burning of these batteries will generate toxic fumes. Fire fighters should use self-contained breathing apparatus

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