

Product Information Sheet

Panasonic Batteries

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**Product: Nickel Cadmium
Batteries (NiCd)**

Applicable models/sizes: All

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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 Cadmium battery:

Component	Material	Formula
Positive Electrode	Nickel Oxyhydroxide	Ni(OH) ₂
Negative Electrode	Cadmium	Cd
Electrolyte	Potassium Hydroxide	KOH
	Sodium Hydroxide	NaOH (for high temp. versions)

The overall reaction is: $\text{Cd} + 2\text{NiOOH} + 2\text{H}_2\text{O} \rightleftharpoons \text{Cd(OH)}_2 + 2\text{Ni(OH)}_2$

Potential Health Hazards

Nickel Cadmium batteries do not leak electrolyte under normal usage conditions. Severely overcharged or abused batteries may leak small amounts of electrolyte. In the case of skin exposure, wash any exposed skin with copious amounts of water. It is advisable to wear gloves and safety glasses when handling leaking batteries.

Disposal: Assure Proper Recycling!

All Panasonic Nickel Cadmium batteries are classified by the federal government as a hazardous waste and must be recycled. These batteries are accepted for recycling by the Rechargeable Battery Recycling Corporation's (RBRC) Battery Recycling Program. Please call 1-800-8-BATTERY for information on recycling your used Nickel Cadmium battery or go to the RBRC website at www.rbrc.org for additional information.

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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.

Panasonic strongly recommends that all of its customers join the RBRC Nickel Cadmium Recycling Program thus, allowing you to use the following License Seal, which meets all the labeling requirements of the 1996 Federal Battery Law.



Nickel Cadmium batteries destined for recycling can be managed under the federal *Universal Waste Rule* codified at 40 CFR Part 273.

In the event of disposal, dispose only in accordance with federal, state and local regulation. Batteries generated as a waste are subject to the Resource Conservation and Recovery Act (RCRA) as a D006 (cadmium) hazardous waste.

Transportation

Panasonic sealed Nickel Cadmium 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."

All Nickel Cadmium batteries are classified as a D006 hazardous waste because of the presence of cadmium. This waste code is assigned because of toxicity, not corrosiveness. These batteries do not meet the definition of a corrosive waste.