

Product Information Sheet

Panasonic Batteries

Panasonic Industrial Company
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Product: Lithium-ion Batteries
(Li-ion)

Applicable models/sizes: All

Revision: B; Dated 3/3/00

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 Lithium Ion battery:

Component	Material	Formula
Positive Electrode	Lithium Cobalt Oxide	LiCoO ₂
Negative Electrode	Graphite	C
Electrolyte	Ethylene Carbonate - Solvent	C ₃ H ₄ O ₃
	Diethyl Carbonate - Solvent	C ₅ H ₁₀ O ₃
	Lithium Hexafluorophosphate - Salt	LiPF ₆

The overall reaction is: $\text{Li}_x\text{C} + \text{Li}_{1-x}\text{CoO}_2 \leftrightarrow \text{C} + \text{LiCoO}_2$

Disposal

These batteries are not defined by the federal government as 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 at the INMETCO facility in Ellwood City, PA.. For more information on INMETCO call (724) 758-2802 or go to their web site at www.inmetco.com.

Transport

Panasonic Lithium Ion 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 Dangerous Goods regulations (IMDG). The only DOT requirement for shipping these batteries 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). As of 1/1/97 IATA requires that batteries being transported by air must be protected from short-circuiting and protected from movement that could lead to short-circuiting.

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.