Panasonic Batteries
Panasonic Industrial Company
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Product Information Sheet

Product:  Alkaline Batteries

Applicable models/sizes:  All Cylindrical and 9-Volt

Revision:  G January 1, 2011

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 Alkaline battery:

<table>
<thead>
<tr>
<th>Component</th>
<th>Material</th>
<th>Formula</th>
<th>CAS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Electrode</td>
<td>Manganese Dioxide</td>
<td>MnO₂</td>
<td>1313-13-9</td>
</tr>
<tr>
<td></td>
<td>Graphite</td>
<td>C</td>
<td>7782-42-5</td>
</tr>
<tr>
<td>Negative Electrode</td>
<td>Zinc</td>
<td>Zn</td>
<td>7440-66-6</td>
</tr>
<tr>
<td>Electrolyte</td>
<td>Potassium Hydroxide</td>
<td>KOH</td>
<td>1310-58-3</td>
</tr>
</tbody>
</table>

Disposal
All Panasonic Alkaline batteries are manufactured with “no added mercury” and 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 as of February 8, 2006 requires disposal of these batteries in accordance with the California Universal Waste Rules. Check local your local regulations for proper disposal.

Transportation
Alkaline batteries (sometimes referred to as “Dry cell” batteries) are not listed as dangerous goods under the International Civil Aviation Organization (ICAO), 2011-2012 edition, International Air Transport Association (IATA), 51st edition and U.S. Department of Transportation (DOT) regulations, 49 CFR. These batteries are not subject to the dangerous goods regulations provided they meet the requirements contained in the following Special Provisions; Special Provision A123 in the ICAO Technical Instructions and IATA Dangerous Goods Regulations and Special Provision 130 of the DOT. These regulations require these batteries to be packed in such a way to prevent short circuits or generation of a dangerous quantity of heat. In addition, the ICAO and IATA regulations require the words “Not Restricted” and “Special Provision A123” be provided on the air waybill, when an air waybill

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.
is issued. By ocean the International Maritime Organization (IMO), 2010 edition does not regulate these 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 202-625-333 (Collect) or your local poison center immediately.

**General Recommendations**
CAUTION: May explode or leak if recharged, inserted improperly, mixed with different battery types or disposed of in fire. Do not open battery.

**Fire Safety**
In case of fire, you can use any Class of fire extinguisher. Cooling the exterior of the batteries will help prevent rupturing. Fire fighters should use self-contained breathing apparatus.