



**MATERIAL SAFETY DATA SHEET – NICKEL METAL HYDRIDE BATTERIES**

**Technote 36**

**Rev 03**

**22 April 2015**

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**STATEMENT OF HAZARDOUS NATURE**

Not classified as hazardous according to Worksafe Australia criteria.

**COMPANY DETAILS**

Manufactured for:

**Arlec Australia Pty Ltd (ACN 009 322 105)**  
**Building 3, 31-41 Joseph St**  
**Blackburn North Vic 3130**  
**PO Box 1065**  
**Blackburn North Vic 3130**

**IDENTIFICATION**

**Product Name:** Arlec Nickel Metal Hydride Batteries

**Manufacturer's Product Code:**  
NMH series

**UN Number:** None allocated

**Dangerous Goods Class and Subsidiary Risk:** None

**Hazchem Code:** None

**Poisons Schedule Number:** None

**Use:** Energy source

**Physical Description/Properties**

**Appearance:** Various size battery packs. Contents dark in colour.

**Boiling Point/Melting Point:** Not available **Flashpoint:** Not available

**Vapour Pressure:** Not available **Flammability Limits:** Not available

**Specific Gravity:** Not available **Solubility in Water:** Not applicable

**Other Properties:**

**Ingredients\*:**

<b>Chemical Name:</b>	<b>CAS Number:</b>	<b>% :</b>
Nickel	7440-02-0	55-70
Cobalt	7440-48-4	5-10
Potassium Hydroxide (35%)	1310-58-3	1-5
Aluminum	7429-90-5	1-5
Sodium Hydroxide	1310-73-2	1-5
Manganese	7439-96-5	1-5

## HEALTH HAZARD INFORMATION

These chemicals and metals are contained in a sealed can. For consumer use, adequate hazard warnings are included on both the package and on the battery. Potential for exposure should not exist unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused. Contains concentrated (35%) potassium and sodium hydroxides, which are caustic. Anticipated potential leakage of potassium and sodium hydroxides is 1 to 2 grams, depending on battery size.

### Acute:

**Swallowed:** Not anticipated due to size of batteries. Irritation, including caustic burns to the internal/external mouth areas, may occur following exposure to a leaking battery.

**Eye:** Irritation, including caustic burns/injury, may occur following exposure to a leaking battery.

**Skin:** Irritation, including caustic burns/injury, may occur following exposure to a leaking battery.

**Inhaled:** Respiratory (and eye) irritation may occur if fumes are released due to heat or an abundance of leaking batteries.

**Chronic:** Not applicable to intact batteries.

### First Aid

**Swallowed:** Not anticipated. Rinse the mouth and surrounding area with clear, tepid water for at least 15 minutes. Consult a physician immediately for treatment and to rule out involvement of the esophagus and other tissues.

**Eye:** If battery is leaking and material contacts eyes, flush with copious amounts of clear, tepid water for 30 minutes. Contact physician at once.

**Skin:** If battery is leaking, irrigate exposed skin with copious amounts of clear, tepid water for at least 15 minutes. If irritation, injury or pain persists, consult a physician.

**Inhaled:** If battery is leaking, contents may be irritating to respiratory passages. Remove to fresh air. Contact physician if irritation persists.

**First Aid Facilities:** Not applicable for normal consumer use. For warehouse/storage facilities have an eyewash and safety shower available in case batteries leak or rupture.

**Advice to Doctor:** The acutely toxic ingredients are concentrated (35%) potassium and sodium hydroxides and nickel. Chronic exposure to nickel has been reported to be carcinogenic and disposal processes resulting in nickel exposure may be hazardous. Anticipated potential leakage of potassium and sodium hydroxides is 1-2 grams. If the cell is abusively opened the electrodes may react with air and ignite.

## PRECAUTIONS FOR USE

### Exposure Standards: 8-Hour TWA's:

Nickel (insoluble compounds as Ni) - 1.0 mg/m<sup>3</sup> (OSHA); 0.2 mg/m<sup>3</sup> (ACGIH)

Nickel (elemental) - 1 mg/m<sup>3</sup> (Australia/OSHA); 1.5 mg/m<sup>3</sup> (ACGIH)

Nickel (soluble compounds, as Ni) - 0.1 mg/m<sup>3</sup> (Australia/ACGIH/OSHA)

Cobalt (elemental and inorganic compounds, as Co) - 0.02 mg/m<sup>3</sup> (ACGIH)

Cobalt (fume and dust) - 0.2 mg/m<sup>3</sup> (Australia); 0.1 mg/m<sup>3</sup> (OSHA)

Potassium Hydroxide - 2 mg/m<sup>3</sup> (Peak Limitation) (Australia); (Ceiling) (ACGIH)

Aluminum (dust) - 10.0 mg/m<sup>3</sup> (Australia/ACGIH); 15 mg/m<sup>3</sup> (total dust, OSHA);  
5 mg/m<sup>3</sup> (respirable, OSHA)

Sodium Hydroxide - 2.0 mg/m<sup>3</sup> (Peak Limitation) (Australia); (Ceiling) (OSHA/ACGIH)

Manganese - 1 mg/m<sup>3</sup> (dust and compounds, Australia); 5 mg/m<sup>3</sup> (Ceiling) (OSHA); 0.2 mg/m<sup>3</sup> (ACGIH)

These levels are not anticipated under normal consumer use conditions.

**Engineering Controls:** General ventilation under normal use conditions.

**Personal Protection:** None under normal use conditions. Wear safety glasses and neoprene, rubber or latex gloves when handling leaking batteries.

**Flammability:** Not applicable

## SAFE HANDLING INFORMATION

### Storage:

Store at room temperature. Avoid mechanical or electrical abuse. **DO NOT** short or install incorrectly. Batteries may explode, pyrolyze or vent if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in accordance with equipment instructions. Replace all batteries in equipment at the same time. Do not carry batteries loose in pocket or bag.

### Transport:

Nickel Metal Hydride batteries are subject to IATA Special Provision A123 when shipped as airfreight.

Nickel Metal Hydride batteries are not subject to hazardous or dangerous goods restrictions when shipped by road or rail.

### Spills:

Notify safety personnel of large spills. Irritating vapours may be released from leaking or ruptured batteries. Avoid eye or skin contact and inhalation of vapours. Increase ventilation. Clean-up personnel should wear appropriate protective gear. Remove spilled liquid with absorbent and contain for disposal.

### Disposal:

Discharged batteries may be disposed of with normal household rubbish. Do not incinerate, since batteries may explode at excessive temperatures.

Note: Recycling of this product may be available. Contact your local recycling office for information about how and where you can recycle used batteries.

**Fire/Explosion Hazard:** Thermal degradation may produce hazardous metal fumes; hydrogen gas; caustic vapours of potassium and sodium hydroxides and other toxic by-products. Batteries may burst and release hazardous decomposition products when exposed to a fire situation. Use self-contained breathing apparatus and full protective gear.

**OTHER INFORMATION:**

**CONTACT POINT:** Australian Poisons Information Centre  
24 hour service: -13 11 26  
Police or Fire Brigade: -000 (exchange): -1100

New Zealand Poisons Information Centre  
Dunedin: -(03)479 1200 (Normal hours)  
-(03)474 0999 (Emergency)

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