

# Amerex Nickel Metal Hydride (NiMH) Safety Data Sheet

## Section 1 - Product Identification and Company Information

### Product Identifier

|  |
|--|
| 18156 - Battery Assy, Replacement NiMH for Mod CM/CP III |
| 19667 - Battery Assy, Replacement, SafetyNet Driver      |
| 19682 - Battery Sub-assy, Amerex Mil                     |
| 23642 - Battery, NiMH, CDRS Dual & Quad                  |

Supplier Name:  
Amerex Corporation  
P.O. Box 81  
Trussville, AL 35173

Telephone: (205) 655-3271  
Fax: (205) 655-2879

Website: [www.amerex-fire.com](http://www.amerex-fire.com)

Product Operating Voltage ranges  
4.8 to 9.6 vdc nominal

Product Use:  
To be used only with Amerex Fire Control  
Panels

Emergency Contact:  
ChemTrec 1-800-424-9300  
1-703-527-3887

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

## Section 2 – Hazard Identification

A sealed Nickel-Metal hydride cell/battery is not hazardous in normal use. A small amount of hydrogen gas may be released during normal operation. In cases of battery pack abuse (over charging, reverse charge, external short circuit, etc.) or in the case of mechanical damage, some electrolyte can leak from the cell through the safety device. If electrolyte has leaked from the cell follow the guidelines for the risk of potassium hydroxide solution which has a pH of >14. Electrode materials are only hazardous if the battery pack is mechanically damaged or if the pack is exposed to fire.

## Section 3 - Composition

### Ingredients

| Contents | CAS No.    | Hazard Categories  | Hazard Statements  | Material                |
|----------|------------|--|--|-------------------------|
| 10-35%   |            | Flam. Sol. 2<br>Pyr. Sol. 1<br>Resp. Sens. 1<br>Skin Sens. 1<br>Carc. 2<br>STOT RE 1<br>Aquatic Chronic 3  | H228<br>H250<br>H334<br>H317<br>H351<br>H372<br>H412                                   | Mischmetal nickel alloy |
| 10-40%   | 12054-48-7 | Carc. 1A<br>Repr. 1 B<br>Muta. 2<br>STOT RE 1<br>Acute Tox. 4*<br>Skin Irrit. 2<br>Resp. Sens. 1<br>Skin Sens. 1<br>Aquatic Acute 1<br>Aquatic Chronic 1 | H302<br>H332<br>H334<br>H315<br>H317<br>H341<br>H350i<br>H360D<br>H372<br>H400<br>H410 | Nickel hydroxide        |

|        |           |  |                              |                      |
|--------|-----------|--|------------------------------|----------------------|
| 3-15%  | 1310-58-3 | Acute Tox. 4<br>Skin Corr. 1A                                      | H302<br>H314                 | Potassium hydroxide  |
| 0-0.3% | 1310-73-2 | Skin Corr. 1A  | H314                         | Sodium hydroxide     |
| 0-0.1% | 1310-65-2 | Acute Tox. 3<br>Skin Corr. 1A                                      | H301<br>H314                 | Lithium hydroxide    |
| 0-3%   |           | Acute Tox. 4<br>Skin Sens. 1<br>Aquatic Acute<br>Aquatic Chronic 1 | H302<br>H317<br>H400<br>H410 | Cobalt and compounds |

Full test of Hazard statements: see section 16

## Heavy Metals and RoHS Relevant Substances

| Contents   | CAS No.   | Material   |
|------------|-----------|--|
| < 5 mg/kg  | 7440-43-9 | Cadmium<br>(none intentionally introduced)                   |
| < 15 mg/kg | 7439-92-1 | Lead<br>(none intentionally introduced)                      |
| < 1 mg/kg  | 7439-97-6 | Mercury<br>(none intentionally introduced)<br>See Section 12 |
| < 5 mg/kg  |           | Hexavalent Chromium (Cr <sup>6+</sup> )                      |
| < 5 mg/kg  |           | PBB  |
| < 5 mg/kg  |           | PBDE   |

## Other Ingredients

| Contents | CAS No. | Material   |
|----------|---------|--|
| 15-60 %  |         | Steel and nickel   |
| 3-10%    |         | Polymers<br>(including external coating and<br>isolation material) |

During charge process, the mischmetal nickel alloy is loaded with hydrogen, this compound is flammable.

## Section 4 – First Aid Measures

Threshold Limit Values: See Section 3

Inhalation: Fresh air.  
Seek medical assistance.

After skin contact: Flush affected areas with plenty of water.  
Remove contaminated clothing immediately.  
Seek medical assistance.

After eye contact: Flush the eye gently with plenty of water (at least 15 minutes). Seek medical assistance.

After ingestion: Drink plenty of water.  
Avoid vomiting.  
Seek medical assistance.  
No trials for neutralization.

The information and recommendations set forth are made in good faith and believed to be accurate as of the date of preparation. Amerex Corporation makes no warranty, expressed or implied, with respect to this information and disclaims all liabilities from reliance on it.

## Section 5 – Fire-fighting Measures

|  |  |
|--|--|
| Suitable extinguishing media:                      | Use foam, dry chemical or dry sand, as appropriate.  |
| Special protection equipment during fire-fighting: | Protective clothing including breathing apparatus  |
| Special hazard:                                    | During fire conditions, the electrode materials can form carcinogenic nickel and cobalt oxides |

## Section 6 Accidental Release Measures

|                                  |  |
|----------------------------------|--|
| Personal protection measures:    | Wear personal protective equipment adapted to the situation (protection gloves, cloth)   |
| Environment protection measures: | In the event of battery rupture, prevent skin contact and collect all released material in a plastic lined container.<br>Dispose of according to local laws.<br>Prevent leached substances from soaking into the ground, ground water, ponds, lakes and streams. |
| In the event of a spill:         | If battery casing is cracked, small amounts of electrolyte may leak. Pack the battery including ingredients with sand as described above. Then clean the area with large amounts of water.   |

## Section 7 - Safe Handling and Storage

|                              |  |
|------------------------------|--|
| Guideline for safe handling: | Always follow the warning information on the batteries and in the manuals of devices.<br>Only use the recommended battery types.<br>Keep batteries away from children.<br>Unpacked batteries shall not lie about in bulk.<br>In case of battery change always replace all batteries by new ones of identical type and brand.<br>Do not swallow batteries.<br>Do not throw batteries into water.<br>Do not throw batteries into fire.<br>Avoid deep discharge.<br>Do not short-circuit batteries<br>Use recommended charging time and current.<br>Do not open or disassemble batteries. |
| Storage:                     | Storage preferably at room temperature 20 °C. Avoid large temperature changes.<br>Do not store close to heat sources.<br>Avoid direct sunlight.  |
| Storage of large amounts:    | If possible, store the batteries in original packaging<br>A fire alarm is recommended;<br>For automatic fire extinguishing, refer to section 5 "Firefighting measures".  |

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## **Section 8 – Exposure controls/Personal protection**

Under normal conditions (during charge and discharge) release of ingredients does not occur.

## **Section 9 – Physical and chemical properties**

Not applicable if closed.

## **Section 10 – Stability and Reactivity**

Dangerous reactions:                      When heated above 150°C the risk of rupture occurs.  
Due to special safety construction, rupture implies controlled release of pressure without ignition.

## **Section 11 – Toxicological Information**

Under normal conditions (during charge and discharge) release of ingredients does not occur.  
If accidental release occurs see information in section 2, 3, and 4.  
Swallowing of a battery can be harmful. Call the local Poison Control Center for advice and follow-up.

## **Section 12 – Ecological Information**

Nickel metal hydride button cells/batteries do not contain heavy metals as defined by the European directive 2006/66/EC Article 21.

Mercury has not been "intentionally introduced (as distinguished from mercury that may be incidentally present in other materials)" as per the U.S.A. "Mercury-Containing and Rechargeable Battery Management Act" (May 13 1996).

The Regulation on Mercury Content Limitation for Batteries promulgated on 1997-12-31 by the China authorities including the State Administration of Light Industry and the State Environmental Protection Administration defines 'low mercury' as 'mercury content by weight in battery as less than 0.025%', and 'mercury free' as 'mercury content by weight in battery as less than 0.0001%'

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## Section 13 – Disposal Considerations

### USA:

Nickel metal hydride button cells/batteries are classified by the federal government as non-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 by the Rechargeable Battery Recycling Corporation's (RBBC) Battery Recycling Program. Please go to the RPRC website at [www.rbrbc.org](http://www.rbrbc.org) for additional information.

### European Union:

Manufacturing, handling and disposal of batteries is regulated on the basis of the DIRECTIVE 2006/66/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC. Customers may find detailed information on disposal in their specific countries using the web site of the European Portable Batteries Association (<http://www.epbaeurope.net/{eqjsiatiQn national.html}>).

Importers and users outside EU should consider the local law and rules.

In order to avoid short circuit and heating, used nickel metal hydride button cells/batteries should never be stored or transported in bulk. Proper measures against short circuit are:

- Storage of batteries in original packaging
- Coverage of the terminals

## Section 14 - Transportation

Amerex nickel metal hydride battery packs 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), the International Maritime Organization (IMO), the "Accord European Relatif au Transport International des Marchandises Dangereuses par Route" (ADR) and the "Reglement concernant le transport international ferroviaire de marchandises Dangereuses" (RID)

IATA DGR: Special Provision A199: "The UN number UN3496 is only applicable in sea transport. Nickel-metal hydride batteries or nickel-metal hydride battery-powered devices, equipment or vehicles having the potential of a dangerous evolution of heat are not subject to these Regulations provided they are prepared for transport so as to prevent: a) 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); and (b) unintentional activation. The words 'Not Restricted' and the Special Provision number must be include in the description of the substance on the Air Waybill as required by 8.2.6, when an Air Waybill is issued."

IMO, IMDG Code: Special Provision 963: "Nickel-metal hydride button cells or nickel-metal hydride cells or batteries pack with or contained in equipment are not subject to the provisions of the Code."

EU (ADR/RID): Chapter 3.2 Table A: "Batteries, nickel-metal hydride, UN 3496, not subject to ADR."

USA: 49 CFR § 172.102 Special Provisions 130 and 340: Nickel metal hydride button cells/batteries are not subject to requirements of this subchapter except for the following... "Batteries and battery-powered device(s) containing batteries must be prepared and packaged for transport in a manner to prevent: (1) A dangerous evolution of heat; (2) Short circuits, including but not limited to the following methods: (i) Packaging each battery or each battery-powered device when practicable, in fully enclosed inner packaging made of non-conductive material; (ii) Separating or packaging batteries in a manner to prevent contact with other batteries, devices, or conductive materials (e.g., metal) in the packaging."

Code of practice for packaging and shipment of secondary batteries given in IEC 62133: "The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture."

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## Section 15 – Regulatory Information

|                                 |   |
|---------------------------------|---|
| Marking Requirements:           | According to DIRECTIVE 2006/66/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC all batteries have to be marked with the crossed bin. |
| International Safety Standards: | The component cells are approved according to UL 2054   |
| Water Hazard Class:             | (according to the German Federal Water Management Act) non-water polluting according to VwVwS Appendix 1 (No. 1443 and 766).  |

## Section 16 – Other Information

Full text of Hazard Statements referred to under section 3.

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|       |  |
|-------|--|
| H228  | Flammable solid.   |
| H250  | Catches fire spontaneously if exposed to air.                              |
| H301  | Toxic if swallowed.  |
| H302  | Harmful if swallowed.  |
| H314  | Causes severe skin burns and eye damage.                                   |
| H315  | Causes skin irritation.  |
| H317  | May cause an allergic skin reaction.                                       |
| H332  | Harmful if inhaled.  |
| H334  | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H341  | Suspected of causing genetic defects.                                      |
| H350i | May cause cancer by inhalation.  |
| H351  | Suspected of causing cancer.   |
| H360D | May damage the unborn child.   |
| H372  | Causes damage to organs through prolonged or repeated exposure.            |
| H400  | Very toxic to aquatic life.  |
| H410  | Very toxic to aquatic life with long lasting effects.                      |
| H412  | Harmful to aquatic life with long lasting effects.                         |

Note Issued: Date of issue of the transport regulations: ADR 2015, RID 2015, IATA 2016 (57<sup>th</sup> edition), IMDG 2014, DOT/49 CRF 2016.  
Latest covered modification of the European Battery Directive 2006/66/EC: Directive 2013/56/EU.

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