



Safety Data Sheet

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This Safety Data Sheet (SDS) is provided as a courtesy in response to a customer request. This product is not regulated under, and a SDS is not required for this product by the OSHA Hazard Communication Standard (29 CFR 1910.1200) because, when used as recommended or under ordinary conditions, it should not present a health and safety hazard. However, use or processing of the product not in accordance with the product's recommendations or not under ordinary conditions may affect the performance of the product and may present potential health and safety hazards.

| | | | |
|------------------------|-----------|-------------------------|----------|
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| Issue Date: | 12/03/13 | Supersedes Date: | 03/10/06 |

SECTION 1: Identification

1.1. Product identifier

Nickel Metal Hydride Batteries

Product Identification Numbers

52-0001-6987-1, 70-0712-6846-3

1.2. Recommended use and restrictions on use

Recommended use

Battery

1.3. Supplier's details

| | |
|----------------------|---|
| MANUFACTURER: | 3M |
| DIVISION: | Personal Safety Division |
| ADDRESS: | 3M Center, St. Paul, MN 55144-1000, USA |
| Telephone: | 1-888-3M HELPS (1-888-364-3577) |

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

This product is exempt from hazard classification according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

2.2. Label elements

Signal word

Not applicable.

Symbols

Not applicable.

Pictograms

Not applicable.

2.3. Hazards not otherwise classified

None.

35% of the mixture consists of ingredients of unknown acute oral toxicity.

SECTION 3: Composition/information on ingredients

| Ingredient | C.A.S. No. | % by Wt |
|------------------------------|------------|---------|
| NICKEL | 7440-02-0 | 30 - 40 |
| Steel | Unknown | 15 - 25 |
| ZINC | 7440-66-6 | 5 - 20 |
| POTASSIUM HYDROXIDE | 1310-58-3 | 10 - 15 |
| Water, Paper, plastic, other | Unknown | 0 - 10 |
| COBALT | 7440-48-4 | 4 - 8 |
| MANGANESE | 7439-96-5 | 0 - 2 |
| ALUMINUM | 7429-90-5 | 0 - 1 |

SECTION 4: First aid measures**4.1. Description of first aid measures****Inhalation:**

No need for first aid is anticipated.

Skin Contact:

No need for first aid is anticipated.

Eye Contact:

No need for first aid is anticipated.

If Swallowed:

No need for first aid is anticipated.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures**5.1. Suitable extinguishing media**

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

5.3. Special protective actions for fire-fighters

No unusual fire or explosion hazards are anticipated.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Not applicable.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Not applicable.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

7.2. Conditions for safe storage including any incompatibilities

Not applicable. Store away from heat. Store away from acids. Store away from strong bases. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

| Ingredient | C.A.S. No. | Agency | Limit type | Additional Comments |
|---------------------|-------------------|--------------------------------|--|----------------------------|
| POTASSIUM HYDROXIDE | 1310-58-3 | Amer Conf of Gov. Indust. Hyg. | CEIL:2 mg/m ³ | |
| ALUMINUM | 7429-90-5 | Amer Conf of Gov. Indust. Hyg. | TWA(respirable fraction):1 mg/m ³ | |
| ALUMINUM | 7429-90-5 | US Dept of Labor - OSHA | TWA(as Al respirable dust):5 mg/m ³ ;TWA(as Al total dust):15 mg/m ³ | |
| MANGANESE | 7439-96-5 | Amer Conf of Gov. Indust. Hyg. | TWA(as Mn, inhalable fraction):0.1 mg/m ³ ;TWA(as Mn, respirable fraction):0.02 mg/m ³ | |
| MANGANESE | 7439-96-5 | US Dept of Labor - OSHA | CEIL(as Mn fume):5 mg/m ³ | |
| NICKEL | 7440-02-0 | Amer Conf of Gov. Indust. Hyg. | TWA(inhalable fraction):1.5 mg/m ³ | |
| NICKEL | 7440-02-0 | US Dept of Labor - OSHA | TWA(as Ni):1 mg/m ³ | |
| COBALT | 7440-48-4 | Amer Conf of Gov. Indust. Hyg. | TWA(as Co):0.02 mg/m ³ | |
| COBALT | 7440-48-4 | US Dept of Labor - OSHA | TWA(as Co, dust and fume):0.1 mg/m ³ | |

Amer Conf of Gov. Indust. Hyg. : American Conference of Governmental Industrial Hygienists
American Indust. Hygiene Assoc : American Industrial Hygiene Association

Chemical Manufacturer Rec Guid : Chemical Manufacturer's Recommended Guidelines
US Dept of Labor - OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

No engineering controls required.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Eye protection not required.

Skin/hand protection

No chemical protective gloves are required.

Respiratory protection

Respiratory protection is not required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|--|
| General Physical Form: | Solid |
| Specific Physical Form: | battery |
| Odor, Color, Grade: | Odorless, metallic, geometric objects. |
| Odor threshold | <i>Not Applicable</i> |
| pH | <i>Not Applicable</i> |
| Melting point | <i>Not Applicable</i> |
| Boiling Point | <i>Not Applicable</i> |
| Flash Point | No flash point |
| Evaporation rate | <i>Not Applicable</i> |
| Flammability (solid, gas) | Not Classified |
| Flammable Limits(LEL) | <i>Not Applicable</i> |
| Flammable Limits(UEL) | <i>Not Applicable</i> |
| Vapor Pressure | <i>Not Applicable</i> |
| | |
| Vapor Density | <i>Not Applicable</i> |
| | |
| Density | <i>No Data Available</i> |
| Specific Gravity | <i>No Data Available</i> |
| Solubility In Water | <i>Not Applicable</i> |
| | |
| Solubility- non-water | <i>Not Applicable</i> |
| | |
| Partition coefficient: n-octanol/ water | <i>No Data Available</i> |
| Autoignition temperature | <i>Not Applicable</i> |
| Decomposition temperature | <i>Not Applicable</i> |
| Viscosity | <i>Not Applicable</i> |
| Volatile Organic Compounds | <i>Not Applicable</i> |
| Percent volatile | <i>Not Applicable</i> |

VOC Less H2O & Exempt Solvents

Not Applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

Strong oxidizing agents

Reducing agents

Strong acids

Strong bases

10.6. Hazardous decomposition products

| <u>Substance</u> | <u>Condition</u> |
|-------------------------------|------------------|
| Carbon monoxide | Not Specified |
| Carbon dioxide | Not Specified |
| Toxic Vapor, Gas, Particulate | Not Specified |

Under recommended usage conditions, hazardous decomposition products are not expected. Hazardous decomposition products may occur as a result of oxidation, heating, or reaction with another material.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

No health effects are expected.

Skin Contact:

No health effects are expected.

Eye Contact:

No health effects are expected.

Ingestion:

No health effects are expected.

Carcinogenicity:

| Ingredient | C.A.S. No. | Class Description | Regulation |
|------------------|------------|--------------------------------|---|
| COBALT | 7440-48-4 | Grp. 2B: Possible human carc. | International Agency for Research on Cancer |
| NICKEL | 7440-02-0 | Anticipated human carcinogen | National Toxicology Program Carcinogens |
| NICKEL | 7440-02-0 | Grp. 2B: Possible human carc. | International Agency for Research on Cancer |
| NICKEL COMPOUNDS | 7440-02-0 | Grp. 1: Carcinogenic to humans | International Agency for Research on Cancer |

Toxicological Data**Acute Toxicity**

| Name | Route | Species | Value |
|---------------------|--------------------------------|---------|---|
| Overall product | Ingestion | | Data not available or insufficient for classification; calculated ATE > 5,000 mg/kg |
| NICKEL | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 2.55 mg/l |
| NICKEL | Ingestion | Rat | LD50 > 9,000 mg/kg |
| ZINC | Dermal | Rabbit | LD50 > 5,000 mg/kg |
| ZINC | Inhalation-Dust/Mist | Rat | LC50 > 5.4 mg/l |
| ZINC | Ingestion | Rat | LD50 > 2,000 mg/kg |
| POTASSIUM HYDROXIDE | Dermal | Rabbit | LD50 > 1,260 mg/kg |
| POTASSIUM HYDROXIDE | Ingestion | Rat | LD50 273 mg/kg |
| COBALT | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 2.5 mg/l |
| COBALT | Ingestion | Rat | LD50 6,170 mg/kg |
| MANGANESE | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| MANGANESE | Ingestion | Rat | LD50 > 9,000 mg/kg |
| ALUMINUM | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| ALUMINUM | Ingestion | | LD50 estimated to be > 5,000 mg/kg |
| ALUMINUM | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > .888 mg/l |

ATE = acute toxicity estimate

Skin Corrosion/Irritation

| Name | Species | Value |
|---------------------|---------|---|
| NICKEL | | Data not available or insufficient for classification |
| ZINC | | Data not available or insufficient for classification |
| POTASSIUM HYDROXIDE | | Data not available or insufficient for classification |
| COBALT | | Data not available or insufficient for classification |
| MANGANESE | | Data not available or insufficient for classification |
| ALUMINUM | Rabbit | No significant irritation |

Serious Eye Damage/Irritation

| Name | Species | Value |
|---------------------|---------|---|
| NICKEL | | Data not available or insufficient for classification |
| ZINC | | Data not available or insufficient for classification |
| POTASSIUM HYDROXIDE | | Data not available or insufficient for classification |
| COBALT | | Data not available or insufficient for classification |
| MANGANESE | | Data not available or insufficient for classification |
| ALUMINUM | Rabbit | No significant irritation |

Skin Sensitization

| Name | Species | Value |
|------|---------|-------|
|------|---------|-------|

| | | |
|---------------------|------------|---|
| NICKEL | | Data not available or insufficient for classification |
| ZINC | | Data not available or insufficient for classification |
| POTASSIUM HYDROXIDE | | Data not available or insufficient for classification |
| COBALT | | Data not available or insufficient for classification |
| MANGANESE | | Data not available or insufficient for classification |
| ALUMINUM | Guinea pig | Not sensitizing |

Respiratory Sensitization

| Name | Species | Value |
|---------------------|---------|--|
| NICKEL | | Data not available or insufficient for classification |
| ZINC | | Data not available or insufficient for classification |
| POTASSIUM HYDROXIDE | | Data not available or insufficient for classification |
| COBALT | | Data not available or insufficient for classification |
| MANGANESE | | Data not available or insufficient for classification |
| ALUMINUM | Human | Some positive data exist, but the data are not sufficient for classification |

Germ Cell Mutagenicity

| Name | Route | Value |
|---------------------|----------|---|
| NICKEL | | Data not available or insufficient for classification |
| ZINC | | Data not available or insufficient for classification |
| POTASSIUM HYDROXIDE | | Data not available or insufficient for classification |
| COBALT | | Data not available or insufficient for classification |
| MANGANESE | | Data not available or insufficient for classification |
| ALUMINUM | In Vitro | Not mutagenic |

Carcinogenicity

| Name | Route | Species | Value |
|---------------------|-------|---------|---|
| NICKEL | | | Data not available or insufficient for classification |
| ZINC | | | Data not available or insufficient for classification |
| POTASSIUM HYDROXIDE | | | Data not available or insufficient for classification |
| COBALT | | | Data not available or insufficient for classification |
| MANGANESE | | | Data not available or insufficient for classification |
| ALUMINUM | | | Data not available or insufficient for classification |

Reproductive Toxicity

Reproductive and/or Developmental Effects

| Name | Route | Value | Species | Test Result | Exposure Duration |
|---------------------|-------|---|---------|-------------|-------------------|
| NICKEL | | Data not available or insufficient for classification | | | |
| ZINC | | Data not available or insufficient for classification | | | |
| POTASSIUM HYDROXIDE | | Data not available or insufficient for classification | | | |
| COBALT | | Data not available or insufficient for classification | | | |
| MANGANESE | | Data not available or insufficient for classification | | | |
| ALUMINUM | | Data not available or insufficient for classification | | | |

Target Organ(s)

Specific Target Organ Toxicity - single exposure

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|-----------|-------|-----------------|---|---------|-------------|-------------------|
| NICKEL | | | Data not available or insufficient for classification | | | |
| ZINC | | | Data not available or insufficient for classification | | | |
| POTASSIUM | | | Data not available or insufficient | | | |

| | | | | | | |
|-----------|--|--|---|--|--|--|
| HYDROXIDE | | | for classification | | | |
| COBALT | | | Data not available or insufficient for classification | | | |
| MANGANESE | | | Data not available or insufficient for classification | | | |
| ALUMINUM | | | Data not available or insufficient for classification | | | |

Specific Target Organ Toxicity - repeated exposure

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|---------------------|------------|-------------------------------------|--|---------|---------------------|-----------------------|
| NICKEL | | | Data not available or insufficient for classification | | | |
| ZINC | | | Data not available or insufficient for classification | | | |
| POTASSIUM HYDROXIDE | | | Data not available or insufficient for classification | | | |
| COBALT | | | Data not available or insufficient for classification | | | |
| MANGANESE | | | Data not available or insufficient for classification | | | |
| ALUMINUM | Inhalation | nervous system respiratory system | Some positive data exist, but the data are not sufficient for classification | Human | NOAEL Not available | occupational exposure |

Aspiration Hazard

| Name | Value |
|---------------------|--------------------------|
| NICKEL | Not an aspiration hazard |
| ZINC | Not an aspiration hazard |
| POTASSIUM HYDROXIDE | Not an aspiration hazard |
| COBALT | Not an aspiration hazard |
| MANGANESE | Not an aspiration hazard |
| ALUMINUM | Not an aspiration hazard |

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information**Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations**13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

This product has been classified as a non-hazardous waste. Prior to disposal, consult all applicable authorities and regulations to insure proper classification. Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. If no other disposal options are available, waste product may be placed in a landfill properly designed for industrial waste.

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - No Delayed Hazard - No

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

| <u>Ingredient</u> | <u>C.A.S. No</u> | <u>% by Wt</u> |
|---------------------------------|------------------|----------------|
| COBALT | 7440-48-4 | 4 - 8 |
| NICKEL | 7440-02-0 | 30 - 40 |
| NICKEL (NICKEL COMPOUNDS) | 7440-02-0 | 30 - 40 |
| ZINC | 7440-66-6 | 5 - 20 |
| MANGANESE | 7439-96-5 | 0 - 2 |
| MANGANESE (MANGANESE COMPOUNDS) | 7439-96-5 | 0 - 2 |
| ALUMINUM | 7429-90-5 | 0 - 1 |

15.2. State Regulations

Contact 3M for more information.

California Proposition 65

| <u>Ingredient</u> | <u>C.A.S. No.</u> | <u>Classification</u> |
|-------------------|-------------------|-----------------------|
| NICKEL | 7440-02-0 | Carcinogen |
| COBALT | 7440-48-4 | Carcinogen |

WARNING: This product contains a chemical known to the State of California to cause cancer.

15.3. Chemical Inventories

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory listing requirements.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 0 Flammability: 2 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address

the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: 0 Flammability: 2 Physical Hazard: 0 Personal Protection: X - See PPE section.

Hazardous Material Identification System (HMIS® III) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® III ratings are to be used with a fully implemented HMIS® III program. HMIS® is a registered mark of the American Coatings Association (ACA).

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