

**1. IDENTIFICATION**

Product Name: Nickel Cadmium Rechargeable Battery  
 Product Number: Not applicable  
 Product Use: Battery  
 Manufacturer: BISELL Homecare, Inc.  
 PO Box 1888  
 Grand Rapids, MI 49501  
 (616) 453- 4451, www.BISELL.com  
 SDS@BISELL.com

24-Hour Emergency Phone Numbers:  
 Prosar (Medical) 1 866-303-6951  
 Chemtrec (US) 1 800-424-9300 acct 2808  
 Chemtrec (Int'l) 1 703-527-3887

**2. HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW:** This product is a sealed, rechargeable nickel cadmium battery. The information below is intended for repeated and prolonged contact with the battery contents in an occupational setting. In the absence of an incident or accident, it is not likely to apply to normal product use. However, this Safety Data Sheet (SDS) contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product. Always be aware of the risk of fire, explosion, or burns. Do not short circuit the (+) and (-) terminals with any other metals. Do not disassemble or modify the battery. Do not solder a battery directly. Keep away from fire or open flame.

Appearance: Battery    Physical State: Solid Article

Classification

Acute toxicity - Oral	Category 4
Acute toxicity – Dermal	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 1
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 1A
Reproductive toxicity	Category 1B
Specific target organ toxicity (repeated exposure)	Category 1

PictogramSignal Word

Danger

Hazard Statements

Harmful if swallowed  
 Harmful in contact with skin  
 Fatal if inhaled  
 Causes skin irritation  
 Causes serious eye irritation  
 May cause allergy or asthma symptoms or breathing difficulties if inhaled  
 May cause an allergic skin reaction  
 Suspected of causing genetic defects  
 May cause cancer  
 May damage fertility or the unborn child  
 Causes damage to organs through prolonged or repeated exposure

Precautionary Statements - Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Do not breathe dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

Wear respiratory protection

In case of inadequate ventilation wear respiratory protection

Contaminated work clothing should not be allowed out of the workplace

Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

If exposed or concerned: Get medical advice/attention

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

IF ON SKIN: Wash with plenty of soap and water

Take off contaminated clothing and wash it before reuse

Call a poison center or doctor/physician if you feel unwell

If skin irritation or rash occurs: Get medical advice/attention

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Immediately call a poison center or doctor/physician

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Rinse mouth

Precautionary Statements - Storage

Store locked up

Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other Hazards

Very toxic to aquatic life with long lasting effects

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No	Weight-%
Cadmium hydroxide	21041-95-2	11-26
Cadmium	7440-43-9	11-26
Nickel	7440-02-0	8-17
Nickel hydroxide	12054-48-7	5-12
Potassium hydroxide	1310-58-3	<3

\*\*If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.\*\*

#### **4. FIRST-AID MEASURES**

##### First Aid Measures

Eye Contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Skin Contact	Wash off immediately with soap and plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. Call a poison center or doctor/physician if you feel unwell. If skin irritation or rash occurs: Get medical advice/attention.
Inhalation	Remove to fresh air. Seek immediate medical attention/advice.
Ingestion	Do not induce vomiting. Call a physician or poison control center immediately.

##### Most important symptoms and effects

Symptoms	<p>Inhalation: During normal use inhalation is highly unlikely due to the containment of hazardous materials inside the sealed battery case. However, if the batteries are exposed to extreme heat or pressure causing a breach in the battery cell case, cadmium fumes and dust may be emitted. Inhalation of cadmium dusts or fumes may cause throat dryness, respiratory irritation, headache, nausea, vomiting, chest pain, extreme restlessness and irritability, pneumonitis and bronchopneumonia. In the case of high concentration exposures (e.g. above 1 to 5mg/m<sup>3</sup> during an eight hour period) death may occur within several days of exposure.</p> <p>Ingestion: If the battery case is breached in the digestive tract, the electrolyte may cause localized burns. Ingestion of cadmium compounds may result in increased salivation, choking, nausea, persistent vomiting, diarrhea, abdominal pain, amnesia, tenesmus, and kidney dysfunction.</p> <p>Skin Contact: Exposure to the electrolyte inside the battery may result in severe irritation and chemical burns. Exposure to nickel may cause dermatitis for some sensitive individuals. May cause an allergic skin reaction.</p> <p>Eye Contact: Exposure to the electrolyte contained inside the battery may result in severe irritation and chemical burns.</p>
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##### Indication of any immediate medical attention and special treatment needed

Notes to Physician      Treat symptomatically.

#### **5. FIRE-FIGHTING MEASURES**

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media	Not determined.

##### Specific Hazards Arising from the Chemical

See Section 2, Hazard Statements. Exposure to temperatures above 212 °F can cause evaporation of the liquid content of the potassium hydroxide electrolyte, resulting in the rupturing of the cell. Potential exposure to cadmium fumes during fire.

Hazardous Combustion Products      Oxides of cadmium and nickel and potassium hydroxide.

##### Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## **6. ACCIDENTAL RELEASE MEASURES**

### Personal precautions, protective equipment and emergency procedures

Personal Precautions	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.
Environmental Precautions	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. See Section 13: DISPOSAL CONSIDERATIONS.

### Methods and material for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Clean-Up	Collect all released material in a plastic lined container. Report all spills in accordance with Federal, State and Local reporting requirements.

## **7. HANDLING AND STORAGE**

### Precautions for safe handling

Advice on Safe Handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection recommended in Section 8. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash face, hands, and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace.
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### Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep container tightly closed and store in a cool, dry and well-ventilated place. Store away from heat, sparks, flame. Protect from moisture. Store away from incompatible materials. Prevent condensation on cells or battery terminals. Elevated temperatures may result in reduced battery life. Accidental short circuit will bring high temperature elevation to the battery as well as shorten the battery life. Be sure to avoid prolonged short circuit since the heat generated can burn skin and even rupture the battery cell case. Batteries packaged in bulk containers should not be shaken. Metal covered tables or belts used for the assembly of batteries into devices can be the source of short circuits; apply insulating material to assembly work surfaces. Soldering/Welding: If soldering or welding to the case is required consult our Technical Department for proper precautions to prevent seal damage or external short circuit.
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Charging: These batteries are designed for recharging. A loss of voltage and capacity of the battery due to self- discharge during prolonged storage is unavoidable. Charge battery before use. Observe the specified charge rate since higher rates can cause a rise in internal gas pressure which may result in damaging heat generation or cell rupture and/or venting.

Incompatible Materials	Potential incompatibilities: The battery cells are encased in a non-reactive container; however, if the container is breached, avoid contact of internal battery components with acids, aldehydes and carbonate compounds.
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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

## Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Cadmium hydroxide 21041-95-2	TWA: 0.01 mg/m <sup>3</sup> Cd TWA: 0.002 mg/m <sup>3</sup> Cd respirable fraction	-	IDLH: 9 mg/m <sup>3</sup> Cd dust and fume
Cadmium 7440-43-9	TWA: 0.01 mg/m <sup>3</sup> Cd TWA: 0.002 mg/m <sup>3</sup> Cd respirable fraction	TWA: 0.1 mg/m <sup>3</sup> fume applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect TWA: 0.2 mg/m <sup>3</sup> dust applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect TWA: 5 µg/m <sup>3</sup> (vacated) STEL: 0.3 ppm fume Ceiling: 0.3 mg/m <sup>3</sup> fume applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect Ceiling: 0.6 mg/m <sup>3</sup> dust applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect	IDLH: 9 mg/m <sup>3</sup> Cd dust and fume
Nickel 7440-02-0	TWA: 1.5 mg/m <sup>3</sup> inhalable fraction	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> Ni TWA: 0.015 mg/m <sup>3</sup> except Nickel carbonyl Ni
Nickel hydroxide 12054-48-7	TWA: 0.2 mg/m <sup>3</sup> Ni inhalable fraction	TWA: 1 mg/m <sup>3</sup> Ni (vacated) TWA: 1 mg/m <sup>3</sup> Ni	IDLH: 10 mg/m <sup>3</sup> Ni TWA: 0.015 mg/m <sup>3</sup> except Nickel carbonyl Ni
Potassium hydroxide 1310-58-3	Ceiling: 2 mg/m <sup>3</sup>	(vacated) Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>

Appropriate engineering controls

Engineering Controls Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment

Eye/Face Protection None needed under normal conditions. If handling damaged or broken batteries use chemical splash goggles or face shield.

Skin and Body Protection None needed under normal conditions. If battery case is damaged use rubber or plastic gloves.

Respiratory Protection None required under normal conditions. If battery is overcharged and concentrations of components are known to exceed PEL use NIOSH or MSH approved respiratory protection.

General Hygiene Considerations Handle batteries carefully to avoid damaging the case. Do not allow metallic articles to contact the battery terminals during handling. Avoid contact with the internal components of the battery.

**9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties

<u>Physical State</u>	<u>Solid Article</u>
Appearance	Battery
Odor	Not determined
Color	Not determined
Odor Threshold	Not determined

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	Not determined	
Melting Point/Freezing Point	Not determined	
Boiling Point/Boiling Range	Not determined	
Flash Point	Not determined	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Not determined	
Upper Flammability Limits	Not determined	
Lower Flammability Limit	Not determined	
Vapor Pressure	Not determined	
Vapor Density	Not determined	
Specific Gravity	Not determined	
Water Solubility	Insoluble	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	

**10. STABILITY AND REACTIVITY**Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization      Hazardous polymerization does not occur.

Conditions to Avoid

Exposure to temperatures above 212 °F can cause evaporation of the liquid content of the potassium hydroxide electrolyte, resulting in the rupturing of the cell. Potential exposure to cadmium fumes during fire. See Sec. 7 Handling & Storage.

Incompatible Materials

Potential incompatibilities: The battery cells are encased in a non-reactive container; however, if the container is breached, avoid contact of internal battery components with acids, aldehydes and carbonate compounds.

Hazardous Decomposition Products

Oxides of cadmium and nickel and potassium hydroxide.

**11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure

## Product Information

Eye Contact	Causes serious eye irritation.
Skin Contact	Causes skin irritation. Harmful in contact with skin.
Inhalation	Fatal if inhaled.
Ingestion	Harmful if swallowed.

## Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Cadmium 7440-43-9	= 1140 mg/kg ( Rat )	-	= 25 mg/m3 ( Rat ) 30 min
Nickel 7440-02-0	> 9000 mg/kg ( Rat )	-	-
Nickel hydroxide 12054-48-7	= 1515 mg/kg ( Rat )	> 2 g/kg ( Rat )	= 1200 mg/m3 ( Rat ) 4 h
Potassium hydroxide 1310-58-3	= 284 mg/kg ( Rat )	-	-

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ cell mutagenicity Suspected of causing genetic defects.

Carcinogenicity May cause cancer.

Chemical Name	ACGIH	IARC	NTP	OSHA
Cadmium hydroxide 21041-95-2	A2	Group 1	Known	X
Cadmium 7440-43-9	A2	Group 1	Known	X
Nickel 7440-02-0		Group 1	Known, Reasonably Anticipated	X
Nickel hydroxide 12054-48-7	A1	Group 1	Known	X

## Legend

*ACGIH (American Conference of Governmental Industrial Hygienists)*

*A1 - Known Human Carcinogen*

*A2 - Suspected Human Carcinogen*

*IARC (International Agency for Research on Cancer)*

*Group 1 - Carcinogenic to Humans*

*NTP (National Toxicology Program)*

*Known - Known Carcinogen*

*Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen*

*OSHA (Occupational Safety and Health Administration of the US Department of Labor)*

*X - Present*

Reproductive toxicity May damage fertility or the unborn child.  
STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure.

Numerical measures of toxicity

Not determined

**12. ECOLOGICAL INFORMATION**

Ecotoxicity Very toxic to aquatic life with long lasting effects.

## Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Cadmium 7440-43-9		0.016: 96 h <i>Oryzias latipes</i> mg/L LC50 0.002: 96 h <i>Cyprinus carpio</i> mg/L LC50 0.0004 - 0.003: 96 h <i>Pimephales promelas</i> mg/L LC50 4.26: 96 h <i>Cyprinus carpio</i> mg/L LC50 semi-static 0.24: 96 h <i>Cyprinus carpio</i> mg/L LC50 static 21.1: 96 h <i>Lepomis macrochirus</i> mg/L LC50 flow-through 0.003: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 flow-through 0.006: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static		0.0244: 48 h <i>Daphnia magna</i> mg/L EC50 Static
Nickel 7440-02-0	0.18: 72 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 0.174 - 0.311: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static	100: 96 h <i>Brachydanio rerio</i> mg/L LC50 1.3: 96 h <i>Cyprinus carpio</i> mg/L LC50 semi-static 10.4: 96 h <i>Cyprinus carpio</i> mg/L LC50 static		100: 48 h <i>Daphnia magna</i> mg/L EC50 1: 48 h <i>Daphnia magna</i> mg/L EC50 Static
Potassium hydroxide 1310-58-3		80: 96 h <i>Gambusia affinis</i> mg/L LC50 static		

Persistence/Degradability Not determined.

Bioaccumulation Not determined.

## Mobility

Chemical Name	Partition Coefficient
Potassium hydroxide 1310-58-3	0.65 0.83

Other Adverse Effects Not determined

**13. DISPOSAL CONSIDERATIONS**Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

## US EPA Waste Number

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Nickel 7440-02-0		Included in waste streams: F006, F039, K061, K069, K100	1.0 mg/L regulatory level	
Cadmium 7440-43-9		Included in waste streams: F006, F039		

## California Hazardous Waste Status

Chemical Name	California Hazardous Waste Status
Nickel 7440-02-0	Toxic powder Ignitable powder
Potassium hydroxide 1310-58-3	Toxic Corrosive



**14. TRANSPORT INFORMATION**

- Note** Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances. Power-Sonic sealed Nickel Cadmium batteries are considered to be “dry cell” batteries and are unregulated for purposes of transport by the US Department of Transportation (DOT), International Civil Aviation Administration (ICAO), International Air Transport Association (IATA) and the International Maritime Organization (IMO).
- DOT** The only requirements for shipping these batteries by DOT 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).
- IATA** The only requirements for shipping these batteries by ICAO and IATA is Special Provision A123 which states “an electrical battery or battery powered device having the potential of dangerous evolutions of heat that is not prepared so as to prevent 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) is forbidden from transportation.”
- IMDG** Marine Pollutant This material may meet the definition of a marine pollutant

**15. REGULATORY INFORMATION****International Inventories**

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Cadmium hydroxide	Present		X	Present		Present	X	Present		X
Cadmium	Present	X		Present			X	Present	X	X
Nickel	Present	X		Present		Present	X	Present	X	X
Nickel hydroxide	Present	X		Present		Present	X	Present	X	X
Potassium hydroxide	Present	X		Present		Present	X	Present	X	X

**Legend:**

*TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*

*DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List*

*EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*

*ENCS - Japan Existing and New Chemical Substances*

*IECSC - China Inventory of Existing Chemical Substances*

*KECL - Korean Existing and Evaluated Chemical Substances*

*PICCS - Philippines Inventory of Chemicals and Chemical Substances*

*AICS - Australian Inventory of Chemical Substances*

**US Federal Regulations****CERCLA**

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Cadmium 7440-43-9	10 lb		RQ 10 lb final RQ RQ 45.4 kg final RQ
Nickel 7440-02-0	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ
Nickel hydroxide 12054-48-7	10 lb		RQ 10 lb final RQ RQ 45.4 kg final RQ
Potassium hydroxide 1310-58-3	1000 lb		RQ 1000 lb final RQ RQ 45.4 kg final RQ

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Cadmium hydroxide	21041-95-2	11-26	0.1
Cadmium	7440-43-9	11-26	0.1
Nickel	7440-02-0	8-17	0.1
Nickel hydroxide	12054-48-7	5-12	0.1

**CWA (Clean Water Act)**

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Cadmium hydroxide		X		
Cadmium		X	X	
Nickel		X	X	
Nickel hydroxide		X		X
Potassium hydroxide	1000 lb			X

**US State Regulations****California Proposition 65**

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Cadmium hydroxide 21041-95-2	Carcinogen
Cadmium 7440-43-9	Carcinogen Developmental Male Reproductive
Nickel 7440-02-0	Carcinogen
Nickel hydroxide 12054-48-7	Carcinogen

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Cadmium hydroxide 21041-95-2	X		X
Cadmium 7440-43-9	X	X	X
Nickel 7440-02-0	X	X	X
Nickel hydroxide 12054-48-7	X	X	X
Potassium hydroxide 1310-58-3	X	X	X

NFPA	Health Hazards	Flammability	Instability	Special Hazards
	Not determined	Not determined	Not determined	Not determined

HMIS	Health Hazards	Flammability	Instability	Special Hazards
	Not determined	Not determined	Not determined	Not determined

**15. OTHER INFORMATION**

The information herein is presented in good faith and believed to be accurate as of the effective date shown below. However, no warranty, expressed or implied, is given. Regulatory requirements are subject to change and may differ from one location to another. It is the buyer's responsibility to ensure that its activities comply with federal, state or Provincial, and local laws.

Effective Date: March 14, 2016

Supersedes: Not applicable, new issue

Prepared By: Don Mahaffy