Conrad Electronic SE, Klaus-Conrad-Str. 1, D-92240 Hirschau

Item no.: 1579016

Material Safety Data Sheet

1. Product & Company Identification

Product:	NiMH Rechargeable battery
Nominal voltage:	9.6 V
Nominal capacity:	3000 mAh
Manufacturer:	Conrad Electronic SE
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date of issue:	29.07.2017

2. Hazards Identification

Preparation hazards and classification

Not dangerous with normal use. Do not dismantle, open or shred NICKEL METAL HYDRIDE BATTERY the ingredients contained within or their ingredients products could be harmful.

Appearance, Color, Odor

Solid object with no odor, no color.

Primary Route(s) of Exposure

These chemicals are contained in a sealed stainless steel enclosure. Risk of exposure occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, exposure to the electrolyte solution contained within can occur by Inhalation, Ingestion, Eye contact and Skin contact

Potential Health Effects:

ACUTE (short term): see Section 8 for exposure controls In the event that this battery has been ruptured, the electrolyte solution contained within the battery would be corrosive and can cause burns.

Inhalation: Inhalation of materials from a sealed battery is not an expected route of exposure. Vapors or mists from a ruptured battery may cause respiratory irritation.

Ingestion: Swallowing of materials from a sealed battery is not an expected route of exposure. Swallowing the contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.

Skin: Contact between the battery and skin will not cause any harm. Skin contact with contents of an open battery can cause severe irritation or burns to the skin.

Eye: Contact between the battery and the eye will not cause any harm. Eye contact with contents of an open battery can cause severe irritation or burns to the eye.

CHRONIC (long term): see Section 11 for additional toxicological data

Medical Conditions Aggravated by Exposure

Not applicable

Reported as carcinogen

Not applicable

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3. Composition / Information On Ingredients

Hazardous Ingredients (Chemical Name)	Concentration or concentration ranges (%)	CAS Number
Nickel	15-40	7440-02-0
Nickel hydroxide	10-30	12054-48-7
Iron	10-30	7439-89-6
Cobalt	1-5	7440-48-4
Sodium hydroxide	1-5	1310-73-2
Potassium hydroxide	1-5	1310-58-3
Cobalt hydroxide	1-5	21041-93-0
Manganese	1-5	7439-96-5

Labeling according to EC directives.

No symbol and risk phrase are required.

Note: CAS number is Chemical Abstract Service Registry Number.

4. First Aid Measures

Inhalation

Remove to fresh air. Get medical attention immediately if symptoms occur. May cause allergic respiratory reaction. If breathing has stopped, give artificial respiration. Get medical attention immediately. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Skin contact

Wash off immediately with soap and plenty of water for at least 15 minutes. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub affected area. Seek immediate medical attention/advice.

Ingestion

Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. May produce an allergic reaction. If an allergic reaction occurs, stop use and seek medical help right away.

Call a physician or poison control center immediately.

5. Fire Fighting Measures

Flammable Properties

In the event that this battery has been ruptured, the electrolyte solution contain within the battery would be flammable. Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of flammable or corrosive materials.

Suitable extinguishing Media

Use extinguishing media suitable for the materials that are burning.

Unsuitable extinguishing Media

Not available

Explosion Data

Sensitivity to Mechanical Impact: This may result in rupture in extreme cases. Sensitivity to Static Discharge: Not Applicable

Specific Hazards arising from the chemical

Fires involving NICKEL METAL HYDRIDE BATTERY can be controlled with water. When water is used, however, hydrogen gas may evolve. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended to extinguish the fire

Protective Equipment and precautions for firefighters

As for any fire, evacuate the area and fight the fire from a safe distance. Wear a pressure-demand, self-contained breathing apparatus and full protective gear. Fight fire from a protected location or a safe distance. Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear.

NFPA

Health: 0 Flammability: 0 Instability: 0

6. Accidental Release Measures

Personal Precautions, protective equipment, and emergency procedures

Restrict access to area until completion of clean-up. Do not touch the spilled material. Wear adequate personal protective equipment as indicated in Section 8.

Environmental Precautions

Do not allow material to be released to the environment without proper governmental permits.

Methods and materials for containment and cleaning up:

All waste must refer to the United Nations, the national and local regulations for disposal.

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7. Handling and Storage

Handling

Consumption of food and beverage should be avoided in work areas. Wash hands with soap and water before eating, drinking.

Ground containers when transferring liquid to prevent static accumulation and discharge.

Information about protection against explosions and fires: Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

Conditions for safe storage, including any incompatibilities:

Requirements to be met by storerooms and receptacles: Store in a cool, dry, well-ventilated place.

Information about storage in one common storage facility: Keep away from heat, avoiding the long time of sunlight.

Further information about storage conditions: Keep container tightly sealed.

Specific and use: No further relevant information available.

8. Exposure Controls, Personal Protection

Engineering Controls

Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor.

Keep away from heat and open flame. Store in a cool, dry place.

Personal Protective Equipment

Respiratory Protection: Not necessary under normal conditions.

Skin and body Protection: Not necessary under normal conditions, Wear neoprene or nitride rubber gloves if handling an open or leaking battery.

Hand protection: Wear neoprene or natural rubber material gloves if handling an open or leaking battery.

Eye Protection: Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery.

Other Protective Equipment

Have a safety shower and eye wash fountain readily available in the immediate work area.

Hygiene Measures

Do not eat, drink, or smoke in work area. Maintain good housekeeping.

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9. Physical and Chemical Properties

Physical State

Form:	Solid
Odour:	Odorless

Change in condition:

pH, with indication of the concentration	Not applicable
Melting point/freezing point	Not available.
Boiling Point, initial boiling point and Boiling range:	Not available.
Flash Point	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapor Pressure:	Not applicable
Vapor Density: (Air = 1)	Not applicable
Density/relative density	Not available.
Solubility in Water:	Insoluble
n-octanol/water partition coefficient	Not available.
Auto-ignition temperature	130°C
Decomposition temperature	Not available.
Odout threshold	Not available.
Evaporation rate	Not available.
Flammability (soil, gas)	Not available.
Viscosity	Not applicable
Other information:	Voltage 9.6 V, Electric capacity 3000 mAh

10. Stability and Reactivity

Stability

The product is stable under normal conditions.

Reactivity

Not Available

Conditions to Avoid

Flames, sparks, and other sources of ignition, incompatible materials.

Incompatible Materials

Oxidizing agents, acid, base

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide, lithium oxide fumes

Possibility of Hazardous Reaction

Not Available

11. Toxicological Information

Irritation

Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur.

Sensitization

Not Available

Neurological Effects

Not Available

Teratogenicity

Not Available

Reproductive Toxicity

Not Available

Mutagenicity (Genetic Effects)

Not Available

Toxicologically Synergistic Materials

Not Available

12. Ecological Information

General note:

Water hazard class 1(Self-assessment): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Anticipated behavior of a chemical product in environment/possible environmental impact/ ecotoxicity

Not Available

Mobility in soil

Not Available

Persistence and Degradability

Not Available

Bioaccumulation potential

Not Available

Other Adverse Effects

Not Available

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13. Disposal Considerations

Product disposal recommendation

Observe local, state and federal laws and regulations.

Packaging disposal recommendation

Be aware discarded batteries may cause fire, tape the battery terminals to insulate them. Don't disassembly the battery. Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local, state and federal laws and regulations.

The potential effects on the environment and human health of the substances used in batteries and accumulators; the desirability of not disposing of waste batteries and accumulators as unsorted municipal waste and of participating in their separate collection so as to facilitate treatment and recycling.

14. Transport Information

UN number:

UN3496

UN Proper shipping name:

Nickel-metal hydride batteries

Transport hazard class(es):

9

Packing group, if applicable:

N/A

Environmental hazards (Marine pollutant (Yes/No)):

No

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

No information available.

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises

Transport information:

NICKEL METAL HYDRIDE BATTERY (SC3000mAh 8.4V) is exempt from dangerous goods. It is considered non-dangerous goods by the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) DGR 58th, IATA Special Provisions A199, or the Recommendations on the Transport of Dangerous Goods Model Regulations (19th).

Special Provisions A199

This entry applies to Batteries, electric storage, not otherwise listed in Subsection 4.2–List of Dangerous Goods. Examples of such batteries are: alkali-manganese, zinc-carbon, nickel-metal hydride and nickel-cadmium batteries. Any electrical battery or battery powered device, equipment or vehicle having the potential of a dangerous evolution of heat must be 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) accidental activation.

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The words “Not Restricted” and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6, when an Air Waybill is issued.

International maritime Dangerous Goods Regulations (IMDG) (37-14), is from dangerous goods.

Note: Products weighing more than 100kg in the Container. (By sea).

Special Provisions 304

Batteries, dry, containing corrosive electrolyte which will not flow out of the battery if the battery case is cracked are not subject to the provision of this code provided the batteries are securely packed and protected against short-circuits. Examples of such batteries are: alkali-manganese, zinc carbon, nickel metal hydride and nickel-cadmium batteries. Such batteries have been packed in inner packaging in such a manner as to effectively prevent short circuit and movement that could lead to short-circuit.

Special Provisions 963

Nickel-metal hydride button cells or nickel-metal hydride cells or batteries packed with or contained in equipment are not subject to the provisions of this Code. All other nickel-metal hydride cells or batteries shall be securely packed and protected from short circuit. They are not subject to other provisions of this Code provided that they are loaded in a cargo transport unit in a total quantity of less than 100Kg gross mass or more, they are not subject to other provisions of this Code except those of 5.4.1, 5.4.3 and column (16) of the dangerous good list in Chapter 3.2.

Separate batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport.

Note: Products weighing less than 100kg in the Container. (By sea)

Transport Fashion:

By air, by sea, by railway, by road

15. Regulatory Information

OSHA hazard communication standard (29 CFR 1910.1200)

Hazardous _____ Non-hazardous ____√____

16. Additional Information

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. This material safety data sheet provides guidelines for the safe handling and use of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required.

The data/information contained herein has been reviewed and approved for general release on the basis that this document contains no export controlled information.