Material Safety Data Sheet

1. Product & Company Identification

Product:	NiCd rechargeable battery (AA ZLF)
Manufacturer:	Conrad Electronic SE
Nominal voltage:	1,2 V
Nominal capacity:	1000 mAh
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date of issue:	10.11.2016

2. Hazardouse Ingredients

IMPORTANT NOTE:

The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

MATERIAL OR INGREDIENTS		**% W. t.**
Ingredients name	**CAS No.**	
Nickel dihydroxide	12054-48-7	18.9
Cobalt oxide	1307-96-6	2.5
Nickel power	7440-02-0	0.9
Cadmium oxide	1306-19-0	28.3
Cadmium	7440-43-9	3.3
Potassium hydroxide	1310-58-3	3.7
Lithium hydroxide	1310-69-2	0.3
Nickel	7440-02-0	5
Iron	7439-89-6	34.4
Vinylon	N/A	2.7

Remark: The battery is neither substance nor mixture but a finished product. It has no risk to life and health under normal use or transportation ingredients of batter are not leaked out by virtue of hermetical sealing with metal case. The electrolyte is corrosive. Contact with internal components may cause irritation or severe burns. Irritating to eyes, respiratory system, and skin.

3. Fire and Explosion Hazard Data

If fire or explosion occurs when batteries are on charge, shut off power to charge.

In case of fire, it is permissible to use any class of extinguishing medium on these batteries or their packing materials. Cool exterior of batteries if exposed to fire to prevent rupture.

Fire fighters should wear self-contained breathing apparatus. Nickel-Cadmium batteries involved in a fire can vent and produce toxic fumes including nickel, nickel oxide, cadmium, cadmium oxides, and cobalt oxides.

4. Healtz Hazard Data

Under normal conditions of use, the battery is hermetically sealed.

Ingestion:

Swallowing a battery can be harmful. Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract. Contents include toxic cadmium compounds that can cause excessive salivation, choking, nausea, persistent vomiting, diarrhea, abdominal pain, dizziness, faintness, unconsciousness, and possible liver and kidney injury.

If a battery or open battery is ingested, do not induce vomiting or give food or drink. Seek medical attention immediately.

Inhalation:

Contents of an open battery can cause respiratory irritation. Cadmium oxide fumes and cause metal fume fever. Hypersensitivity to nickel can cause allergic pulmonary asthma. Provide fresh air and seek medical attention.

Skin Contact:

Contents of an open battery can cause skin irritation and/or chemical burns. Cobalt, cobalt compounds, nickel, and nickel compounds can cause skin sensitization and an allergic contact dermatitis. Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical attention.

Eye Contact:

Contents of an open battery can cause severe irritation and chemical burns. Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

5. Precautions For Safe Handling And Use

Storage:

Store in a cool, well-ventilated area. Elevated temperature can result in shortened battery life.

Mechanical Containment:

Do not obstruct safety release vents on batteries. Encapsulation of batteries will not allow cell venting and can cause high-pressure rupture.

Handling:

Accidental short circuit for a few seconds will not seriously affect the battery. However, this battery is capable of delivering very high short circuits. Prolonged short circuits will cause high cell temperatures that can cause skin burns. Sources of short circuits include jumbled batteries in bulk containers, metal jewelry, and metal covered tables or metal belts used for assembly of batteries into devices.

If soldering or welding to the battery is required, use of tabbed batteries is recommended.

Do not open battery. The negative electrode material maybe pyrophoric. Should an individual cell from a battery become disassembled, spontaneous combustion of the negative electrode is possible. That is much more like to happen if the electrode is removed from its metal container. There can be a delay between exposure to air and spontaneous combustion.

Charging:

This battery is made to be charging many times. Because it gradually loses its charge over a few months, it is good practice to charge battery before use. Use recommended charger. Improper charging can cause heat damage or even high pressure rupture. Observe proper charging polarity.

6. Special Protection Information

Ventilation Requirements:

Not necessary under normal conditions.

Respiratory Protection:

Not necessary under normal conditions.

Eye Protection:

Not necessary under normal conditions. Wear safety glasses with side shields if handling an open or leaking battery.

Glove:

Not necessary under normal conditions. Use neoprene or natural rubber gloves if handling an open or leaking battery.

Open Battery Storage:

Battery should not be opened. Should a cell become disassembled, the electrode should be stored in a fireproof cabinet, away from combustibles.

7. Disposal Method

Dispose of batteries according to government regulations.

8. Tranportation Information

We hereby certify that the above captioned goods are non-dangerous and non-hazardous materials for air transport in any nature.

The consignment is fully described by Proper Shipping Name and packed (short-circuit prevented), marked and in proper condition for carriage by air/sea.

Air:

We here certify that the consignment is not classified as dangerous under the current edition of the IATA DANGEROUS GOODS REGULATIONS (edition 57h), with complying to the provision SPA 199 and all applicable carrier and governmental regulations.

Sea:

We here certify that the consignment is not classified as dangerous.

9. Regulatory Information

Special requirement be according to the local regulatories.

10. Other Information

The data in this Material Safety Data Sheet relates only to the specific material designated herein.

11. Measures for fire Extinction

In case of fire, it is permissible to use any class of extinguishing medium on these batteries or their packing material. Cool exterior of batteries if exposed to fire to prevent rupture.

Fire fighters should wear self-contained breathing apparatus.

12. Physical/Chemical Characteristics

Boiling Point	N.A.
Specific Gravity (H2O=1)	N.A.
Vapor Pressure (mm Hg)	N.A.
Melting Point	N.A.
Vapor Density (AIR=1)	N.A.
Evaporation Rate (Butyl Acetate)	N.A.
Solubility in Water	N.A.
Appearance and Odor	Cylindrical Shape, odorless

13. Accidental Release or Spillage

Steps to Be Taken in Case Material is Released or Spilled

Batteries that are leakage should be handled with rubber gloves.Avoid direct contact with electrolyte.Wear protective clothing and a positive pressure Self-Contained Breathing Apparatus (SCBA)

14. Exposure Controls/Person Protection

Occupational Exposure Limits:	LTEP	N.A.
	STEP	N.A.
Respiratory Protection (Specify Type)	N.A.	
Ventilation Local Exhausts	N.A.	
Special	N.A.	
Mechanical (General)	N.A.	
Other	N.A.	
Protective Gloves	N.A.	
Eye Protection	N.A.	
Other Protective Clothing/Equipment	N.A.	
Work / Hygienic Practices	N.A.	

15. Ecological Information

N.A.

16. Reactivity Data

Stability	Stable
Conditions to Avoid	N/A
Incompatibility (Materials to Avoid)	N/A
Hazardous Decomposition or Byproducts	N/A
Hazardous Polymerization	Will not occur
Conditions to Avoid	N/A