

Material Safety Data Sheet

1. Product & Company Identification

Product name:	NiMH rechargeable battery (AA)
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Item no.	Size	Nominal Voltage	Capacity	Energy content
2533738	AA, Mignon	1.2 V	1400 mAh	1.68 Wh

Manufacturer:	Conrad Electronic SE
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
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2. Hazards Identification

Nickel Metal Hydride Battery are exempted from Dangerous Goods UN Recommendations on the Transport of Dangerous Goods (ST/SG/AC.10/C3/70, Annex and ST/SG/AC.10/C3/74/Add. 1).

3. Hazards identification

Important Note:

The battery should not be opened or exposed to heat measure.

Exposure of the following ingredients contained within could be harmful under some circumstances.

Composition	CAS No.	Content (%)
Nickel-hydroxide [Ni(OH) ₂]	12054-48-7	~25 - 40
Cobalt [Co]	7440-48-4	~3 - 5
Manganese	7439-96-5	~25 - 40
Lanthanum	7439-91-0	
Cerium	7440-45-1	
Neodymium	7440-00-8	
Potassium-hydroxide [KO]	1310-58-3 / 71769-53-4	~2 - 3
Polypropylene [PP]	9003-07-0	~1 - 3
Iron [Fe]	7439-89-6	~15 - 25
Water [H ₂ O]	7732-18-5	~4 - 7
Polyamicie [PA66]	63428-84-2	~0.2 - 1
Rubber [EPDM]	25038-36-2	~0.1 - 0.5

Chemical System : Nickel/Metal Hydride

Designated for Recharge : Yes

Nominal Voltage : 1.2 V

Note: The above information is provided for the user's information only.

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4. Physical Data for Battery

Melting point (°C):	NA
Boiling point (°C):	NA
%Volatile by Volume:	NA
Vapor pressure (mmHg):	NA
Evaporation Rate:	NA
Vapor Density (Air=1)	NA
Specific Gravity H2O:	NA
Solubility in water:	NA
Appearance and Odor	No Odor

5. First Aid Measure

The product contains corrosive electrolyte, in case of electrolyte leakage from the battery, action described below are required.

Skin contact

Wash this contacted areas off immediately with plenty of water. If appropriate procedures are not taken, this may cause sores on the skin.

Eye contact

Flush the eyes with plenty of clean water without rubbing. Take a medical treatment. If appropriate procedures are not taken, this may cause an eye irritation.

Inhalation

Remove to fresh air immediately. Take a medical treatment.

Extinguishing method

Since vapor, generated from burning batteries may make eyes, nose and throat irritate, be sure to extinguish the fire on the windward side. Wear the respiratory protection equipment in some cases.

Fire extinguishing agent

Dry chemical, alcohol-resistant form, carbon dioxide and plenty of water area effective.

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6. Fire and Explosion Hazard Data

Flash Point: NA

Lower Explosive Limit: NA

Upper Explosive Limit: NA

Extinguishing Media

Water, Foam, Dry. Any class of extinguishing medium may be used on the batteries or their packing material.

Special Fire Fighting Procedures

Exposure to temperatures of above 100 °C can cause venting of the liquid electrolyte. Internal shorting could also cause venting of the electrolyte. There is potential for exposure to iron, nickel, cobalt, rare earth metals, manganese, and aluminum fumes during fire; use self-contained breathing apparatus.

7. Accidental Release

Steps to be taken in case material is released or spilled:

The preferred response is to leave the area and allow the batteries to cool and the vapours to dissipate. Avoid skin and eye contact or inhalation of vapours. Collect all released material in a plastic lined metal container and remove spilled liquid with absorbent. Doing this, protect your skin and eyes with gloves and protection glasses.

8. Handling and storage

- 1) When packing the batteries, do not allow battery terminals to contact each other, or contact with other metals. Be sure to pack batteries by providing in the packaging box, or in a separate plastic bag so that the single batteries are not mixed together.
- 2) Use strong materials for packaging boxes so that they will not be damaged by vibration, impact, dropping and stacking during their transportation.
- 3) Do not let water penetrate into packaging boxes during their storage and transportation.
- 4) The batteries will be stored at room temperature.
- 5) Do not store the battery in places of the high temperature exceeding 35 °C or direct sunlight or in front of a stove. Please also avoid the places of high humidity. Be sure not to expose the battery to condensation, water drop or not to store it under lower temperature than -20 °C.
- 6) Batteries are sure to be packed in such a way to prevent short circuits under conditions normally encountered in transport.
- 7) Please avoid storing the battery in the place where it is exposed to the electricity, so that no damage will be caused to the protection circuit of the battery pack.

9. Exposure controls/personal protection

Respiratory protection (specify type):	Not necessary under conditions of normal use
Ventilation:	Not necessary under conditions of normal use
Protective gloves:	Not necessary under conditions of normal use
Eye protection:	Not necessary under conditions of normal use
Other protective clothing or equipment:	Not necessary under conditions of normal use

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10. Physical & chemical properties

The chemicals mentioned in Section 3 are contained in a hermetically sealed can. Under conditions of normal use, the chemicals will not be released.

11. Stability & reactivity

Nickel Metal Hydride Batteries are contained in a stable step container and are hermetically sealed to avoid any chemical release under conditions of normal use.

12. Health Hazard Data

Skin contact

Exposure to the electrolyte contained inside the battery may result in chemical burn, Exposure to nickel may cause dermatitis in some sensitive individuals.

Eye contact

Exposure to the electrolyte contained inside the battery may result in severe irritation and chemical burns.

Ingestion

If the battery case is breached in the digestive tract, the electrolyte may cause localized burns.

Inhalation

During normal use inhalation is an unlikely route of exposure due to containment of hazardous materials within battery case.

13. Reactivity Data

- 1) The batteries are stable under normal operating condition.
- 2) Hazardous polymerization will not occur
- 3) Hazardous decomposition products: Nickel-dihydroxide, cobalt, Metal hydride
- 4) Conditions to avoid: heat, open flames, sparks, and moisture.
- 5) Incompatibilities (materials to avoid): The battery cells are encased in a non-reactive container; if the container is breached, avoid contact of internal battery components with acids, aldehydes, and carbonate compounds.

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14. Transport Information

Not classified as dangerous goods in the meaning of air transport regulations.

Regulatory body: IATA (56th Edition-2015)

Special provision: A199

Our batteries 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) and International Maritime Dangerous Goods Regulations (IMDG).

Shipping these batteries is subject to the only requirements by DOT in Special Provision 130 which states: "batteries, dry are not subject to the requirement 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)".

Shipping these batteries is subject to the only requirements by ICAO and IATA in Special Provision A199 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 is forbidden from transportation."

The International Maritime Dangerous Goods Code (IMDG) regulate them for ocean transportation under Special Provision 963 which says: "Batteries, dry, containing corrosive electrolyte which will not flow out of 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.

As of TATA requires that batteries being transported by air must be protected from short-circuiting and protected from movement that could lead to short-circuiting. Our sealed Nickel Metal Hydride batteries are not subject to these regulations and special provision as their terminals are protected from short-circuit when packaged for transport.

15. Regulatory Information

IATA DGR A199-2015 dangerous goods regulations.

ICAO Technical Instructions for the safe transport of dangerous goods by air.

In inner packing in such matter as to effectively prevent Short circuits and to prevent movements which could lead to short circuits.

16. Reference

UN Recommendations on the Transport of Dangerous Goods Model Regulations and Manual of Tests and Criteria) (ST/SG/AC.10/C3/70, Annex and ST/SG/AC.10/C3/74/Add.1)