Material Safety Data Sheet

1. Product & Company Identification

Product name:	9 V Nickel/Metal Hydride rechargeable battery

Item no.	Size	Nominal Voltage	Capacity	Energy content
2542812	9 V, 6LR61	8.4 V	200 mAh	1.68 Wh
2542813	9 V, 6LR61	8.4 V	270 mAh	2.268 Wh

Manufacturer:	Conrad Electronic SE
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date of issue:	01.01.2023

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/C,3/74/Add.1)

3. Composition/information on ingredients

IMPORTANT NOTE: The battery should not be opened or exposed to heat beasure exposure of the following ingredients contained within could be harmful under some circumstances.

Composition	CAS No.	EC No.	Content(wt%)
Nickel-hydroxide [Ni(OH)2]	12054-48-7	235-008-5	15--40%
Nickel [Ni]	7440-02-0	231-111-4	20--30%
Iron [Fe]	7439-89-6	231-096-4	15--30%
Mischmetal	/	/	5--20%
Cobalt [Co]	7440-48-4	231-158-0	2--10%
Manganese[Mn]	7439-96-5	231-105-1	1--5%
Potassium-hydroxide [KOH]	1310-58-3	215-181-3	1--5%
Sodium hydroxide [NaOH]	1310-73-2	215-185-5	0--5%
Lithium hydroxide[LiOH]	1310-65-2	215-183-4	0--5%
Polypropylene [PP]	9003-07-0	/	1--3%
Water [H2O]	7732-18-5	231-791-2	5--10 %
Polyamide [PA66]	63428-84-2	/	0.1—1.0%
Rubber [EPDM]	25038-36-2	/	0.01--0.05%

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

4. First Aid Measures

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.

5. Fire-fighting Measures

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.

6. Accidental Release Measures

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

The preferred respinse 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.

7. 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 under 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.

8. 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

9. Physical and chemical properties

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

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

10. Stability & reactivity

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

1) The batteries are stable under normal operating condition.

2) Hazardous polymerization will not occur

3) Hazardous decomposition products: Nickel-hydroxide, 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.

11. Toxicological information

Not available

12. Ecological information

Ni-MH cells contain no cadmium, no mercury, no lead and no toxic metals.

13. Disposal considerations

Incineration:

Never incinerate NI-MH batteries.

Landfill:

Never dispose NI-MH batteries as landfill.

Dispose in accordance with all applicable nations, federal, state and local regulations.

14. Transport Information

Transported by air:

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

Regulatory body: IATA(64th Edition-2023)

Special provision: A199

International Civil Aviation Organization (ICAO) and International Air Transport Association(IATA), Special Provision A199 state: 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.

The 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.

Transported by sea:

Classified as dangerous goods in the meaning of sea transport regulations.

According to the meeting of Committee of Experts on the Transport of Dangerous Goods in Geneva, 29 November-7 December 2010, mainly discuss about the draft amendments to the Recommendations on the Transport of Dangerous Goods (Model Regulations and Manual of Tests and Criteria) adopted at the thirty-fifth, thirty-sixth and thirty-seventh sessions. The content includes that adding the Batteries. Nickel-Metal Hydride for transport of dangerous goods only when transported by sea. The hazardous level is CLASS 9 and the UN number is UN3496. (Reference documents:ST/SG/AC.10/C 3/70, Annex and ST/SG/AC,10/C,3/74/Add.1)

Regulatory body: IMDG (41th Edition-2022)

Special provision: 117, 963

SP 117 state: subject to these regulations only when transported by sea.

SP963 state: 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 nick-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. When loaded in a cargo transport unit in a total quantity of 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 columns 16a and 16b of the Dangerous Goods List in chapter 3.2.

15. Regulatory Information

IATA DGR A199-2023 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. Other information

Reference

UN- Recommendations on the Transport of Dangerous Goods (Model Regulations and Manual of Tests and Criteria) (ST/SG/AC.10/C 3/70,Annex and ST/SG/AC,10/C,3/74/Add.1)