

Nickel-Metal Hydride BATTERIES

1. Identification of the substance/mixture and of the company/undertaking

Product name: KODAK Rechargeable Ni-MH Battery types (pre-charged and non-pre-charged) AA and AAA

Supplier: Strand Europe Ltd., Strand House, Galway Road, Yateley, Hampshire, GU46 6GE, United Kingdom

Emergency telephone number: +44 (0) 1252 864533

For other information or to request an MSDS, contact;

Kodak Batteries - Technology Department
Tel. +44 (0) 1252 864520
Email: kodakbatteries@strand europe.com

Synonyms: None.

Product Use: Battery, for consumer and industrial use.

2. Hazards identification

CONTAINS: Hydrogen absorbing alloy (proprietary), Metal hydroxides (proprietary), Nickel substrate (proprietary)

WARNING!

MAY FLAME OR LEAK IF OPENED, SHORT CIRCUITED, RECHARGED, CONNECTED IMPROPERLY, OR EXPOSED TO FIRE OR HIGH TEMPERATURES

HARMFUL IF SWALLOWED

VAPORS/FUMES FROM DAMAGED BATTERIES MAY CAUSE RESPIRATORY TRACT IRRITATION

DAMAGED BATTERIES MAY CAUSE SKIN AND EYE BURNS

3. Composition/information on ingredients

Weight percent	Components - (CAS-No.)
25 - 45	Hydrogen absorbing alloy (proprietary)
20 - 25	Nickel substrate (proprietary)
18 - 40	Metal hydroxides (proprietary)

Weight percent listed is based on approximate percent of the average weight of the battery.

The components in this section may only represent a hazard if the integrity of the battery is compromised.

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4. First aid measures

The routine handling and use of intact, non-damaged batteries is not expected to result in situations that require first-aid measures. If battery is damaged due to opening, cutting, crushing, overheating, improper installation, exposure to fire or high temperatures, or recharging, battery contents may be released.

Inhalation: If vapours or fumes from vented or leaking battery are irritating to respiratory tract, move to fresh air. Get medical attention if symptoms occur.

Eyes: In case of contact with battery contents (liquid or metal), immediately flush with plenty of water for at least 15 minutes. Get medical attention immediately. If easy to do, remove contact lens, if worn.

Skin: In case of contact with battery contents (liquid or metal), immediately remove metal fragments and flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash contaminated clothing before re-use. Destroy or thoroughly clean contaminated shoes. Get medical attention immediately.

Ingestion: Call a physician or poison control center immediately for any actual or suspected ingestion. All batteries may be harmful if swallowed. If swallowed, DO NOT induce vomiting. Batteries may lodge in the throat or digestive tract and fragment. If battery was leaking or was chewed, rinse mouth thoroughly with water.

Notes to physician:

Hazards: Battery ingestions should not be managed in the same way as other small metallic object ingestions, eg., coins. The position and integrity of the battery in the gastrointestinal tract should be assessed and monitored by x-ray. Leaking batteries may cause necrosis and tissue damage. Larger batteries or batteries that lodge in the gastrointestinal tract may have to be removed endoscopically or surgically.

5. Fire-fighting measures

Extinguishing Media: Flood with water or foam. Do not use carbon dioxide or Halon type extinguisher.

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing. Fire or excessive heat may produce hazardous decomposition products.

Hazardous Combustion Products: Carbon oxides and metal oxides

Unusual Fire and Explosion Hazards: Fire or high temperatures may cause battery to flame or leak flammable and hazardous vapours. Damaged or opened batteries can result in rapid heating and the release of flammable and hazardous vapours.

6. Accidental release measures

Dispose of in accordance with local regulations (see Section 13. Disposal considerations).

For Large Spills: None should be needed.

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7. Handling and storage

Personal precautions: If battery has been damaged, do not breathe fumes or vapours. Do not get battery contents in eyes, on skin, on clothing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

Prevention of Fire and Explosion: DO NOT DISASSEMBLE. Keep away from heat and flame. Do not short circuit. Avoid the use of old and new batteries or batteries of varying sizes and types in the same battery assembly. The batteries electrical characteristics and capabilities may vary and damage may result to the batteries or electrical equipment.

Storage: Do not store in a manner that allows terminals to short circuit. Keep in a dry, cool place. Keep away from direct sunlight. Storage above 21°C (70°F) may affect product quality. Do not freeze. Keep away from water. Short circuiting may reduce battery service life. Extended short circuiting creates high temperatures in the battery. High temperatures can cause leakage, explosion, and/or flame. Keep away from incompatible substances (see Incompatibility section.)

8. Exposure controls/personal protection

Occupational exposure controls

Chemical Name	Regulatory List	Value Type	Value
Nickel hydroxide	ACGIH	time weighted average	0.2 mg/m3 <i>Expressed as Ni</i>
	OSHA	time weighted average	1 mg/m3 <i>Expressed as Ni</i>
Cobalt hydroxide	ACGIH	time weighted average	0.02 mg/m3 <i>Expressed as Co</i>
Sodium hydroxide	OSHA	Ceiling Limit Value	2 mg/m3
		time weighted average	2 mg/m3

Ventilation: Supplemental ventilation may be needed in special circumstances to control fumes/vapours to an acceptable level.

Respiratory protection: None should be needed.

Eye protection: When handling a damaged battery, wear safety glasses with side shields (or goggles).

Hand protection: When handling a damaged battery, wear impervious gloves.

9. Physical and chemical properties

Physical form: solid

Colour: not applicable

Odour: odourless

Specific gravity: not applicable

Vapour pressure: negligible

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Vapour density: not applicable

Melting point/range: not applicable

Water solubility: insoluble

pH: not applicable

Flash point: not applicable

10. Stability and reactivity

Stability: Stable under normal conditions.

Incompatibility: Avoid contact with acids and oxidizers

Hazardous decomposition products: None under normal conditions of use.

Hazardous Polymerization: Hazardous polymerization does not occur.

11. Toxicological information

Effects of Exposure

General advice: Since the materials in this battery are sealed in the battery case, the potential for exposure to the components of the battery is negligible when the battery is used as directed. However, technical or electrical abuse of the battery may result in the release of battery contents.

Inhalation: Intact battery: Expected to be a low hazard for recommended handling.
Damaged battery: Harmful if inhaled, may cause irritation to the mucous membranes and upper respiratory tract.

Eyes: Intact battery: Expected to be a low hazard for recommended handling.
Damaged battery: Contact with electrolyte (liquid) causes burns. Airborne dust/mist/vapor irritating. Contact with metal fragments may cause burns or mechanical injury.

Skin: Intact battery: Expected to be a low hazard for recommended handling.
Damaged battery: Contact with electrolyte (liquid) causes burns. Contact with metal fragments may cause burns or mechanical injury. Harmful if absorbed through skin. Vapors or fumes may cause irritation.

Ingestion: All batteries may be harmful if swallowed, may cause burns of the gastrointestinal tract if swallowed.

12. Ecological information

Not applicable as product isn't meant to be released in environment.

13. Disposal considerations

DO NOT INCINERATE or expose to fire. Discharge, treatment, or disposal may be subject to federal, state, commonwealth, provincial, or local laws.

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14. Transport information

Kodak NiMH batteries in all forms of transportation (ground, air, or ocean) are packaged in a safe and responsible manner. Regulatory concerns from all agencies for safe packaging require that batteries be packaged in a manner that prevents short circuits and be contained in "strong outer packaging" that prevents spillage of contents.

Nickel metal hydride batteries (sometimes referred to as "Dry cell" batteries) are not defined as dangerous goods under the IATA Dangerous Goods Regulations 55rd edition 2014, ICAO Technical Instructions and the U.S. hazardous materials regulations (49 CFR). These batteries are not subject to the dangerous goods regulations as they are compliant with the special provisions requirements.

In addition, the IATA Dangerous Goods Regulations and ICAO Technical Instructions require the words "not restricted" and the Special Provision number A123 be provided on the air waybill, when an air waybill is issued.

For maritime transport, the batteries are regulated by the IMO under UN 3496 BATTERIES, NICKEL METAL HYDRIDE, class 9 dangerous goods with Special Provision 117 and 963 assigned.

All 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 100 Kg gross mass. When loaded in a cargo transport unit in a total quantity of 100 Kg gross mass or more, the following requirements must be met:

- (1) Dangerous goods transport documentation to accompany the shipment,
- (2) The shipment must be described as "UN3496, BATTERIES, NICKEL-METAL HYDRIDE, CLASS 9" on the shipper's declaration for dangerous goods.
- (3) The dangerous goods description must also be entered on the Dangerous Cargo Manifest and/or the detailed stowage plan in compliance with the IMDG Code requirements for shipboard documentation

15. Regulatory information

Notification status

Regulatory List	Notification status
TSCA	Not all listed
DSL	Not all listed
NDSL	None listed
EINECS	Not all listed
ELINCS	None listed
NLP	None listed
AICS	Not all listed
IECS	Not all listed
ENCS	Not all listed
ECI	Not all listed
NZIoC	Not all listed
PICCS	Not all listed

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"Not all listed" indicates one or more component is either not on the public Inventory or is subject to exemption requirements. If additional information is needed contact Strand Europe.

Other regulations

American Conference of Governmental Industrial Hygienists (ACGIH):	A1 - Confirmed Human Carcinogen: Nickel hydroxide A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans: Cobalt hydroxide
International Agency for Research on Cancer (IARC):	Group 1 - Carcinogenic to Humans: Nickel hydroxide Group 2B - Possibly Carcinogenic to Humans: Cobalt hydroxide
U.S. National Toxicology Program (NTP):	Known Human Carcinogen: Nickel hydroxide
U.S. Occupational Safety and Health Administration (OSHA):	OSHA Carcinogen or Potential Carcinogen: Nickel hydroxide, Cobalt hydroxide
California Prop. 65	WARNING! This product contains a chemical known in the State of California to cause cancer. Nickel hydroxide, Sodium hydroxide
U.S. - CERCLA/SARA (40 CFR § 302.4 Designation of hazardous substances):	Nickel hydroxide, Sodium hydroxide
U.S. - CERCLA/SARA - Section 302 (40 CFR § 355 Appendices A and B - The List of Extremely Hazardous Substances and Their Threshold Planning Quantities):	No components of this product are subject to the SARA Section 302 (40 CFR 355) reporting requirements.
U.S. - CERCLA/SARA - Section 313 (40 CFR § 372.65 Toxic Chemical Release Reporting):	Nickel hydroxide, Cobalt hydroxide
U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances:	Nickel hydroxide, Sodium hydroxide
U.S. - California - 8 CCR Section 5200-5220 - Specifically Regulated Carcinogens:	No components found on the California Specifically Regulated Carcinogens List.
U.S. - California - 8 CCR Section 5203 Carcinogens:	No components found on the California Section 5203 Carcinogens List.
U.S. - California - 8 CCR Section 5209 Carcinogens:	No components found on the California Section 5209 Carcinogens List.
U.S. - Massachusetts - General Law Chapter 111F (MGL c 111F) - Hazardous Substances Disclosure by Employers (a.k.a. Right to Know Law):	Nickel hydroxide, Sodium hydroxide
U.S. - Minnesota Employee Right-to-Know (5206.0400, Subpart 5. List of Hazardous Substances):	Nickel hydroxide, Cobalt hydroxide, Sodium hydroxide, Lithium hydroxide

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U.S. - New Jersey - Worker and Community Right to Know Act (N.J.S.A. 34:5A-1):

U.S. - Pennsylvania - Part XIII. Worker and Community Right-to-Know Act (Chapter 323 Hazardous Substance List, Appendix A):

U.S. - Rhode Island - Title 28 Labor and Labor Relations (Chapters 28-21 Hazardous Substance Right-to-Know Act):

Nickel hydroxide, Cobalt hydroxide, Sodium hydroxide

Steel casing, Plastic, Hydrogen absorbing alloy, Nickel hydroxide, Cobalt hydroxide, Sodium hydroxide, Lithium hydroxide, Paper

No components regulated under the Rhode Island Hazardous Substance Right-to-Know Act.

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16. Other information

The data below reflects current legislative requirements whereas the product in your possession may carry a different version of the label depending on the date of manufacture.

US/Canadian Label Statements:

KODAK Rechargeable Ni-MH Battery (all types)

CONTAINS: Hydrogen absorbing alloy (not applicable), Metal hydroxides (not applicable), Nickel substrate (not applicable).

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FIRST AID: If vapours or fumes from vented or leaking battery are irritating to respiratory tract, move to fresh air. Get medical attention if symptoms occur. In case of contact with battery contents (liquid or metal), immediately flush with plenty of water for at least 15 minutes. Get medical attention immediately. If easy to do, remove contact lens, if worn. In case of contact with battery contents (liquid or metal), immediately remove metal fragments and flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash contaminated clothing before re-use. Destroy or thoroughly clean contaminated shoes. Get medical attention immediately. Call a physician or poison control center immediately for any actual or suspected ingestion. All batteries may be harmful if swallowed. If swallowed, DO NOT induce vomiting. Batteries may lodge in the throat or digestive tract and fragment. If battery was leaking or was chewed, rinse mouth thoroughly with water. Keep out of reach of children. Do not handle or use until safety precautions in Material Safety Data Sheet (MSDS) have been read and understood. Since emptied containers retain product residue, follow label warnings even after container is emptied.

IN CASE OF FIRE: Flood with water. Do not use carbon dioxide or Halon type extinguisher.

IN CASE OF SPILL: Dispose of in accordance with local regulations (see Section 13.

Disposal considerations). For Large Spills: None should be needed. Additional Components Include: Steel casing (not applicable).

The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment. The information relating to the working solution is for guidance purposes only, and is based on correct mixing and use of the product according to instructions.