

## 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

For Hazardous Materials [or Dangerous Goods] Incident  
Spill, Leak, Fire, Exposure, or Accident  
Call CHEMTREC Day or Night  
1-800-424-9300 / +1 703-527-3887 CCN696626

For other information or to request an MSDS, contact;

Kodak Batteries - Technology Department  
Tel. +44 (0) 1252 861000  
Email: [kodakbatteries@strand europe.com](mailto:kodakbatteries@strand europe.com)

**Synonyms:** None.

**Product Use:** Battery, for consumer and industrial use.



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### 2. Hazards identification

Classification of the chemical in accordance with paragraph (d) of 29 CFR 1910.1200 :

Components	Hazard Class	Hazard Category	Hazard Statement Codes	Route of Exposure
Nickel hydroxide	Carcinogenicity	Category 1A	H350i	May Cause cancer.
	Reproductive Toxicity	Category 1B	H360	May Damage Fertility or the unborn child.
	Mutagenicity	Category 2	H341	Suspected of causing genetic defects.
	STOT RE	Category 1	H372	Causes damage to organs through prolonged or repeated exposure.
	Acute Toxicity	Category 4	H332	Harmful if inhaled.
Metal hydroxides	Skin Irritation	Category 2	H315	Harmful if swallowed.
	Sensitisation of the respiratory tract	Category 1	H334	Causes skin irritation.
	Sensitisation of the skin	Category 1	H317	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
	Aquatic acute hazard	Category 1	H400	May cause an allergic skin reaction.
	Aquatic chronic hazard	Category 1	H410	Very toxic to aquatic life.
				Very toxic to aquatic life with long lasting effects.
Metal hydroxides	Skin corrosion	Category 1A	H314	Causes severe skin burns & eye damage.
	Acute toxicity	Category 4	H302	Harmful if swallowed.
	Corrosive to metals	Category 1	H290	May be corrosive to metals.
	Serious eye damage	Category 1	H318	Causes serious eye damage.

### GHS-Labeling

**CONTAINS :** Hydrogen absorbing alloy (proprietary), Metal hydroxides (1310-58-3; 1310-73-2), Nickel substrate (12054-48-7)

Symbol(s) :



Signal Word : Danger



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## Nickel-Metal Hydride BATTERIES

**Hazard Statements:** May cause cancer. May Damage Fertility or the unborn child. Suspected of causing genetic defects. Causes damage to organs through prolonged or repeated exposure. Harmful if inhaled. Harmful if swallowed. Causes skin irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. Causes severe skin burns & eye damage. Harmful if swallowed. May be corrosive to metals. Causes serious eye damage.

### Precautionary statements:

**Prevention:** If battery has been damaged, do not breathe fumes or vapours. Do not get battery contents in eyes, on skin, on clothing. wear impervious gloves.

**Response:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician. IF SWALLOWED: All batteries may be harmful if swallowed. Call a physician/ doctor or POISON CENTER immediately for any actual or suspected ingestion. 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. IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell. If skin irritation occurs: Get medical advice/ Attention. Remove/ Take off immediately all contaminated clothing and wash it before reuse. IF exposed or concerned. Get medical advice/ Attention.

**Storage:** Keep in a dry, cool place. Keep away from direct sunlight and sources of heat. Do not freeze. Keep away from water. Do not short circuit.

**Disposal:** Dispose of batteries in accordance with local/ regional/ national/International regulation.



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## Nickel-Metal Hydride BATTERIES

### 3. Composition/information on ingredients

Weight percent %	Components	CAS-No
25 - 45	Hydrogen absorbing alloy	proprietary
20 - 25	Nickel substrate	12054-48-7
18 - 40	Metal hydroxides	1310-58-3; 1310-73-2

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.

### 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 centre 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, e.g., 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.



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### 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.

### 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.)



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### 8. Exposure controls/personal protection

#### Occupational exposure controls

Chemical Name	Regulatory List	Value Type	Value
Nickel hydroxide	ACGIH	Time weighted average (Inhalable fraction)	0.2 mg/m <sup>3</sup> <i>Expressed as Ni</i>
	OSHA	Time weighted average	1 mg/m <sup>3</sup> <i>Expressed as Ni</i>
Cobalt hydroxide	ACGIH	Time weighted average	0.02 mg/m <sup>3</sup> <i>Expressed as Co</i>
Sodium hydroxide	OSHA	Ceiling Limit Value	2 mg/m <sup>3</sup>
		Time weighted average	2 mg/m <sup>3</sup>

**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

**Vapour density:** not applicable

**Melting point/range:** not applicable

**Water solubility:** insoluble

**pH:** not applicable

**Flash point:** not applicable



## Nickel-Metal Hydride BATTERIES

### 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. Vapours 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.

### 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 60th edition 2019, ICAO Technical



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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 provision's requirements. No ADR regulations on the goods.

In addition, the IATA Dangerous Goods Regulations and ICAO Technical Instructions require the words "not restricted" and the Special Provision number A199 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.

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

"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.





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### 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
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):	Nickel hydroxide, Cobalt hydroxide, Sodium hydroxide
U.S. - Pennsylvania - Part XIII. Worker and Community Right-to-Know Act (Chapter 323 Hazardous Substance List, Appendix A):	Steel casing, Plastic, Hydrogen absorbing alloy, Nickel hydroxide, Cobalt hydroxide, Sodium hydroxide, Lithium hydroxide, Paper
U.S. - Rhode Island - Title 28 Labour and Labour Relations (Chapters 28-21 Hazardous Substance Right-to-Know Act):	No components regulated under the Rhode Island Hazardous Substance Right-to-Know Act.



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## Nickel-Metal Hydride BATTERIES

### 16. Other information

#### GHS-Labeling

**CONTAINS :** Hydrogen absorbing alloy (proprietary), Metal hydroxides (1310-58-3; 1310-73-2), Nickel substrate (12054-48-7)

Symbol(s) :



Signal Word : Danger

**Hazard Statements:** May cause cancer. May Damage Fertility or the unborn child. Suspected of causing genetic defects. Causes damage to organs through prolonged or repeated exposure. Harmful if inhaled. Harmful if swallowed. Causes skin irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. Causes severe skin burns & eye damage. Harmful if swallowed. May be corrosive to metals. Causes serious eye damage.

#### Precautionary statements:

**Prevention:** If battery has been damaged, do not breathe fumes or vapours. Do not get battery contents in eyes, on skin, on clothing. wear impervious gloves.

**Response:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician. IF SWALLOWED: All batteries may be harmful if swallowed. Call a physician/ doctor or POISON CENTER immediately for any actual or suspected ingestion. 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. IF



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**ON SKIN:** Wash with plenty of soap and water. Call a POISON CENTER or doctor/physician if you feel unwell. If skin irritation occurs: Get medical advice/ Attention. Remove/ Take off immediately all contaminated clothing and wash it before reuse. IF exposed or concerned. Get medical advice/ Attention.

**Storage:** Keep in a dry, cool place. Keep away from direct sunlight and sources of heat. Do not freeze. Keep away from water. Do not short circuit.

**Disposal:** Dispose of batteries in accordance with local/ regional/ national/International regulation.

**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. 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. Get medical attention immediately. Wash contaminated clothing before re-use. Destroy or thoroughly clean contaminated shoes. All batteries may be harmful if swallowed. Call a physician or poison control centre immediately for any actual or suspected ingestion. 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:** Use appropriate agent for adjacent fire.

**IN CASE OF SPILL:** Dispose of in accordance with local regulations (see Section 13. Disposal considerations). For Large Spills: None should be needed.

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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.

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