
PRIMARY ZINC/AIR BUTTON CELL, MERCURY FREE

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

Product names: KODAK Zinc Air Battery types;

Product types	K675ZA	IEC PR 44	ANSI 7003ZD
	K13ZA	IEC PR 48	ANSI 7000ZD
	K312ZA	IEC PR 41	ANSI 7002ZD
	K10ZA	IEC PR 70	ANSI 7005ZD

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 864520
Email: kodakbatteries@strandeurope.com

Synonyms: None.

Product Use: Battery, for consumer and industrial use.

PRIMARY ZINC/AIR BUTTON CELL, MERCURY FREE

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
Manganese dioxide	Acute Toxicity	Category 4	H302 H332	Harmful if swallowed Harmful if inhaled
Zinc	Hazardous to the aquatic environment, Short term (Acute)	Acute 1 Chronic 1	H400 H410	Very toxic to aquatic life Very toxic to aquatic life with long lasting effects
Potassium hydroxide	Acute Toxicity Skin corrosion/Irritation	Category 4 Category1A	H302 H314	Harmful if swallowed Causes severe skin burns/eye damage
Lead	Reproductive Toxicity Acute Toxicity STOT RE Hazardous to the aquatic environment (Chronic)	Category1A Category 4 Category2 Category 1	H360D H332 H373 H410	May damage the unborn child Harmful if inhaled May cause damage to organs through prolonged or repeated exposure Very Toxic to aquatic life with long lasting effects

Heavy Metals & RoHS

Contents	CAS No.	Material
< 5 mg/kg	7440-43-9	Cadmium
< 5 mg/kg	7439-97-6	Mercury
		(none intentionally introduced, see Chapter 12)
< 5 mg/kg		Hexavalent Chromium

PRIMARY ZINC/AIR BUTTON CELL, MERCURY FREE

GHS-Labeling

CONTAINS: Manganese dioxide (1313-13-9), Zinc (7440-66-6), Potassium hydroxide (1310-58-3), Lead (7439-92-1), Cadmium (7440-43-9), Mercury (7439-97-6), Copper (7440-50-8), and Polymers.



Signal Word : Warning

Hazard Statements :

Harmful if swallowed, harmful if inhaled, Very toxic to aquatic life, Very toxic to aquatic life with long lasting effects, Causes severe skin burns/eye damage, May damage the unborn child, May cause damage to organs through prolonged or repeated exposure, Very Toxic to aquatic life with long lasting effects.

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.

PRIMARY ZINC/AIR BUTTON CELL, MERCURY FREE

3. Composition/information on ingredients

Weight percent %	Components	CAS-No
27-40	Nickel plated Steel	-
18 - 46	Zinc	7440-66-6
0 - 14	Manganese dioxide	1313-13-9
2-7	Polymers	-
2-5	Copper	7440-50-8
1 - 4	Potassium hydroxide	1310-58-3
0,01 - 0,03	Lead	7439-92-1

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 are 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.

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: All batteries may be harmful if swallowed. Call a physician or poison control center immediately for any actual or suspected ingestion. If swallowed, DO NOT induce vomiting. Drink plenty of water. 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.

PRIMARY ZINC/AIR BUTTON CELL, MERCURY FREE

5. Fire-fighting measures

Extinguishing Media: Use foam, water, or CO₂, as appropriate, Use caution during application.

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

Hazardous Combustion Products: oxides of zinc, oxides of manganese, Carbon oxides, (see also Hazardous Decomposition Products sections.)

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

In the event of battery rupture, small amounts of electrolyte prevent skin contact and collect all released material in a plastic lined container. Avoid leached substances to get into the earth, canalization or waters. Then clean with water (diluted acetic acid may be helpful).

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. Always read the manual of the device.

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. DO NOT RECHARGE. Charging may result in electrolyte leakage, explosion and/or cause the battery to flame. Avoid reversing polarity within a device or a battery assembly. To do so may cause leakage, explosion, and/or flame.

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.

Storage category according to TRGS 510: It is recommended to consider the "Technical Rule for Hazardous Substances TRGS 510 - Storage of hazardous substances in non-stationary containers" and to handle primary zinc/air button cells according to storage category 11 ("combustible solids").

PRIMARY ZINC/AIR BUTTON CELL, MERCURY FREE

8. Exposure controls/personal protection

Occupational exposure controls

Chemical Name	Regulatory List	Value Type	Value
Manganese dioxide	ACGIH	Time weighted average	0.2 mg/m ³ Expressed as Mn
	OSHA	Ceiling Limit Value	5 mg/m ³ Expressed as Mn
	NIOSH	Time weighted average	1 mg/m ³ (ST) 3 mg/m ³
	CAL/OSHA	Time weighted average	0.02 mg/m ³ (resp.) 0.1 mg/m ³ (IHL)
Copper	ACGIH	Time weighted average	1 mg/m ³ (dust and mist)
	OSHA	Time weighted average	0.1 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
	NIOSH	Time weighted average	0.1mg/m ³ (fume) 1 mg/m ³ (dust and mist)
	CAL/OSHA	Time weighted average	0.1mg/m ³ (fume) 1 mg/m ³ (dust and mist))
Lead	ACGIH	Time weighted average	0.05 mg/m ³
	NIOSH	Time weighted average	0.05 mg/m ³
	CAL/OSHA	Time weighted average	0.05 mg/m ³
Mercury	ACGIH	Time weighted average	0.025 mg/m ³ for metallic and inorganic
	NIOSH	Time weighted average	0.05 mg/m ³
	CAL/OSHA	Time weighted average	0.025 mg/m ³ for metallic and inorganic
Cadmium	ACGIH	Time weighted average	0.01mg/m ³ (total) 0.002 mg/m ³ (resp.)
	CAL/OSHA	Time weighted average	0.005 mg/m ³

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.

PRIMARY ZINC/AIR BUTTON CELL, MERCURY FREE

9. Physical and chemical properties

Physical form: solid

Colour: not applicable

Odour: odourless

Specific gravity: not applicable

Vapour pressure: not applicable

Vapour density: not applicable

Volatile fraction by weight: not applicable

Melting point/range: not applicable

Water solubility: not applicable

pH: not applicable

Flash point: When heated above 60°C the risk of rupture occurs.

10. Stability and reactivity

Stability: Stable under normal conditions.

Incompatibility: Water.

Hazardous decomposition products: None under normal conditions of use.

Hazardous Polymerization: not applicable

11. Toxicological information

Under normal conditions (during charge and discharge) release of ingredients does not occur. If accidental release occurs see information in section 2, 3, and 4.

Ingestion: All batteries may be harmful if swallowed. May cause burns of the gastrointestinal tract if swallowed. Call a physician/ doctor or POISON CENTER immediately for any actual or suspected ingestion.

PRIMARY ZINC/AIR BUTTON CELL, MERCURY FREE

Data for Manganese dioxide (CAS 1313-13-9):

Acute Toxicity Data:

Oral LD50 (rat): > 3,478 mg/kg

Data for Potassium hydroxide (1310-58-3):

Acute Toxicity Data:

Oral LD50 (rat): 273 mg/kg

12. Ecological information

Primary zinc/air button cells do contain lead, and do not contain mercury and cadmium as defined by the European directive 2006/66/EC Article 21.

Mercury has not been "intentionally introduced (as distinguished from mercury that may be incidentally present in other materials)" in the sense of the U.S.A. "Mercury-Containing and Rechargeable Battery Management Act" (May 13, 1996).

The Regulation on Mercury Content Limitation for Batteries promulgated on 2009 standard GB24428-2009 by the China authorities including the State Administration of Light Industry and the State Environmental Protection Administration defines mercury free as mercury content by weight in battery of less than < 5 mg/kg. KODAK primary zinc/air button cells belong to the category of mercury free battery as their content meets this requirement.

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 batteries follow the regulatory concerns on batteries from all agencies for safe packaging which require that batteries be packaged in a manner that prevents short circuits and be contained in "strong outer packaging" that prevents spillage of contents.

These batteries are not regulated by international agencies as hazardous materials or dangerous goods when shipped under IATA Dangerous Goods Regulations, ICAO Technical Instructions, IMDG Code, UN Model Regulations, U.S. Hazardous Materials Regulations (49 CFR), and UNECE ADR

UN Identification Number	None - Not Required
Air Transport (IATA/ICAO) SP	Special Provision A123 (60th Edition - 2019). NOTE: The words "NOT RESTRICTED" and "SPECIAL PROVISION A123" must be included on the description in the Air Waybill.
IMDG/Ocean	Not listed
US DOT SP	49 CFR 172.102 Special Provision 130

PRIMARY ZINC/AIR BUTTON CELL, MERCURY FREE

15. Regulatory information

Notification status

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

"Not all listed" indicates one or more component is either not on the public Inventory or is subject to exemption requirements.

Other regulations

These products are covered by, in part or as a whole, by the following regulations:

- "American Conference of Governmental Industrial Hygienists (ACGIH)"
- "U.S. National Toxicology Program (NTP)"
- "U.S Superfund Amendments and Reauthorization Act Title III (302/311/312/313)" (SARA)
- "U.S California - 8 CCR (Section 339/ 5200-5220/5203/5209)"
- "U.S California Proposition 65"
- "U.S. - Massachusetts - General Law Chapter 111F (MGL c 111F)"
- "U.S. - Minnesota Employee Right-to-Know (5206.0400, Subpart 5. List of Hazardous Substances)"
- "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 (Chapters 301-323)"
- "U.S. - Rhode Island - Title 28 Labor and Labor Relations (Chapters 28-21)"
- "Safety Drinking Water Act" (CWA)"

PRIMARY ZINC/AIR BUTTON CELL, MERCURY FREE

16. Other information

GHS-Labeling

CONTAINS: Manganese dioxide (1313-13-9), Zinc (7440-66-6), Potassium hydroxide (1310-58-3), Lead (7439-92-1), Cadmium (7440-43-9), Mercury (7439-97-6), Copper (7440-50-8), and Polymers.



Signal Word : Warning

Hazard Statements :

Harmful if swallowed, harmful if inhaled, Very toxic to aquatic life, Very toxic to aquatic life with long lasting effects, Causes severe skin burns/eye damage, May damage the unborn child, May cause damage to organs through prolonged or repeated exposure, Very Toxic to aquatic life with long lasting effects.

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

PRIMARY ZINC/AIR BUTTON CELL, MERCURY FREE

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.

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.
