

## KODAK Ultra Lithium AA/AAA batteries

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

**Product names:** KODAK Ultra Lithium AA / AAA;

**Sizes:** KAAFR / K3AFR

**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@strandeuropa.com

**Synonyms:** None.

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

### 2. Hazards identification

**CONTAINS:** Iron Disulfide (1309-36-0), Lithium or lithium alloy, 1,3 Dioxolane (646-06-0), 1,2 Diemethoxyethane (110-71-4), Lithium iodide (7439-93-2), Carbon Black (1333-86-4), Graphite (7782-42-5)

**WARNING!**

**MAY FLAME OR LEAK IF OPENED, SHORT CIRCUITED, RECHARGED, CONNECTED IMPROPERLY, OR EXPOSED TO FIRE OR HIGH TEMPERATURES  
HARMFUL IF SWALLOWED  
DAMAGED BATTERIES MAY CAUSE SKIN AND EYE BURNS**

### 3. Composition/information on ingredients

Weight percent	Components - (CAS-No.)
15 - 40	Iron Disulfide (1309-36-0)
5 - 10	Lithium or Lithium Alloy
5 - 10	1,3 Dioxolane (646-06-0)
1 - 5	1,2 Diemethoxyethane (110-71-4)
1 - 5	Lithium Iodide (7439-93-2)
1 - 5	Carbon Black (1333-86-4)
1 - 5	Graphite (7782-42-5)

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.

**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. Seek medical attention.

**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. Batteries may lodge in the throat or digestive tract and fragment.

#### **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:** Carbon dioxide, Dry Chemical or foam extinguishers

**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 lithium, lithium hydroxide fumes, sulfur dioxide gas, 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 or explode. Damaged or opened batteries can result in rapid heating and the release of flammable and hazardous vapours.

**Do not short circuit battery:** may cause burns

### 6. Accidental release measures

To cleanup leaking batteries, avoid direct contact with electrolyte and fumes by:

Increasing the ventilation in the room to disperse fumes from open or leaking batteries.

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Avoid exposure to electrolyte fumes from open or leaking batteries. A self-contained breathing apparatus can be worn.

Wear safety glasses with side shields if handling an open or leaking battery.

Use neoprene or natural rubber gloves if handling an open or leaking battery. Battery materials should be disposed of in a leak-proof container.

### 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.

**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. Elevated temperatures may shorten lifespan. 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
Carbon black	ACGIH	time weighted average	3.5 mg/m <sup>3</sup> <i>Expressed as Mn</i>
	OSHA	Time weighted average	3.5 mg/m <sup>3</sup> <i>Expressed as Mn</i>
1,3 Dioxolane	ACGIH	Time weighted average	20 ppm
Graphite	OSHA	Time weighted average	15 mg/m <sup>3</sup>
		(total dust)	<i>Expressed as Mn</i>
	ACGIH	Time weighted average (respirable dust fraction)	5 mg/m <sup>3</sup> <i>Expressed as Mn</i>
		Time weighted average (respirable dust fraction)	2 mg/m <sup>3</sup> <i>Expressed as Mn</i>

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**Ventilation:** None needed under normal conditions.

**Respiratory protection:** None should be needed.

**Eye protection:** When handling a damaged battery, wear safety glasses with side shields (or goggles). None needed under normal conditions.

**Hand protection:** When handling a damaged battery, wear impervious gloves. None needed under normal conditions.

### 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

### 10. Stability and reactivity

**Stability:** Stable under normal conditions.

**Incompatibility:** Water.

**Hazardous decomposition products:** None under normal conditions of use.

**Hazardous Polymerization:** Hazardous polymerization does not occur.

### 11. Toxicological information

#### **Effects of Exposure**

**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:

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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

This material is not expected to be harmful to aquatic life.

### 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 FR6/FR3 Lithium batteries (Lithium Metal Battery) shown in this MSDS comply to the necessary requirements under the UN Recommendations on the Transport of Dangerous Goods Model Regulations and UN Manual of Tests and Criteria as referenced in the following transportation regulations:

UN no.	Shipping mode	Regulations	Packing instructions	Limit of Aggregated lithium content	Classification	Lithium handling label	Class 9 DG label
UN 3090	USA	US Department of Transportation of Hazardous Substances (HMR) 49 CFR 173.185		1 g (cell) / 2 g (battery)	Non-dangerous goods	Needed	Not necessary
	Air	ICAP/IATA DGR 54 <sup>th</sup> edition	PI968 Section II	0.3 g – 1.0 g (<8 cells) 0.3 g – 2.0 g (<2 battery)	Non-dangerous goods	Needed	Not necessary
			PI968 Section IB	0.3 g – 1.0 g (>8 cells) 0.3 g – 2.0 g (>2 batteries)	Partially regulated dangerous goods	Needed	Necessary for IB
	Sea	IMO/IMDG Code 35-10	P903 SP188	1 g (cell) / 2 g (battery)	Non-dangerous goods	Needed	Not necessary
	Road/Rail	ADR / RID	P903 P903a P903b	1 g (cell) / 2 g (battery)	Non-dangerous goods	Needed	Not necessary

As KODAK FR6/FR3 Lithium batteries do not exceed 1g of lithium, it adheres to the regulations indicated above.

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**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.

**Other regulations**

American Conference of Governmental Industrial Hygienists (ACGIH):	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
International Agency for Research on Cancer (IARC):	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
U.S. National Toxicology Program (NTP):	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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U.S. Occupational Safety and Health Administration (OSHA):	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
California Prop. 65	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
U.S. - CERCLA/SARA (40 CFR § 302.4 Designation of hazardous substances):	No components of this product are subject to the SARA Section 302 (40 CFR 302.4) reporting requirements.
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. - 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):	Lithium
U.S. - New Jersey - Worker and Community Right to Know Act (N.J.S.A. 34:5A-1):	Lithium
U.S. - Pennsylvania - Part XIII. Worker and Community Right-to-Know Act (Chapter 323 Hazardous Substance List, Appendix A):	Organic Electrolyte, Lithium
U.S. - Rhode Island - Title 28 Labor and Labor Relations (Chapters 28-21 Hazardous Substance Right-to-Know Act):	Lithium



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### 16. Other information

None required.

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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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