

## KODAK Zinc Air Batteries

### Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830  
Issue date: 2/25/2021 Version: 3.0

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product form : Article  
Product name : KODAK Zinc Air Battery types 10; 13; 312 & 675

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### 1.2.1. Relevant identified uses

Main use category : Consumer use  
Industrial/Professional use spec : Industrial  
For professional use only  
Use of the substance/mixture : batteries

#### 1.2.2. Uses advised against

No additional information available

### 1.3. Details of the supplier of the safety data sheet

Registered Address:  
Strand Europe Ltd, 3<sup>rd</sup> Floor  
207 Regent Street, London, W1B 3HH- United Kingdom  
T +44 (0) 1252 861000  
[sales@strandeuropa.com](mailto:sales@strandeuropa.com)

### 1.4. Emergency telephone number

Emergency number : 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

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 1, Sub-Category 1B	H314
Reproductive toxicity, Category 1A	H360
Hazardous to the aquatic environment — Chronic Hazard, Category 1	H410
Full text of H statements : see section 16	

#### Adverse physicochemical, human health and environmental effects

No additional information available

### 2.2. Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS05

GHS08

GHS09

Signal word (CLP) :

Danger

Contains :

potassium hydroxide; caustic potash; Lead

Hazard statements (CLP) :

H314 - Causes severe skin burns and eye damage.  
H360 - May damage fertility or the unborn child.  
H410 - Very toxic to aquatic life with long lasting effects.

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Precautionary statements (CLP) : P201 - Obtain special instructions before use.  
 P202 - Do not handle until all safety precautions have been read and understood.  
 P260 - Do not breathe dust/fume/gas/mist/vapours/spray.  
 P264 - Wash hands, forearms and face thoroughly after handling.  
 P273 - Avoid release to the environment.  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Zinc	(CAS-No.) 7440-66-6 (EC-No.) 231-175-3 (EC Index-No.) 030-001-01-9 (REACH-no) 01-2119467174-37-XXXX	10 – 60	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
manganese dioxide substance with a Community workplace exposure limit	(CAS-No.) 1313-13-9 (EC-No.) 215-202-6 (EC Index-No.) 025-001-00-3 (REACH-no) 01-2119452801-43	< 20	Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Oral), H302
Copper (Cu) substance with national workplace exposure limit(s) (GB); substance with a Community workplace exposure limit	(CAS-No.) 7440-50-8 (EC-No.) 231-159-6 (REACH-no) 01-2119480154-42-XXXX	1 – 10	Not classified
potassium hydroxide; caustic potash substance with national workplace exposure limit(s) (GB)	(CAS-No.) 1310-58-3 (EC-No.) 215-181-3 (EC Index-No.) 019-002-00-8 (REACH-no) 01-2119487136-33-XXXX	1 – 10	Acute Tox. 4 (Oral), H302 Skin Corr. 1A, H314
Lead substance listed as REACH Candidate substance with a Community workplace exposure limit	(CAS-No.) 7439-92-1 (EC-No.) 231-100-4 (EC Index-No.) 082-013-00-1 (REACH-no) 01-2119513221-59-XXXX	< 0.1	Lact., H362 Repr. 1A, H360Fd

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Specific concentration limits:		
Name	Product identifier	Specific concentration limits
potassium hydroxide; caustic potash	(CAS-No.) 1310-58-3 (EC-No.) 215-181-3 (EC Index-No.) 019-002-00-8 (REACH-no) 01-2119487136-33-XXXX	( 0.5 ≤C < 2) Eye Irrit. 2, H319 ( 0.5 ≤C < 2) Skin Irrit. 2, H315 ( 2 ≤C < 5) Skin Corr. 1B, H314 ( 5 ≤C < 100) Skin Corr. 1A, H314
Lead	(CAS-No.) 7439-92-1 (EC-No.) 231-100-4 (EC Index-No.) 082-013-00-1 (REACH-no) 01-2119513221-59-XXXX	( 0.03 ≤C < 100) Repr. 1A, H360D

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTRE or doctor/physician.
First-aid measures after skin contact	: Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTRE or doctor/physician.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE or doctor/physician.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTRE or doctor/physician.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects	: This product is not expected to cause a hazard however if the casing splits then the contents may cause a hazard. May damage fertility or the unborn child.
Symptoms/effects after inhalation	: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Symptoms/effects after skin contact	: Causes severe burns.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: Ingestion may cause nausea and vomiting. Swallowing a small quantity of this material will result in serious health hazard.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	: Foam. Carbon dioxide. Water spray.
Unsuitable extinguishing media	: Do not use a heavy water stream.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard	: No fire hazard.
Explosion hazard	: Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.
Reactivity in case of fire	: Under fire conditions closed containers may rupture or explode.

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Hazardous decomposition products in case of fire : oxides of zinc. Carbon oxides.

#### 5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid fire-fighting water entering the environment.  
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate unnecessary personnel.

##### 6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.  
Emergency procedures : Evacuate unnecessary personnel. Stop leak if safe to do so. Mark out the contaminated area with signs and prevent access to unauthorized personnel.

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimise generation of dust. Store away from other materials.

#### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Do not breathe dust/fume/gas/mist/vapours/spray. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use.  
Hygiene measures : Wash hands, forearms and face thoroughly after handling. Wash contaminated clothing before reuse.

#### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.  
Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.  
Incompatible products : Strong bases. Strong acids.  
Incompatible materials : Sources of ignition. Direct sunlight.

#### 7.3. Specific end use(s)

No additional information available

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#### SECTION 8: Exposure controls/personal protection

##### 8.1. Control parameters

###### 8.1.1 National occupational exposure and biological limit values

manganese dioxide (1313-13-9)	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA	0.2 mg/m <sup>3</sup>

Copper (Cu) (7440-50-8)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Copper
IOEL TWA	0.01 mg/m <sup>3</sup> (respirable fraction)
Notes	SCOEL Recommendations (2014)
Regulatory reference	SCOEL Recommendations
United Kingdom - Occupational Exposure Limits	
Local name	Copper
WEL TWA (OEL TWA) [1]	0.2 mg/m <sup>3</sup> fume (as Cu) 1 mg/m <sup>3</sup> and compounds, dusts and mists (as Cu)
WEL STEL (OEL STEL)	2 mg/m <sup>3</sup> and compounds, dusts and mists (as Cu)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

potassium hydroxide; caustic potash (1310-58-3)	
United Kingdom - Occupational Exposure Limits	
Local name	Potassium hydroxide
WEL STEL (OEL STEL)	2 mg/m <sup>3</sup>
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

Lead (7439-92-1)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Lead and its inorganic compounds
IOEL TWA	100 µg/m <sup>3</sup>
Notes	SCOEL Recommendations (2002)
Regulatory reference	SCOEL Recommendations
EU - Binding Occupational Exposure Limit (BOEL)	
Local name	Inorganic lead and its compounds
BOEL TWA	0.15 mg/m <sup>3</sup>
Regulatory reference	COUNCIL DIRECTIVE 98/24/EC
EU - Biological Limit Value (BLV)	
Local name	Lead and its inorganic compounds
BLV	30 µg/100ml Parameter: Pb

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#### Lead (7439-92-1)

Regulatory reference	SCOEL List of recommended health-based BLVs and BGVs
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#### 8.1.2. Recommended monitoring procedures

No additional information available

#### 8.1.3. Air contaminants formed

No additional information available

#### 8.1.4. DNEL and PNEC

No additional information available

#### 8.1.5. Control banding

No additional information available

### 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

No additional information available

#### 8.2.2. Personal protection equipment

##### Personal protective equipment:

Avoid all unnecessary exposure.

##### Personal protective equipment symbol(s):



##### 8.2.2.1. Eye and face protection

##### Eye protection:

Chemical goggles or face shield

Type	Field of application	Characteristics	Standard
Safety goggles		clear	EN 166

##### 8.2.2.2. Skin protection

##### Skin and body protection:

Wear suitable protective clothing

##### Hand protection:

Wear protective gloves.

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Polyvinylchloride (PVC)				EN ISO 374

##### 8.2.2.3. Respiratory protection

##### Respiratory protection:

Wear appropriate mask

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#### 8.2.2.4. Thermal hazards

No additional information available

#### 8.2.3. Environmental exposure controls

#### Other information:

Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: No data available
Odour	: Odourless.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Thermal decomposition generates : Corrosive vapours.

### 10.2. Chemical stability

Not established.

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

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#### 10.5. Incompatible materials

Strong acids. Strong bases.

#### 10.6. Hazardous decomposition products

Fume. Carbon monoxide. Carbon dioxide. Thermal decomposition generates : Corrosive vapours.

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

Acute toxicity (oral) : Not classified  
 Acute toxicity (dermal) : Not classified  
 Acute toxicity (inhalation) : Not classified

#### Zinc (7440-66-6)

LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LC50 Inhalation - Rat	> 5.41 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)

#### manganese dioxide (1313-13-9)

LD50 oral	> 2197 mg/kg bodyweight
LD50 dermal	2000 mg/kg bodyweight
LC50 Inhalation - Rat (Dust/Mist)	> 1500 mg/l

#### Copper (Cu) (7440-50-8)

LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal)), Guideline: EPA OTS 798.1100 (Acute Dermal Toxicity), Guideline: other:MAFF 4200 (1985)
LC50 Inhalation - Rat	> 5.11 mg/l air Animal: rat, Guideline: OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class Method)

#### potassium hydroxide; caustic potash (1310-58-3)

LD50 oral	333 mg/kg bodyweight
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Skin corrosion/irritation : Causes severe skin burns.  
 Serious eye damage/irritation : Assumed to cause serious eye damage  
 Respiratory or skin sensitisation : Not classified  
 Additional information : Based on available data, the classification criteria are not met  
 Germ cell mutagenicity : Not classified  
 Additional information : Based on available data, the classification criteria are not met  
 Carcinogenicity : Not classified  
 Additional information : Based on available data, the classification criteria are not met

#### Lead (7439-92-1)

IARC group	2B - Possibly carcinogenic to humans
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Reproductive toxicity : May damage fertility or the unborn child.



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STOT-single exposure : Not classified  
Additional information : Based on available data, the classification criteria are not met

STOT-repeated exposure : Not classified  
Additional information : Based on available data, the classification criteria are not met

#### Zinc (7440-66-6)

NOAEL (oral, rat, 90 days)	31.52 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
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Aspiration hazard : Not classified  
Additional information : Based on available data, the classification criteria are not met

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - water : Very toxic to aquatic life with long lasting effects.  
Hazardous to the aquatic environment, short-term (acute) : Not classified  
Hazardous to the aquatic environment, long-term (chronic) : Very toxic to aquatic life with long lasting effects.

#### manganese dioxide (1313-13-9)

LC50 - Fish [1]	100 mg/l
EC50 - Other aquatic organisms [1]	100 mg/l waterflea

#### potassium hydroxide; caustic potash (1310-58-3)

LC50 - Fish [1]	80 mg/l
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### 12.2. Persistence and degradability

**KODAK Zinc Air Battery 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**

Persistence and degradability	May cause long-term adverse effects in the environment.
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### 12.3. Bioaccumulative potential

**KODAK Zinc Air Battery 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**

Bioaccumulative potential	Not established.
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#### potassium hydroxide; caustic potash (1310-58-3)

Partition coefficient n-octanol/water (Log Pow)	0.75
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### 12.4. Mobility in soil

No additional information available

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#### 12.5. Results of PBT and vPvB assessment

Component	
Lead (7439-92-1)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

#### 12.6. Other adverse effects

Additional information : Avoid release to the environment.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Ecology - waste materials : Avoid release to the environment.

### SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.2. UN proper shipping name</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.3. Transport hazard class(es)</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.4. Packing group</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available				

#### 14.6. Special precautions for user

##### Overland transport

Not applicable

##### Transport by sea

Not applicable

##### Air transport

Not applicable

##### Inland waterway transport

Not applicable

##### Rail transport

Not applicable

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#### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

Contains no substance on the REACH candidate list > 0,1 %

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

#### 15.1.2. National regulations

No additional information available

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

### Full text of H- and EUH-statements:

Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Lact.	Reproductive toxicity, Additional category, Effects on or via lactation
Repr. 1A	Reproductive toxicity, Category 1A
Repr. 1A	Reproductive toxicity, Category 1A
Skin Corr. 1A	Skin corrosion/irritation, Category 1, Sub-Category 1A
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.

# KODAK Products

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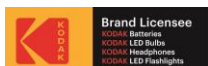
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H360	May damage fertility or the unborn child.
H360D	May damage the unborn child.
H360Fd	May damage fertility. Suspected of damaging the unborn child.
H362	May cause harm to breast-fed children.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



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EU- EN (English)

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