

## KODAK Lithium Batteries

### Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
Issue date: 11/9/2022 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 MAX Lithium batteries CR1025, CR1220, CR1616, CR1620, CR1632, CR2430, CR2450, CR2016, CR2025, CR2032, CR2, K123LA SDS

##### 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

Strand Europe Ltd  
Strand House, Galway Road  
GU46 6GE Yateley – Hampshire  
United Kingdom  
T +44 (0) 1252 861000  
[sales@strandurope.com](mailto:sales@strandurope.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]

Acute toxicity (oral), Category 4 H302  
Acute toxicity (inhalation:dust,mist) Category 4 H332  
Skin corrosion/irritation, Category 1, Sub-Category 1B H314

Full text of H- and EUH-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

GHS07

Signal word (CLP) : Danger

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Contains	: manganese dioxide, lithium
Hazard statements (CLP)	: H302+H332 - Harmful if swallowed or if inhaled. H314 - Causes severe skin burns and eye damage.
Precautionary statements (CLP)	: P260 - Do not breathe dust/fume/gas/mist/vapours/spray. P264 - Wash hands, forearms and face thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P271 - Use only outdoors or in a well-ventilated area. P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.

#### 2.3. Other hazards

Contains no PBT/vPvB substances  $\geq 0.1\%$  assessed in accordance with REACH Annex XIII

### 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]
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 – 40	Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Oral), H302
lithium	CAS-No.: 7439-93-2 EC-No.: 231-102-5 EC Index-No.: 003-001-00-4	1 – 5	Water-react. 1, H260 Skin Corr. 1B, H314
Perchloric acid, lithium salt	CAS-No.: 7791-03-9	< 3	Ox. Liq. 2, H272 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335

Full text of H- and EUH-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 you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. 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. Call a POISON CENTER/doctor if you feel unwell. Immediately call a POISON CENTRE or doctor/physician.

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#### 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. Causes severe skin burns and eye damage.
Symptoms/effects after inhalation	: Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.
Symptoms/effects after skin contact	: Causes severe burns.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: 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	: Dry powder. Carbon dioxide.
Unsuitable extinguishing media	: Do not use a heavy water stream.

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

Fire hazard	: Heating may cause a fire or explosion.
Explosion hazard	: Heating may cause a fire or explosion.
Reactivity in case of fire	: Under fire conditions closed containers may rupture or explode.
Hazardous decomposition products in case of fire	: oxides of lithium. Carbon oxides. oxides of manganese.

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

Emergency procedures	: Evacuate unnecessary personnel.
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##### 6.1.2. For emergency responders

Protective equipment	: Equip cleanup crew with proper protection.
Emergency procedures	: Ventilate area.

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

#### 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.
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#### 6.4. Reference to other sections

See Section 8. Exposure controls and personal protection.

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#### 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. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not breathe dust/fume/gas/mist/vapours/spray.
- Hygiene measures : Do not eat, drink or smoke when using this product. 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

#### 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>

###### 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.

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



#### 8.2.2.1. Eye and face protection

##### Eye protection:

Chemical goggles or face shield

Eye protection			
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.

Hand protection					
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

#### 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	: Colourless.
Odour	: Odourless.
Odour threshold	: Not available
Melting point	: Not available
Freezing point	: Not available
Boiling point	: Not available
Flammability	: Non flammable.
Explosive limits	: Not applicable
Lower explosion limit	: Not applicable
Upper explosion limit	: Not applicable
Flash point	: Not applicable

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Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not available
pH	: Not available
pH solution	: Not available
Viscosity, kinematic	: Not applicable
Solubility	: Not available
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: Not available
Relative density	: Not available
Relative vapour density at 20°C	: Not applicable
Particle size	: Not available
Particle size distribution	: Not available
Particle shape	: Not available
Particle aspect ratio	: Not available
Particle aggregation state	: Not available
Particle agglomeration state	: Not available
Particle specific surface area	: Not available
Particle dustiness	: Not available

#### 9.2. Other information

##### 9.2.1. Information with regard to physical hazard classes

No additional information available

##### 9.2.2. Other safety characteristics

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Thermal decomposition generates : Corrosive vapours.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials

No additional information available

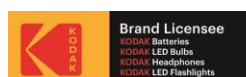
### 10.6. Hazardous decomposition products

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

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral) : Harmful if swallowed.



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Acute toxicity (dermal) : Not classified  
 Acute toxicity (inhalation) : Harmful if inhaled.

#### KODAK MAX Lithium batteries CR1025, CR1220, CR1616, CR1620, CR1632, CR2430, CR2450, CR2016, CR2025, CR2032, CR2, K123LA

ATE CLP (oral)	1250 mg/kg bodyweight
ATE CLP (dust,mist)	3.75 mg/l/4h

#### 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

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

#### Perchloric acid, lithium salt (7791-03-9)

STOT-single exposure	May cause respiratory irritation.
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STOT-repeated exposure : Not classified  
 Additional information : Based on available data, the classification criteria are not met  
 Aspiration hazard : Not classified  
 Additional information : Based on available data, the classification criteria are not met

### 11.2. Information on other hazards

#### 11.2.1. Endocrine disrupting properties

No additional information available

#### 11.2.2. Other information

Potential adverse human health effects and symptoms : Harmful if swallowed,Harmful if inhaled.

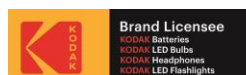
## SECTION 12: Ecological information

### 12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified  
 Hazardous to the aquatic environment, long-term (chronic) : Not classified

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

LC50 - Fish [1]	100 mg/l
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manganese dioxide (1313-13-9)	
EC50 - Other aquatic organisms [1]	100 mg/l waterflea

lithium (7439-93-2)	
LC50 - Fish [1]	109 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
LC50 - Fish [2]	18 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
LOEC (chronic)	2.53 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	1.7 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

#### 12.2. Persistence and degradability

KODAK MAX Lithium batteries CR1025, CR1220, CR1616, CR1620, CR1632, CR2430, CR2450, CR2016, CR2025, CR2032, CR2, K123LA	
Persistence and degradability	Not established.

#### 12.3. Bioaccumulative potential

KODAK MAX Lithium batteries CR1025, CR1220, CR1616, CR1620, CR1632, CR2430, CR2450, CR2016, CR2025, CR2032, CR2, K123LA	
Bioaccumulative potential	Not established.

#### 12.4. Mobility in soil

No additional information available

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

No additional information available

#### 12.6. Endocrine disrupting properties

No additional information available

#### 12.7. Other adverse effects

Additional information : Avoid release to the environment.

### SECTION 13: Disposal considerations

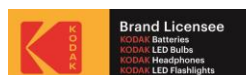
#### 13.1. Waste treatment methods

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 3090	UN 3090	UN 3090	UN 3090	UN 3090








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ADR	IMDG	IATA	ADN	RID
<b>14.2. UN proper shipping name</b>				
LITHIUM METAL BATTERIES	LITHIUM METAL BATTERIES	Lithium metal batteries	LITHIUM METAL BATTERIES	LITHIUM METAL BATTERIES
<b>Transport document description (ADR)</b>				
UN 3090 LITHIUM METAL BATTERIES, 9A, (E)	UN 3090 LITHIUM METAL BATTERIES, 9	UN 3090 Lithium metal batteries, 9A	UN 3090 LITHIUM METAL BATTERIES, 9A	UN 3090 LITHIUM METAL BATTERIES, 9A
<b>14.3. Transport hazard class(es)</b>				
9A	9	9A	9A	9A
				
<b>14.4. Packing group</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No
<p>KODAK MAX Lithium button cells comply to the necessary requirements under the UN Recommendations on the Transport of Dangerous Goods Regulations and are exempt from Dangerous goods because they contain less than 0.3g of lithium, meet the requirements of UN38.2, the applicable SP188 and are manufactured by a ISO9001 certified company. Our button cells are packed in a manner to prevent short circuits, reduce mechanical damage, shock, vibration and spillage of contents.</p>				

### 14.6. Special precautions for user

#### Overland transport

Classification code (ADR) : M4  
 Special provisions (ADR) : 188, 230, 310, 376, 377, 387, 636  
 Limited quantities (ADR) : 0  
 Excepted quantities (ADR) : E0  
 Packing instructions (ADR) : P903, P908, P909, P910, LP903, LP904  
 Transport category (ADR) : 2  
 Tunnel restriction code (ADR) : E  
 EAC code : 4W

#### Transport by sea

Special provisions (IMDG) : 188, 230, 310, 376, 377, 384, 387  
 Limited quantities (IMDG) : 0  
 Excepted quantities (IMDG) : E0  
 Packing instructions (IMDG) : P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906  
 EmS-No. (Fire) : F-A  
 EmS-No. (Spillage) : S-I  
 Stowage category (IMDG) : A  
 Stowage and handling (IMDG) : SW19  
 Properties and observations (IMDG) : Electrical batteries containing lithium encased in a rigid metallic body. Lithium batteries may also be shipped in, or packed with, equipment. Electrical lithium batteries may cause fire due to an explosive rupture of the body caused by improper construction or reaction with contaminants.

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#### Air transport

PCA Excepted quantities (IATA)	: E0
PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden
PCA packing instructions (IATA)	: Forbidden
PCA max net quantity (IATA)	: Forbidden
CAO packing instructions (IATA)	: See 968
CAO max net quantity (IATA)	: See 968
Special provisions (IATA)	: A88, A99, A154, A164, A183, A201, A206, A213, A334, A802
ERG code (IATA)	: 12FZ

#### Inland waterway transport

Classification code (ADN)	: M4
Special provisions (ADN)	: 188, 230, 310, 376, 377, 387, 636
Limited quantities (ADN)	: 0
Excepted quantities (ADN)	: E0
Equipment required (ADN)	: PP
Number of blue cones/lights (ADN)	: 0

#### Rail transport

Classification code (RID)	: M4
Special provisions (RID)	: 188, 230, 310, 376, 377, 387, 636
Limited quantities (RID)	: 0
Excepted quantities (RID)	: E0
Packing instructions (RID)	: P903, 908, 909, P910, P911, LP903, LP904, LP905, LP906
Transport category (RID)	: 2
Colis express (express parcels) (RID)	: CE2
Hazard identification number (RID)	: 90

#### 14.7. Maritime transport in bulk according to IMO instruments

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(s) listed on the REACH Candidate List

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

##### 15.1.2. National regulations

No additional information available

#### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

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#### 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
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H260	In contact with water releases flammable gases which may ignite spontaneously.
H272	May intensify fire; oxidiser.
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.
H335	May cause respiratory irritation.
Ox. Liq. 2	Oxidising Liquids, Category 2
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation
Water-react. 1	Substances and Mixtures which, in contact with water, emit flammable gases, Category 1

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.