

Product Safety Datasheet

Alkaline Batteries

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

Product identifier

Trade Name: Suprabeam Alkaline batteries

Product Identification: Alkaline Manganese Dioxide Cells

Relevant identified uses of the substance or mixture and uses advised against

Application of the substance / the preparation: Energy Source

Details of the supplier of the safety datasheet

Manufacturer/Supplier

Steiner A/S

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info@suprabeam.com

Emergency phone number:

+45 82 12 12 12 - Giftlinjen Bispebjerg Hospital – 24 h Service

02. Hazards identification

Caution

May explode or leak, and cause burn injury if recharged, disposed in fire, mixed with a different battery type, inserted backwards or disassembled. Replace all used batteries at the same time. Do not carry batteries loose in your pocket or purse. Do not remove the battery label.

Potential Health Effects:

The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused. A damaged battery will release concentrated potassium hydroxide, which is caustic. Anticipated potential leakage of potassium hydroxide is 2 to 20 mL, depending on battery size.

Eye Contact

Contact with battery contents may cause severe irritation and burns. Eye damage is possible.

Skin Contact

Contact with battery contents may cause severe irritation and burns.

Inhalation

Inhalation of vapors or fumes released due to heat or a large number of leaking batteries may cause respiratory and eye irritation.

Ingestion

Swallowing is not anticipated due to battery size. Choking may occur if smaller AAA batteries are swallowed. Ingestion of battery contents (from a leaking battery) may cause mouth, throat and intestinal burns and damage.

03. Composition / Information on Ingredients

Chemical characterization: Mixture

Chemical Composition	CAS No.	Amount (%)	Classification
Manganese Dioxide	1313-13-9	36-44	Xn, R20/22
Zinc	7440-66-6	13-18	N, R50/R53
Potassium Hydroxide (40%)	1310-58-3	4-9	
Graphite, natural or synthetic	7782-42-5	1-4	Xn, R22, R35
Steel	7439-89-6	10-18	
Brass	12597-71-6	2-4	
Zinc Oxide	1314-13-2	< 1	
Ni-plating	7440-02-0	< 0.5	
Water, paper, plastic, other	-	Balance	

Impurity	CAS No.	Content
Mercury (Hg)	7439-97-6	< 0.1 ppm
Lead (Pb)	7439-92-1	< 1.0 ppm
Cadmium (Cd)	7440-43-9	< 10.0 ppm

The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused. Hazardous Ingredients as defined by OSHA, 29 CFR 1910.1200. and/or WHMIS under the HPA.

04. First Aid Measures

Description of first aid measures

General information

The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused. Damaged battery will release concentrated potassium hydroxide, which is caustic. Anticipated potential leakage of potassium hydroxide is 2 to 20 ml, depending on battery size.

Following eye contact

If battery is leaking and material contacts the eye, flush thoroughly with copious amounts of running water for 30 minutes. Seek immediate medical advice.

Following skin contact

If battery is leaking and material contacts the skin, remove any contaminated clothing and flush exposed skin with copious amounts of running water for at least 15 minutes. If irritation, injury or pain persists, seek medical advice.

Following inhalation

If battery is leaking, contents may be irritating to respiratory passages. Move to fresh air. If irritation persists, seek medical advice.

Following ingestion

Do not induce vomiting. If the victim is alert, have them rinse their mouth and the surrounding skin with water for at least 15 minutes. Seek immediate medical attention.

Personal protective equipment for first-aid responders

No further relevant information provided.

Most important symptoms/effects, acute and delayed

No further relevant information provided.

Indication of immediate medical attention and special treatment needed

No further relevant information provided.

05. Fire Fighting Measures

Extinguishing media

Use any extinguishing media that is appropriate for the surrounding fire.

Special hazards arising from the substance or mixture

Thermal degradation may produce hazardous fumes of zinc and manganese, hydrogen gas, caustic vapors of potassium hydroxide and other toxic by-products.

Specific protective actions for fire fighters

Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Fight fire from a distance or protected area. Cool fire exposed batteries to prevent rupture. Use caution when handling fire-exposed containers (containers may rocket or explode in heat of fire).

06. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Notify safety personnel of large spills. Caustic potassium hydroxide may be released from leaking or ruptured batteries. Clean-up personnel should wear appropriate protective clothing to avoid eye and skin contact and inhalation of vapors or fumes. Increase ventilation. Carefully collect batteries and place in an appropriate container for disposal.

07. Handling and Storage

Precautions for safe handling

Avoid mechanical or electrical abuse. DO NOT short circuit or install incorrectly. Batteries may explode, ignite or vent if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in accordance with equipment instructions. Do not mix battery systems, such as alkaline and zinc carbon, in the same equipment. Replace all batteries in equipment at the same time. Do not carry batteries loose in a pocket or bag. Do not remove battery tester or battery label.

Conditions for storage, including any incompatibilities

Store batteries in a dry place at normal room temperature. Do not refrigerate – this will not make them last longer.

Specific use

Use only for intended use

08. Exposure controls/personal protection

Control parameters

Chemical Name	Exposure Limits
Zinc	None established for zinc metal
Manganese Dioxide	5 mg/m ³ Ceiling OSHA PEL 0.2 mg/m ³ TWA ACGIH TLV 0.5 mg/m ³ TWA UK WEL 0.5 mg/m ³ TWA (inhalable) DFG MAK 0.2 mg/m ³ VL Belgium 0.2 mg/m ³ TWA Denmark LV
Potassium Hydroxide	2 mg/m ³ Ceiling ACGIH TLV 2 mg/m ³ STEL UK WEL 2 mg/m ³ VCD Belgium 2 mg/m ³ Ceiling Denmark LV
Graphite	15 mppcf TWA OSHA PEL (natural-non-fibrous) 2 mg/m ³ TWA (respirable dust) ACGIH TLV (natural-non-fibrous) 5 mg/m ³ TWA (respirable dust), 15 mg/m ³ TWA (total dust) OSHA PEL 2 mg/m ³ TWA (respirable dust) ACGIH TLV (synthetic non-fibrous) 4 mg/m ³ TWA UK WEL (respirable dust) 10 mg/m ³ TWA UK WEL (inhalable dust) 1.5 mg/m ³ TWA DFG MAK (respirable dust) 4 mg/m ³ TWA DFG MAK (inhalable dust) 2 mg/m ³ VL Belgium (respirable dust)

Personal Protective Equipment

Ventilation

No special ventilation is necessary for normal use.

Respiratory protection

None required for normal use.

Eye/face protection

None required for normal use. Wear safety goggles when handling leaking batteries.

Skin and Body Protection

None required for normal use. Use neoprene, rubber or latex gloves when handling leaking batteries.

09. Physical and chemical properties

Information on basic physical and chemical properties

Form	Cylindrical
Odour	Odourless
Boiling point at 760mm Hg (°C)	Not applicable
Water Solubility	Insoluble
Vapour pressure (mm Hg at 25°C)	Not applicable
Vapour density (Air = 1)	Not applicable
Density (g/cm ³)	3.0 - 4.2
Percent Volatile by Volume (%)	Not applicable
Evaporation rate (Butyl Acetate =1)	Not applicable
Physical State	Solid
Solubility in water (% by weight)	Not applicable
pH	Not applicable
Other information	
Voltage	1.5V

10. Stability and Reactivity

Stability

Stable

Conditions to avoid

Contents are incompatible with strong oxidizing agents. Do not heat, crush, disassemble, short circuit or recharge.

Hazardous decomposition products

Thermal decomposition may produce hazardous fumes of zinc and manganese; caustic vapors of potassium hydroxide and other toxic by-products.

Hazardous Polymerization

Will not occur.

11. Toxicological Information

Potential Health Effects

The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused. Damaged battery will release concentrated potassium hydroxide, which is caustic. Anticipated potential leakage of potassium hydroxide is 2 to 20 ml, depending on battery size.

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Acute Toxicity Data

Manganese Dioxide: LD50 oral rat >3478 mg/kg

Potassium Hydroxide: LD50 oral rat 273 mg/kg

Chronic Effects

The chemicals in this product are contained in a sealed can and exposure does not occur during normal handling and use. No chronic effects would be expected from handling a leaking battery.

Target Organs

Skin, eyes and respiratory system.

Carcinogenicity

None of the components of this product are listed as carcinogens by ACGIH, IARC, NTP or OSHA

12. Ecological Information

Ecological Toxicity

No data available.

Other adverse effects

Batteries and cells released into the environment will slowly degrade and may release toxic or harmful substances. Batteries should be disposed or recycled according to local regulations.

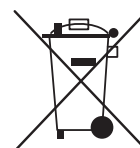
13. Disposal Consideration

Disposal Methods

Disposal should be in accordance with federal, state/provincial and local regulations. Products covered by this SDS, in their original form, when disposed as waste, are considered non hazardous waste according to Federal RCRA regulations (40 CFR 261). Some communities offer recycling or collection of alkaline batteries – contact your local government for disposal practices in your area.

These batteries have no added mercury.

These alkaline manganese dioxide batteries are labeled with “special collection” symbol (as shown) in accordance with EU Battery Directive 2006/66.



14. Transport Information

Transport information

Alkaline batteries (sometimes referred to as “Dry Cell” or “Household” batteries) are not listed or regulated as dangerous goods under the IATA Dangerous Goods Regulations, ICAO Technical Instructions, IMDG Code, UN Model Regulations or U.S. hazardous regulations (49CFR).

However, special regulatory provisions apply that require batteries to be packaged in a manner that prevents the generation of a dangerous quantity of heat and short circuits. Product shipped in its original unopened packaging is

compliant with the following packaging special provisions:

- Ground Transport (ADR/RID/US DOT): 49 CFR172.102 Special Provision 130.
- Air Transport (IATA): Special Provision A123 (IATA DGR Edition 2015 –56th Edition).

The words 'NOT RESTRICTED' and the 'Special Provision A123' must be included on the description of the substance on the Air Waybill, when air waybill is issued.

Marine/Water Transport (IMDG/ICAO): NONE

15. Regulatory Information

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

EU Classification of Preparation: Not classified as a dangerous preparation.

EU RoHS Directive: Batteries are not subject regulation.

EU Battery Directive

Alkaline batteries comply with the substance restriction limits and labeling requirements set forth in the EU Battery Directive 2006/66/EC and Amendment 2013/66/EU and as a result contain <0.0005% (5 ppm) mercury, <0.002% (20 ppm) cadmium and <0.004% (40 ppm) lead. The chemical symbols Hg, Cd and Pb are therefore not required below the separate collection symbol.

REACH

Subject battery products are “articles” under REACH and not subject to REACH registration or e-SDS requirements. To the best of our knowledge, Suprabeam alkaline batteries do not contain any of the 155 SVHCs per the ECHA updated Candidate List of June 16, 2014.

EU Labeling

None Required. Labeling is not required because batteries are classified as articles under both REACH and the Dangerous Preparations Directive and are exempt from the labeling requirements.

United States

EPA TSCA Status: All intentionally-added components of this product are listed on the US TSCA Inventory.

OSHA Status

While the finished product(s) is considered an article and not covered by the OSHA Hazard Communication Standard, 29 CFR 1910.1200, this MSDS contains valuable information critical to the safe handling and proper use of the product.

CPSIA 2008: Alkaline batteries are exempt.

EPA Mercury Containing and Rechargeable Battery Management Act of 1996: Compliant.

EPA TSCA: All intentionally-added components of this product are listed on the US TSCA Inventory.

EPA SARA 313/302/304/311/312 chemicals: Manganese compounds 36-44%; Zinc 13-18%.

California: This product has been evaluated and does not require warning labeling under California Proposition 65.

State Right-to-Know and CERCLA:

The following ingredients present in the finished product are listed on state right-to-know lists or state worker exposure lists:

Ingredient	CAS #	Level %	CERCLA RQ	State				
				IL	MA	NJ	PA	RI
Manganese Dioxide	1313-13-9	36-44	None	Y	Y	N	Y	Y
Zinc	7440-66-6	13-18	1000 lb	Y	Y	Y	Y	N
Potassium Hydroxide	1310-58-3	4-9	1000 lb	Y	Y	Y	Y	Y
Graphite	7782-42-5 7440-44-0	1-4	None	Y	Y	N	Y	Y

Canadá

Todos los componentes añadidos intencionalmente de este producto se enumeran en el DSL canadiense. Este producto ha sido clasificado de acuerdo con los criterios de peligro de las Regulaciones de Productos Controlados (CPR), y esta MSDS contiene toda la información requerida por las Regulaciones de Productos Controlados.

16. Other Information

Hazard Rating

Health: 0

Fire: 0

Reactivity: 0

(4=EXTREME / 3=HIGH / 2=MODERATE / 1=SLIGHT / 0=NOT SIGNIFICANT)

* Hazard Ratings are Risk Phrases for Reference.

EU Classes and Risk Phrases for Reference (See Sections 2 and 3)

C - Corrosive **N** - Dangerous for the Environment

Xn - Harmful **R20/22** - Harmful by inhalation and if swallowed.

R22 - Harmful if ingested **R35** - Causes severe burns

R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Data supplied is for use only in connection with occupational safety and health.

Reference:

- IATA DGR Edition 2015 (56th Edition)

Date of preparation

January 22, 2016

Notice to reader

To the best of our knowledge, the information contained in the SDS is provided in good faith and is believed to be accurate at the date of preparation. However, Steiner A/S or any of its subsidiaries assumes any liability whatsoever for the consequences of the use of this information since it may be applied under conditions beyond Steiner's control or knowledge.

Final determination of suitability of any material is the sole responsibility of the user. All material may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Abbreviations:

CAS (Chemical Abstracts Service)

EC (European Commission)

ACGIH (American Conference of Governmental Industrial Hygienists)

NIOSH (US National Institute for Occupational Safety and Health)

OSHA (US Occupational Safety and Health)

TLV (Threshold Limit Value)

TWA (Time Weighted Average)

STEL (Short Term Exposure Limit)

PEL (Permissible Exposure Level)

REL (Recommended Exposure Limit)

PC-STEL (Permissible concentration-time weighted average)

PC-TWA (Permissible concentration-short time exposure limit)

LC50 (Lethal concentration, 50 percent kill)

LD50 (Lethal dose, 50 percent kill)

IARC (International Agency for Research on Cancer)

EC50 (Median effective concentration)

BCF (Bioconcentration Factor)

NOEC (No observed effect concentration)

NTP (US National Toxicology Program)

RTECS (Registry of Toxic Effects of Chemical Substances)

IATA (International Air Transportation Association)

IMDG (International Maritime Dangerous Goods)

TDG (Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations)

TOC (Total Organic Carbon)

TSCA (Toxic Substances Control Act of USA)

DSL (the Domestic Substances List of Canada)

NDSL (the Non-domestic Substances List of Canada)