



Material Safety Data Sheet

1. Substance, preparation and company name

Product name	Alkaline manganese dioxide – zinc battery, RC27G
Company name and address	Datacell Eurl, 20 Impasse des Templiers, 25300 VUILLECIN (France)
Emergency information	+33 (0) 381 39 04 94 during regular office hours
Revision date	August 2022
Approved by	Federico Giannini

2. Composition and information on ingredients

Name	Content (approx.)	EEC No	CAS No	Index No	Classification	Hazard Code
Manganese dioxide	48 %	1313-13-9	113-13-9	025-001-00-3	Xn, R20/22	H302, H332, H373
Zinc	17 %	7440-66-6	7440-66-6	030-002-00-7	F, R15, R17	H250, H260, H400, H410
Potassium Hydroxide	4 % (as dry KOH)	1310-58-3	1310-58-3	019-002-00-8	C, R35	H290, H302, H314, H318
Mercury, Cadmium, Lead	None added					

3. Possible hazards

Critical hazards to man	in case of leakage, exposure to caustic ingredients may occur
Critical hazards to the environment	not applicable
Other information	keep batteries out of access to small children

4. First aid measures

General advice	The battery ingredients are contained in a sealed can. Potential exposure should not exist unless the battery leaks, is mechanically or electrically abused or is exposed to high temperatures. The battery contains caustic concentrated potassium hydroxide solution of which 10 to 50 ml may leak. Up to 200 ml of zinc or zinc oxide paste may also leak.
Inhalation	Irritation of eyes or respiratory track may occur in case of fumes due to heat. Remove to fresh air and contact a physician if irritation persists.
Skin contact	Exposure to leaking batteries may cause irritations or chemical burns or injury. Wash exposed skin with plenty of tepid clear water for at least 15 minutes. Contact a physician if injury, pain or irritation persists.
Contact with eyes	Exposure to leaking batteries may cause irritation or chemical burns. In case of contact of leaking substance with eyes, flush with large amounts of tepid clear water for at least 30 minutes and contact immediately a physician.
Ingestion	Ingestion of a complete battery is not possible due to its size, however, exposure may occur in case of contact with a leaking battery. Wash the mouth and all contaminated areas with plenty tepid clear water for at least 15 minutes and contact a physician.
Note to physician	The only acutely toxic ingredient is concentrated (about 40 weight %) potassium hydroxide solution of which up to 50 ml may leak.

5. Fire fighting measures

Suitable extinguishing media	As appropriate for adjacent fire
Special protective equipment	In case of fires with large quantities of batteries, use self-contained breathing equipment and full protective clothing.
Further information	See section 10 for hazardous decomposition products



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6. Accidental release measures

Personal precautions	In case of large spills, call safety personnel. Caustic potassium hydroxide may leak from ruptured batteries, avoid contact with eyes or skin and inhalation of vapours. Personnel should wear appropriate protective equipment when cleaning.
Environmental precautions	Not applicable
Methods for cleaning up	Not applicable

7. Handling and storage

Handling	Electrical or mechanical abuse must be avoided. Do not short, respect polarity. Batteries may explode or vent if they are recharged, crushed, disassembled or exposed to high temperatures. Do not mix fresh and partially discharged batteries in the same equipment. Avoid short circuits between battery terminals.
Storage	Store at room temperature in a dry place.

8. Exposure controls and personal protection

Ingredient	OSHA	TLV (ACGIH)	Respirable OSHA
Manganese dioxide (as Mn)	5 mg/m ³	0.2 mg/m ³	
Zinc (as ZnO)	15 mg/m ³	10 mg/m ³	5 mg/m ³
Potassium hydroxide (as KOH)	Not established	2 mg/m ³	2 mg/m ³
Graphite	15 mg/m ³	2 mg/m ³	5 mg/m ³
Personal protection			
Respiratory equipment	Not required under normal conditions of use		
Hand protection	Not required under normal conditions of use. Use nitrile, rubber or neoprene gloves to handle leaking cells.		
Eye protection	Not required under normal conditions of use. Wear safety glasses when handling leaking cells.		
General safety and hygiene	Use only as directed		

9. Physical and chemical properties

Form and colour	Cylindrical object, 65 mm diameter, 205 mm high. Content of various colours.
Odour	None
Change in physical state	
Melting point or range	Not applicable
Boiling point or range	Not applicable
Flash point	Not applicable
Explosion limits	Not available
Ignition temperature	Not available
Vapour pressure	Not available
Specific gravity	Not applicable
% volatile	Not available
Solubility in water	Not applicable
Solubility in other solvents	Not applicable
pH value	Not applicable (> 14 for leaking liquids)
Octanol/water partition coefficient (log POW)	Not applicable
Viscosity	Not applicable



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10. Stability and reactivity

Thermal decomposition	Batteries may explode and release decomposition products when exposed to a fire
Substances to be avoided	Strong oxidizers
Hazardous reactions	Content incompatible with strong oxidizers and strong acids
Hazardous decomposition products	Thermal degradation may produce hazardous fumes of manganese and zinc, caustic vapours of potassium hydroxide, hydrogen gas and possible other by-products.

11. Toxicological information

Toxicological information	Toxicity information is available for individual battery ingredients as listed in section 2 but is not applicable to undamaged batteries
Chronic health effects	Not applicable to undamaged batteries

12. Ecological information

Not available

13. Disposal considerations

Dispose in accordance with appropriate local regulations

14. Transport information

UN Number	ADR classification	IATA classification	IMO classification
None	None	None	None
These batteries are not regulated as hazardous materials or dangerous goods when shipped, they meet the requirements contained in the following Special Provisions; Special Provision A123 in the ICAO Technical Instructions and IATA Dangerous Goods Regulations and Special Provision 130 of the DOT. These regulations require these batteries to be packed in such a way to prevent short circuits or generation of a dangerous quantity of heat. In addition, the ICAO and IATA regulations require the words "Not Restricted" and "Special Provision A123" be provided on the air waybill, when an air waybill is issued. By ocean the International Maritime Organization (IMO), 2012 edition, 36 th Amendment, does not regulate these batteries.			

15. Regulatory information

EC labelling	Risk phrases	Safety phrases
None	None	None
Batteries are classified as "articles" and as such do not require labelling.		

16. Other information

Prepared by	Phone number	Replaces
Federico Giannini Datacell Eurl 20 Impasse des Templiers 25300 VUILLECIN (France)	+33 (0) 381 39 04 94	MSDS RC27G 2021

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