

Section 1: Chemical Product and Company Identification

Product Name : Dry battery (alkaline manganese)
Part Number : PSG90900, PSG90901, PSG90902, PSG90903, PSG91110, PSG91111, PSG91112, PSG91113, PSG91114, PSG91115, PSG91116 & PSG91117
Company : Premier Farnell plc
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Leeds
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+44 (0) 8701 202530
Emergency telephone : +44 1865 407333

Section 2: Composition / Information on Ingredients

Chemical Name	Percent (by weight)	CAS No.	EC#	
Manganese Dioxide	48%	1313-13-9	215-202-6	
Zinc powder	18%	7440-66-6	231-175-3	
Potassium hydroxide	7%	1310-58-3	215-181-3	
Carbon (C)	4%	7440-44-0	231-153-3	
Steel shell	13%	12597-69-2	Unlisted	
H65 Brass	Copper (Cu)	1%	7440-50-8	231-159-6
	Zinc (ZN)		7440-66-6	231-175-3
Water	8.6%	7732-18-5	231-791-2	
Nylon-66	0.4%	32131-17-2	Unlisted	

Section 3: Hazards identifications

Emergency Overview

Caution The battery pack and enclosed cells should not be recharged, opened, disassembled, crushed, burned, or exposed to high temperatures. Do not use organic solvents or other chemical cleaners on battery. Under normal use and handling, the customer has no contact with the internal components of the battery. However, on some bad using conditions (recharge, high over charge, Inverse charge, and external short circuit....) and in case of a bad functioning, some electrolyte can be removed from the cell by the security vent. Exposure to the ingredients contained within the battery pack could be harmful under some circumstances.

Target Organs : None.

Hazard Sorts : None.

Potential Health Effects

Eye : No effect under routine handling and use for sealed battery. Exposure to the electrolyte contained inside the battery may result in severe irritation and chemical burns.

Skin : No effect under routine handling and use for sealed battery. Exposure to the electrolyte contained inside the battery may result in chemical burns. Exposure to battery particulate may cause dermatitis.

Ingestion : No effect under routine handling and use for sealed battery. Harmful if swallowed the electrolyte contained inside the battery. Exposure to the electrolyte contained inside the battery may cause severe chemical burn to mouth, esophagus and gastrointestinal system.

Inhalation : No effect under routine handling and use for sealed battery. If battery is broken, inhale fume/ dust may cause respiratory irritation, cough, and shortness of breath or chemical burns.

Section 4: First Aid Measures

Caution! No effect under routine handling and use. If exposure to internal materials within cell due to damaged outer metal casing, the following actions are recommended.

Eyes	: Rinse immediately with plenty of water during at least 15-30 minutes, occasionally lifting the upper lower eyelids, Check for and remove any contact lenses if easily possible. Get medical aid immediately.
Skin	: In case of contact, immediately flush skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing and shoes before reuse. Get medical aid immediately.
Inhalation	: If inhaled, remove from exposure and move to fresh air immediately. Rinse mouth and nose with water. Get medical aid immediately. DO NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.
Ingestion	: Do not induce vomiting. If the injured is fully conscious: wash mouth out with water, then give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Section 5: Fire-fighting Measures

General Information	: Cells can be overheated by an external source or by internal shorting and develop potassium hydroxide mist and/or hydrogen gas. Toxic vapor may release in case of fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.
Extinguishing Media	: Class D-Dry chemical powder, sand is suitable. Do NOT use water.

Section 6: Accidental Release Measures

General Information	: No action shall be taken involving any personal risk or without suitable training. Review Section 5 and Section 7 sections before proceeding with clean-up. Use proper personal protective equipment as indicated in Section 8. If electrolyte leaks or spills, do not touch or walk through electrolyte.
Spills/Leaks	: Keep unnecessary people away. Remove heat and sources of ignition. Move battery pack to well ventilated area. If electrolyte leaks or spills, neutralize with a weak acid such as vinegar or citric acid before proper disposal.

Section 7: Handling and Storage

Storage	: Store in a cool and dry area, but prevent condensation on cell or battery terminals. High temperature may damage the performance of the battery cause leaking or rusting. Protect from physical damage and short circuits. To avoid risk of fire or explosion, keep spark and other sources of ignition away from the battery. Do not allow metal objects to simultaneously contact both positive and negative terminal of batteries. Do not stack battery directly on another battery. Do not store batteries on electrically conductive surfaces.
Handling	: Do not dispose in fire, mix with other battery types, recharge, connect improperly, or short circuit, which may result in overheating, explosion or leakage of cell contents. Accidental short circuit will bring high temperature elevation to the battery as well as shorten the battery life. Be sure to avoid prolonged short circuit since the heat can burn attendant skin and even rupture of the battery cell case. Battery bulk container, coins, metal jewelry, metal worktable, metal belt or other equipment for assembly battery may be the source

for short circuit. Use effective anti short circuit measures. Do not use organic solvents or other chemical cleaners on battery. Do not disassembly or decompose. Avoid contacting with water, avoid straight sunlight.

Section 8: Exposure Controls, Personal Protection

Exposure Limit:

CAS No.	ACGIH (mg/m ³)	NIOSH (mg/m ³)	OSHA(mg/m ³)
1313-13-9	TLV-TWA 0.2(as Mn)	None listed	None listed
7440-66-6	TLV-TWA 5 (asZnO fume)	None listed	PEL-TWA 5 (as ZnO fume)
1310-58-3	TLV-TWA 2 (ceiling)	None listed	None listed
7440-44-0	None listed	None listed	None listed
12597-69-2	None listed	None listed	None listed
7440-50-8	TLV-TWA0.2 (fume): TLV-TWA1 (dust and mist)	REL-TWA 1	REL-TWA 1
7732-18-5	None listed	None listed	None listed
32131-17-2	None listed	None listed	None listed

Monitoring Methods : No Information found.

Engineering Controls : General room ventilation is sufficient during normal use and handing. Do not install these batteries in sealed, unventilated areas. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Work/Hygienic Practices : Remove jewellery, rings, watches and any other metallic objects while working on battery. All tools should insulate to avoid the possibility of shorting connections. DO NOT lay tools on top of the battery. The work area should be equipped with the corresponding species and quantity of fire equipment and leakage emergency equipment.

Personal Protective Equipment:

Eyes : Under normal condition of use and handing no special protection is required for sealed battery.

Skin : Under normal condition of use and handing no special protection is required for sealed Battery.

Clothing : Under normal condition of use and handing no special protection is required for sealed battery.

Respirators : Under normal condition of use and handing no special protection is required for sealed Battery. Use appropriate respirator if airborne dust or mist concentrations exceed.

Personal Protective Equipment (In the Event of Battery Case Breakage):

Always wear appropriate safety glasses with side shields or full face clothing. Use appropriate gloves. Wear appropriate boots, apron or clothing. Use appropriate respirator.

Other Protection : No smoking or eating scene work. To maintain good health habits. Wash hands thoroughly after working and before eating.

Section 9: Physical and chemical propertied

Physical State : Cylindrical battery

Odour : Odouriess

Molecular Formula : Mixture.

Molecular Weight : N/A

PH : N/A

Flash Point : N/A

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Boiling Point : N/A
Melting Point : N/A
Relative density (water=1) : N/A
Viscosity : N/A
Water Solubility : N/A
Chemical Users : Power Supply.

Section 10: Stability and Reactivity

Chemical Stability : Stable under normal use.
Conditions to Avoid : When a battery cell is exposed to an external short-circuit, crushed, modification, high temperature, open flames, it will be the cause of heat generation and ignition. May explode or leak if recharged. Direct sunlight and high humidity.
Incompatibilities with other materials : Conductive materials, water, seawater, strong oxidizers and acids.
Hazardous decomposition products : Oxides of metal, harmful gas and etc.
Hazardous Polymerization : Will not occur.

Section 11: Toxicological information

Toxicological Information:

CAS No.	RTECS#	LD50/LC50
1313-13-9	OP0350000	LD50:3478 mg/kg (Oral, rat)
7440-66-6	ZG8600000	No date available.
1310-58-3	TT2100000	LD50: 273mg/kg(oral, rat)
7440-44-0	FF5250100	No date available
12597-69-2	Unlisted	No date available
7440-50-8	GL5325000	LD50:>5 g /Kg (Oral, mouse) LD50: 413mg/kg (Oral, mouse)
7732-18-5	ZC0110000	LD50:> 90ml/kg(oral, rat)
32131-17-2	Unlisted	No date available

Section 12: Ecological information

Ecological Toxicity : Not available
Ecological Degradation : Not available
Biology Degradation : Not available.
Other Information : If the battery is discarded into the environment, the harmful contents inside may be dangerous.

Section 13: Disposal considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Disposal should be in accordance with applicable regional, national and local laws and regulations. Do not incinerate, since batteries may explode at excessive temperature.
Refer to Section 7 and Section 8 for additional handling information and protection of employees.

Section 14: Transport Information

Sealed Alkali-manganese battery packs are considered to be "Battery , Dry" and are not subject to dangerous goods regulations for purposes of transportation by the International Civil Aviation Organization (ICAO), International Air Transport Association (IATA), the International Maritime Dangerous Goods regulations (IMDG CODE), the Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations (UN TDG) and US Department of Transportation (DOT).

Air shipment must comply with IACO and IATA DGR Special Provision A123, Which includes the requirement that "Any electrical battery or battery powered device, equipment or vehicle having the potential of dangerous evolution of heat must be prepared for transport so as to prevent a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or. In the case of equipment, by disconnection of the battery and protection or exposed terminals) and accidental activation." Under IATA regulations, effective January 1, 2009, any waybill accompanying a consignment of these batteries must contain the words " Non-restricted" and special provision A123"

Ocean shipment and land shipment must comply with IMDG CODE and UN TDG Special Provision 304, which includes the requirement that " Batteries, dry, containing corrosive electrolyte which will not flow out of the battery if the battery case is cracked are not subject to these regulations provided the batteries are securely packed and protected against short-circuits. Examples of such batteries are: alkali manganese, zinc-carbon, nickel-metal hydride are securely and nickel-cadmium batteries."

The DOT requirement for shipping these batteries is Special Provision 130, which includes the requirement that "Batteries and battery- powered device(s) containing batteries must be prepared and packaged for transport in a manner to prevent the dangerous evolution of heat; short circuits; and the damage to terminals."

The requirement for shipping these batteries, in all modes of transportation, are that they be separated from each other to prevent short-circuits and to prevent movement that could lead to short-circuits. Products must also be packed in strong packaging that can withstand the rigors normal to transportation, these products are labeled in accordance to requirements for cargo shipment of Alkali-manganese batteries and cells.

Section 15: Regulatory Information

Regulatory information: Reference to local, national, US, EU,CA and International regulations.

CAS No.	TSCA	Canada	OSHA	California Prop 65
1313-13-9	Listed	Listed in DSL	Unlisted	Unlisted
7440-66-6	Listed	Listed in DSL	Unlisted	Unlisted
1310-58-3	Listed	Listed in DSL	Listed	Unlisted
7440-44-0	Listed	Listed in DSL	Listed	Unlisted
12597-69-2	Unlisted	Unlisted	Unlisted	Unlisted
7440-50-8	Listed	Listed in DSL	Unlisted	Unlisted
7732-18-5	Listed	Listed in DSL	Unlisted	Unlisted
32131-17-2	Listed	Listed in DSL	Unlisted	Unlisted

European Labeling in Accordance with EC Directives:

CAS No.	EC#	Hazard Symbols	Risk Description	Safety Description
1313-13-9	215-202-6	Xn	R20/22	S2-25
7440-66-6	231-175-3	[zinc powder/ dust (Stabilized)]N	R50/53	S 60-61
1310-58-3	215-181-3	Xn; C	R22-35	S1/2/26-36/37/39-45
7440-44-0	231-153-3	None,	R36/37	S26
12597-69-2	Unlisted	None	None	None

Safety Data Sheet

CAS No.	EC#	Hazard Symbols	Risk Description	Safety Description
7440-50-8	231-159-6	F(for powder)	R11-36/37/38	S16
7732-18-5	231-791-2	None	None	None
32131-17-2	Unlisted	None	None	None

Hazard Symbols:

- F: Flammable
- Xn: Harmful.
- C: Corrosive.
- N: Dangerous for the environment.

Risk Description:

- R11: Highly Flammable
- R20/22: Harmful by inhalation and if swallowed
- R35: Cause severe burns.
- R36/37/38: Irritating to eyes, respiratory system and skin.
- R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects.

Safety Description:

- S 1/2: Keep locked up and out of reach of children.
- S 16: Keep away from sources of ignition –No smoking.
- S 25: Avoid contact with eyes.
- S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S 36/37/39: Wear suitable protective clothing , gloves and eye/face protection.
- S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- S60: This material and / or its container must be disposed of as hazardous waste.
- S 61: Avoid release to the environment. Refer to special Instructions/ Safety data sheets.

Section 16: Other information

The information on this Safety Data Sheet (SDS) was obtained from current and reputable sources. However, the data is provided without any warranty; expressed or implied, regarding its correctness or accuracy. It is the user's responsibility to assume liability on loss, injury, damage, or expense resulting from improper use of this product.

Part Number	Part Number	Part Number
PSG90900	PSG91110	PSG91114
PSG90901	PSG91111	PSG91115
PSG90902	PSG91112	PSG91116
PSG90903	PSG91113	PSG91117

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