Safety Data Sheet

Section 1: Chemical product and company identification

Name of Product Coin Type Manganese Dioxide Lithium Batteries

Product models CR1220, CR2430, CR2450, CR1620, CR2477, CR1632, CR2016, CR2430FTH43 & CR2025

Details of the supplier of the safety data sheet

Supplier

Premier Farnell plc
150 Armley Road
Leeds
LS12 2QQ
+44 (0) 870 129 8608

Emergency telephone number

Emergency telephone +44 1865 407333

Section 2: Hazards identification

This contains lithium, organic solvent, and other combustible materials. For this reason, improper handling of the battery could lead to distortion, leakage*, overheating, explosion of fire and cause human injury or equipment trouble. Please strictly observe safety instruction.

(*Leakage is defined as an unintended escape of liquid from a battery.)

Section 3: Composition/information of ingredients

Material	CAS No.	Content (%)
Manganese Dioxide	1313-13-9	16 - 37
Lithium metal	7439-93-2	1 - 3
1,2-Dimethoxyethane	110-71-4	2.6 - 5.8
Lithium perchlorate	7791-03-9	0.6 - 1.3
Propylene Carbonate	108-32-7	4.3 - 8
Graphite	7782-42-5, 1333-86-4	1.8 - 5.5
Steel	7439-86-6, 7440-47-3	30 - 85
Polypropylene	9003-07-0	0.5 - 10

Lithium content per cell model

Model	Weight of Battery (in g)	Lithium Content (in g)
CR1220	0.8	0.012
CR1620	1.4	0.023
CR1632	2.0	0.033
CR2016	2.0	0.024
CR2025	2.7	0.052

Model	Weight of Battery (in g)	Lithium Content (in g)
CR2430	4.6	0.086
CR2450	6.9	0.165
CR2477	10.5	0.3
CR2430FTH43	4.6	0.086

Section 4: First aid measures

None unless internal materials exposure. If contents are leaked out, read the following instructions.

Inhalation	Fumes can cause respiratory irritation. Remove to fresh air and consult a physician.
Skin	Immediately flush skin plenty of water. If itch or irritation by chemical bum persists, consult a physician.
Eyes	Immediately flush eye with plenty of water for at least 15 minutes. Consult a physician immediately
Ingestion	If swallowing a battery, consult a physician immediately. If contents come into mouth, immediately rinse by plenty of water and consult a physician.

Section 5: Firefighting measures

Extinguishing agent	Extinguisher of alkaline metal fire is effective. Plenty of cold water is also effective to cool the surrounding area and control the spread fire. But hydrogen gas may evolve by the reaction of water and lithium and it can form an explosive mixture. Therefore, in the case that lots of lithium batteries are burning in a confined space, use a smothering agent.
Firefighting procedure	Use self-contained breathing apparatus and full protective gear not to inhale harmful gas.

Section 6: Accidental release measures

Accidental Releases	Do not breathe vapors or touch liquid with bare hands (see section 4).
Waste Disposal Methods	Evacuate area. If possible, a trained person should attempt to stop or contain the leak by neutralizing spill with soda lime or baking soda. A NIOSH Approved Acid Gas Filter Mask or Self- Contained Breathing Apparatus should be worn. Seal leaking battery and soda lime or baking soda in a plastic bag and dispose of as hazardous waste.
Other	Follow North American Emergency Response Guide (NAERG)#138 for cells involved in an accident, cells that have vented, or have exploded.

Section 7: Handling and storage

1) Handling

Never swallow.

Never reverse the positive and negative terminals when mounting. Never short-circuit the battery.

Never heat.

Never expose to open flame. Never disassemble.

Never weld the terminal or wire to the body of the battery directly. Never touch the liquid leaked out of battery.

Never bring fire close to battery liquid. Never keep in touch with battery.

2) Storage
Never let the battery contact with water.
Never store the battery in hot and high humid place.

Section 8: Exposure controls and personal protection

Respiratory Protection		N/A
Ventilation	Local Exhaust	N/A
	Mechanical	N/A
	Special	N/A
	Other	N/A
Eye Protection		N/A
Protective Gloves		N/A
Other protective clothing		N/A

Section 9: Physical and chemical properties

Appearance	Coin shape. Contents are sealed in stainless steel vessel
Nominal Voltage	3V
PH	Not applicable because the article is not soluble in water
Boiling point/boiling range	Not applicable for the article
Melting point	Not applicable for the article
Decomposition Temperature	Not applicable for the article
Flash point	Not applicable for the article

Section 10: Stability and reactivity

Stability	Stable
Incompatibility	Water
Hazardous polymerization	Will not occur
Condition to avoid	See section 7
Hazardous decomposition or by products	Hydrogen

Section 11: Toxicological information

Acute Toxicity:
1,2-Dimethoxyethane:

LC_{50} (Inhalation)	N/A
LD_{50}	N/A
Eye Effects	Corrosive
Skin Effects	Corrosive

Section 12: Ecological information

Aquatic Toxicity	Do not let internal components enter marine environments. Avoid releases into waterways, wastewater, or groundwater.

Section 13: Disposal considerations

The battery disposal may be regulated by national or local government regulation. Please follow the instructions of proper regulation. As electric capacity is left in a discarded battery and it comes into contact with other metals, it could lead to distortion, leakage, overheating, or explosion, so make sure to cover the (+) and (-) terminals with friction tape or some other insulator before disposal.

Section 14: Transport information

In general, all cells/batteries being transported by ship, aircraft or railway, must be packaged in a safe and responsible manner. Do not leave them in high temperature or in high condensation. Battery cartons should be handled with care. Rough handling may result in batteries being short circuited or damaged.

Lithium metal cells and batteries are subject to the following transport rules. All Power Glory lithium cells/batteries meet the requirements of the special provisions listed below:

Regulatory Body	Special Provisions
ADR	188, 230, 310, 636, 656
IMDG	188, 230, 310, 957
UN	UN 3090, UN 3091
US DOT	29, A54, A100, A101
IATA, ICAO	Dangerous Goods Regulation (Packaging Instructions 968 – 970)

Ocean Transportation

All Power Glory lithium coin cells/batteries can be transported as Non-Dangerous Goods by vessel as these articles satisfy with SP188 of IMO-IMDG Code.

Air Transportation

Power Glory Lithium cells/batteries can meet the requirement of IATA Dangerous Goods Regulations 59th Edition of 2018, Packing Instruction PI 968 - 970.

Proper Shipping Name	Lithium Metal Batteries
UN Number	UN3090 (When cell/batteries contained in equipment / packed with equipment, it is UN3091)
Hazard Classification	Class 9 (Miscellaneous)

IATA DGR 59th Edition, Packing Instruction (PI)	Packing Instruction (PI) brief description
PI 968 Section IA	Cells, Cargo Aircraft only; net quantity per package Max. 35kg
PI 968 Section IB	Cells, Cargo Aircraft only; net quantity per package Max. 2.5kg
PI 968 Section II	Cells, Cargo Aircraft only, not more than one package in any single consignment; net quantity per package Max. 2.5kg
PI 969 Section II	Cells packed with equipment
PI 970 Section II	Cells contained in equipment, button cell batteries

1. for cells, the lithium content cannot be more than 0.3g for PI 968 Section II, not more than 1.0g for PI 968 Section IB, and can be more than 1.0g for PI 968 Section IA.
2. each cell is of the type proven to meet the requirements of each test in the UN Manual of Tests and Criteria, Part III, sub-section 38.3.
3. each cell is manufactured in good qualification factory.

Section 15: Regulatory information

Major applicable regulations for transportation are listed below:

Technical Instructions for the Safety Transport of Dangerous Goods by Air, 2017-2018 Edition
IATA Dangerous Goods Regulations 59th Edition (IATA DGR)
IMO International Maritime Dangerous Goods Code 2016 Edition (IMO, IMDG Code)

Section 16: Other information

N/A

Part Number
CR1220
CR2430
CR2450
CR1620
CR2477
CR1632
CR2016
CR2430FTH43
CR2025