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Safety Data Sheet

Note : PSDS/MSDS is not applicable to the products hermetically sealed. Under normal conditions of use, the battery is contained in a hermetically-sealed case, therefore the information herein contained is provided for your information only.
The information and recommendations set forth herein are made in good faith and are believed to be accurate as of the date of preparation.
However, Sony Corporation MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM RELIANCE ON.

1. Product and company Identification

Product Name	Lithium Manganese Dioxide Battery
Model Name	CR1216%, CR1220%, CR1616%, CR1620%, CR1632%, CR2016%, CR2025%, CR2032%, CR2430%, CR2450%, CR2477%
Brand	SONY
Company Name	Sony Energy Devices Corporation
Company Address	1-1 Shimosugishita, Takakura, Hiwada-machi, Koriyama-shi, Fukushima 963-0531 JAPAN
Information Telephone	Japan +81 50 3807 3528
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Date Revised	February 1, 2015
Issued Department	Branded Battery Department, Energy Division 2, Sony Energy Devices Corporation

The model name attached % means that valid for all models which the singular/plural digits of alphanumeric or marks (including a space) attached after the model name.

2. Hazard identification

The important hazards and adverse effects of the chemical product	No information available	
Chemical product- specific hazards	No information available	
Outline of an anticipated emergency	Hazard	Lithium Manganese Dioxide battery contains flammable materials such as organic solvent and metallic lithium. If battery was disposed in fire, or battery temperature exceeded 100℃, explosion or ignition of the battery may be caused. When short-circuit is caused by jumbling the batteries, explosion or ignition may be caused due to heat generation.
	Toxicity	When battery is burned, generated vapor may cause eyes, skin and respiratory irritation.

3. Composition/information on ingredients

Portion	Ingredient	CAS No.	Content ratio wt%
Cathode	Manganese Dioxide	1313-13-9	20~40 wt%
Anode	Metallic Lithium	7439-93-2	1~3 wt% (Li < 0.3g)
Electrolyte	Dimethoxyethane	110-71-4	1~4 wt%
	Propylene Carbonate	108-32-7	2~8 wt%
	Lithium Perchlorate	7791-03-9	0.3~0.8 wt%
Others	Heavy metal such as Mercury, Cadmium and Lead are not added in the battery.		

4. First aid measures

Swallowing	Ingestion of a battery can be harmful. Contents of an opened battery can cause serious chemical burns of mouth, esophagus and gastrointestinal tract. In either case, do not induce vomiting nor give food or drink. Seek medical attention immediately.
Skin Contact	Contents of an opened battery can cause skin irritation. Wash skin with soap and water. If inflammation was caused on the skin, seek the medical attention.
Eye Contact	Contents of an opened battery can cause eye irritation. Immediately flush eyes thoroughly with water for several minutes. Seek medical attention.
Inhalation	Contents of an opened battery can cause respiratory irritation. Provide fresh air and call a doctor.

5. Fire fighting measures

Extinguishing Media	Powder, Carbon dioxide and Dry sand. Metallic Lithium contained in a battery reacts with water strongly, as a result, generates hydrogen gas. Extinguishing by water may cause explosion.

6. Accidental release measures (In the case that electrolyte is leaked from battery.)

Personal precautions	Temporary inhalation of odor and attaching of electrolyte to skin does not cause serious health hazard. Be sure the ventilation and washing out of electrolyte quickly.
Environmental precautions	Wipe off with dry cloth and keep away from fire.

7. Precautions for safe handling and use

Handling	Since improper battery handling may cause leakage, overheating or explosion of the battery, the following precautions shall be observed. (1) Do not short. (2) Insert batteries with positive (+) and negative (-) terminals correctly oriented. (3) Do not mix different type batteries or mix new and old ones together. (4) Do not directly heat, solder or throw into fire. (5) Do not modify, deform or disassemble the battery. (6) Do not have children replace batteries unsupervised by adults. (7) In case of swallowed battery, seek medical attention immediately. (8) This battery is not designed for recharging. To do so can cause leakage or explosion.
Storage	Store in a cool, well-ventilated area. Do not store batteries at high-temperatures or high-humidity. Proper storage temperature is +10℃~+25℃. It is preferable not to exceed +30℃. Avoid extremely higher or lower humidity (95% or more, 40% or less). Elevated temperature can result in shortened battery life. Avoid exposure to sunlight to prevent performance deterioration, swelling or leakage. Since short circuit can cause burn hazard and leak or explode hazard, do not batteries jumbled in bulk containers. Avoid to contact water, metallic chain or metallic chip which may result in short-circuit.

8. Exposure controls/personal protection

N/A

9. Physical and chemical properties

Condition	Solid
Appearance	Coin Shape
Nominal voltage	3 V

10. Stability and reactivity

Stability : Stable under normal conditions of use.
Condition to avoid : See Section 7.

11. Toxicological information

Under normal conditions of use, there is no risk to life and health, because ingredients of battery is hermetical sealed with metal case.

12. Ecological information

When exhausted battery is buried in the ground, it is confirmed that outflow of metal contained in the battery has been seldom found. But we have no ecological information.

13. Disposal considerations

When battery is disposed, isolate positive (+) and negative (-) terminals of the battery to avoid those terminals touch each other.
Batteries may be short-circuited when piled up or mixed the batteries in disorder.
Dispose in accordance with applicable federal, state and local regulations.

14. Transport information

UN Dangerous Goods List

UN No.	Name and Description	Class or division	Special provision	Packing instruction
3090	LITHIUM METAL BATTERIES	9	188 230 310 376 377	P903 P908 P909

Dangerous Goods List on IATA DGR （Packing Instructions 968-Ⅱ）

UN No.	Proper Shipping Name/Description	Class or division	Passenger Aircraft	Cargo Aircraft	S.P.
			Max Net Qty /Package	Max Net Qty /Package	
3090	LITHIUM METAL BATTERIES	9	Forbidden	2.5 kg	A88 A99 A154 A164 A183 A201

All lithium metal cells shipping from Sony Corporation and their packing condition conform to the following regulations and meet the requirements, therefore they can be shipped as exemption from Class 9 Dangerous goods.
This exclusion is only applied to transportation by cargo aircraft.

Air transportation : IATA DGR (IATA DGR 56th Edition) Package Instruction 968-Section Ⅱ
Sea transportation : IMO-IMDG Code 2014 SP188

As all of Sony CR Coins contain lithium metals less than 1.0 g,
Packing Instruction 970 can be applicable to the products Sony CR Coins are assembled into.
No need to pack the products as dangerous goods for transportation.

Outline of IATA DGR 56th Edition Packing Instruction 968-Ⅱ(Exemption from Class 9)

- For a lithium metal cell with the lithium content of less than 0.3g, maximum net weight per package shall not exceed 2.5kg.
- Each cell is of the type proven to meet the requirements of each test in the UN Manual of Tests and Criteria Fifth revised edition Amendment 2, Part Ⅲ,subsection 38.3.
- Cells shall be packed in inner packagings that completely enclose the cell.
- Each package shall be capable of withstanding a 1.2m drop test in any orientation without damage to cells contained therein, without shifting of the contents so as to allow battery to battery contact and without release of contents.
- Each package must be labeled with specified indications such us lithium battery handling label and cargo aircraft only label.

Outline of IMO-IMDG Code 2014 SP188

- For a lithium metal cell, the lithium content is not more than 1g.
- Each cell is of the type proven to meet the requirements of each test in the UN Manual of Tests and Criteria Fifth revised edition Amendment 2, Part Ⅲ, subsection 38.3.
- Cells shall be packed in inner packagings that completely enclose the cell.
- Each package shall be capable of withstanding a 1.2m drop test in any orientation without damage to cells contained therein, without shifting of the contents so as to allow battery to battery contact and without release of contents.
- Package shall not exceed 30kg gross mass.
- Each package must be labeled with a lithium battery handling label.
- Each cell shall be manufactured under quality program specified by the United Nation.

*Related regulation, Issued documents

International Air Transport Association (IATA): Dangerous Goods Regulations, 56th Edition International Civil Aviation Organization (ICAO): Technical Instructions for the Safe Transport of Dangerous Goods by Air, 2015-2016 Edition International Maritime Organization (IMO): International Maritime Dangerous Goods (IMDG) Code, 2014 Edition U.S. Department of Transportation (DOT) 49 CFR UN (SP188) / UN (United Nations): Recommendations on the Transport of Dangerous Goods: Model Regulations 18th revised edition.

15. Regulatory information

- EU Directive 2006/66/EC
- CA Lithium Perchlorate Regulation

16. Other information

If you need further information, please contact your local sales representative.