

SONY

Sony Energy Devices Corporation

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Document No. SDS-E17-004E

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
Emergency Telephone	Japan +81 24 958 3811 Sony Energy Devices Corporation
Date Revised	February 1, 2015
Issued Department	Branded Battery Business 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°C, 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.
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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	<p>Since improper battery handling may cause leakage, overheating or explosion of the battery, the following precautions shall be observed.</p> <ol style="list-style-type: none"> (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	<p>Store in a cool, well-ventilated area. Do not store batteries at high-temperatures or high-humidity. Proper storage temperature is +10°C~+25°C. It is preferable not to exceed +30°C. 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.</p>

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 1 g.
- 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.

SAFETY DATA SHEET

Issuing Date 18 March-2015

Revision Date 18 March-2015

Revision Number 2



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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Black Toner for B721, B731, MB760, MB770, MPS5501, MPS5502

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Dry powder colorant to form an image on sheet of paper or other substrate.

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name Oki Data Americas, Inc.
Supplier Address 2000 Bishops Gate Blvd.
Mount Laurel
NJ
08054
US
Supplier Phone Number Phone:1-800-654-3282
Fax: 1-856-222-5247
Supplier Email support@okidata.com
Emergency telephone number Phone:1-800-654-3282

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

GHS Label elements, including precautionary statements

Emergency Overview

Signal word None

Hazard Statements
None



Appearance Black	Physical State Powder(s) Solid	Odor Mild
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Precautionary Statements - Prevention

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

101.9% of the mixture consists of ingredient(s) of unknown toxicity

Other information

Carbon Black in a free state is classified by the IARC as a Group 2B Carcinogen (possibly carcinogenic to humans). The formulation of the toner has Carbon Black only present in a bounded state and not in a free state so it does not present a carcinogenic risk.

Interactions with Other Chemicals

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Third Party Formulation (TP # 1186423)	Proprietary	7 - 13	*
Third Party Formulation (TP # 1186423)	Proprietary	1 - 5	*
Third Party Formulation (TP # 1186423)	Proprietary	1 - 5	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General Advice

Immediate medical attention is required.

Eye Contact

Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin Contact

Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.

Inhalation

Remove to fresh air. If symptoms persist, call a physician.

Ingestion

Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.



Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical

No information available.

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Avoid contact with eyes.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental Precautions

Environmental Precautions Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with eyes.



Conditions for safe storage, including any incompatibilities

Storage Keep container tightly closed.
Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Third Party Formulation (TP # 1186423)	TWA: 2 mg/m ³	(vacated) TWA: 2 mg/m ³	TWA: 2 mg/m ³
Third Party Formulation (TP # 1186423)	TWA: 3 mg/m ³ inhalable fraction	TWA: 3.5 mg/m ³ (vacated) TWA: 3.5 mg/m ³	IDLH: 1750 mg/m ³ TWA: 3.5 mg/m ³ TWA: 0.1 mg/m ³ Carbon black in presence of Polycyclic aromatic hydrocarbons PAH
Third Party Formulation (TP # 1186423)	10 mg/m ³	20 mppcf TWA; ((80)/(% SiO ₂)) mg/m ³	IDLH: 3000 mg/m ³ TWA: 6 mg/m ³

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992) See section 15 for national exposure control parameters

Appropriate engineering controls

Engineering Measures Showers
 Eyewash stations
 Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection No special protective equipment required.

Skin and Body Protection Wear protective gloves and protective clothing.

Respiratory Protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State	Powder(s), Solid	Odor	Mild
Appearance	Black	Odor Threshold	No information available
Color	No information available		
Property	Values	Remarks	Method
pH	No data available	None known	
Melting / freezing point	No data available	None known	



Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	Negligible	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing Properties	No data available	

Other Information

Softening Point	49 – 60 °C (120 – 140 °F)
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

None known based on information supplied.

Hazardous Decomposition Products

Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Product does not present an acute toxicity hazard based on known or supplied information.
Inhalation	Specific test data for the substance or mixture is not available.



Eye Contact Specific test data for the substance or mixture is not available.

Skin Contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Third Party Formulation (TP # 1186423)	> 3750 mg/kg (Rat)	> 3600 mg/kg (Rabbit)	-
Third Party Formulation (TP # 1186423)	> 15400 mg/kg (Rat)	> 3 g/kg (Rabbit)	-
Third Party Formulation (TP # 1186423)	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 2.2 mg/L (Rat) 1 h

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.

Mutagenic Effects No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Third Party Formulation (TP # 1186423)	A3	Group 2B		X
Third Party Formulation (TP # 1186423)		Group 3		

ACGIH (American Conference of Governmental Industrial Hygienists)
 A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
 Group 2B - Possibly Carcinogenic to Humans
 Group 3 - Not Classifiable as to Carcinogenicity in Humans
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
 X - Present

Reproductive Toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.



Chronic Toxicity

Contains a known or suspected carcinogen. In 1996 the IARC reevaluated Carbon Black as a Group 2B carcinogen (possible human carcinogen). This classification is given to chemicals for which there is inadequate human evidence, but sufficient animal evidence on which to base an opinion of carcinogenicity. The classification is based upon the development of lung tumors in rats receiving chronic inhalation exposures to free Carbon Black at levels that induce particle overload of the lung. Studies performed in animal models other than rats did not show any association between Carbon Black and lung tumors. Moreover, a two-year cancer bioassay using a typical toner product containing Carbon Black demonstrated no association between toner exposure and tumor development in rats. The formulation of the toner has Carbon Black only present in a bounded state and not in a free state.

Target Organ Effects

Respiratory system. Eyes. Skin. Gastrointestinal tract (GI). Lymphatic System. Lungs.

Aspiration Hazard

No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

Not applicable

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Third Party Formulation (TP # 1186423)				24h EC50: > 5600 mg/L
Third Party Formulation (TP # 1186423)	72h EC50: = 440 mg/L (Pseudokirchneriella subcapitata)	96h LC50: = 5000 mg/L (Brachydanio rerio)		48h EC50: = 7600 mg/L

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.



California Hazardous Waste Codes 352

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

DOT
Proper Shipping Name NOT REGULATED
Hazard Class NON REGULATED
N/A

TDG Not regulated

MEX Not regulated

ICAO Not regulated

IATA
Proper Shipping Name Not regulated
Hazard Class NON REGULATED
N/A

IMDG/IMO
Hazard Class Not regulated
N/A

RID Not regulated

ADR Not regulated

ADN Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
DSL All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard No
Chronic Health Hazard Yes
Fire Hazard No
Sudden release of pressure hazard No
Reactive Hazard No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)



CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

Not Regulated due to chemicals being bound in a resin matrix.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Third Party Formulation (TP # 1186423)	X	X	X		
Third Party Formulation (TP # 1186423)	X	X	X		X
Third Party Formulation (TP # 1186423)		X	X		

International Regulations

Mexico

National occupational exposure limits

Component	Carcinogen Status	Exposure Limits
Third Party Formulation (TP # 1186423) (7 - 13)		Mexico: TWA= 2 mg/m ³ Mexico: STEL= 6 mg/m ³
Third Party Formulation (TP # 1186423) (1 - 5)		Mexico: TWA 3.5 mg/m ³ Mexico: STEL 7 mg/m ³

Mexico - Occupational Exposure Limits - Carcinogens

Canada

WHMIS Hazard Class

Non-controlled by definition of manufactured article

16. OTHER INFORMATION

NFPA	Health Hazards 1	Flammability 0	Instability 0	Physical and Chemical Hazards - Personal Protection X
HMIS	Health Hazards 1*	Flammability 0	Physical Hazard 0	

Chronic Hazard Star Legend * = Chronic Health Hazard

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Revision Date 18-March-2015

Revision Note No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text



End of Safety Data Sheet