

Safety Data Sheet

Date of Issue: March 05, 2018

File No.: DGXNY20180305WERCS01

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product Identifier

Name of Product: Rechargeable Lithium-ion Polymer Battery

1.2 Other means of identification

Product Models: 284449

Nominal Voltage: 3.7V

Nominal capacity: 560mAh

Nominal Power: 2.1Wh

Weight: 10g

1.3 Recommended use of the chemical and restriction on use

Recommended Use: Rechargeable Lithium-ion Polymer Battery

Restriction on Use: No information available

1.4 Information Of Supplier:

Company Name: Dong Guan Amperex Technology Limited

Address: 1 West Industrial Road, North Zone of SSL Sci. & Tech. Industry Park, Dongguan, China

Zip code: 523808

Contact person: Lin Ying

Tel: 86-593-257 6248

E-mail: LinYing@ATLBattery.com

1.5 Emergency Telephone

86-177-5933 5025

2. Hazard(s) Identification

2.1 Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

2.2 Label elements

2.2.1 Signal Word **Danger**

2.2.2 Hazard Statements

Causes skin irritation

Causes serious eye damage

Suspected of causing cancer

Causes damage to organs through prolonged or repeated exposure

2.2.3 Symbol



Safety Data Sheet

Date of Issue: March 05, 2018

File No.: DGXNY20180305WERCS01

This product is an article which contains a chemical substance. Safety information is given for exposure to the article as solid. Intended use of the product should not result in exposure to the chemical substance, This is a battery. In case of rupture: the above hazards exist.

2.3 Precautionary Statements

2.3.1 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.

Wash face, hands and any exposed skin thoroughly after handling.

Contaminated work clothing should not be allowed out of the workplace.

Keep away from flames and hot surface –no smoking.

Do not breath dust/fume/gas/mist/vapors/spray.

Do not eat, drink or smoke when using this product.

2.3.2 Precautionary Statements – Response

If exposed or connected: Get medical advice/attention.

Specific treatment(see supplemental first aid/instruction on this label).

Skin

If ON SKIN: wash with plenty of soap and water.

Take off contaminated clothing and water before reuse.

If skin irritation or rash occurs: get medical advice/attention if feel unwell.

Eye

If IN EYES: Rinse cautiously with water for several minutes, remove contact lenses, if present and easy to do, Continue rinsing. Call a POISON CENTER or doctor/physician.

Inhalation

If inhalation: if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or doctor/physician.

Ingestion

If swallowed: rinse mouth, do not induce vomiting ,Call a poison center or doctor/physician if feel unwell.

2.3.3 Precautionary Statements – Storage

Store locked up

2.3.4 Precautionary Statements – Disposal

Dispose of contents/container to an approved waste disposal plant.

2.4 Hazards not otherwise classified (HNOC)

Not applicable

2.5 Unknown Toxicity

40% of the mixture consists of ingredient(s) of unknown toxicity.

2.6 Other information

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.7 Interactions with other chemicals

No information available.

Safety Data Sheet

Date of Issue: March 05, 2018

File No.: DGXNY20180305WERCS01

3. Composition/ Information on Ingredients

Chemical Name	Molecular formula	CAS No.	Weigh%
Graphite	C	7782-42-5	7-25
Lithium Cobalt oxide	LiCoO ₂	12190-79-3	15-40
Lithium Hexafluorophosphate	LiPF ₆	21324-40-3	0-5
Acetylene Black	C	1333-86-4	0-2
Diethyl Carbonate	C ₅ H ₁₀ O ₃	105-58-8	0-15
Propylene Carbonate	C ₄ H ₆ O ₃	108-32-7	0-15
Ethylene Carbonate	C ₃ H ₄ O ₃	96-49-1	0-15
Copper	Cu	7440-50-8	10-12
Aluminum	Al	7429-90-5	3-5
Nickel	Ni	7440-02-0	0-1

4. First Aid Measures

4.1 General Advice

First aid is upon rupture of sealed battery.

4.1.1 Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub affected area. Seek immediate medical attention/advice.

4.1.2 Skin Contact

Wash off immediately with plenty of water and soap for at least 15 minutes. Remove and isolate contaminated clothing and shoes. Get medical attention if irritation develops and persists.

4.1.3 Inhalation of Vented Gas

Remove to fresh air. Get medical attention immediately if symptoms occur. If not breathing, give artificial respiration. If breathing is difficult, (trained personnel should) give oxygen.

4.1.4 Ingestion

Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

4.1.5 Self-protection of the first aider

Ensure that medical personnel are aware of the material(s) involved. Take precaution to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personnel protective equipment as required. Wear personnel protective clothing (see section 8).

Safety Data Sheet

Date of Issue: March 05, 2018

File No.: DGXNY20180305WERCS01

4.2 Most important symptoms and effects, both acute and delayed

Burning sensation, Itching. Rashes. Hives, Coughing.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization of susceptible persons. Treat symptomatically.

5. Fire –Fighting Measures

5.1 Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry chemical, CO₂, water spray or regular foam. Move containers from fire area if you can do it without risk.

5.2 Unsuitable Extinguishing Media

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

5.3 Specific Hazards Arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact. Product is or contains a sensitizer.

Hazardous Combustion products

Carbon oxides

5.4 Explosion Data

Sensitivity to Mechanical Impact :None.

Sensitivity to Static Discharge: None.

5.5 Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/IOSH (approved or equivalent) and full protective gear. Move containers from fire area if you can do it without risk.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2 Environmental Precautions

Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

6.3 Methods for containment

Prevent further leakage or spillage if safe to do so. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Safety Data Sheet

Date of Issue: March 05, 2018

File No.: DGXNY20180305WERCS01

6.4 Methods for cleaning up

Pick up and transfer to properly labeled containers.

7. Handling and Storage

7.1 Precaution for safe handling

In case of rupture, use personal protection equipment. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Do not breathe dust/fume/gas/mist/vapors/spray.

7.2 Conditions for safe storage, including any incompatibilities

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

Incompatible products

Strong acids. Strong oxidizing agent. Strong bases.

8. Exposure Controls/Personal Protection

8.1 Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Graphite 7782-42-5	TWA:2mg/m ³ respirable particulate matter all forms except graphite fibers	TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic (vacated) TWA: 2.5 mg/m ³ respirable dust natural (vacated) TWA: 10 mg/m ³ total dust synthetic (vacated) TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m ³ TWA: 2.5 mg/m ³ respirable dust
Lithium Cobalt Oxide 12190-79-3	TWA:0.02mg/m ³	-	-
Lithium Hexafluorophosphate 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F TWA: 2.5 mg/m ³ dust (vacated) TWA: 2.5 mg/m ³	-
Acetylene Black 1333- 86-4	TWA: 3mg/m ³ Inhalable particulate matter	TWA: 3.5mg/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

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.

Safety Data Sheet

Date of Issue: March 05, 2018

File No.: DGXNY20180305WERCS01

Other Exposure Guidelines:

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

8.2 Appropriate engineering controls

Engineering Measures:

Showers, Eyewash stations, Ventilation systems

8.3 Individual protection measures, such as personal protective equipment

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.

Eye /face protection: if splashes are likely to occur: Wear safety glasses with side shields(or goggles). None required for consumer use.

Skin protection: Wear protective gloves and protective clothing. Long sleeved clothing. Imperious gloves.

Hygiene Measure: Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Wash hands before breaks and immediately after handling the product. For environmental protection, remove and wash all contaminated protective equipment before re-use. No information available.

9. Physical and Chemical Properties

Physical State: Solid

Color: No information available

Odor: Odorless

Odor Threshold: No information available

pH: No data available

Melting/freezing point: No data available

Boiling point/boiling range: No data available

Flash Point: No data available

Evaporation Rate: No data available

Flammability (Solid, gas): No data available

Flammability Limit in Air:

Upper flammability limit: No data available

Lower flammability limit: No data available

Vapor pressure: No data available

Vapor density: No data available

Safety Data Sheet

Date of Issue: March 05, 2018

File No.: DGXNY20180305WERCS01

Specific Gravity: No data available

Solubility: Insoluble in water

Partition coefficient:n-octanol/water: No data available

Autoignition temperature: No data available

Decomposition temperature: No data available

Kinematic viscosity: No data available

Dynamic viscosity: No data available

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:

Do not subject battery to mechanical shock. Keep away from open flames, high temperature.

Incompatible materials:

Strong acids, Strong oxidizing agents. Strong bases.

Hazardous decomposition products:

Carbon oxides

11. Toxicological Information

11.1 Information on likely routes of exposure

Product information:

Product does not present an acute toxicity hazard based on known or supplied information.
In case of rupture:

Inhalation:

Specific test data for the substance or mixture is not available. Corrosive by inhalation (base on components). Inhalation of corrosion fumes/gases may cause coughing, choking, headache, dizziness and weakness for several hour. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure and increased heart rate. Inhaled corrosion substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract.

Eye Contact:

Specific test data for the substance or mixture is not available. Cause burns. (based on components). Corrosion to the eyes and may cause severe damage including blindness.

Safety Data Sheet

Date of Issue: March 05, 2018

File No.: DGXNY20180305WERCS01

Cause serious eye damage. May cause irreversible damage to eyes.

Skin Contact:

Specific test data for the substance or mixture is not available. Corrosion (based on components). Cause burns. Toxic in contact with skin. May be absorbed through the skin in harmful amounts.

Ingestion:

Specific test data for the substance or mixture is not available. Cause burns. (based on components). Ingestion cause burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Graphite 7782-42-5	> 10000mg/kg (Rat)	-	-
Acetylene Black 1333-86-4	>15400 mg/kg (Rat)	>3g/kg(rabbit)	-
Propylene carbonate 108-32-7	=29000mg/kg (Rat)	>20mL/kg(rabbit)	-

11.2 Information on toxicological effects

Symptoms:

Erythema (skin redness). May cause redness and tearing of eyes. Itching. Rashes. Hives. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Coughing and/or wheezing.

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

Sensitization: May cause sensitization of susceptible person, May cause sensitization by skin contact. May cause sensitization by inhalation.

Mutagenic Effects: No information available.

Carcinogenicity: the table below whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Lithium Cobalt oxide 12190-79-3	A3	Group 2B		X
Acetylene Black 1333-86-4	A3	Group 2B	Reasonably Anticipated	X

ACGIH (American Conference of Governmental Industrial Hygienists)

A3- Animal Carcinogen

IARC (International Agency for research on Cancer)

Group 2B- Possibly Carcinogenic to humans

Safety Data Sheet

Date of Issue: March 05, 2018

File No.: DGXNY20180305WERCS01

NTP (National Toxicology Program) Reasonably Anticipated- reasonably anticipated to be a human Carcinogenic.

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: Cause damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE)

Chronic Toxicity: Prolonged exposure may cause chronic effects. Repeated contact may cause allergic reactions in very susceptible persons. Contain a known or suspected carcinogen. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.

Target Organ Effects: Respiratory system. Eyes. Skin. Gastrointestinal tract(GI). Blood. Central Nervous System(CNS). Kidney. Liver. Lungs. Nasal cavities.

Aspiration Hazard: No information available.

11.4 Numerical measures of toxicity product information

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

ATE mix(oral): 5400 mg/kg

12. Ecological Information

Ecotoxicity :

Chemical name	Toxicity to Aglae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Acetylene Black 1333-86-4				24h EC50: >5600mg/L
Propylene Carbonate 108-32-7	72h EC50: >500mg/L (Desmodesmus subspicatus)	96h LC50: >1000mg/L (Cyprinus carpio) 96h LC50: =5300mg/L (Leuciscus idus)	17h EC50: >1000mg/L	24h EC50: >5600mg/L

Persistence and Degradability: No information available

Bioaccumulation: No information available

Other adverse effects: No information available

Safety Data Sheet

Date of Issue: March 05, 2018

File No.: DGXNY20180305WERCS01

13. Disposal Considerations

13.1 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. Should not be released into the environment.

Contaminated Packaging:

Dispose of in accordance with federal, state and local regulations.

California Hazardous Waste Codes 141

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

Chemical Name	California Hazardous Waste
Lithium Cobalt Oxide 12190-79-3	Toxic

14. Transportation Information

The transportation of primary lithium cells and batteries is regulated by the International Civil

Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)

Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with " PI965-967 section II of IATA-DGR " or "special provision 188 of IMO-IMDG Code"

DOT: NOT REGULATED

Proper Shipping Name: NON REGULATED

Emergency Response Guide Number: 147

Hazard Class: N/A

TDG: Not regulated

MEX: Not regulated

Safety Data Sheet

Date of Issue: March 05, 2018

File No.: DGXNY20180305WERCS01

ICAO: Not regulated

IATA: Not regulated

Proper Shipping Name: Not regulated

Hazard Class: Not regulated

IMDG/IMO: Not regulated

Proper Shipping Name: NON REGULATED

Hazard Class: N/A

Ems No.: F-A, S-1

RID: Not regulated

ADR: Not regulated

AND: Not regulated

15. Regulatory information

15.1 International Inventories

TSCA Complies

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

TSCA – United State Toxic Substance Control Act Section 8(b) Inventory

DSL/NDSL – Canadian Domestic Substance List/Non-Domestic Substance List

15.2 US Federal Regulations

SARA 313: Section 313 of Title III of the superfund Amendments and Reauthorization Act of 1986(SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No.	Weight (%)	SARA313-Threshold values(%)
Lithium Cobalt Oxide	12190-79-3	15-40	0.1

15.3 SARA 311/312 Hazard Categories

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

15.4 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)

15.5 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

Safety Data Sheet

Date of Issue: March 05, 2018

File No.: DGXNY20180305WERCS01

15.6 US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Acetylene Black 1333-86-4	Carcinogen

U.S State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Lithium Cobalt Oxide 12190-79-3	x		x	x	x
Graphite 7782-42-5	x	x	x		
Ethylene Carbonate 96-49-1		x	x		
Diethyl Carbonate 105-58-8	x	x	x		
Lithium Hexafluorophosphate 21324-40-3	x				
Acetylene Black 1333-86-4	x	x	x		x

15.7 International Regulations

Mexico

National occupational exposure limits

Chemical Name	Carcinogen Status	Exposure Limits
Graphite		Mexico: TWA= 2 mg/m ³
Acetylene Black		Mexico: TWA 3.5 mg/m ³ Mexico: STEL 7 mg/m ³

Canada

WHMIS Hazard Class

Non-controlled

16. Other Information

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 material used in combination with any other materials or in any process, unless specified in the test.

Prepared By: Guangzhou MCM Certification and Testing Co., Ltd.

Issuing Date: March 05, 2018

Revision Date: March 05, 2018

--- End of SDS ---

PRODUCT SAFETY DATA SHEET**PRODUCT NAME:** Energizer Battery**Type No.:****Volts:** 3.0**TRADE NAMES:** Coin/Button Lithium Manganese Dioxide Batteries**Approximate Weight:** 0.6 – 7.0 g**CHEMICAL SYSTEM:** Lithium Manganese Dioxide**Designed for Recharge:** No

Energizer has prepared copyrighted Product Safety Datasheets to provide information on the different Eveready/Energizer battery systems. Batteries are articles as defined under the GHS and exempt from GHS classification criteria (Section 1.3.2.1.1 of the GHS). The information and recommendations set forth herein are made in good faith, for information only, and are believed to be accurate as of the date of preparation. However, ENERGIZER BATTERY MANUFACTURING, INC. MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM REFERENCE ON IT.

SECTION 1- MANUFACTURER INFORMATIONManufactured for
Energizer Battery Manufacturing, Inc.
25225 Detroit Rd.
Westlake, OH 44145Telephone Number for Information:
800-383-7323 (USA / CANADA)

Date Prepared: March 2015

SECTION 2 – HAZARDS IDENTIFICATION**GHS classification:** N/A**Signal Word:** N/A**Hazard Classification:** N/A

Under normal conditions of use, the battery is hermetically sealed.

Ingestion: Swallowing may lead to serious injury or death in as little as 2 hours due to chemical burns and potential perforation of the esophagus. **Immediately see doctor; have doctor phone (202) 625-3333.** Do not induce vomiting or give food or drink.**Inhalation:** Contents of an open battery can cause respiratory irritation.**Skin Contact:** Contents of an open battery can cause skin irritation.**Eye Contact:** Contents of an open battery can cause severe irritation.**SECTION 3 - INGREDIENTS****IMPORTANT NOTE:** The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

MATERIAL OR INGREDIENT	PEL (OSHA)	TLV (ACGIH)	%/wt.
Carbon Black (CAS# 1333-86-4)	3.5 mg/m ³ TWA	3.5 mg/m ³ TWA	0-1
1,2-Dimethoxyethane (CAS# 110-71-4)	None established	None established	0-6
1,3-Dioxolane (CAS# 646-06-0)	None established	None established	0-8
Graphite (CAS# 7782-42-5)	15 mg/m ³ TWA (total dust) 5 mg/m ³ TWA (respirable fraction)	2 mg/m ³ TWA (respirable fraction)	0-3
Lithium or Lithium Alloy (CAS# 7439-93-2)	None established	None established	1-6

Lithium Perchlorate (CAS# 7791-03-9)	None established	None established	0-3
Lithium Trifluoromethanesulfonate (CAS# 33454-82-9)	None established	None established	0-3
Lithium Trifluoromethanesulfonimide (CAS# 90076-65-6)	None established	None established	0-3
Manganese Dioxide (CAS# 1313-13-9)	5 mg/m ³ Ceiling (as Mn)	0.2 mg/m ³ TWA (as Mn)	12-42
Propylene Carbonate (CAS# 108-32-7)	None established	None established	0-8
Non-Hazardous Components:			
Steel (iron CAS# 65997-19-5)	None established	None established	20
Plastic and Other	None established	None established	Balance

SECTION 4 – FIRST AID MEASURES

Ingestion: Swallowing may lead to serious injury or death in as little as 2 hours due to chemical burns and potential perforation of the esophagus. **Immediately see doctor; have doctor phone (202) 625-3333.** Do not induce vomiting or give food or drink.

Inhalation: Provide fresh air and seek medical attention.

Skin Contact: Remove contaminated clothing and wash skin with soap and water.

Eye Contact: Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

Note: Carbon black is listed as a possible carcinogen by International Agency for Research on Cancer (IARC).

SECTION 5- FIRE FIGHTING MEASURES

In case of fire where lithium batteries are present, flood area with water or smother with a Class D fire extinguishant appropriate for lithium metal, such as Lith-X. Water may not extinguish burning batteries but will cool the adjacent batteries and control the spread of fire. Burning batteries will burn themselves out. Virtually all fires involving lithium batteries can be controlled by flooding with water. However, the contents of the battery will react with water and form hydrogen gas. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended. A smothering agent will extinguish burning lithium batteries.

Emergency Responders should wear self-contained breathing apparatus. Burning lithium manganese dioxide batteries produce toxic and corrosive lithium hydroxide fumes.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

To cleanup leaking batteries:

Ventilation Requirements: Room ventilation may be required in areas where there are open or leaking batteries.

Respiratory Protection: Avoid exposure to electrolyte fumes from open or leaking batteries.

Eye Protection: Wear safety glasses with side shields if handling an open or leaking battery.

Gloves: Use neoprene or natural rubber gloves if handling an open or leaking battery.

Battery materials should be collected in a leak-proof container.

SECTION 7 - HANDLING AND STORAGE

Storage: Store in a cool, well ventilated area. Elevated temperatures can result in shortened battery life. In locations that handle large quantities of lithium batteries, such as warehouses, lithium batteries should be isolated from unnecessary combustibles.

Mechanical Containment: If potting or sealing the battery in an airtight or watertight container is required, consult your Energizer Battery Manufacturing, Inc. representative for precautionary suggestions. Do not obstruct safety release vents on batteries. Encapsulation of batteries will not allow cell venting and can cause high pressure rupture.

Handling: Accidental short circuit for a few seconds will not seriously affect the battery. Prolonged short circuit will cause the battery to lose energy, generate significant heat and can cause the safety release vent to open. Sources of short circuits include jumbled batteries in bulk containers, metal jewelry, metal covered tables or metal belts used for assembly of batteries into devices. Damaging a lithium battery may result in an internal short circuit.

The contents of an open battery, including a vented battery, when exposed to water, may result in a fire and/or explosion. Crushed or damaged batteries may result in a fire.

If soldering or welding to the battery is required, consult your Energizer representative for proper precautions to prevent seal damage or short circuit.

Charging: This battery is manufactured in a charged state. It is not designed for recharging. Recharging can cause battery leakage or, in some cases, high pressure rupture. Inadvertent charging can occur if a battery is installed backwards.

Labeling: If the Energizer label or package warnings are not visible, it is important to provide a package and/or device label stating:

WARNING: Battery can explode or leak and cause burns if installed backwards, disassembled, charged, or exposed to water, fire or high temperature.

Where accidental ingestion of small batteries is possible, the label should include:



(1) KEEP OUT OF REACH OF CHILDREN. Swallowing may lead to serious injury or death in as little as 2 hours due to chemical burns and potential perforation of the esophagus. **Immediately see doctor; have doctor phone (202) 625-3333.** Keep in original package until ready to use. Dispose of used batteries immediately.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation Requirements: Not necessary under normal conditions.

Respiratory Protection: Not necessary under normal conditions.

Eye Protection: Not necessary under normal conditions.

Gloves: Not necessary under normal conditions.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.):	Solid object
Upper Explosive Limits:	Not applicable for an Article
Lower Explosive Limits	Not applicable for an Article
Odor	No odor
Vapor Pressure (mm Hg @ 25°C)	Not applicable for an Article
Odor Threshold	No odor
Vapor Density (Air = 1)	Not applicable for an Article
pH	Not applicable for an Article

Density (g/cm ³)	2.0-3.0
Melting point/Freezing Point	Not applicable for an Article
Solubility in Water (% by weight)	Not applicable for an Article
Boiling Point @ 760 mm Hg (°C)	Not applicable for an Article
Flash Point	Not applicable for an Article
Evaporation Rate (Butyl Acetate = 1)	Not applicable for an Article
Flammability	Not applicable for an Article
Partition Coefficient	Not applicable for an Article
Auto-ignition Temperature	Not applicable for an Article
Decomposition Temperature	Not applicable for an Article
Viscosity	Not applicable for an Article

SECTION 10 – STABILITY AND REACTIVITY

Lithium manganese dioxide batteries contain no sulfides or cyanides and they do not meet any other reactivity criteria including “reacts violently with water” and therefore do not meet any of the criteria established in 40 CFR 261.2 for reactivity.

SECTION 11 – TOXICOLOGICAL INFORMATION

Under normal conditions of use, lithium manganese dioxide batteries are non-toxic.

SECTION 12 – ECOLOGICAL INFORMATION

Issues such as ecotoxicity, persistence and bioaccumulation are not applicable for articles.

SECTION 13 – DISPOSAL CONSIDERATIONS

Lithium iron disulfide batteries are not hazardous waste per the United States Resource Conservation and Recovery Act (RCRA) - 40 CFR Part 261 Subpart C. Dispose of in accordance with all applicable federal, state and local regulations.

SECTION 14 – TRANSPORT INFORMATION

In general, all batteries in all forms of transportation (ground, air, or ocean) must be packaged in a safe and responsible manner. Regulatory concerns from all agencies for safe packaging require that batteries be packaged in a manner that prevents short circuits and be contained in “strong outer packaging” that prevents spillage of contents. All original packaging for Energizer lithium batteries are compliant with these regulatory concerns.




Energizer lithium coin batteries are exempt from the classification as dangerous goods as they meet the requirements of the special provisions listed below. (Essentially, they are properly packaged and labeled, contain less than 1 gram of lithium and pass the tests defined in UN model regulation section 38.3).

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	Packaging Instructions 968 - 970

Energizer is registered with CHEMTREC. In the event of an incident during transport call 1-800-424-9300 (North America) or 1-703-527-3887 (International).

A global lithium label chart is provided below to summarize the current global labeling requirements.

Label Summary Chart

Shipping Mode	Li content	Net quantity wt. of batteries per package	Battery Type			
AIR	0.3g to \leq 1g/cell 0.3g to \leq 2g/ battery	\leq 2.5 kg	L91, L92, L522	YES	YES	YES
	\leq 0.3g/cell	\leq 2.5kg	All Li Coin and 2L76	NO	YES	YES
	\leq 0.3g/cell	>2.5kg	All Li Coin and 2L76	YES	YES	YES
Land/ Sea only	All	All	All	NO	YES	YES

SECTION 15 - REGULATORY INFORMATION

Outside of the transportation requirements noted in Section 14, lithium manganese dioxide batteries marketed by Energizer Battery Manufacturing, Inc. are not regulated.

SARA/TITLE III - As an article, this battery and its contents are not subject to the requirements of the Emergency Planning and Community Right-To-Know Act.

SECTION 16 - OTHER INFORMATION

None.