

Safety Data Sheet

This safety data sheet was created pursuant to the requirements of: GB/T 16483-2008 , GB/T 17519-2013.

Issuing date : 01-Mar-2017

Revision : : 01-Mar-2017

Revision Number : KY-A-3

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product identifier	
Product name	Lead-Acid (Non-spillable)Battery
other means of identification	Synonyms : None
Details of the supplier of the safety data sheet	
Supplier Name:	Quanzhou Kaiying Power Supply & Electrical Equip Co., Ltd.
Supplier Address	Laogang Industrial Area, Anxi Town, Quanzhou City, Fujian Province, China
Supplier Email address	sales@longwaybattery.com
Supplier Phone Number	86 595 68782266
Supplier Fax Number	86 595 68782222
Supplier Emergency phone number	86 595 68782235
Recommended use of the Chemical and restrictions on use	
Recommended use	Lead-Acid (Non-spillable)Battery
Uses advised against	No information available

SECTION 2 HAZARDS IDENTIFICATION

Classification

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

This product is an article which is sealed battery and as such does not require an SDS per the OSHA hazard communication standard unless Ruptured . The hazard indicated are for a ruptured battery .

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Gases)	Category 4
Acute toxicity - Inhalation (Vapors)	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 2
Carcinogenicity	Category 1A
Reproductive toxicity	Category 1A
Specific organ toxicity (repeated exposure)	Category 2

GHS Label elements , including Precautionary statements.

Emergency Overview

Signal Word Danger



Hazard Statements

Harmful if swallowed

Harmful if inhaled

Cause severe skin burns and eye damage

Cause serious eye irritation

May cause cancer

May cause fertility or unborn child

May cause damage to organs through prolonged or repeated exposure



This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. 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.

Appearance: gray Black cuboid battery

Physical State : Solid

Odor : Odorless

Precautionary Statements - Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understand

Use personal protective equipment as required

Wash face, hands and exposed skin thoroughly after handling

Do not eat ,drink or smoke when using this product

Use only outdoor or in a well-ventilated area

Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician

Specific treatment (see supplemental first aid instructions on this label)

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses , if present and easy to do . Continue rinsing.

Immediately call a POISON CENTER or doctor/physician

Skin

IF ON SKIN(or hair): Remove /take off the immediately all contaminated clothing. Rinse skin with water/shower.

Wash contaminated clothing before reuse .

Inhalation

IF INHALED:Remove victim to fresh air and keep at rest in a position comfortable before breathing.

Call a POISON CENTER or doctor/physician if you feel unwell.

Immediately call a POISON CENTER or doctor/physician

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.



Rinse mouth

Do not induce vomiting

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

0.6% of the mixture consists of ingredient(s) of unknown toxicity

Other information

Very toxic to aquatic life with long lasting effects

Interactions with other Chemicals

Use of alcoholic beverages may enhance toxic effects.

SECTION 3: COMPOSITION/ INFORMATION ON INGREDIENTS

Chemical characterization :Mixtures .

*PBB spies or PBDE spices is not involved

Exposure Limits			Air Exposure Limits (ug/m3)		
Material	by Wt.	CAS Number	OSHA	AGGIH	NIOSH
Lead	57	7439-92-1	50	150	100
Lead Oxide	22	1309-60-0	50	150	100
Electrolyte (Sulfuric Acid)	14	7664-93-9	1	1	1
Battery Pack (ABS)	7	9003-56-9	1	1	1

SECTION 4: FIRST-ACID MEASURE

First aid measures	
General Advice	First aid is upon rupture of sealed battery.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Seek immediate medical attention/advice. Remove contact lenses, if present and easy to do. Continue rinsing



Skin Contact	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes
Inhalation	Remove to fresh air. If symptoms persist, call a physician. If breathing has stopped, give artificial respiration. Get medical attention immediately. If not breathing, give artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If breathing is difficult, (trained personnel should) give oxygen. Seek immediate medical attention/advice. Delayed pulmonary edema may occur.
Ingestion	Do NOT induce vomiting. Rinse mouth. 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.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions 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 personal protective equipment as required. Wear personal protective clothing (see section 8).
Most important symptoms and effects, both acute and delayed	
Most Important Symptoms and Effects	Burning sensation. Lead poisoning is characterized by a metallic taste in the mouth, loss of appetite, indigestion, nausea, vomiting, constipation, sleep disturbances and overall weakness. Severe exposures can lead to shock, circulatory collapse and death.
Indication of any immediate medical attention and special treatment needed	
Notes to Physician	Treat symptomatically. Product is a corrosive material. 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

SECTION 5 : FIRE-FIGHTING MEASURE

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	
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.	
Uniform Fire Code	Corrosive: Acid-Liquid Toxic: Liquid
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.	



SECTION 6 :LEADAGE EMERGENCY TREATMENT

Personal precautions, protective equipment and emergency procedures	
Personal Precautions	Attention! Corrosive material. 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. Avoid generation of dust.
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. 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
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.

SECTION 7 :HANDING AND STORAGE

Precautions for safe handling	
Handling	In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.
Conditions for safe storage, including any incompatibilities	
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials
Incompatible Products	Acids. Bases. Oxidizing agent

Section 8 : EXPOSURE CONTROLE/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Lead 7439-92-1	TWA: 0.05 mg/m ³	TWA: 50 µg/m ³ TWA: 50 µg/m ³ Pb Action Level: 30 µg/m ³ Poison, See 29 CFR 1910.1025 Action Level: 30 µg/m ³ Pb Poison, See 29 CFR 1910.102	IDLH: 100 mg/m ³ TWA: 0.050 mg/m ³
Lead dioxide 1309-60-0	TWA: 0.05 mg/m ³ Pb	TWA: 50 µg/m ³ Pb Action Level: 30 µg/m ³ Pb Poison, See 29 CFR 1910.1025	IDLH: 100 mg/m ³ Pb TWA: 0.050 mg/m ³ Pb
Sulfuric acid 7664-93-9	TWA: 0.2 mg/m ³ thoracic fraction	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³	IDLH: 15 mg/m ³ TWA: 1 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	None required for consumer use. If splashes are likely to occur: Face protection shield.
Skin and Body Protection	Wear protective gloves and protective clothing. Long sleeved clothing. Chemical resistant apron. Impervious gloves.
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. Take off contaminated clothing and wash before reuse. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. For environmental protection, remove and wash all contaminated protective equipment before re-use.

SECTION 9: PHYSICAL/CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State	Solid		
Appearance	Cuboid battery	Odor	Odorless
Color	Gray black	Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks Method</u>
pH	No data available	None known
Melting / freezing point	327.4 °C	Lead
Boiling point / boiling range	110 °C	electrolyte
Flash Point	1740 °C	Lead
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air	No data available	None known
Upper flammability limit	No data available	None known
Lower flammability limit	No data available	None known
Vapor pressure	<0.3mmHg @25 °C	electrolyte
Vapor density	3.4	electrolyte
Specific Gravity	1.215 - 1.350	electrolyte
Water Solubility	100%	electrolyte
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	
Explosive properties	No data available	
Oxidizing Properties	No data available	

Other Information Softening	
Softening Point	
Point VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	No data available

SECTION 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	Exposure to air or moisture over prolonged periods. Avoid shorting circuit or sparks near battery. Avoid prolonged over-charging. Use only approved charging methods. Do not charge in gas tight containers , sparks, open flames, and keep battery away from strong oxidizers.
Incompatible Materials	Acids. Bases. Oxidizing agent.
Hazardous Decomposition Products	Carbon oxides.

SECTION 11: TOXICOLOGICAL

Information on likely routes of exposure

Product Information	Product does not present an acute toxicity hazard based on known or supplier information. In case of rupture.
Inhalation	Specific test data for the substance or mixture is not available. Corrosive by inhalation (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure and increased heart rate. Inhaled corrosive 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. Causes burns (based on components). Corrosive to the eyes and may cause severe damage including blindness. Expected to be an irritant based on components.



Skin Contact	Specific test data for the substance or mixture is not available. Corrosive (based on components). Causes burns
Ingestion	Specific test data for the substance or mixture is not available. Causes burns (based on components). Ingestion causes 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
Sulfuric acid 7664-93-9	= 2140 mg/kg (Rat)	-	= 510 mg/m3 (Rat) 2 h

Information on toxicological effects

Symptoms	Erythema (skin redness). Burning. May cause blindness. Coughing and/or wheezing. May cause redness and tearing of the eyes.
-----------------	---

Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

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

Chemical Name	ACGIH	IARC	NTP	OSHA
Lead 7439-92-1	A3	Group 2A	Reasonably Anticipated	X
Lead dioxide 1309-60-0	A3	Group 2A	Reasonably Anticipated	X
Sulfuric acid 7664-93-9	A3	Group 1	Known	X

ACGIH (American Conference of Governmental Industrial Hygienists)

A2 - Suspected Human Carcinogen A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

NTP (National Toxicology Program)

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X – Present

Reproductive Toxicity	Product is or contains a chemical which is a known or suspected reproductive hazard. Contains a known or suspected reproductive toxin.
Developmental Toxicity	Contains ingredients that have suspected developmental hazards.
STOT - single exposure	No information available



STOT - repeated exposure	Causes 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	Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Contains a known or suspected carcinogen. Contains a known or suspected reproductive toxin. Possible risk of irreversible effects. Avoid repeated exposure. Prolonged exposure may cause chronic effects. May cause adverse effects on the bone marrow and blood-forming system. Lead compounds may be absorbed by ingestion, by inhalation and through the skin. Lead may damage kidney function, the blood forming system and the reproductive system.
Target Organ Effects	Respiratory system. Eyes. Skin. Gastrointestinal tract (GI). Reproductive System. Blood. Central Nervous System (CNS). Gingival Tissue. Kidney. Teeth. Cardiovascular system. Hematopoietic system. Immune system. May damage the unborn child.
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

ATEmix (oral)

500.00 mg/kg

ATEmix (inhalation-gas)

5,625.00 ppm (4 hr)

ATEmix (inhalation-dust/mist)

1.10 mg/l

ATEmix (inhalation-vapor)

14.00 ATEmix

SECTION 12: ECOLOGICAL

This product contains a chemical which is listed as a severe marine pollutant according to DOT

Ecotoxicity

Very toxic to aquatic life with long lasting effects

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Lead 7439-92-1		96h LC50: = 0.44 mg/L(Cyprinus carpio) 96h LC50:= 1.17 mg/L(Oncorhynchus mykiss) 96h LC50: = 1.32mg/L (Oncorhynchus mykiss)		48h EC50: = 600 µ g/L
Sulfuric acid 7664-93-9		96h LC50: > 500 mg/L(Brachydanio rerio)		24h EC50: = 29 mg/L

Persistence and Degradability

No information available.

Bioaccumulation

No information available.

Other adverse effects

No information available.



SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal Methods	This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).
Contaminated Packaging	Dispose of contents/containers in accordance with local regulations.
US EPA Waste Number	D002 D004 D008

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Lead 7439-92-1	(hazardous constituent – no waste number)	Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K064, K065, K066, K069, K086, K100, K176	= 5.0 mg/L regulatory level	

California Hazardous Waste Codes 792

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

Chemical Name	California Hazardous Waste
Lead 7439-92-1	Toxic
Lead dioxide 1309-60-0	Toxic
Sulfuric acid 7664-93-9	Toxic Corrosive

SECTION 14: TRANSPORTATION INFORMATION

Transportation Information

Proper shipping name:

“Batteries, Wet, Non-spillable, Electric storage, Not regulated”

U.S. DOT:

DOT-Our Non-spillable batteries are Not subject to DG regulations , since they meet the requirements of 49 CFR 173.159(d).

They do not have an assigned UN number nor do they require additional DOT hazard labeling.

IATA / ICAO:

IATA/ICAO- LONGWAY batteries are exempt from DG regulations, and classified as a “Non-Spillable battery”. Our Non-spillable batteries are Not subject to DG regulations , since they meet the requirements of Packing Instructions 872 of Special Provision A67.

The LONGWAY batteries are securely packaged, protected from short circuits and la eled “Non-Spillable”. They are good for transportation on either passenger aircraft or cargo aircraft.

For all modes of transportation, each battery and outer package must be labeled:

“Non-Spillable” or “Non-Spillable Battery”. This label must be visible during transportation.





IMDG:

LONGWAY batteries are Non-spillable batteries. They meet the requirements of Special Provision 238 and are not subject to the provisions of the IMDG code.

We hereby certify that all LONGWAY Battery Maintenance Free Rechargeable Sealed Lead Acid batteries conform to the UN2800 classification as "Batteries, wet, Non-Spillable, and electric storage" as a result of passing the Vibration and Pressure Differential Test described in DOT [49 CFR 173.159(d)] and IATA/ICAO [Special Provision A67] and IMDG CODE 2014 Edition Chapter 3.3 item 238. LONGWAY batteries having met the related conditions are EXEMPT from hazardous goods regulations for the purpose of transportation by DOT, IATA/ICAO and IMDG, and therefore are unrestricted for transportation by any means.

SECTION 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 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-%	SARA 313 - Threshold Values %
Lead 7439-92-1	7439-92-1	57	0.1
Lead dioxide 1309-60-0	1309-60-0	22	0.1
Sulfuric acid 7664-93-9	7664-93-9	14	1.0
Battery Pack (ABS)	9003-56-9	7	

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

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR122.21 and 40 CFR 122.42)





Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Lead 7439-92-1		x	x	
Lead dioxide 1309-60-0		x		
Sulfuric acid 7664-93-9	1000 lb			x

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Lead 7439-92-1	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ
Sulfuric acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Lead 7439-92-1	Carcinogen Developmental Female Reproductive
Lead dioxide 1309-60-0	Carcinogen Developmental Female Reproductive Male Reproductive
Sulfuric acid 7664-93-9	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Lead 7439-92-1	X	X	X	X	X
Lead dioxide 1309-60-0	X	X	X	X	X
Sulfuric acid 7664-93-9	X	X	X	X	X
Tin 7440-31-5	X	X	X		
Calcium 7440-70-2	X	X	X		



16. OTHER INFORMATION

NFPA	Health Hazards 3	Flammability 0	Instability 0	Physical and Chemical Hazards -
HMIS	Health Hazards 0	Flammability 0	Physical Hazard 0	Personal Protection X
PSN: LEAD ACID BATTERIES, NON-SPILLABLE Electric storage. UN NO.: 2800. CLASS 8.				

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 a guide 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



ARTICLE INFORMATION SHEET

This Article Information Sheet (AIS) provides relevant battery information to retailers, consumers, OEMs and other users requesting a GHS-compliant SDS. Articles, such as batteries, are exempt from GHS SDS classification criteria. The GHS criteria is not designed or intended to be used to classify the physical, health and environmental hazards of an article. Branded consumer batteries are defined as electro-technical devices. The design, safety, manufacture, and qualification of Energizer branded consumer batteries follow ANSI and IEC battery standards.

SECTION 1 - DOCUMENT INFORMATION

Product Name: Energizer Battery

Document Number: 1218-Lith

Chemical System: Lithium Iron Disulfide

Date Prepared: December 2018

Designed for Recharge: No

Valid Until: December 2021

Prepared by: Energizer

SECTION 2 – COMPANY INFORMATION

Energizer Brands, LLC
533 Maryville University Drive
St. Louis, MO 63141

Email for Information:
energizer@custhelp.com
www.energizer.com

SECTION 3 – ARTICLE INFORMATION

Description	Lithium Iron Disulfide Battery
Use	Portable power source
Brand	ENERGIZER
IEC Designations	FR6 and FR03
Sizes	AAA and AA
Image	

Article Information Sheet



SECTION 4 – ARTICLE CONSTRUCTION

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	0-4
1,2 Dimethoxyethane (CAS# 110-71-4)	None established	None established	2-4
1,3 Dioxolane (CAS# 646-06-0)	None established	20 ppm TWA	5-9
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)	0-4.5
Iron Disulfide (CAS# 1309-36-0)	None established	None established	28-44
Lithium or Lithium Alloy (CAS# 7439-93-2)	None established	None established	6.3-6.6 / AA 5.4-5.5 / AAA
Lithium Iodide (CAS# 10377-51-2)	None established	None established	0.3-3
Non-Hazardous Components Steel (iron CAS# 65997-19-5)	None established	None established	18-25

* PNOR: Particulates not otherwise regulated

**PNOC: Particulates not otherwise classified

All Energizer Lithium Iron Disulfide have zero added mercury.

Applicable Battery Industry Standards

North America Standards	ANSI C18.3M Part 1	ANSI C18.3 M Part 2	ANSI C18.4
International Standards	IEC 60086-1	IEC 60086-2	IEC 60086-4

SECTION 5 – HEALTH AND SAFETY

Ingestion: Do not induce vomiting or give food or drink. Seek medical attention immediately. CALL NATIONAL BATTERY INGESTION HOTLINE for advice and follow-up (202-625-3333) collect day or night.

The following instructions apply to exposure of internal components.

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 6 – FIRE HAZARD & FIREFIGHTING

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

Article Information Sheet



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-iron disulfide batteries produce toxic and corrosive lithium hydroxide fumes and sulfur dioxide gas.

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 Brands, LLC 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: The label acts as an electrical insulation for the battery can. Damage to the label can increase the potential for short circuit.

WARNING: Do not install backwards, charge, put in fire, or mix with other battery types. May explode or leak causing injury. **Replace all batteries at the same time.**

SECTION 8 – 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 9 – 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-iron disulfide 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	422, A54
IATA 60 th Edition, ICAO	Packaging Instructions 968 – 970

Energizer is registered with CHEMTEL. In the event of an incident during transport call 1-800-526-4727 (North America) or 1-314-985-1511 (International).

Article Information Sheet

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 ≤1g/cell 0.3g to ≤2g/ battery	≤2.5 kg	L91, L92, L522	YES	YES	YES
	≤0.3g/cell	≤2.5kg	All Li Coin and 2L76	NO	YES	YES
	≤0.3g/cell	>2.5kg	All Li Coin and 2L76	YES	YES	YES
Land/ Sea only	All	All	All	NO	YES	YES

SECTION 10 – REGULATORY INFORMATION

10A Battery

- 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.
- USA EPA Mercury Containing & Rechargeable Battery Management Act of 1996:** No mercury added
- EU Battery Directive 2006/66/EC Amended 2013/56/EU:** Energizer batteries are compliant with all aspects of the Directive

10B General

- CPSIA 2008:** Exempt
- US CPSC FHSA (16 CFR 1500):** Not applicable since batteries are defined as articles
- USA EPA TSCA (40 CFR 707.20):** Not applicable since batteries are defined as articles
- USA EPA RCRA (40 CFR 261):** Classified as non-hazardous waste per ignitable, corrosive, reactive or toxicity testing
- California Prop 65:** No warning required
- DTSC Perchlorate labeling:** No warning required
- EU REACH SVHC:** 1,2 dimethoxyethane (DME) is present above 0.01% w/w

10C Article Definitions

- OSHA Hazard Communication Standard, Section 1910.1200(c)**

SECTION 11 – GHS OTHER INFORMATION

None

Acronym Glossary

[ANSI](#): American National Standards Institute

Article Information Sheet



Page 5 of 5
Lithium Iron Disulfide Batteries

[CPSC](#): Consumer Product Safety Commission
[CPSIA](#): Consumer Product Safety Improvement Act
[DTSC](#): Department of Toxic Substances Control
[EPA](#): Environmental Protection Agency
[FHSA](#): Federal Hazardous Substances Act
[GHS](#): Globally Harmonized System for Hazard Communication
[IEC](#): International Electrotechnical Commission
[OSHA](#): Occupational Safety and Health Administration
[RCRA](#): Resource Conservation and Recovery Act
[SDS](#): Safety Data Sheet
[SVHC](#): Substances of Very high Concern
[TSCA](#): Toxic Substances Control Act

Energizer has prepared copyrighted Article Information Sheets 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 BRANDS, LLC MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM REFERENCE ON IT.

ARTICLE INFORMATION SHEET

This Article Information Sheet (AIS) provides relevant battery information to retailers, consumers, OEMs and other users requesting a GHS-compliant SDS. Articles, such as batteries, are exempt from GHS SDS classification criteria. The GHS criteria is not designed or intended to be used to classify the physical, health and environmental hazards of an article. Branded consumer batteries are defined as electro-technical devices. The design, safety, manufacture, and qualification of Energizer branded consumer batteries follow ANSI and IEC battery standards.

SECTION 1 - DOCUMENT INFORMATION

Product Name: Energizer Battery

Document Number: 1218-LMNO2

Chemical System: Lithium Manganese Dioxide

Date Prepared: December 2018

Designed for Recharge: No

Valid Until: December 2021


Prepared by: Energizer

SECTION 2 – COMPANY INFORMATION

Energizer Brands, LLC
533 Maryville University Drive
St. Louis, MO 63141

Email for Information:
energizer@custhelp.com
www.energizer.com

SECTION 3 – ARTICLE INFORMATION

Description	Lithium Manganese Dioxide Battery
Use	Portable power source
Brand	ENERGIZER
IEC Designation	Including but not limited to: CR17345, CR15H270, CR-P2, 2CR5, CR11108, 6LP3146
Sizes	Including but not limited to: 123, 1CR2, 223, 2CR5, 2L76, CRV3, L522
Image	

Article Information Sheet



SECTION 4 – ARTICLE CONSTRUCTION

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
Steel (iron CAS# 65997-19-5)	None established	None established	20

* PNOR: Particulates not otherwise regulated

**PNOC: Particulates not otherwise classified

All Energizer Lithium Manganese Dioxide have zero added mercury.

Applicable Battery Industry Standards

North America Standards	ANSI C18.3M Part 1	ANSI C18.3 M Part 2	ANSI C18.4
International Standards	IEC 60086-1	IEC 60086-2	IEC 60086-4

Article Information Sheet



SECTION 5 – HEALTH AND SAFETY

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 (800) 498-8666.** Do not induce vomiting or give food or drink.

The following instructions apply to exposure of internal components.

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.

SECTION 6 – FIRE HAZARD & FIREFIGHTING

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 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 Brands, LLC 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.

Article Information Sheet

SECTION 8 – DISPOSAL CONSIDERATIONS

LiMnO₂ 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 9 – 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	422, A54
IATA 60 th edition, ICAO	Packaging Instructions 968 - 970

Energizer is registered with CHEMTEL. In the event of an incident during transport call 1-800-526-4727 (North America) or 1-314-985-1511 (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 ≤1g/cell 0.3g to ≤2g/ battery	≤2.5 kg	L91, L92, L522	YES	YES	YES
	≤0.3g/cell	≤2.5kg	All Li Coin and 2L76	NO	YES	YES
	≤0.3g/cell	>2.5kg	All Li Coin and 2L76	YES	YES	YES
Land/ Sea only	All	All	All	NO	YES	YES

SECTION 10 – REGULATORY INFORMATION

10A Battery

- 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.
- USA EPA Mercury Containing & Rechargeable Battery Management Act of 1996:** No mercury added
- EU Battery Directive 2006/66/EC Amended 2013/56/EU:** Energizer batteries are compliant with all aspects of the Directive

10B General

- CPSIA 2008:** Exempt

Article Information Sheet

2. **US CPSC FHSA (16 CFR 1500):** Not applicable since batteries are defined as articles
3. **USA EPA TSCA (40 CFR 707.20):** Not applicable since batteries are defined as articles
4. **USA EPA RCRA (40 CFR 261):** Classified as non-hazardous waste per ignitable, corrosive, reactive or toxicity testing
5. **California Prop 65:** No warning required
6. **DTSC Perchlorate labeling:** warning required
7. **EU REACH SVHC:** 1,2 dimethoxyethane (DME) is present above 0.01% w/w

10C Article Definitions

1. **OSHA Hazard Communication Standard, Section 1910.1200(c)**

SECTION 11 – GHS OTHER INFORMATION

None

Acronym Glossary

[ANSI](#): American National Standards Institute
[CPSC](#): Consumer Product Safety Commission
[CPSIA](#): Consumer Product Safety Improvement Act
[DTSC](#): Department of Toxic Substances Control
[EPA](#): Environmental Protection Agency
[FHSA](#): Federal Hazardous Substances Act
[GHS](#): Globally Harmonized System for Hazard Communication
[IEC](#): International Electrotechnical Commission
[OSHA](#): Occupational Safety and Health Administration
[RCRA](#): Resource Conservation and Recovery Act
[SDS](#): Safety Data Sheet
[SVHC](#): Substances of Very high Concern
[TSCA](#): Toxic Substances Control Act

Energizer has prepared copyrighted Article Information Sheets 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 BRANDS, LLC MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM REFERENCE ON IT.