

SAFETY DATA SHEET (SDS)

SDS – 038

Revision number: 04

Rev. 11/18

Primary (non-rechargeable) Lithium Battery

Part Numbers: NA

For use with the GLUCOCARD® Shine Blood Glucose Meter, GLUCOCARD® Shine XL Blood Glucose Meter, GLUCOCARD® Shine Connex Blood Glucose Meter, GLUCOCARD® Vital Blood Glucose Meter, GLUCOCARD® 01 Blood Glucose Meter, Assure® Prism multi Blood Glucose Meter, ReliOn™ Confirm Blood Glucose Meter, ReliOn™ Micro Blood Glucose Meter, ReliOn™ Prime Blood Glucose Meter, ReliOn™ Premier BLU Blood Glucose Meter and ReliOn™ Premier Compact Blood Glucose Meter.

ARKRAY USA, Inc.

5182 West 76th Street

Minneapolis, Minnesota 55439

Technical Customer Service Phone:

1-800-566-8558

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1. Identification of the substance/preparation and the company/undertaking

GHS product identifier

Product name: Primary (non-rechargeable) Lithium Battery

Other mean of identification

Product code(s): Not applicable.

UN-Number: 3090

Synonyms: None

Recommended use of the chemical and restrictions on use

Recommended use: Not applicable.

Uses advised against: See section 7.

Supplier address/information

ARKRAY USA, Inc.
5182 West 76th Street
Minneapolis, Minnesota 55439
800-566-8558

Emergency telephone number: 800-566-8558

2. Hazards Identification

Classification

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

IMPORTANT NOTE: The battery should not be opened or exposed to heat because exposure of the following ingredients contained within could be harmful under some circumstances.

GHS label elements, including precautionary statements

No information available.

Emergency overview

Signal Word No Signal Word

Appearance: Coin Type Cells

Physical state: Manganese Dioxide Lithium Primary

Odor: None

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Precautionary statements

General advice:

- Lithium can cause thermal and chemical burns upon contact with the skin.

Eyes:

- Contact of electrolyte and extruded lithium with skin and eyes should be avoided. DME is believed to be slightly to moderately. LiClO₄ is irritating to skin, eyes and mucous membranes.

Inhalation:

- The most likely risk is acute exposure when a cell vents.

Storage:

- Store unused batteries in their original packaging and keep them away from metal objects which may short-circuit them. Storing unpackaged cells together could result in cell shorting and heat build-up.
- When discarding batteries with solder tags, insulate the tags by wrapping them with tape, foil, etc.
- Store and display batteries in their original packaging in well ventilated, dry and cool conditions.
- Avoid storing or display batteries in direct sun, or in places where they get exposed to rain.
- Do not stack battery cartons on top of each other exceeding a specified height. The height is clearly dependent on the strength of the packaging. As for general rule, this height should not exceed 1.5 m for cardboard packages or 3 m for wooden cases. The above recommendations are equally valid for storage conditions during prolonged transit. Thus, batteries should be stored away from ship engines and not left for long periods in unventilated metal box cars (containers) during summer.

Disposal:

- See section 13.

Hazard not otherwise classified (HNOC)

Not applicable.

Other information

Not applicable.

3. Composition/Information on ingredients

Chemical name	CAS-No	Weight %	Trade Secret
Manganese Dioxide (MnO ₂)	1313-13-9		X
Lithium	7439-93-2		X
Propylene Carbonate (PC)	108-32-7		X
1, 2 dimethoxy ethane (DME) body	110-71-4		X
Lithium Perchlorate (LiClO ₄)	7791-03-9		X

IMPORTANT NOTE: The battery should not be opened or exposed to heat because exposure of the following ingredients contained within could be harmful under some circumstances.

4. First aid measures

Description of necessary first-aid measures

Eye contact:

- Flush immediately with copious amounts of water for 15 minutes and get immediate medical attention.

Skin contact:

- Flush immediately with copious amounts of water for 15 minutes.

Inhalation:

- Do not inhale leaked material.

Ingestion:

- No information available.

Most important symptoms/effects, acute and delayed

Most important symptoms/effects: *No information available.*

Indication of immediate medical attention and special treatment needed, if necessary

Notes to Physician: *None*

5. Fire-fighting measures

Suitable extinguishing media: See Special Fire Fighting Procedure

Unsuitable extinguishing media: No information available

Specific hazards arising from the chemical

See section 3 for hazardous materials.

Explosion data:

- *No information available.*

Protective equipment and precautions for firefighters

In case of fire in an adjacent area, use water, CO₂ or dry chemical extinguishers if cells are packed in their original containers since the fuel of the fire is basically paper products. For bulk quantities of unpackaged cells use LITH-X (Graphite base). In this case, do not use water. As with any fire, wear self-contained breathing apparatus to avoid inhalation of hazardous decomposition products.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

The preferred response is to leave the area and allow the batteries to cool and the vapors to dissipate.

Environmental precautions

1. Do not insert batteries in reverse. Observe the polarity markings on battery and equipment.
2. Do not short-circuit batteries.
3. Do not charge batteries.

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4. Do not force discharge batteries.
5. Do not mix batteries.
6. Exhausted batteries should be immediately removed from equipment and disposed of.
7. Do not overheat batteries by exposure to high temperatures and direct sunlight.
8. Do not weld or solder directly to batteries.
9. Do not dismantle batteries.
10. Do not deform batteries.
11. Do not dispose of batteries in fire.
12. A lithium battery with a damaged container should not be exposed to water.
13. Do not allow children to replace batteries without adult supervision.
14. Keep batteries out of the reach of children. In case of ingestion of a cell or battery, the person involved should seek medical assistance promptly.
15. Equipment intended for use by children should have battery compartments which are tamper-proof.
16. Do not encapsulate and/or modify batteries.
17. Store unused batteries in their original packaging and keep them away from metal objects which may short-circuit them. Storing unpackaged cells together could result in cell shorting and heat build-up.
18. When discarding batteries with solder tags, insulate the tags by wrapping them with tape, foil, etc.
19. Store and display batteries in their original packaging in well ventilated, dry and cool conditions.
20. Avoid storing or display batteries in direct sun, or in places where they get exposed to rain.
21. Do not stack battery cartons on top of each other exceeding a specified height. The height is clearly dependent on the strength of the packaging. As for general rule, this height should not exceed 1.5 m for cardboard packages or 3 m for wooden cases. The above recommendations are equally valid for storage conditions during prolonged transit. Thus, batteries should be stored away from ship engines and not left for long periods in unventilated metal box cars (containers) during summer.

Methods and materials for containment and cleaning up

- Methods for containment: The preferred response is to leave the area and allow the batteries to cool and the vapors to dissipate.
- Methods for cleaning up: Collect all released material in a plastic lined metal container and remove spilled liquid with absorbent. Doing this, protect your skin and eyes with gloves and protective glasses.

7. Handling and storage

Precautions for safe handling

Handling:

- Battery cartons should be handled with care. Rough handling may result in batteries being short circuited or damaged. This may cause leakage, explosion, or fire.

Conditions for safe storage, including any incompatibilities

Storage:

1. Store unused batteries in their original packaging and keep them away from metal objects which may short-circuit them. Storing unpackaged cells together could result in cell shorting and heat build-up.
2. When discarding batteries with solder tags, insulate the tags by wrapping them with tape, foil, etc.
3. Store and display batteries in their original packaging in well ventilated, dry and cool conditions.
4. Avoid storing or display batteries in direct sun, or in places where they get exposed to rain.
5. Do not stack battery cartons on top of each other exceeding a specified height. The height is clearly dependent on the strength of the packaging. As for general rule, this height should not exceed 1.5 m for cardboard packages or 3 m for wooden cases. The above recommendations are equally valid for storage conditions during prolonged transit. Thus, batteries should be stored away from ship engines and not left for long periods in unventilated metal box cars (containers) during summer.

Incompatible products:

No information available.

8. Exposure controls/personal protection

Control parameters

Exposure guidelines *No data available.*

Appropriate engineering controls

Engineering measures: *None*

Individual protection measures, such as personal protective equipment

Eye/face protection: Not necessary under conditions of normal use. If contents of battery come in contact with eyes, flush immediately with copious amounts of water for 15 minutes and get immediate medical attention.

Skin and body protection: Not necessary under conditions of normal use. If comes in contact with contents of battery, flush immediately with copious amounts of water for 15 minutes.

Respiratory protection: Not necessary under conditions of normal use.

Hygiene measures: Not necessary under conditions of normal use.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state: Manganese Dioxide Lithium Primary

Odor: *None*

Appearance: Coin Type Cells

Odor threshold: *None*

Property	Values	Remarks/Method
pH		<i>No data available.</i>
Melting point/range		<i>No data available.</i>
Boiling point/boiling range		<i>No data available.</i>
Flash point		<i>No data available.</i>
Evaporation rate		<i>No data available.</i>
Flammability (solid, gas)		<i>No data available.</i>
Flammability limits in air		<i>No data available.</i>
-upper flammability limit		<i>No data available.</i>
-lower flammability limit		<i>No data available.</i>
Vapor pressure		<i>No data available.</i>
Vapor density		<i>No data available.</i>
Specific gravity		<i>No data available.</i>
Water solubility		<i>No data available.</i>
Solubility in other solvents		<i>No data available.</i>
Partition coefficient: n-octanol/water		<i>No data available.</i>

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Autoignition temperature	<i>No data available.</i>
Decomposition temperature	<i>No data available.</i>
Viscosity	<i>No data available.</i>
Flammable properties	<i>No data available.</i>
Explosive properties	<i>No data available.</i>
Oxidizing properties	<i>No data available.</i>

Other information

VOC content (%): *No data available.*

10. Stability and reactivity

Reactivity

No data available.

Chemical stability

Lithium batteries are contained in a stable steel container and are hermetically sealed to avoid any chemical release under conditions of normal use.

Possibility of hazardous reactions

See section 7.

Conditions to avoid

See section 7.

Incompatible materials

None

Hazardous decomposition products

No data available.

11. Toxicological information

Information on likely routes of exposure

Product information:

- Inhalation: *No data available.*
- Eye contact: For eye contact, flush with copious amounts of water for 15 minutes and get immediate medical attention.
- Skin contact: In case of skin contact with contents of battery, flush immediately with copious amounts of water for 15 minutes.
- Ingestion: Ingestion of a battery can be harmful. For the US, call The National Capital Poison Control Center (1- 800-222-1222) day or night – for advice and follow-up. For other countries please contact the local Tox Centers.

Symptoms related to the physical, chemical and toxicological characteristics

- No data available.

Delayed and immediate effects and also chronic effects from short and long term exposure

- Sensitization: *No data available.*
- Mutagenic effects: *No data available.*
- Carcinogenicity: *No data available.*
- Reproductive toxicity: *No data available.*
- STOT – single exposure: *No data available.*
- STOT – repeated exposure: *No data available.*
- Aspiration hazard: *No data available.*

Numerical measures of toxicity – product

- No data available.

12. Ecological information

Ecotoxicity

Under normal condition of use, the battery is hermetically sealed and does not release chemicals listed in Section 3. It does not pose a physical or health risk to users.

Persistence and Degradability

No data available.

Bioaccumulation

No data available.

Other adverse effects

Under normal condition of use, the battery is hermetically sealed and does not release chemicals listed in section 3. It does not pose a physical or health risk to users.

13. Disposal considerations

Waste disposal methods

1. Dispose in accordance with appropriate national and International regulations.
2. *European Community:* according to Directive 2002/96/EC on Waste Electrical and Electric Equipment (WEEE), Annex II, batteries have to be treated according to the Battery Directive 1991/157/EEC.
3. *US:* Lithium batteries are neither specifically listed nor exempted from the Federal Environmental Protection Agency (US EPA) hazardous waste regulations. The only material of possible concern due to its reactivity is lithium metal. However, button cells contain so little lithium that they can be disposed of in the normal municipal waste stream.
4. Open cells should be treated as hazardous waste.
5. DO NOT INCINERATE or subject battery cells to temperatures in excess of 212 °F (100 °C). Such treatment can cause cell rupture.

Contaminated packaging

No data available.

14. Transport information

Notes:

Lithium cells and batteries are subject to ICAC-TI/ATA-DGR (Air) / IMDG Code (Sea) / ADR (Road Europe) / RID (Rail Europe) UN 3090, Lithium batteries, 9, II.

Basically, they must meet Special Provision 230 of the UN Model Regulations.

However, if they meet the following requirements of Special Provision 188 of the UN Model Regulations, Special Provision A45 of the ICAO-TI/IATA-DGR (Air), Special Provision 310 of the IMDG Code, Special Provision 188 of the ADR and RID (Road and Rail Europe), they are not subject to other provisions of the above mentioned regulations:

- a. For a lithium metal or lithium alloy cell, the lithium content is not more than 1 g, and for a lithium-ion cell, the equivalent lithium content is not more than 1.5 g;
- b. For a lithium metal or lithium alloy battery the aggregate lithium content is not more than 2 g, and for a lithium-ion battery, the aggregate equivalent lithium content is not more than 8g;
- c. Each cell or battery is of the type proved to meet the requirements of each test in the Manual of Tests and Criteria, Part III, sub-section 38.3;
- d. Cells and batteries are separated so as to prevent short circuits and are packed in strong packaging; except when installed in equipment, each package containing more than 24 lithium cells or 12 lithium batteries shall in addition meet the following requirements:
 - i. Each package shall be marked indicating that it contains lithium batteries and that special procedures should be followed in the event that the package is damaged (Specimen see Annex II).;
 - ii. Each shipment shall be accompanied with a document indicating in the event a package is damaged (Specimen see Annex IV);
 - iii. Each package is capable of withstanding a 1.2 m drop test in any orientation without damage to cells or batteries contained therein, without shifting of the contents so as to allow battery (or cell to cell) contact and without release of contents; and
 - iv. Except in the case of lithium batteries packed with equipment, package may not exceed 30 kg gross mass.

As used above and elsewhere in these Regulations, "lithium content" means the mass of lithium in the anode of a lithium metal or lithium alloy cell, except in the case of a lithium-ion cell the "equivalent lithium content" in grams is calculated to be 0.3 times the rated capacity in ampere-hours.

RENATA's lithium cells and batteries do meet the above-mentioned provisions. These can be described as "Not restricted, as per Special Provision..." in the transport documents.

XIV.II Provisions for shipments by air into, out of, or within the U.S. (pursuant to 49 CFR)

In addition to the provisions mentioned under XIV.I for shipments into, out of, or within the US the following provisions of the 48 CFR apply:

Pursuant to Special Provision A 100 of the 49 CFR primary (non-rechargeable) lithium cells and batteries are forbidden for transport on passenger carrying aircraft. To avoid these cells and batteries being loaded on board of passenger carrying aircrafts, packages must be marked pursuant to 173.185 (b)(5) (Specimen see Annex III), even if the packaging are shipped via highway, rail, or vessel. RENATA's primary lithium cells and batteries do meet the provisions of 173.185 (b).

Battery cartons should be handled with care. Rough handling may result in batteries being short circuited or damaged. This may cause leakage, explosion, or fire. (refer also to Section 7)

DOT

- | | |
|----------------------------|------------------------|
| • UN-Number | <i>Not Applicable.</i> |
| • Proper shipping name | <i>Not Applicable.</i> |
| • Hazard class | <i>Not Applicable.</i> |
| • Reportable quantity (RQ) | <i>Not Applicable.</i> |
| • Description | <i>Not Applicable.</i> |

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- Emergency response guide *Not Applicable.*
- Number *Not Applicable.*

TDG

- UN-Number *Not Applicable.*
- Proper shipping name *Not Applicable.*
- Hazard class *Not Applicable.*
- Description *Not Applicable.*

MEX

- UN-Number *Not Applicable.*
- Proper shipping name *Not Applicable.*
- Hazard class *Not Applicable.*
- Description *Not Applicable.*

ICAO

- UN-Number *3090*
- Proper shipping name *Lithium batteries*
- Hazard class *Not Applicable.*
- Description *Not Applicable.*

IATA

- UN-Number *3090*
- Proper shipping name *Lithium batteries*
- Hazard class *Not Applicable.*
- ERG code *Not Applicable.*
- Description *Not Applicable.*

IMDG/IMO

- UN-Number *3090*
- Proper shipping name *Lithium batteries*
- Hazard class *Not Applicable.*
- Subsidiary class *Not Applicable.*
- EmS number *Not Applicable.*
- Description *Not Applicable.*

RID

- UN-Number *3090*
- Proper shipping name *Lithium batteries*
- Hazard class *Not Applicable.*
- Classification code *Not Applicable.*
- Description *Not Applicable.*

ADR

- UN-Number *3090*
- Proper shipping name *Lithium batteries*
- Hazard class *Not Applicable.*
- Classification code *Not Applicable.*
- Tunnel restriction code *Not Applicable.*
- Description *Not Applicable.*
- ADR/RID – Labels *Not Applicable.*

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ADN

- | | |
|------------------------|------------------------|
| • Proper shipping name | <i>Not Applicable.</i> |
| • Hazard class | <i>Not Applicable.</i> |
| • Classification code | <i>Not Applicable.</i> |
| • Special provisions | <i>Not Applicable.</i> |
| • Description | <i>Not Applicable.</i> |
| • Limited quantity | <i>Not Applicable.</i> |
| • Ventilation | <i>Not Applicable.</i> |

15. Regulatory information

Interventional inventories

No data available.

U.S. Federal regulations

Not Applicable.

SARA 311/312 Hazard categories

- Acute health hazard
- Chronic health hazard
- Fire hazard
- Sudden release of pressure hazard
- Reactive hazard

Clean Water Act

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

CERCLA

No data available.

U.S. state regulations

California Proposition 65: This product does not contain any Proposition 65 chemicals.

U.S. state Right-to-Know regulations

No data available.

U.S. EPA label information

EPA Pesticide registration number: *No data available.*

16. Other information

Not Applicable.

Prepared by:	Katie Ahlstrom
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Revision note:	04

General Disclaimer

The information provided on this SDS 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 as 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 material or in any process, unless specified in the text.

End of Safety Data Sheet