

Safety Data Sheet

This product under normal conditions of use does not pose a physical or health risk and is considered an article. Thus, it is exempt from the requirements of the Hazardous Communication Standard therefore, a SDS is not required. See 29 CFR § 1910.1200(b)(6)(v). This Safety Data Sheet and the information described voluntarily offers helpful information for safe handling and environmental care and can be provided in the event where the integrity of the product may be compromised.

SECTION 1 Identification

1.1. Product identifier

Product form : Article
 Trade name : Lithium rechargeable battery pack
 Product code : URB12350

1.2. Other means of identification

No additional information available

1.3. Recommended use of the chemical and restrictions on use

Recommended use : Battery
 Restrictions on use : Do not: Crush, Open, destroy or incinerate. Do not: short circuit, over charge, force over-discharge, or expose to high temperatures or fire.

1.4. Supplier's details

Ultralife Corporation
 2000 Technology Parkway
 Newark, NY 14513
 T 315-332-7100
dgould@ulbi.com

1.5. Emergency phone number

Emergency number : For Hazardous Materials or Dangerous Goods Incident Spill, Leak, Fire, Exposure, or Accident
 Call CHEMTREC Day or Night: 1-800-424-9300 (Toll Free, USA) / 703-527-3887 (Virginia, USA)
 CCN 23057
 Back-up Emergency Number: +1 703-741-5970 (Washington, DC)

SECTION 2 Hazard Identification

2.1. Classification of the substance or mixture

GHS US classification

Skin corrosion/irritation, Category 2	H315	Causes skin irritation.
Serious eye damage/eye irritation, Category 2A	H319	Causes serious eye irritation.
Skin sensitization, Category 1	H317	May cause an allergic skin reaction.
Carcinogenicity, Category 2	H351	Suspected of causing cancer (Inhalation).
Specific target organ toxicity — Repeated exposure, Category 1	H372	Causes damage to organs (lungs) through prolonged or repeated exposure (Inhalation).

Full text of H statements : see section 16

2.2. Label elements

GHS US labeling

Hazard pictograms (GHS US) : 

Signal word (GHS US) : Danger

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Hazard statements (GHS US)	: H315 - Causes skin irritation H317 - May cause an allergic skin reaction H319 - Causes serious eye irritation H351 - Suspected of causing cancer (Inhalation). H372 - Causes damage to organs (lungs) through prolonged or repeated exposure (Inhalation)
Precautionary statements (GHS US)	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe fume. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves, protective clothing, eye protection. If on skin: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice or attention. Take off contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention. Get medical advice or attention if you feel unwell. Store locked up. Dispose of contents and/or container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

2.4. Hazards not otherwise classified

Other hazards which do not result in classification : The product is a Lithium ion cell or battery and is therefore classified as an article and is not hazardous when used according to the recommendations of the manufacturer. The hazard is associated with the contents of the cell or battery. Under recommended use conditions, the electrode materials and liquid electrolyte are non-reactive provided that the cell or battery integrity remains and the seals remain intact. The potential for exposure should not exist unless the cell or battery leaks, is exposed to high temperatures or is mechanically, electrically or physically abused/damaged. If the cell or battery is compromised and starts to leak, based upon the battery ingredients, the contents are classified as Hazardous.

2.5. Unknown acute toxicity

No additional information available

SECTION 3 Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
Lithium iron phosphate carbon coated	CAS-No.: 15365-14-7	25.13	Acute Tox. 4 (Dermal), H312 Aquatic Acute 3, H402
Acrylonitrile-Butadiene-Styrene copolymer	CAS-No.: 9003-56-9	16.26	Aquatic Acute 3, H402 Aquatic Chronic 3, H412

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Name	Product identifier	%	GHS US classification
Graphite	CAS-No.: 7782-42-5	13.5	Aquatic Acute 3, H402 Aquatic Chronic 3, H412
Copper	CAS-No.: 7440-50-8	6.67	Not classified
Aluminium	CAS-No.: 7429-90-5	2.94	Aquatic Acute 1, H400
Lithium hexafluorophosphate	CAS-No.: 21324-40-3	1.8	Acute Tox. 3 (Oral), H301 Skin Corr. 1, H314 Eye Dam. 1, H318
Polyethylene low density	CAS-No.: 9002-88-4	1.61	Eye Irrit. 2B, H320
Carbon Black	CAS-No.: 1333-86-4	1.45	Comb. Dust 1
Nickel	CAS-No.: 7440-02-0	1.41	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372
Ethylene carbonate	CAS-No.: 96-49-1	1.26	Eye Irrit. 2A, H319
Carbonic acid, ethyl methyl carbonate	CAS-No.: 623-53-0	1.22	Flam. Liq. 2, H225 Aquatic Acute 3, H402

Full text of hazard classes and H-statements : see section 16

SECTION 4 First aid measures

4.1. Description of necessary first-aid measures

- First-aid measures general : The following first aid measures are required only in case of exposure to interior battery components after damage of the external battery casing. Undamaged, closed batteries do not represent a danger to the health. First aider: Pay attention to self-protection. Never give anything by mouth to an unconscious person. Give artificial respiration if necessary. Induce artificial respiration with mask fitted with one-way valve or other suitable device but, not mouth-to-mouth. IF exposed or concerned: Get medical advice/attention.
- First-aid measures after 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 a doctor.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin areas with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms/effects, acute and delayed

- Symptoms/effects : In the form in which it is marketed, the product causes no danger to health for humans through inhalation, swallowing or contact with the skin. If the product form in the as-supplied state is changed through further processing (e.g. through grinding, polishing, electrical discharge machining, welding or melting) and dust or vapours are produced, the following hazards are associated with the product.
- Symptoms/effects after inhalation : Prolonged and frequent exposure through inhalation may cause cancer. Causes damage to organs (lungs) through prolonged or repeated exposure (Inhalation).
- Symptoms/effects after skin contact : Irritation. May cause an allergic skin reaction.
- Symptoms/effects after eye contact : Eye irritation. Redness, itching, tears.
- Symptoms/effects after ingestion : May cause irritation to the digestive tract.

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

Other medical advice or treatment : IF exposed or concerned: Get medical advice/attention.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : UNRUPTURED BATTERY CELLS - CO2 extinguishers or, even preferably, copious quantities of water of water based foam can be used to cool down a burning Li-SO2 cell or battery pack as long as the extent of the fire has not progressed to the point that the lithium metal they contain is exposed (identified by the deep red flame).
RUPTURED BATTERY CELLS - If battery cells have ruptured (noted by the deep red flame) use a metal CLASS D fire extinguishing agent ONLY.

Unsuitable extinguishing media : Do not use warm or hot water. Do not use CO2 or Halon-type extinguishers. Do not use sand, dry powder or soda ash, graphite powder or fire blankets. Use only class D metal extinguishers on raw lithium metal.

5.2. Specific hazards arising from the chemical

Fire hazard : Large lithium ion batteries or large quantities of smaller batteries may reignite after the initial fire has been suppressed. Batteries should be stored in a safe place outside (access restriction, hazard indications) for a minimum of 72 hours. It is recommended to monitor the temperature frequently to detect any potential new heat generation. In the instance that a thermal event reoccurs, follow the same firefighting methods.

Explosion hazard : When exposed to extreme heat, battery within product may emit flammable vapors which, when mixed with air, can burn or be explosive.

Hazardous decomposition products in case of fire : Exposures to high temperatures, sparks and flames can result from the liberating flammable and toxic gases with eventual product ignition.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. No action shall be taken without appropriate training or involving any personal risk. Use extinguishing media appropriate for surrounding fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Use self-contained breathing apparatus and chemically protective clothing. Wear fire/flame resistant/retardant clothing.

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : No flames, no sparks. Eliminate all sources of ignition. Avoid all personal contact including breathing in the fume, mist, vapors. Do not take actions involving personal risks. Wear self-contained breathing apparatus. Absorb spillage to prevent material-damage.

For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.

Emergency procedures : Evacuate the danger area. If outdoors, move to an area upwind of the danger area. Do not breathe fume, mist, vapors. Avoid contact with skin and eyes. If possible without taking personal risks, Remove ignition sources, ventilate area. Prevent other non-emergency personnel from entering the danger area.

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For emergency responders

- Protective equipment : Wear the recommended personal protective equipment. Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
- Emergency procedures : Evacuate unnecessary personnel. Do not touch or walk on the spilled product. Ventilate area.
- Environmental precautions : Do not let the product reach soil, drains, sewers, or surface and ground water.

6.2. Methods and materials for containment and cleaning up

- For containment : The following measures are applicable only if the product is compromised: Cover spill with non combustible material, e.g.: sand, earth, vermiculite.
- Methods for cleaning up : Damaged batteries that are not hot or burning should be placed in a sealed plastic bag or container. Decontaminate surfaces and equipment with water and detergent. Until a sufficient level of dilution is achieved, the decontamination water may pose the same hazards as the product. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

For further information refer to section 8: "Exposure controls/personal protection", For further information refer to section 13

SECTION 7 Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take precautionary measures against static discharge. Do not subject to grinding, shock, friction. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Only connect the battery when it is going to be used. Never use the battery for any other purpose than for that which it has been designed. Do not: Crush, Open, destroy or incinerate. Do not: short circuit, over charge, force over-discharge, or expose to high temperatures or fire. Do not charge it in the unit. Do not disassemble the module.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.
- Additional hazards when processed : Lithium ion batteries are designed to be recharged. Use only approved chargers and procedures. Do not charge above specified rate. Improper charging may cause the battery to catch fire and/or vent flammable and toxic gases. Do not allow conductive material to touch the battery terminals. A dangerous short circuit may occur and cause battery failure and fire. Do not open, disassemble, crush, or burn batteries. Do not expose to extreme heat or fire. Protect case from puncture and damage.

7.2. Conditions for safe storage, including incompatibilities

- Storage conditions : Store in a cool, dry place (humidity: 45-85%) away from sparks and flame. Make the charge amount less than or equal to 50% then store between -20°C (-4°F) and 40°C (104°F). Avoid mechanical or electrical abuse. Store separated from other materials in a non-combustible, well-ventilated structure with sufficient clearance between walls and stacks of lithium ion battery and ensure adequate fire suppression (e.g, water sprinkler) is available. Do not place near heating equipment or direct sunlight for extended periods. Store away from incompatible materials. See also following codes and standards. - 2024 International Fire Code
- 2024 International Building Code
- SAE J3235 - Best-Practices for Storage of Lithium ion Batteries. On-site storage regulations vary based on geography. For industry best practices on lithium battery storage, consult the 2024 International Fire Code or Chapter 14 of NFPA 855.
- Incompatible materials : Strong oxidizing agents.
- Storage temperature : -20 – 60 °C / -4 - 140 °F

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SECTION 8 Exposure controls/personal protection

8.1. Control parameters

Carbon Black (1333-86-4)

USA - ACGIH - Occupational Exposure Limits

Local name	Carbon black
ACGIH® TLV® TWA	3 mg/m ³ (I - Inhalable particulate matter)
Remark (ACGIH®)	TLV® Basis: Bronchitis. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2025

USA - OSHA - Occupational Exposure Limits

Local name	Carbon black
OSHA PEL TWA	3.5 mg/m ³
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

USA - NIOSH - Occupational Exposure Limits

Local name	Carbon black
NIOSH REL 10h TWA	3.5 mg/m ³ (without PAHs)
Remark (NIOSH)	When PAHs are present, NIOSH considers carbon black to be a potential occupational carcinogen
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))

Graphite (7782-42-5)

USA - ACGIH - Occupational Exposure Limits

Local name	Graphite, all forms except graphite fibers
ACGIH® TLV® TWA	2 mg/m ³ (R - Respirable particulate matter)
Remark (ACGIH®)	TLV® Basis: Pneumoconiosis
Regulatory reference	ACGIH 2025

USA - OSHA - Occupational Exposure Limits

Local name	Graphite (Natural)
OSHA PEL TWA	15 mppcf
Remark (OSHA)	Table Z-3. CAS No. source: eCFR Table Z-1.
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-3 Mineral Dusts

USA - NIOSH - Occupational Exposure Limits

Local name	Graphite (Natural)
NIOSH REL 10h TWA	2.5 mg/m ³ (Respirable fraction)
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-3 Mineral Dusts (NIOSH Pocket Guide to Chemical Hazards (NPG))

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Copper (7440-50-8)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Copper, as Cu
ACGIH® TLV® TWA	0.2 mg/m ³ (Fume) 1 mg/m ³ (Dusts and mists)
Remark (ACGIH®)	TLV® Basis: Irr; GI; metal fume fever
Regulatory reference	ACGIH 2025
USA - OSHA - Occupational Exposure Limits	
Local name	Copper
OSHA PEL TWA	0.1 mg/m ³ (Fume (as Cu)) 1 mg/m ³ (Dusts and mists (as Cu))
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - NIOSH - Occupational Exposure Limits	
Local name	Copper
NIOSH REL 10h TWA	0.1 mg/m ³ (Fume (as Cu)) 1 mg/m ³ (Dusts and mists (as Cu))
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))
Nickel (7440-02-0)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Nickel, Elemental/Metal, as Ni
ACGIH® TLV® TWA	1.5 mg/m ³ (I - Inhalable particulate matter)
Remark (ACGIH®)	TLV® Basis: Dermatitis; pneumoconiosis. Notations: A5 (Not Suspected as a Human Carcinogen)
Regulatory reference	ACGIH 2025
USA - ACGIH - Biological Exposure Indices	
Local name	Nickel and inorganic compounds
BEI	5 µg/l Parameter: Nickel - Medium: urine after exposure to elemental Nickel and poorly soluble compounds - Sampling time: Post-shift at end of workweek - Notations: B 30 µg/l Parameter: Nickel - Medium: urine after exposure to soluble compounds - Sampling time: Post-shift at end of workweek
Regulatory reference	ACGIH 2025
USA - OSHA - Occupational Exposure Limits	
Local name	Nickel
OSHA PEL TWA	1 mg/m ³ metal and insoluble compounds (as Ni) 1 mg/m ³ soluble compounds (as Ni)
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - NIOSH - Occupational Exposure Limits	
Local name	Nickel

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Nickel (7440-02-0)	
NIOSH REL 10h TWA	0.015 mg/m ³ metal and insoluble compounds (as Ni) 0.015 mg/m ³ soluble compounds (as Ni)
Remark (NIOSH)	Ca = Potential occupational carcinogens
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))
Aluminium (7429-90-5)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Aluminum, metal and insoluble compounds
ACGIH® TLV® TWA	1 mg/m ³ (R - Respirable particulate matter)
Remark (ACGIH®)	TLV® Basis: Pneumoconiosis; LRT irr; neurotoxicity. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2025
USA - OSHA - Occupational Exposure Limits	
Local name	Aluminum Metal (as Al)
OSHA PEL TWA	15 mg/m ³ (Total dust) 5 mg/m ³ (Respirable fraction)
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - NIOSH - Occupational Exposure Limits	
Local name	Aluminum Metal (as Al)
NIOSH REL 10h TWA	10 mg/m ³ (Total dust) 5 mg/m ³ (Respirable fraction)
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))

8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station. Use general ventilation, local exhaust ventilation, or process enclosure to keep the airborne concentrations below the permissible exposure limits. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Environmental exposure controls	: Avoid release to the environment. Take measures to reduce or limit air emissions and releases to soil and the aquatic environment.

8.3. Individual protection measures, such as personal protective equipment

Personal protective equipment:

The following personal protective equipment is to be used in the event product is compromised. Personal protective equipment should be chosen according to national standards and in discussion with the supplier of the protective equipment.

Hand protection:
Wear protective gloves. Chemically impervious gloves as described by OSHA's hand protection regulations in 29 CFR 1910.138
Eye protection:
Chemical goggles or safety glasses
Skin and body protection:
Wear suitable protective clothing. In case of fire: Chemical-resistant, impervious, and thermal rated

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Respiratory protection:

No respiratory protection needed under normal use conditions. Use NIOSH approved respirator if ventilation is inadequate. SCBA for emergency responders. Must be used in accordance with an OSHA compliant respiratory protection program.

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

SECTION 9 Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	: Solid
Appearance	: Rectangular shape.
Color	: Black
Odor	: Characteristic
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: Not applicable
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity, kinematic	: Not applicable
Explosion limits	: Not applicable
	Upper explosion limit: Upper explosion limit: Intact lithium ion batteries are stable, however, exposure to high temperatures (e.g., above 150°C/302°F) or a thermal event may liberate hydrogen gases
Explosive properties	: Intact lithium ion batteries are stable. However, exposure to heat or a thermal event may liberate hydrogen gases resulting in a rapid disassembly of the battery.
Particle characteristics	: No data available

9.2. Data relevant with regard to physical hazard classes (supplemental)

No additional information available

SECTION 10 Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

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10.2. Chemical stability

Compromised lithium ion battery may liberate flammable gas mixture.

10.3. Possibility of hazardous reactions

Damaged non-discharged batteries contain elemental Lithium that is water reactive. This reaction gives off heat and hydrogen gas.

10.4. Conditions to avoid

Incompatible materials. Direct sunlight. Extremely high or low temperatures. Prolonged overcharge. Excessive physical shock and vibration.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition generates: Carbon monoxide. Hydrogen fluoride. Compromised lithium ion batteries may liberate irritating and toxic gases from decomposition by heat and combustion if burned; corrosive or toxic fumes may also be generated.

SECTION 11 Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified.
Acute toxicity (dermal) : Not classified.
Acute toxicity (inhalation) : Not classified

Carbon Black

LD50 oral rat	> 8000 mg/kg body weight
LD50 dermal rabbit	> 2000 mg/kg body weight

Lithium iron phosphate carbon coated

LD50 oral rat	> 2000 mg/kg body weight
LD50 dermal rat	2000 mg/kg body weight
LC50 Inhalation - Rat	> 3.2 mg/l air

Lithium hexafluorophosphate

LD50 oral rat	50 – 300 mg/kg body weight
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Copper

LD50 dermal rat	> 2000 mg/kg body weight
LC50 Inhalation - Rat	> 5.11 mg/l air

Ethylene carbonate

LD50 oral rat	> 5000 mg/kg body weight
LD50 dermal rat	> 2000 mg/kg body weight

Carbonic acid, ethyl methyl carbonate

LD50 oral rat	> 5000 mg/kg body weight
LC50 Inhalation - Rat	> 17.6 mg/l air

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Polyethylene low density	
LD50 oral rat	> 8000 mg/kg body weight
Nickel	
LD50 oral rat	> 9000 mg/kg body weight
Aluminium	
LD50 oral rat	> 15900 mg/kg body weight
LC50 Inhalation - Rat	> 0.888 mg/l air
Skin corrosion/irritation	: Causes skin irritation.
Lithium hexafluorophosphate	
Skin corrosion/irritation, human	Causes severe burns
Polyethylene low density	
Skin corrosion/irritation, human	Not irritating when applied to human skin
Serious eye damage/irritation	: Causes serious eye irritation.
Polyethylene low density	
Serious eye damage/irritation, rabbit	Mildly irritating to rabbits on ocular application
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Lithium hexafluorophosphate	
Additional information	Local Lymph Node Assay : Negative
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer (Inhalation).
Carbon Black	
IARC group	2B - Possibly carcinogenic to humans
Polyethylene low density	
IARC group	3 - Not classifiable
Nickel	
IARC group	2B - Possibly carcinogenic to humans
National Toxicity Program (NTP) Status	Reasonably anticipated to be Human Carcinogen.
Reproductive toxicity	: Not classified
Lithium hexafluorophosphate	
NOAEL (animal/male, F0/P)	500 mg/kg body weight
Aluminium	
NOAEL (animal/male, F0/P)	1000 mg/kg body weight
STOT-single exposure	: Not classified
STOT-repeated exposure	: Causes damage to organs (lungs) through prolonged or repeated exposure (Inhalation).

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Carbon Black	
NOAEL (oral, rat, 90 days)	> 1000 mg/kg body weight
NOAEC (inhalation, rat, dust/mist/fume, 90 days)	0.0011 mg/l air
Graphite	
NOAEL (oral, rat, 90 days)	≥ 10000 mg/kg body weight
Ethylene carbonate	
LOAEL (oral, rat, 90 days)	554 mg/kg body weight
Carbonic acid, ethyl methyl carbonate	
NOAEL (oral, rat, 90 days)	1000 mg/kg body weight
Nickel	
LOAEC (inhalation, rat, dust/mist/fume, 90 days)	0.004 mg/l air
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Aluminium	
LOAEC (inhalation, rat, dust/mist/fume, 90 days)	0.05 mg/l air
NOAEL (subchronic, oral, animal/male, 90 days)	1034 mg/kg body weight
NOAEL (subchronic, oral, animal/female, 90 days)	1087 mg/kg body weight

Aspiration hazard : Not classified

Lithium rechargeable battery pack	
Viscosity, kinematic	Not applicable
Symptoms/effects	: In the form in which it is marketed, the product causes no danger to health for humans through inhalation, swallowing or contact with the skin. If the product form in the as-supplied state is changed through further processing (e.g. through grinding, polishing, electrical discharge machining, welding or melting) and dust or vapours are produced, the following hazards are associated with the product.
Symptoms/effects after inhalation	: Prolonged and frequent exposure through inhalation may cause cancer. Causes damage to organs (lungs) through prolonged or repeated exposure (Inhalation).
Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Eye irritation. Redness, itching, tears.
Symptoms/effects after ingestion	: May cause irritation to the digestive tract.

SECTION 12 Ecological information

12.1. Ecotoxicity

Hazardous to the aquatic environment, short-term (acute) : Toxic to aquatic life
Hazardous to the aquatic environment, long-term (chronic) : Harmful to aquatic life with long lasting effects

Carbon Black	
EC50 - Crustacea [1]	> 1000 mg/l

Lithium Rechargeable Battery Pack

Safety Data Sheet

This product under normal conditions of use does not pose a physical or health risk and is considered an article. Thus, it is exempt from the requirements of the Hazardous Communication Standard therefore, a SDS is not required. See 29 CFR § 1910.1200(b)(6)(v). This Safety Data Sheet and the information described voluntarily offers helpful information for safe handling and environmental care and can be provided in the event where the integrity of the product may be compromised.

Lithium iron phosphate carbon coated	
LC50 - Fish [1]	> 28 mg/l
EC50 - Crustacea [1]	> 28 mg/l
EC50 72h - Algae [1]	> 24 mg/l
Graphite	
LC50 - Fish [1]	> 100 mg/l
EC50 - Crustacea [1]	> 100 mg/l
EC50 72h - Algae [1]	19 mg/l
NOEC (chronic)	47 mg/l
Lithium hexafluorophosphate	
EC50 96h - Algae [1]	> 100 mg/l
NOEC chronic fish	4 mg/l
Ethylene carbonate	
LC50 - Fish [1]	> 100 mg/l
EC50 72h - Algae [1]	> 100 mg/l
Carbonic acid, ethyl methyl carbonate	
LC50 - Fish [1]	> 100 mg/l
EC50 - Crustacea [1]	> 100 mg/l
EC50 72h - Algae [1]	> 62 mg/l
Acrylonitrile-Butadiene-Styrene copolymer	
LC50 - Fish [1]	11.5 mg/l
Aluminium	
EC50 72h - Algae [1]	1.05 mg/l
EC50 72h - Algae [2]	0.2 mg/l
12.2. Persistence and degradability	
Lithium rechargeable battery pack	
Persistence and degradability	Not established.
Carbon Black	
Persistence and degradability	Not rapidly degradable
Lithium iron phosphate carbon coated	
Persistence and degradability	Not rapidly degradable
Graphite	
Persistence and degradability	Not rapidly degradable

Lithium Rechargeable Battery Pack

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Lithium hexafluorophosphate	
Persistence and degradability	Not rapidly degradable
Copper	
Persistence and degradability	Not rapidly degradable
Ethylene carbonate	
Persistence and degradability	Not rapidly degradable
Carbonic acid, ethyl methyl carbonate	
Persistence and degradability	Rapidly degradable
Acrylonitrile-Butadiene-Styrene copolymer	
Persistence and degradability	Not rapidly degradable
Polyethylene low density	
Persistence and degradability	Not rapidly degradable
Nickel	
Persistence and degradability	Not rapidly degradable
Aluminium	
Persistence and degradability	Not rapidly degradable

12.3. Bioaccumulative potential

Lithium rechargeable battery pack	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Ozone	: Not classified
Fluorinated greenhouse gases	: No
Other information	: Avoid release to the environment.

SECTION 13 Disposal considerations

Regional waste regulation	: Disposal must be done according to official regulations. The battery should not be released to the environment, so they should be recycled wherever possible or be disposed of as hazardous waste at an appropriate hazardous waste collection site.
Waste treatment methods	: Batteries are not to be treated as ordinary trash. Do not dissect, pierce, crush or treat similarly. Dispose of contents/container in accordance with licensed collector's sorting instructions. Must follow special treatment according to local regulation.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Battery should be fully discharged before being sent for recycling. Do not break open or damage batteries prior to disposal. Care should be taken at all times to ensure used batteries are not damaged during storage or transportation.

Lithium Rechargeable Battery Pack

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Ecological waste information : Avoid release to the environment.

SECTION 14 Transport information

In accordance with DOT / IMDG / IATA

DOT	IMDG	IATA
14.1. UN number		
UN3480, UN3481	3480, 3481	3480, 3481
14.2. Proper Shipping Name		
UN 3480, Lithium Ion batteries UN 3481, Lithium Ion batteries, contained in equipment UN 3481, Lithium Ion batteries, packed with equipment	UN 3480, Lithium Ion batteries UN 3481, Lithium Ion batteries, contained in equipment UN 3481, Lithium Ion batteries, packed with equipment	UN 3480, Lithium Ion batteries UN 3481, Lithium Ion batteries, contained in equipment UN 3481, Lithium Ion batteries, packed with equipment
14.3. Transport hazard class(es)		
9	9	9
14.4. Packing group		
Not applicable	Not applicable	Not applicable
14.5. Environmental hazards		
	Dangerous for the environment: No Marine pollutant: No	
No supplementary information available		

14.6. Transport in bulk

Not applicable

14.7. Special precautions for user

DOT
UN-No. (DOT) : UN3480, UN3481
DOT Packaging Exceptions (49 CFR 173.xxx) : 185
DOT Packaging Non Bulk (49 CFR 173.xxx) : 185
DOT Packaging Bulk (49 CFR 173.xxx) : 185
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 35 kg
DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

IMDG
Special provision (IMDG) : 188, 230, 310, 348, 376, 377, 384, 387
Limited quantities (IMDG) : 0
Excepted quantities (IMDG) : E0
Packing instructions (IMDG) : P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906
EmS-No. (Fire) : F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE
EmS-No. (Spillage) : S-I - SPILLAGE SCHEDULE India - FLAMMABLE SOLIDS (REPACKING POSSIBLE)
Stowage category (IMDG) : A

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Stowage and handling (IMDG) : SW19
Properties and observations (IMDG) : Electrical batteries containing lithium ion may react (e.g. flame, heat, emission of toxic, corrosive or flammable gases or vapours) or disassemble due to damage, defects or short circuit.

IATA

PCA Excepted quantities (IATA) : E0
PCA Limited quantities (IATA) : Forbidden
PCA limited quantity max net quantity (IATA) : Forbidden
PCA packing instructions (IATA) : Forbidden
PCA max net quantity (IATA) : Forbidden
CAO packing instructions (IATA) : See 965
CAO max net quantity (IATA) : See 965
ERG code (IATA) : 12FZ

SECTION 15 Regulatory information

15.1. Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory, except for:

Graphite	CAS-No. 7782-42-5	13.5%
Electrical componenets	CAS-No. No data	1.9%
Contains chemical(s) subject to TSCA 12b export notification if product is shipped outside the U.S		
Lithium iron phosphate carbon coated	CAS-No. 15365-14-7	25.13%

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Copper	CAS-No. 7440-50-8	6.67%
Nickel	CAS-No. 7440-02-0	1.41%
Aluminium and aluminium components, non-flammable solid	CAS-No. 7429-90-5	2.94%

Copper (7440-50-8)

CERCLA RQ 5000 lb

Nickel (7440-02-0)

CERCLA RQ 100 lb

15.2. International regulations

CANADA

Carbon Black (1333-86-4)

Listed on the Canadian DSL (Domestic Substances List)

Lithium iron phosphate carbon coated (15365-14-7)

Listed on the Canadian DSL (Domestic Substances List)

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Lithium hexafluorophosphate (21324-40-3)

Listed on the Canadian NDSL (Non-Domestic Substances List)

Copper (7440-50-8)

Listed on the Canadian DSL (Domestic Substances List)

Ethylene carbonate (96-49-1)

Listed on the Canadian DSL (Domestic Substances List)

Carbonic acid, ethyl methyl carbonate (623-53-0)

Listed on the Canadian NDSL (Non-Domestic Substances List)

Acrylonitrile-Butadiene-Styrene copolymer (9003-56-9)

Listed on the Canadian DSL (Domestic Substances List)

Polyethylene low density (9002-88-4)

Listed on the Canadian DSL (Domestic Substances List)

Nickel (7440-02-0)

Listed on the Canadian DSL (Domestic Substances List)

Aluminium (7429-90-5)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

Carbon Black (1333-86-4)

Listed on IARC (International Agency for Research on Cancer)
Listed on INSQ (Mexican National Inventory of Chemical Substances)

Copper (7440-50-8)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Acrylonitrile-Butadiene-Styrene copolymer (9003-56-9)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Polyethylene low density (9002-88-4)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

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Safety Data Sheet

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Nickel (7440-02-0)

Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)
Listed on INSQ (Mexican National Inventory of Chemical Substances)

Aluminium (7429-90-5)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. State regulations

 **WARNING:** This product can expose you to Carbon black (airborne, unbound particles of respirable size), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Component	State or local regulations
Carbon Black(1333-86-4)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
Copper(7440-50-8)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - New York City - Right to Know Hazardous Substances List; U.S. - Pennsylvania - RTK (Right to Know) List
Ethylene carbonate(96-49-1)	U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) List
Nickel(7440-02-0)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - New York City - Right to Know Hazardous Substances List; U.S. - Pennsylvania - RTK (Right to Know) List
Aluminium(7429-90-5)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - New York City - Right to Know Hazardous Substances List; U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16 Other information

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Full text of hazard classes and H-statements	
H225	Highly flammable liquid and vapor
H301	Toxic if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage

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Full text of hazard classes and H-statements	
H319	Causes serious eye irritation
H320	Causes eye irritation
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H402	Harmful to aquatic life
H412	Harmful to aquatic life with long lasting effects

Abbreviations and acronyms	
ACGIH	American Conference of Government Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	Chemical oxygen demand (COD)
CSA	Chemical safety assessment
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
ED	Endocrine disruptor
EN	European Standard
EWC	European waste catalogue
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
Log Kow	Partition coefficient n-octanol/water (Log Kow)
Log Pow	Partition coefficient n-octanol/water (Log Pow)

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Abbreviations and acronyms	
MAK	maximum workplace concentration
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
N.O.S.	Not Otherwise Specified
OECD	Organization for Economic Co-operation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety Health Administration
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
PPE	Personal protection equipment
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TF	Technical function
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TWA	Time Weighted Average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulative
UFI	Unique Formula Identifier

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Lithium Rechargeable Battery Pack

Safety Data Sheet

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Revision History:

Revision	Description	DCR #	Date
-	Initial Release.	25-0148	12 MAR 2026

Required Approvals:

Originator	Dave Gould	<u>Date:</u> 06 MAR 2026
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