

MATERIAL SAFETY DATA SHEET (MSDS)

REPORT NO. PTC23033002101C-EN01


Dated: April 17, 2023



SECTION 1 - CHEMICAL PRODUCT IDENTIFICATION

NAME OF PRODUCT	18V RECHARGEABLE LITHIUM-ION BATTERY
MODEL/SKU	E1260-28-D
NOMINAL VOLTAGE	18V
RATED CAPACITY	4000mAh (72Wh)
VERSION NUMBER	V1.0
SAMPLE RECEIVED DATE	NOVEMBER 11, 2023
COMPLETED DATE	DECEMBER 23, 2023
REFERENCED DOCUMENTS	ACCORDING TO GB/T 16483-2008 & ISO 11014: 2009

SECTION 2 - HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE	Acute Toxicity - Oral, Category 3 Skin Corrosion - Category 1A Serious Eye Damage - Category 1 Specific Target Organ Toxicity - Repeated Exposure - Category 1
GHS LABEL ELEMENTS INCLUDING PRECAUTIONARY STATEMENTS	<p>Pictogram:</p>  <p>Signal Word: Danger</p> <p>Hazard Statement(s):</p> <p>H301 - Toxic if swallowed H314 - Causes severe skin burns and eye damage H372 - Causes damage to organs through prolonged or repeated exposure H361 - Suspected of damaging fertility or the unborn child</p>

**GHS LABELS ELEMENTS
INCLUDING PRECAUTIONARY
STATEMENTS**

Precautionary Statement(s):

Prevention

P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P264 - Wash thoroughly after handling.
P270 - Do not eat, drink, or smoke when using this product.
P260 - Do not breathe dust, fume, gas, mist, vapors, or spray.
P280 - Wear personal protective equipment (PPE) such as gloves, protective clothing, eye protection, and face protection.

Response

P301, P310 - If swallowed: immediately call a Poison Center or seek immediate medical treatment.
P321 - Specific treatment (see...On this label).
P330 - Rinse mouth.
P301, P330, P331 - If swallowed: rinse mouth. Do not induce vomiting.
P303, P361, P353 - If contact to skin - immediately take off all contaminated clothing. Rinse skin with water or shower.
P363 - Wash contaminated clothing before reuse.
P304, P340 - If inhaled: remove person to fresh air and keep comfortable for breathing.
P310 - Immediately call a Poison Center or seek immediate medical treatment.
P305, P351, P338 - If in eyes: rinse eyes gently with water or several minutes. Remove contact lenses, if they are present and easy to do. Continue rinsing.
P314 - Get medical attention if you feel unwell.
P308, P313 - If exposed or concerned: get medical advise or attention.

Storage

P405 - Store, locked up.

Disposal

P501 - Dispose of contents/container to local regulations.

Supplemental Hazard

None

**OTHER HAZARDS WHICH
DO NOT RESULT IN
CLASSIFICATION**

None

SECTION 3 - COMPOSITION & INFORMATION ON INGREDIENTS

CHEMICAL COMPOSITION	CAS NO.	EC NO.	WEIGHT (%)
Al	7429-60-5	231-72-3	14%
C	7440-44-0	231-153-3	36%
Cu	7440-50-8	231-159-6	11%
PVDF	24937-79-9	607-458-6	5%
LiPF6	21324-40-3	244-334-7	23%
PP	9003-07-0	618-352-4	3%
CMC	9004-32-4	618-378-6	0.50%
EC	96-49-1	202-510-0	3%
DMC	616-38-6	210-478-4	3%
Styrene-butadiene Rubber	9003-55-8	--	1.50%

GENERAL ADVICE	The chemicals and metals in this products are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused.
EYES	If the battery is leaking and materials make contact with the eye, flush thoroughly with copious amounts of running water for 30 minutes. Seek immediate medical advice.
SKIN	If the battery is leaking and material makes contact with the skin, remove any contaminated clothing and flush exposed skin with copious amounts of running water for at least 15 minutes. If irritation, injury, and/or pain persists, seek immediate medical advice.
INHALED	If the battery is leaking, the contents may be irritating to respiratory passages. Move to fresh air. If irritation persists, seek medical advice.
SWALLOWED	If the battery is swallowed, seek immediate medical advice. Batteries lodged in the esophagus should be removed immediately since leakage can cause caustic burns and perforation can occur as soon as two hours after ingestion. If the mouth area has irritation or burning, rinse the mouth and surrounding area with tepid water for at least 15 minutes. Do not give ipecac and seek immediate medical advice.
FIRE AND EXPLOSION HAZARDS	Batteries may burst and release hazardous decomposition products when exposed to a fire situation.

EXTINGUISHING MEDIA	Use any extinguishing media that is appropriate for the surrounding fire.
SPECIAL FIRE FIGHTING PROCEDURES	Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Fight the fire from a distance or a well-protected area. Cool the fire-exposed batteries to prevent rupture. Use caution when handling fire-exposed containers (batteries may explode in heat of fire).
HAZARDOUS COMBUSTION PRODUCTS	Thermal degradation may produce hazardous fumes of lithium and manganese; hydrofluoric acid, oxides of carbon and sulfur and other toxic by-products.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Notify safety personnel of large spills. Irritating and flammable vapors and fumes may be released from leaking or ruptured batteries. Eliminate all ignition sources. Evacuate the area and allow for the vapors to dissipate. Clean-up personnel should wear appropriate protective equipment and clothing to avoid eye, skin contact, and inhalation of vapors or fumes. Increase ventilation. Carefully collect batteries and place in an appropriate container for disposal. Remove spilled liquid with absorbent and contain for disposal.

SECTION 7 - HANDLING AND STORAGE

HANDLING	Avoid mechanical or electrical abuse. DO NOT short circuit or install incorrectly. Batteries may explode, pyrolyze, or vent if disassembled, crushed, recharged, or exposed to high temperatures. Install batteries in accordance with equipment instructions. Replace all batteries in equipment at same time. Do not carry batteries loose in a pocket or bag.
STORAGE	Store batteries in a dry place at normal room temperature.

SECTION 8 - EXPOSURE TO CONTROLS / PERSONAL PROTECTION

RESPIRATORY PROTECTION	In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting cell cores. Respiratory protection is not necessary under conditions of normal use.
VENTILATION	Not necessary under conditions of normal use.
OTHER PROTECTIVE CLOTHING OR EQUIPMENT	Not necessary under conditions of normal use.
PERSONAL PROTECTION IS RECOMMENDED FOR VENTING BATTERY	Respiratory protection, protective gloves, protective clothing, and safety glass with side shields.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	--
ODOR	--
COLOR	--
PH	Not Applicable
FLASH POINT	Not Applicable
FLAMMABILITY	Not Applicable
RELATIVE DENSITY	Not Applicable
SOLUBILITY (WATER)	Not Applicable
SOLUBILITY (OTHER)	Not Applicable

SECTION 10 - STABILITY AND REACTIVITY

STABILITY	This product is stable.
INCOMPATIBILITY / CONDITIONS TO AVOID	Contents are incompatible with strong oxidizing agents. Do not heat, crush, disassemble, short circuit, or recharge.
HAZARDOUS DECOMPOSITION PRODUCTS	Thermal decomposition may produce hazardous fumes of lithium and manganese; hydrofluoric acid, oxides or carbon and sulfur and other toxic by-products.
HAZARDOUS POLYMERIZATION	Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS	The chemicals and metals in this products are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused.
EYE CONTACT	Contact with battery contents may cause irritation.
SKIN CONTACT	Contact with battery contents may cause irritation.
INHALATION	Inhalation of vapors or fumes released due to heat or a large number or leaking batteries may cause respiratory and eye irritation.
INGESTION	Swallowing is not anticipated for larger batteries due to battery size. Smaller batteries may be swallowed. If battery is swallowed, seek immediate medical advice. Batteries lodged in the esophagus should be removed immediately since leakage can cause caustic burns and perforation can occur as soon as two hours after ingestion. Irritation to the internal/external mouth areas may occur following expose to a leaking battery.
CHRONIC EFFECTS	The chemicals in this product are contained in a sealed can and exposure does not occur during normal handling and use. No chronic effects would be expected from handling a leaking battery.
TARGET ORGANS	Skin, eyes, and respiratory system.
CARCINOGENICITY	None of the components of this products are listed as carcinogens by the EU Directive on the classification and labeling of substances.

SECTION 12 - ECOLOGICAL INFORMATION

No ecotoxicity is available. This product is not expected to present an environmental hazard.

SECTION 13 - DISPOSAL

Do not incinerate or subject the battery cells to a temperature in excess of 80°C. Dispose of in accordance with local regulations.

SECTION 14 - TRANSPORT INFORMATION

All lithium, lithium ion and lithium polymer cells and batteries must be tested in accordance with the “UN Manual of Tests and Criteria, Part III, Subsection 38.3 2017”.

The 64th edition of the IATA Dangerous Goods Regulations incorporates all amendments made by the ICAO Dangerous Goods Panel in developing the content of the 2023 edition of the ICAO Technical Instructions as well as changes adopted by the IATA Dangerous Goods Board.

Their regulations are based on the UN Recommendations. The UN Recommendations require that lithium ion cells and batteries shall be manufactured under a quality management program and this requirement is adopted by IMDG Code and ICAO TI/ATA DGR.

The following list is intended to assist the user to identify the main changes introduced in this edition and must not be considered an exhaustive listing. The changes have been prefaced by the section or subsection in which the change occurs.

SHIPPING NAME (UN NUMBER)

- Lithium Ion Batteries (UN3480)
- Lithium Ion Batteries packed with equipment (UN3481)
- Lithium Ion Batteries contained in equipment (UN3481)

HAZARD CLASSIFICATION: CLASS 9 (MISCELLANEOUS)

ORGANIZATIONS GOVERNING THE TRANSPORT OF LITHIUM ION BATTERIES ARE AS FOLLOWS:

AREA	METHOD	ORGANIZATION	PACKING INSTRUCTION OR SPECIAL PROVISION
International	Air	IATA, ICAO	Section II of 64th Edition, 2023, PI 965-967
International	Maritime	IMO	SP 188
USA	Air, Rail, Road, Maritime	DOT	49 CFR Section 173.185

Cells and batteries must be packed in inner packaging that completely enclosed the cell or battery.

Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.

Each consignment must be accompanied with a document such as an air waybill with an indication that:

- the package contains lithium ion cells or batteries;
- the package must be handled with care, and that a flammability hazard exists if the package is damaged;
- special procedures should be followed in the event the package is damaged, to include inspection and repacking if necessary; and
- a telephone number for additional information

Each package must be labeled with a lithium battery handling label;

Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities.

SECTION 15 - REGULATORY INFORMATION

- Special requirement according to the local regulations
- Dangerous Goods Regulations
- Recommendations on the transport of Dangerous Goods Model Regulations
- International Maritime Dangerous Goods
- Technical Instructions for the Safe Transport of Dangerous Goods
- Classification and Code of Dangerous Goods
- Occupational Safety and Health Act (OSHA)
- Toxic Substance Control Act (TSCA)
- Consumer Product Safety Act (CPSA)
- Federal Environmental Pollution Control Act (FEPCA)
- The Oil Pollution Act (OPA)
- Superfund Amendments and Reauthorization Act Title III (302-311-312-313) (SARA)
- Resource Conservation and Recovery Act (RCRA)
- Safety Drinking Water Act (CWA)
- California Proposition 65
- Code of Federal Regulations (CFR)

SECTION 16 - OTHER INFORMATION

NOTE

This sheet is provided as technical information only. The information and recommendations set forth are made in good faith and believed to be accurate as of the date of preparation. We make no warranty, expressed or implied, with respect to this information and disclaims all liabilities from reliance on it.

END OF MSDS