

# SAFETY DATA SHEET

## 1. Identification

**Product identifier** XALT Lithium Ion Battery/Cell  
**Other means of identification** Not available.  
**Recommended use** Rechargeable type battery  
**Recommended restrictions** None known.  
**Manufacturer/Importer/Supplier/Distributor information**  
**Company name** XALT Energy, LLC  
**Address** 2700 S. Saginaw Rd.  
Midland, MI 48640 US  
US  
**Telephone** Phone Number: (989) 486 8501  
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Access code 333477

## 2. Hazard(s) identification

**Physical hazards** Not classified.  
**Health hazards** Not classified.  
**OSHA defined hazards** Not classified.

Note: XALT™ lithium ion batteries / cells are by definition an article and not subject to the 29 CFR 1910.1200 OSHA requirements, Canadian WHMIS requirements or GHS requirements.

### Label elements

**Hazard symbol** None.  
**Signal word** None.  
**Hazard statement**

The mixture does not meet the criteria for classification. Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely. The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful. In the event of damage resulting in a leak of exposed materials, avoid contact with contents of an open or damaged cell or battery.

### Precautionary statement

**Prevention** Use personal protective equipment as required. Observe good industrial hygiene practices.  
**Response** Get medical advice/attention if you feel unwell.  
**Storage** Store away from incompatible materials.  
**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations.

### Hazard(s) not otherwise classified (HNOC)

In the event of damage resulting in a leak of exposed materials, avoid contact with contents of an open or damaged cell or battery.

### Supplemental information

Not applicable.

## 3. Composition/information on ingredients

### Mixtures

Chemical name	CAS number	%
Cobalt Lithium Manganese Nickel Oxide	182442-95-1	25 - 35
Graphite	7782-42-5	15 - 20
Copper	7440-50-8	10 - 20
Aluminium	7429-90-5	5 - 15

Ethyl Methyl Carbonate	623-53-0	5 - 10
Ethylene Carbonate	96-49-1	5 - 10
Carbon black	1333-86-4	1 - 5
Lithium Hexafluorophosphate	21324-40-3	1 - 5
Polyethene	9002-88-4	1 - 5
Polypropylene	9003-07-0	1 - 5
Polyvinylidene Fluoride (PVDF)	24937-79-9	1 - 5
Other components below reportable levels		1.5

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

#### 4. First-aid measures

<b>Inhalation</b>	If contents of an opened battery are inhaled, remove source of contamination or move victim to fresh air. Seek medical advice.
<b>Skin contact</b>	If skin contact with contents of an open battery occurs, immediately flush with lukewarm water for at least 30 minutes. Thoroughly wash (or discard) clothing and shoes before reuse. If skin irritation occurs, get medical advice/attention.
<b>Eye contact</b>	If eye comes in contact with contents of an open or damaged cell or battery, immediately flush the contaminated eye(s) with lukewarm water for at least 30 minutes. Get medical attention immediately. Rinse eye with calcium gluconate solution (1%) until arrival of doctor. Continue rinsing.
<b>Ingestion</b>	If ingestion of contents of an open battery occurs, rinse mouth thoroughly with water. DO NOT induce vomiting. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than the hips to help prevent aspiration. Call a physician or poison control center immediately.
<b>Most important symptoms/effects, acute and delayed</b>	Under normal conditions of intended use, this material does not pose a risk to health.
<b>Indication of immediate medical attention and special treatment needed</b>	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	First aid personnel must be aware of own risk during rescue.

#### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	In the event that a fire occurs and a cell or battery is involved, water, carbon dioxide, clean agent, and /or fire blankets suitable for the surrounding materials should be used. Laboratory testing of cells exposed to flame has demonstrated suppression with clean agent type suppression system such as FM200.
<b>Unsuitable extinguishing media</b>	In the event that a battery is ruptured and the internal components are exposed, DO NOT USE WATER.
<b>Specific hazards arising from the chemical</b>	In the event of fire and/or explosion do not breathe fumes. The evolved combustion products may contain carbon oxides, metal oxides, hydrogen fluoride, and should be considered hazardous.
<b>Special protective equipment and precautions for firefighters</b>	Not available.
<b>Fire-fighting equipment/instructions</b>	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Fight fire from a protected location. Prevent entry into waterways, sewers, basements or confined areas.
<b>General fire hazards</b>	Under normal use, the battery does not exhibit flammable properties. In the event that the battery is abused and disassembly of the battery occurs resulting in exposure of internal components, the exposed solution, may be flammable and/or corrosive. Exposure to excessive heat may lead to venting or rupture of the sealed battery, exposing the internal components which may be corrosive and/or flammable. Vented gas would be flammable when in sufficient concentration.

#### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	None under normal use conditions. In the event of damage resulting in a leak or exposed materials, avoid contact with contents of an open or damaged cell or battery. Wear protective clothing as described in Section 8 of this safety data sheet.
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**Methods and materials for containment and cleaning up** Leak from a damaged or opened battery: Contain spillage with sand or earth. Collect with absorbent, non-combustible material into suitable containers. For waste disposal, see Section 13 of the SDS. Do not allow to enter drains, sewers or watercourses.

**Environmental precautions** Avoid allowing material from exposed battery to contaminate soil, sanitary sewers, or waterways.

## 7. Handling and storage

**Precautions for safe handling** Do not open, disassemble, crush or burn battery. Do not expose battery to extreme heat or fire. Elevated temperatures can result in reduced battery service life. Precautions shall be taken to prevent electrical short between cell or battery terminals. Precautions shall be taken to prevent damage which may result in physical damage to the pouch.

**Conditions for safe storage, including any incompatibilities** Store in a cool, dry place. Keep at room temperature. Keep out of reach of children. In the event of damage resulting in a leak or exposed materials, water is to be avoided.

## 8. Exposure controls/personal protection

**Occupational exposure limits** No exposure limits noted for this product.

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Exposure guidelines** Occupational Exposure Limits are not relevant to the current physical form of the product.

**Appropriate engineering controls** If user operations generate dust, fumes, or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Not necessary under normal conditions. In the event that cell or battery is damaged, open, or leaking, wear chemical goggles and/or a face shield if handling an open or leaking cell or battery.

**Skin protection**

**Hand protection** Not necessary under normal conditions. In the event that cell or battery is damaged, open, or leaking, wear chemical resistant gloves if handling. Butyl, Trilite, latex gloves are recommended. Do not use Nitrile.

**Other** Not necessary under normal conditions. Wear chemical resistant gloves if handling an open or leaking battery.

**Respiratory protection** Not necessary under normal conditions. In the event that cell or battery is damaged, open, or leaking, respiratory protection should be worn where there is a potential to exceed the exposure limit requirements or guidelines.

**Thermal hazards** Not applicable.

**General hygiene considerations** Do not store food, drink and tobacco near the product. Practice good housekeeping.

## 9. Physical and chemical properties

**Appearance** Pouch battery.

**Physical state** Solid.

**Form** Solid.

**Color** Silver

**Odor** Odorless.

**Odor threshold** Not available.

**pH** Not available.

**Melting point/freezing point** Not available.

**Initial boiling point and boiling range** Not available.

**Flash point** Not available.

**Evaporation rate** Not available.

**Flammability (solid, gas)** Not available.

**Upper/lower flammability or explosive limits**

**Flammability limit - lower (%)** Not available.

**Flammability limit - upper (%)** Not available.

**Explosive limit - lower (%)** Not available.

**Explosive limit - upper (%)** Not available.

**Vapor pressure** Not available.

<b>Vapor density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Not available.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Stable at normal conditions.
<b>Possibility of hazardous reactions</b>	Under normal conditions of storage and use, hazardous polymerization will not occur.
<b>Conditions to avoid</b>	Heat, sparks, flames, elevated temperatures. Physical damage.
<b>Incompatible materials</b>	Not available.
<b>Hazardous decomposition products</b>	Under normal conditions none known, irritating and/or toxic fumes and gases may be emitted upon decomposition of the product.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Ingestion</b>	Under normal conditions of intended use, this material does not pose a risk to health.
<b>Inhalation</b>	No relevant information available.
<b>Skin contact</b>	Under normal conditions of intended use, this product does not pose a skin hazard. In the event that cell or battery is damaged, open, or leaking – brief contact may cause skin burns with possible symptoms including pain, local redness, and tissue damage.
<b>Eye contact</b>	Under normal conditions of intended use, this product does not pose an eye hazard. In the event that cell or battery is damaged, open, or leaking – irritation with injury resulting in permanent impairment of vision and chemical burn may occur.
<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	Exposure not expected under normal use conditions. In the event that cell or battery is damaged, open, or leaking - inhalation, skin contact, and/or eye contact may be considered for routes of exposure.

### Information on toxicological effects

<b>Acute toxicity</b>	No toxicological impacts are expected under normal use conditions. Risk of irritation occurs only if the cell is mechanically, thermally, or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur.
<b>Skin corrosion/irritation</b>	Under normal conditions of intended use, this product does not pose a skin hazard. In the event that cell or battery is damaged, open, or leaking – brief contact may cause skin burns with possible symptoms including pain, local redness, and tissue damage.
<b>Serious eye damage/eye irritation</b>	Under normal conditions of intended use, this product does not pose an eye hazard. In the event that cell or battery is damaged, open, or leaking – irritation with injury resulting in permanent impairment of vision and chemical burn may occur.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	No data available.
<b>Skin sensitization</b>	Risk of sensitization only occurs if the cell is mechanically, thermally, or electrically abused to the point of compromising the enclosure. If this occurs, battery contains ingredients may cause sensitization.
<b>Germ cell mutagenicity</b>	No data available.
<b>Carcinogenicity</b>	Under normal handling and storage conditions, the exposure to carcinogenic components is not expected. Risk of adverse effects occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure.
<b>Reproductive toxicity</b>	No relevant information available.
<b>Specific target organ toxicity - single exposure</b>	No data available.

<b>Specific target organ toxicity - repeated exposure</b>	No data available.
<b>Aspiration hazard</b>	Not classified.
<b>Chronic effects</b>	Under normal handling and storage conditions, the exposure to carcinogenic components is not expected. Risk of adverse effects occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure.

## 12. Ecological information

<b>Ecotoxicity</b>	No ecological impacts expected under normal use conditions.
<b>Persistence and degradability</b>	No data available.
<b>Bioaccumulative potential</b>	No data available.
<b>Mobility in soil</b>	No data available.
<b>Other adverse effects</b>	No data available.

## 13. Disposal considerations

<b>Disposal instructions</b>	Do not dispose in fire. Dispose waste and residues in accordance with applicable federal, state, and local regulations.
<b>Hazardous waste code</b>	Hazardous waste code should be determined in accordance with hazardous waste regulatory authorities.
<b>Waste from residues / unused products</b>	Dispose in accordance with all local, state and federal regulations.
<b>Contaminated packaging</b>	Dispose in accordance with applicable federal, state, and local regulations.

## 14. Transport information

### DOT

<b>UN number</b>	UN3480
<b>UN proper shipping name</b>	Lithium batteries
<b>Transport hazard class(es)</b>	
<b>Class</b>	9
<b>Subsidiary risk</b>	-
<b>Packing group</b>	II
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Packaging exceptions</b>	185
<b>Packaging non bulk</b>	185
<b>Packaging bulk</b>	None

### IATA

<b>UN number</b>	UN3480
<b>UN proper shipping name</b>	Lithium batteries
<b>Transport hazard class(es)</b>	
<b>Class</b>	9
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	9
<b>Packing group</b>	II
<b>Environmental hazards</b>	No.
<b>ERG Code</b>	9FZ
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

### IMDG

<b>UN number</b>	UN3480
<b>UN proper shipping name</b>	Lithium batteries
<b>Transport hazard class(es)</b>	
<b>Class</b>	9
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	9
<b>Packing group</b>	II
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	No.
<b>EmS</b>	F-A, S-I
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not available.

**General information** The dangerous goods regulations require that each cell and battery design be subject to tests contained in Part III, subsection 38.3 of the UN Manual of Tests and Criteria prior to being offered for transport. Batteries containing these cells should be transported as Class 9 hazardous materials, except for those battery types declared to be exempt.

## 15. Regulatory information

**US federal regulations** This product is an article pursuant to 29 CFR 1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard.  
All components are on the U.S. EPA TSCA Inventory List.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate Hazard - No  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** No

**SARA 313 (TRI reporting)**

Chemical name	CAS number	% by wt.
Copper	7440-50-8	10 - 20
Aluminium	7429-90-5	5 - 15

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations**

**US. Massachusetts RTK - Substance List**

Not regulated.

**US. New Jersey Worker and Community Right-to-Know Act**

Not listed.

**US. Pennsylvania Worker and Community Right-to-Know Law**

Not listed.

**US. Rhode Island RTK**

Not regulated.

**US. California Proposition 65**

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

Not listed.

## 16. Other information, including date of preparation or last revision

**Issue date** 20-May-2014

**Revision date**

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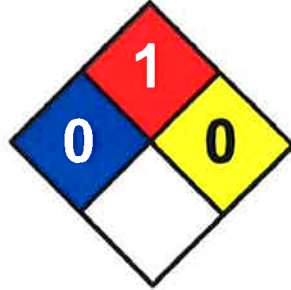
**Version #**

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**Further information**

HMIS® is a registered trade and service mark of the NPCA.

**NFPA Ratings**



**References**

ACGIH

EPA: AQUIRE database

NLM: Hazardous Substances Data Base

US. IARC Monographs on Occupational Exposures to Chemical Agents

**Disclaimer**

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