SECTION 1: Identification

1.1. Identification
Trade name: Sherpa 50

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture: Charger for electronic devices.
Capacity: 56Wh, 5200mAh (10.8V)

1.3. Details of the supplier of the safety data sheet
Goal Zero
675 West 14600 South
Bluffdale, UT 84065
T (888) 794-6250

1.4. Emergency telephone number

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture
This product is non-hazardous in its current form. If the battery opens or leaks, the following hazards apply:

GHS-US classification
Acute toxicity (oral), Category 4 H302
Skin corrosion/irritation, Category 2 H315
Serious eye damage/eye irritation, Category 1 H318
Specific target organ toxicity - Repeated exposure, Category 1 H372
Full text of H statements: see section 16

2.2. Label elements
GHS-US labelling
Hazard pictograms (GHS-US):

Signal word (GHS-US): Warning
Hazard statements (GHS-US): H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary statements (GHS-US):
P260 - Do not breathe fume, mist, spray, vapors
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves, eye protection
P301+P312 - If swallowed: Call a doctor, a POISON CENTER if you feel unwell
P302+P352 - If on skin: Wash with plenty of water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER
P314 - Get medical advice/attention if you feel unwell
P330 - Rinse mouth
P332+P313 - If skin irritation occurs: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse
P501 - Dispose of contents/container to comply with applicable local, national and international regulation

2.3. Other hazards
No additional information available
Sherpa 50
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene carbonate</td>
<td>(CAS No) 96-49-1</td>
<td>10 - 20</td>
<td>Eye Irrit. 2A, H319, STOT RE 2, H373</td>
</tr>
<tr>
<td>Copper</td>
<td>(CAS No) 7440-50-8</td>
<td>2 - 10</td>
<td>Acute Tox. 4 (Oral), H302, Aquatic Acute 1, H400, Aquatic Chronic 3, H412</td>
</tr>
<tr>
<td>Phosphate(1-), hexafluoro-, lithium</td>
<td>(CAS No) 21324-40-3</td>
<td>&lt; 5</td>
<td>Acute Tox. 3 (Oral), H301, Skin Corr. 1A, H314, Eye Dam. 1, H318, STOT RE 1, H372</td>
</tr>
</tbody>
</table>

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

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation: If a battery ruptures, allow victim to breathe fresh air. Allow the victim to rest. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact: If a battery ruptures, remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact: If a battery ruptures, rinse immediately with plenty of water. Get immediate medical advice/attention.

First-aid measures after ingestion: If a battery ruptures, rinse mouth. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation: Not expected to present a significant inhalation hazard under anticipated conditions of normal use. If a battery ruptures, may cause irritation to the respiratory tract.

Symptoms/injuries after skin contact: Not expected to present a significant skin hazard under anticipated conditions of normal use. If a battery ruptures, causes skin irritation.

Symptoms/injuries after eye contact: Not expected to present a significant eye contact hazard under anticipated conditions of normal use. If a battery ruptures, causes serious eye damage.

Symptoms/injuries after ingestion: Not expected to present a significant ingestion hazard under anticipated conditions of normal use. If a battery ruptures, may cause stomach pain or discomfort.

Chronic symptoms: Causes damage to organs through prolonged or repeated exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media


Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard: Minimal fire hazard. Battery may rupture due to pressure buildup when exposed to excessive heat and may result in the release of hazardous materials. On combustion, forms: hydrogen fluoride and carbon oxides

Explosion hazard: Heating will cause pressure to rise with risk of bursting and subsequent explosion.

Reactivity: None under normal conditions.

5.3. Advice for firefighters

Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering the environment.

Protective equipment for firefighters: Do not enter fire area without proper protective equipment, including respiratory protection.
**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

**6.1.1. For non-emergency personnel**
- Emergency procedures: Evacuate unnecessary personnel.

**6.1.2. For emergency responders**
- Protective equipment: Equip cleanup crew with proper protection.
- Emergency procedures: Ventilate area.

**6.2. Environmental precautions**
- Prevent entry to sewers and public waters. Notify authorities if battery enters sewers or public waters.

**6.3. Methods and material for containment and cleaning up**
- Methods for cleaning up: On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

**6.4. Reference to other sections**

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**
- Provide good ventilation in process area to prevent formation of vapor. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- Hygiene measures: Wash hands thoroughly after handling. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
- Storage conditions: Keep only in the original container in a cool, well ventilated place away from heat sources. Keep container closed when not in use. Keep away from high or low temperatures.
- Incompatible materials: Heat sources.

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

<table>
<thead>
<tr>
<th>Compound</th>
<th>ACGIH TWA (mg/m³)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
<th>NIOSH REL (TWA) (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Copper (7440-50-8)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td></td>
<td></td>
<td>0.2 mg/m³ (fume)</td>
</tr>
<tr>
<td>OSHA</td>
<td></td>
<td>0.1 mg/m³ (fume)</td>
<td></td>
</tr>
<tr>
<td>IDLH</td>
<td></td>
<td>1 mg/m³ (dust and mist)</td>
<td></td>
</tr>
<tr>
<td>NIOSH</td>
<td></td>
<td></td>
<td>1 mg/m³ (dust and mist)</td>
</tr>
</tbody>
</table>

| Compound | | | |
|----------|------------------------|-------------------------|
| **Ethylene carbonate (96-49-1)** | Not applicable | |

| Compound | | |
|----------|----------|
| **Phosphate(-), hexafluoro-, lithium (21324-40-3)** | Not applicable | |

**8.2. Exposure controls**
- Appropriate engineering controls: If handling an open or leaking battery: Provide adequate ventilation. Provide local exhaust or general room ventilation to minimize vapor concentrations.
- Hand protection: Not required for normal conditions of use. Impermable protective gloves if handling an open or leaking battery.
- Eye protection: Not required for normal conditions of use. Chemical goggles or safety glasses if handling an open or leaking battery.
- Respiratory protection: Not required for normal conditions of use. NIOSH/MSHA approved air purifying respirator should be used if operating conditions produce airborne concentrations that exceed exposure limits for any individual components. If conditions immediately dangerous to life or health exist, use NIOSH/MSHA self-contained breathing apparatus (SCBA) especially when handling an open or leaking battery.
SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Color</td>
<td>Varies</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Non flammable.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in water.</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

None under normal conditions.

10.2. Chemical stability

Stable at normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Do not puncture, crush, or incinerate.

10.5. Incompatible materials

Heat sources.

10.6. Hazardous decomposition products


SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likely routes of exposure</td>
<td>Ingestion; Inhalation; Skin and Eye contact</td>
</tr>
<tr>
<td>Acute toxicity</td>
<td>Oral: Harmful if swallowed.</td>
</tr>
</tbody>
</table>

** Sherpa 50 **

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE US (oral)</td>
<td>1428.571 mg/kg bodyweight</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Causes serious eye damage.</td>
</tr>
</tbody>
</table>
Sherpa 50
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Respiratory or skin sensitisation: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
Specific target organ toxicity (single exposure): Not classified
Specific target organ toxicity (repeated exposure): Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard: Not classified
Symptoms/injuries after inhalation: Not expected to present a significant inhalation hazard under anticipated conditions of normal use. If a battery ruptures, may cause irritation to the respiratory tract.
Symptoms/injuries after skin contact: Not expected to present a significant skin hazard under anticipated conditions of normal use. If a battery ruptures, causes skin irritation.
Symptoms/injuries after eye contact: Not expected to present a significant eye contact hazard under anticipated conditions of normal use. If a battery ruptures, causes serious eye damage.
Symptoms/injuries after ingestion: Not expected to present a significant ingestion hazard under anticipated conditions of normal use. If battery ruptures, swallowing can be harmful. Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general: The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.2. Persistence and degradability
Sherpa 50
Persistence and degradability: Not established.

12.3. Bioaccumulative potential
Sherpa 50
Bioaccumulative potential: Not established.

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
Effect on global warming: No known effects from this product.
GWPmix comment: No known effects from this product.
Other information: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste disposal recommendations: Dispose of contents/container to comply with applicable local, national and international regulation.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT
Transport document description: UN3481 Lithium ion batteries, contained in equipment including lithium ion polymer batteries, 9
UN-No. (DOT): UN3481
Proper Shipping Name (DOT): Lithium ion batteries, contained in equipment including lithium ion polymer batteries
Hazard labels (DOT): 9 - Class 9 (Miscellaneous dangerous materials)
DOT Packaging Non Bulk (49 CFR 173.xxx): 185
DOT Packaging Bulk (49 CFR 173.xxx): 185
DOT Special Provisions (49 CFR 172.102): A54 - Lithium batteries or lithium batteries contained or packed with equipment that exceed the maximum gross weight allowed by Column (9B) of the 172.101 Table may only be transported on cargo aircraft if approved by the Associate Administrator
DOT Packaging Exceptions (49 CFR 173.xxx): 185
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27): 5 kg
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
Emergency Response Guide (ERG) Number: 147
Other information: No supplementary information available.

TDG
Not applicable

Transport by sea
UN-No. (IMDG): 3481
Proper Shipping Name (IMDG): LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT
Class (IMDG): 9 - Miscellaneous dangerous substances and articles
Limited quantities (IMDG): N/A
Provision (IMDG): 188

Air transport
UN-No. (IATA): 3481 (Section 1B)
Proper Shipping Name (IATA): Lithium ion batteries contained in equipment
Class (IATA): 9 - Miscellaneous Dangerous Goods
Packing Instructions: 967 (57th Edition)

SECTION 15: Regulatory information

15.1. US Federal regulations
All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory
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 (7440-50-8)
CAS No 7440-50-8 2 - 10%
CERCLA RQ 5000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm

15.2. International regulations

CANADA
Cobaltate (CoO21-), lithium (12190-79-3)
Listed on the Canadian DSL (Domestic Substances List)
Copper (7440-50-8)
Listed on the Canadian DSL (Domestic Substances List)
Methyl propionate (554-12-1)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations
Cobaltate (CoO21-), lithium (12190-79-3)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Copper (7440-50-8)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Methyl propionate (554-12-1)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations
Cobaltate (CoO$_2$1-), lithium (12190-79-3)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Japanese Pollutant Release and Transfer Register Law (PRTR Law)

Copper (7440-50-8)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Listed on the Canadian IDL (Ingredient Disclosure List)
- Listed on INSQ (Mexican National Inventory of Chemical Substances)
- Listed on CICR (Turkish Inventory and Control of Chemicals)

Methyl propionate (554-12-1)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Listed on the Canadian IDL (Ingredient Disclosure List)
- Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

No additional data available.

SECTION 16: Other information

Date of Issue: November 2, 2016

Other information: None.

Full text of H-statements:

<table>
<thead>
<tr>
<th>H-Statement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H225</td>
<td>Highly flammable liquid and vapor</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>H332</td>
<td>Harmful if inhaled</td>
</tr>
<tr>
<td>H361</td>
<td>Suspected of damaging fertility or the unborn child</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life</td>
</tr>
<tr>
<td>H412</td>
<td>Harmful to aquatic life with long lasting effects</td>
</tr>
</tbody>
</table>

SDS US (GHS HazCom 2012)

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.