SAFETY DATA SHEET

1. Identification

Product identifier	**Thermacell Repeller – Lithium-ion Cylindrical Battery**
Product No(s).	n/a
Recommended use	Rechargeable, non-removable, battery within mosquito repeller device
Recommended restrictions	Keep out of reach of children. Use only per label directions.
Negative Electrode:	Silicon oxide / graphite
Positive Electrode:	Lithium Nickel Cobalt Manganese Oxide
Electrolyte:	LiPF6
Cell Type:	INR18650-320
Minimum Cell Capacity:	3100mAh
Nominal Voltage:	3.67 V
Company name	**Thermacell Repellents, Inc.**
Address	26 Crosby Drive Bedford, MA 01730
Telephone	866.753.3837

2. Hazard(s) identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

GHS Classification	Not Applicable. The device and battery are articles according to 29 CFR 1910.1200 and not subject to the OSHA Hazard Communication Standard. The battery is not hazardous when used according to the manufacturer's directions. This SDS serves to relay important information regarding the battery's inner contents.
Supplemental information	If the cell or battery is compromised and starts to leak, the contents are flammable, harmful if swallowed, can cause serious eye damage, cause skin burns or severe irritation and may cause an allergic skin reaction.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep in original container. Wash thoroughly after handling. Wear protective gloves/eye protection/face protection.
Response	If swallowed: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting. If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
Storage	Store in a well-ventilated place. Keep cool.
Disposal	Dispose of contents/container in accordance with local, state and federal regulations.

3. Composition/information on ingredients

Hazardous component(s):

Chemical name	CAS Number	Weight (w/w%)
Aluminum foil	7429-90-5	2-7
Copper foil	7440-50-8	5-15
Linear and Cyclic Carbonic Solvents	96-49-1; 616-38-6; 105-58-8	5-16
Silicon oxide / graphite Powder	10097-28-6	10-20
Lithium Nickel Cobalt Manganese Oxide	*	25-30
Poly (vinylidene fluoride) (PVDF)	24937-79-9	0.1-1
Steel, nickel and inert polymer	*	< 30

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention. Wash contaminated clothing before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

General information Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

5. Fire-fighting measures

Suitable extinguishing media Alcohol resistant foam. Dry chemicals. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/ instructions Use water spray to cool unopened containers.

Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	The batteries can leak and/or spout vaporized or decomposed and combustible electrolyte fumes in case of exposure above 90°C resulting from inappropriate use or from the environment. Possible formation of hydrogen fluoride (HF) and phosphorous oxides during fire.LiPF6 salt contained in the electrolyte releases hydrogen fluoride (HF) in contact with water.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	This material should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways. Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Do not handle, store or open near an open flame, sources of heat or sources of ignition (solder). Protect material from direct sunlight. Avoid breathing mist/vapors. Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling. Do not crush, pierce, short (+) and (-) battery terminals with conductive (i.e. metal) goods. Do not dispose in fire. Do not mix batteries of different types.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store in a well-ventilated place. Temperatures above 90°C may result in battery leakage and rupture. Keep batteries in non-conductive (i.e. plastic) trays.

8. Exposure controls/personal protection

Occupational exposure limits	This mixture has no PEL, TLV, or other recommended exposure limit.

Individual protection measures, such as personal protective equipment

Eye/face protection	In case of leak, wear safety glasses with side shields (or goggles).
Skin protection	In case of leak, wear appropriate chemical resistant gloves.
Respiratory	In case of leak, wear suitable respiratory equipment. Chemical respirator with organic vapor cartridge.

9. Physical and chemical properties

Appearance	
Physical state	Solid.
Color	Varies
Odor	None
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	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Density	Not available.
Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Keep away from open flames, hot surfaces and sources of ignition. Do not puncture, crush or incinerate.
Incompatible materials	Strong acids, bases and oxidizing agents.
Hazardous decomposition products	In case of open cells, there is the possibility of hydrofluoric acid and carbon monoxide release.

11. Toxicological information

Information on likely routes of exposure

The hazardous components of the cell or battery are contained within a sealed unit. 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 battery leaks, is exposed to high temperature or is mechanically, electrically or physically abused/damaged. The following data is in respect to the electrolyte.

Acute Toxicity

Inhalation	Inhalation of vapors from a leaking cell or battery is expected to cause severe irritation of the mouth and upper respiratory tract with a burning sensation, pain, burns and inflammation in the nose and throat with coughing or difficulty breathing.
Skin contact	The electrolyte contained within the cell or battery is a corrosive liquid and is expected to cause skin burns or severe irritation if not washed off immediately. May cause an allergic skin reaction.
Eye contact	The electrolyte contained within the cell or battery is a corrosive liquid and it is expected to cause irreversible eye damage. Contact may cause corneal burns.
Ingestion	The electrolyte contained within the cell or battery is a corrosive liquid. Ingestion of the electrolyte would be harmful. Swallowing may result in nausea, vomiting, diarrhea, abdominal pain and chemical burns to the gastrointestinal tract.

Chronic Toxicity

Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Components within contain Cobalt and Nickel compounds. These compounds are classified as IARC 2B – possibly carcinogenic to humans, however, do not present an exposure when contained in the cell or battery sealed unit.
Reproductive toxicity	Not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	None.
Specific target organ toxicity - repeated exposure	None.

12. Ecological information

Ecotoxicity	An environmental hazard cannot be excluded in the event of improper handling or disposal.
Persistence and degradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.

13. Disposal considerations

Disposal instructions	Collect in sealed containers for recycling or handling by licensed waste disposal services. Dispose in accordance with local/regional/national regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues.

14. Transport information

Consult the shipper for guidance with either ground, air or ocean transport.

15. Regulatory information

No data to report for the article.

16. Other information

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Revision date	n/a
Disclaimer	The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create any warranty, expressed or implied. It is the responsibility of the user to determine the applicability of this information and the suitability of the material or product for any particular purpose.