SAFETY DATA SHEET

1. Identification

Product identifier	**Thermacell C-15 Cartridge**
Product No(s).	(With units): MR-GJ, MR-LJ, MR-RJ, MR-XJ, MR450X, MR-CL, MR-CLC, MR-9SB, MR-9L, MR-9W, MR-KA, MR-KB, MR-BP, MR-CLE, MR-CLB, MR-CLD, MR-BPR, MR-PSB, MR-PSG, MR-PSR, MR-PSL, MRD201, MRD202, MRD203, MR-300G, MR-300L, MR-300V, MR-TJ, MR-FJ (Refills): R1, R4, RB1, RB4, R5, R10, L4, R25, E1, E4, C2, C4
Recommended use	Gas cartridge or Energy Cell
Recommended restrictions	Use with Thermacell Repellers, Lanterns, and Torches. Keep out of reach of children. Use only per label directions.
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

Physical hazards	Flammable gases	Category 1
	Gases under pressure	Liquefied gas
Health hazards	Not classified.	
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Hazard symbol

Signal word	Danger
Hazard statement	Extremely flammable gas. Contains gas under pressure; may explode if heated.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Response	Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.
Storage	Protect from sunlight. Store in a well-ventilated place.
Disposal	Dispose of waste and residues in accordance with local/regional/national/ international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Hazardous component(s):

Chemical name	CAS Number	Concentration
Liquefied Petroleum Gas	68476-85-7	100

4. First-aid measures

Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Not likely, due to the form of the product.
Most important symptoms/effects, acute and delayed	Anesthetic effects at high concentrations.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. 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	In case of fire and/or explosion do not breathe fumes. Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. If this cannot be done, allow fire to burn. Move undamaged containers from immediate hazard area if it can be done safely. Stay away from ends of container. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely.

Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. Cool containers exposed to flames with water until well after the fire is out.
General fire hazards	Extremely flammable gas. Contents under pressure. Pressurized container may explode when exposed to heat or flame.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep out of low areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during clean-up. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. 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	Stop leak if you can do so without risk. Use water spray to reduce vapors or divert vapor cloud drift. Isolate area until gas has dispersed. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material.
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. Protect material from direct sunlight. Do not smoke. Turn device off after each use and when empty. Protect cartridges from physical damage; do not drag, roll, slide, or drop. Use only properly specified equipment which is suitable for this product. The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of incomplete combustion products (e.g. carbon monoxide, oxides of sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage.
Conditions for safe storage, including any incompatibilities	Keep away from heat, sparks and open flame. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

OSHA

Component	Type	Value
Liquefied Petroleum Gas	TWA	1000 ppm
	TWA	1800 mg/m3

ACGIH

Component	Type	Value
Liquefied Petroleum Gas	TWA	1000 ppm

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

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection Wear appropriate chemical resistant gloves.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Chemical respirator with organic vapor cartridge.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Gas.

Form Liquefied gas.

Color Colorless.

Odor No distinct odor.

Odor threshold Not available.

pH Not applicable.

Melting/freezing point < -292 °F / < -180 °C

Initial boiling point/range -40 to -22 °F / -40 to -30 °C

Flash point < 23 °F / < -5 °C (Closed Cup - Pensky Martens)

Lower Explosive Limits (vol % in air) 1.8

Upper Explosive Limits (vol % in air) 13.0

Auto-ignition Temperature 752-842 °F / 400-450 °C

Evaporation rate Not available.

Vapor pressure	1400 kPa @ 57°F / 14°C
Vapor density	>1
Specific Gravity (water=1)	0.45-0.6 @ 60ºF (15.6ºC)
Percent Volatile	100%
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	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	Avoid all possible sources of ignition. Heat will increase pressure in the cartridge.
Incompatible materials	Avoid contact with acids, aluminum chloride, chlorine, chlorine dioxide, halogens and oxidizing agents.
Hazardous decomposition products	Not anticipated under normal conditions of use.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Unlikely to be harmful. Asphyxiant at high concentrations in confined spaces may limit oxygen available for breathing.
Skin contact	Skin contact is not anticipated.
Eye contact	Direct contact with eyes is not anticipated.
Ingestion	Ingestion is not anticipated.
Symptoms related to the physical, chemical and toxicological characteristics	Light hydrocarbon gases are simple asphyxiants and can cause anesthetic effects at high concentrations. Symptoms of overexposure, which are reversible if exposure is stopped, can include shortness of breath, drowsiness, headaches, confusion, decreased coordination, visual disturbances and vomiting. Continued exposure can lead to hypoxia (inadequate oxygen), rapid breathing, cyanosis (bluish discoloration of the skin), numbness of the extremities, unconsciousness and death.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
Liquefied Petroleum Gas	Rat	Acute Toxicity (LC50): > 10,000 ppm (gas)

Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	Not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at

	greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not classifiable as to carcinogenicity to humans.
Reproductive toxicity	Not expected to cause reproductive toxicity. Exposure of rats during gestation days 6-10 to concentrations of 1000, 5000, and 10,000 ppm liquefied petroleum gas did not result in fetal toxicity or abnormalities.
Specific target organ toxicity - single exposure	Not expected to cause organ effects from single exposure.
Specific target organ toxicity - repeated exposure	Not known to cause organ damage. A thirteen week inhalation study in which rats were exposed to liquefied petroleum gas at concentrations of 1000, 5000, and 10,000 ppm did not demonstrate adverse effects.
Aspiration hazard	Not an aspiration hazard.

12. Ecological information

Ecotoxicity	Petroleum gases will readily evaporate from the surface and would not be expected to have significant adverse effects in the aquatic environment.
Persistence and degradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/ international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the Waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty cartridges may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT	Consumer Commodity, ORM-D (until 12/31/2020) or Limited Quantity for packages less than 30 kg (66 lb).
IATA	
UN number	UN2037
UN proper shipping name	Gas cartridges (flammable) without a release device, non-refillable
Transport hazard class	
Class	2.1
Subsidiary risk	-

Packing group	-
ERG Code	10L
Special precautions for user	Not available.

IMDG

UN number	UN2037
UN proper shipping name	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) without a release device, non-refillable
Transport hazard class(es)	
Class	2
Subsidiary risk	-
Packing group	Not available.
Environmental hazards	
Marine pollutant	No
EmS	F-D, S-U
Special precautions for user	Not available.

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

IATA; IMDG

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA Hazardous Substance List (40 CFR 302.4)	Not listed.
SARA 304 Emergency release notification	Not regulated.
Superfund Amendments and Reauthorization Act of 1986 (SARA)	
Hazard categories	Immediate Hazard - No Delayed Hazard - No Fire Hazard - Yes Pressure Hazard - Yes Reactivity Hazard - No
SARA 302 Extremely hazardous substance	Not listed.
SARA 311/312	Yes
Hazardous chemical SARA 313 (TRI reporting)	Not regulated.

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

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	
United States	All ingredients are listed or are exempt from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.
Canada	All ingredients of this product comply with the New Substances Notification requirements under the Canadian Environmental Protection Act (CEPA).

16. Other information

Issue date	03-1-2018
Revision date	03-1-2018
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.