



Safety Data Sheet  
IC-REFL-MAT-BULK-THERMACELL BIG MAT PHIL

Safety Data Sheet dated 18/10/2013, version 3

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Mixture identification:

Trade name: IC-REFL-MAT-BULK-THERMACELL BIG MAT PHIL

Trade code: ZSDS17002

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use: Solid insecticide

1.3. Details of the supplier of the safety data sheet

Company: ZOBELE HOLDING S.p.A

Via Fersina 4 - 38123 - Trento (Italy)

ZOBELE HOLDING S.p.A - Phone n.+39 0461/303700 (Working hours)

Competent person responsible for the safety data sheet: info@zobebe.com

1.4. Emergency telephone number

ZOBELE HOLDING S.p.A - Phone n.+39 0461/303700 (Working hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Directive criteria, 67/548/CE, 99/45/EC and following amendments thereof:

Properties / Symbols:

N Dangerous for the environment

R Phrases:

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

EC regulation criteria 1272/2008 (CLP):



Warning, Aquatic Acute 1, Very toxic to aquatic life.



Warning, Aquatic Chronic 1, Very toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects: No other hazards

2.2. Label elements



N

Symbols:

N Dangerous for the environment

R Phrases:

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S Phrases:

S2 Keep out of the reach of children.

S29/56 Do not empty into drains, dispose of this material and its container to hazardous or special waste collection point.

S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

Symbols:



Warning

Hazard statements:

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read label before use.

P273 Avoid release to the environment.

P391 Collect spillage.

P501 Dispose of contents/container in accordance with applicable regulations.

Special Provisions: None

2.3. Other hazards

vPvB Substances: None - PBT Substances: None

Other Hazards: No other hazards

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SECTION 3: Composition/information on ingredients

3.1. Substances - N.A.

3.2. Mixtures

Hazardous components within the meaning of EEC directive 67/548 and CLP regulation and related classification:

21,97 % d-Allethrin;(Pynamin forte); (RS)-3-allyl-2-methyl-4-oxocyclopent-2-enyl  
(1R,3R;1R,3S)-2,2-dimethyl-3-(2-methylprop-1-enyl)cyclopropanecarboxylate

Index number: 006-025-00-3, CAS: 231937-89-6, EC: 209-542-4

Xn,N; R20/22-50/53



3.1/4/Inhal Acute Tox. 4 H332



3.1/4/Oral Acute Tox. 4 H302



4.1/A1 Aquatic Acute 1 H400



4.1/C1 Aquatic Chronic 1 H410

7.69 % Hydrocarbons, C12-C16, isoalkanes,cyclic <2% aromatics

REACH No.: 01-2119456377-30, EC: 927-676-8

Xn; R65-66



2.6/3 Flam. Liq. 3 H226



3.10/1 Asp. Tox. 1 H304

1.92 % Hydrocarbons, C11-C13, isoalkanes, <2% aromatics

REACH No.: 01-2119456810-40, EC: 920-901-0

Xn; R65-66



2.6/3 Flam. Liq. 3 H226



3.10/1 Asp. Tox. 1 H304



3.2/2 Skin Irrit. 2 H315

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SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:Wash with plenty of water and soap.

In case of eyes contact:In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

In case of Ingestion:Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

In case of Inhalation:Remove casualty to fresh air and keep warm and at rest.

4.2. Most important symptoms and effects, both acute and delayed - None

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

Treatment: None

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO2).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

- Suitable material for taking up: absorbing material, organic, sand  
6.3. Methods and material for containment and cleaning up - Wash with plenty of water.  
6.4. Reference to other sections - See also section 8 and 13

**SECTION 7: Handling and storage**

- 7.1. Precautions for safe handling  
Avoid contact with skin and eyes, inhalation of vapours and mists.  
Don't use empty container before they have been cleaned.  
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.  
Contaminated clothing should be changed before entering eating areas.  
Do not eat or drink while working.  
See also section 8 for recommended protective equipment.
- 7.2. Conditions for safe storage, including any incompatibilities  
Keep away from food, drink and feed.  
Incompatible materials:  
None in particular.  
Instructions as regards storage premises:  
Adequately ventilated premises.
- 7.3. Specific end use(s) - None in particular

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

- 8.1. Control parameters  
Hydrocarbons, C12-C16, isoalkanes, cyclic <2% aromatics  
TLV TWA - 200 mg/m<sup>3</sup>  
Hydrocarbons, C11-C13, isoalkanes, <2% aromatics  
TLV TWA - 1200 mg/l  
DNEL Exposure Limit Values - N.A.  
PNEC Exposure Limit Values - N.A.
- 8.2. Exposure controls  
Eye protection: Not needed for normal use. Anyway, operate according good working practices.  
Protection for skin: No special precaution must be adopted for normal use.  
Protection for hands: Not needed for normal use.  
Respiratory protection: Not needed for normal use.  
Thermal Hazards: None  
Environmental exposure controls: None

**SECTION 9: Physical and chemical properties**

- 9.1. Information on basic physical and chemical properties
- |   |  |
|---|--|
| Appearance and colour:                        | Blue cardboard insecticide mat weighing about 2100mg |
| Odour:  | Characteristic                                       |
| Odour threshold:                              | N.A.   |
| pH:   | N.A.   |
| Melting point / freezing point:               | N.A.   |
| Initial boiling point and boiling range:      | N.A.   |
| Solid/gas flammability:                       | N.A.   |
| Upper/lower flammability or explosive limits: | N.A.   |
| Vapour density:                               | N.A.   |
| Flash point:                                  | N.A.   |
| Evaporation rate:                             | N.A.   |
| Vapour pressure:                              | N.A.   |
| Relative density:                             | N.A.   |
| Solubility in water:                          | Partially miscible                                   |
| Solubility in oil:                            | Partially miscible                                   |
| Partition coefficient (n-octanol/water):      | N.A.   |
| Auto-ignition temperature:                    | N.A.   |
| Decomposition temperature:                    | N.A.   |
| Viscosity:                                    | N.A.   |
| Explosive properties:                         | N.A.   |
| Oxidizing properties:                         | N.A.   |
- 9.2. Other information
- |                                      |      |
|--------------------------------------|------|
| Miscibility:                         | N.A. |
| Fat Solubility:                      | N.A. |
| Conductivity:                        | N.A. |
| Substance Groups relevant properties | N.A. |

**SECTION 10: Stability and reactivity**

- 10.1. Reactivity - -Stable under normal conditions

- 10.2. Chemical stability - Stable under normal conditions
- 10.3. Possibility of hazardous reactions - None
- 10.4. Conditions to avoid - Stable under normal conditions.
- 10.5. Incompatible materials - None in particular.
- 10.6. Hazardous decomposition products - None.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological information of the mixture: N.A.

Toxicological information of the main substances found in the mixture:

d-Allethrin; (Pynamin forte); (RS)-3-allyl-2-methyl-4-oxocyclopent-2-enyl  
(1R,3R;1R,3S)-2,2-dimethyl-3-(2-methylprop-1-enyl)cyclopropanecarboxylate - CAS: 231937-89-6

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat 900 mg/kg

Test: LD50 - Route: Skin - Species: Rat > 2000 mg/kg

Test: LC50 - Route: Inhalation - Species: Rat 3.85 mg/l - Duration: 4h

Hydrocarbons, C11-C13, isoalkanes, <2% aromatics

a) acute toxicity:

Test: LC50 - Route: Inhalation - Species: Rat 5000 mg/m<sup>3</sup> - Duration: 8h

Test: LC50 - Route: Oral - Species: Rat 5000 mg/kg

Test: LC50 - Route: Skin - Species: Rabbit 5000 mg/kg

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d-Allethrin; (Pynamin forte); (RS)-3-allyl-2-methyl-4-oxocyclopent-2-enyl  
(1R,3R;1R,3S)-2,2-dimethyl-3-(2-methylprop-1-enyl)cyclopropanecarboxylate - CAS: 231937-89-6

EYE RBT Non-irritant

IHL RAT LC50 >3,875 mg/l

ORL RAT LD50 900 mg/Kg

SKN GPG Non-sensitiser

SKN RBT Non-irritant

SKN RBT LD50 2260 mg/Kg

If not differently specified, the information required in Regulation 453/2010/EC listed below must be considered as N.A.:

- a) acute toxicity;
- b) skin corrosion/irritation;
- c) serious eye damage/irritation;
- d) respiratory or skin sensitisation;
- e) germ cell mutagenicity;
- f) carcinogenicity;
- g) reproductive toxicity;
- h) STOT-single exposure;
- i) STOT-repeated exposure;
- j) aspiration hazard.

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SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

d-Allethrin; (Pynamin forte); (RS)-3-allyl-2-methyl-4-oxocyclopent-2-enyl  
(1R,3R;1R,3S)-2,2-dimethyl-3-(2-methylprop-1-enyl)cyclopropanecarboxylate - CAS: 231937-89-6

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish 0.134 mg/l - Duration h: 96

Endpoint: EC50 - Species: Daphnia 0.047 mg/l - Duration h: 48

12.2. Persistence and degradability - None

d-Allethrin; (Pynamin forte); (RS)-3-allyl-2-methyl-4-oxocyclopent-2-enyl

(1R,3R;1R,3S)-2,2-dimethyl-3-(2-methylprop-1-enyl)cyclopropanecarboxylate - CAS: 231937-89-6

Biodegradability: Non-rapidly degradable - Test: N.A. - Duration: N.A. - %: N.A. - Notes: N.A.

12.3. Bioaccumulative potential - N.A.

12.4. Mobility in soil - N.A.

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Other adverse effects - None

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force.

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SECTION 14: Transport information

- 14.1. UN number  
 ADR-UN number: 3077  
 IATA-Un number: 3077  
 IMDG-Un number: 3077
- 14.2. UN proper shipping name  
 ADR-Shipping Name: Environmentally hazardous substance, solid, N.O.S ( d-Allethrin ). Limited quantity  
 IATA-Technical name: Environmentally hazardous substance, solid, N.O.S ( d-Allethrin ). Limited quantity  
 IMDG-Technical name: Environmentally hazardous substance, solid, N.O.S ( d-Allethrin ). Limited quantity
- 14.3. Transport hazard class(es)  
 ADR-Class: 9  
 IATA-Class: 9  
 IMDG-Class: 9
- 14.4. Packing group  
 ADR-Packing Group: III  
 IATA-Packing group: III  
 IMDG-Packing group: III
- 14.5. Environmental hazards  
 Marine pollutant: Marine pollutant
- 14.6. Special precautions for user  
 IMDG-Technical name: Environmentally hazardous substance, solid, N.O.S ( d-Allethrin ). Limited quantity
- 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code - No

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SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture  
 Dir. 67/548/EEC (Classification, packaging and labelling of dangerous substances). Dir. 99/45/EEC (Classification, packaging and labelling of dangerous preparations). Dir. 98/24/EC (Risks related to chemical agents at work). Dir. 2000/39/EC (Occupational exposure limit values); Dir. 2006/8/CE. Regulation (CE) n. 1907/2006 (REACH), Regulation (CE) n.1272/2008 (CLP), Regulation (CE) n.790/2009.

Where applicable, refer to the following regulatory provisions :

Directive 82/501/EEC ('Activities linked to risks of serious accidents') and subsequent amendments.  
 Regulation (EC) nr 648/2004 (detergents).  
 1999/13/EC (VOC directive)

15.2. Chemical safety assessment - No

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SECTION 16: Other information

Text of phrases referred to under heading 3:

R20/22 Harmful by inhalation and if swallowed.  
 R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
 R65 Harmful: may cause lung damage if swallowed.  
 R66 Repeated exposure may cause skin dryness or cracking.

H332 Harmful if inhaled.  
 H302 Harmful if swallowed.  
 H400 Very toxic to aquatic life.  
 H410 Very toxic to aquatic life with long lasting effects.  
 H226 Flammable liquid and vapour.  
 H304 May be fatal if swallowed and enters airways.  
 H315 Causes skin irritation.

Paragraphs modified from the previous revision:

SECTION 1: Identification of the substance/mixture and of the company/undertaking  
 SECTION 2: Hazards identification  
 SECTION 3: Composition/information on ingredients  
 SECTION 4: First aid measures  
 SECTION 8: Exposure controls/personal protection  
 SECTION 9: Physical and chemical properties  
 SECTION 11: Toxicological information  
 SECTION 12: Ecological information  
 SECTION 14: Transport information  
 SECTION 15: Regulatory information



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GROUP**

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This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

CCNL - Appendix 1

Insert further consulted bibliography

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.



# C-15 Cartridge

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Revision Date: 05/07/2015 Date of issue: 05/07/2015

Version: 1.0

## SECTION 1: IDENTIFICATION

### Product Identifier

**Product Form:** Mixture

**Product Name:** C-15 Cartridge

### Intended Use of the Product

As Gas Cartridge or Energy Cell.

### Name, Address, and Telephone of the Responsible Party

#### Company

Thermacell Repellents, Inc

26 Crosby Dr

Bedford, MA 01730

781-541-6900

[www.thermacell.com](http://www.thermacell.com)

### Emergency Telephone Number

**Emergency Number** : 703-527-3887 CHEMTREC

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the Substance or Mixture

#### Classification (GHS-US)

Simple Asphy

Flam. Gas 1 H220

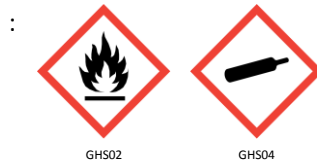
Liquefied gas H280

Full text of H-phrases: see section 16

### 2.2. Label Elements

#### GHS-US Labeling

##### Hazard Pictograms (GHS-US)



##### Signal Word (GHS-US)

: Danger

##### Hazard Statements (GHS-US)

: H220 - Extremely flammable gas.

H280 - Contains gas under pressure; may explode if heated.

May displace oxygen and cause rapid suffocation.

##### Precautionary Statements (GHS-US)

: P210 - Keep away from extremely high or low temperatures, ignition sources, and incompatible materials. - No smoking.

P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381 - Eliminate all ignition sources if safe to do so.

P403 - Store in a well-ventilated place.

P410+P403 - Protect from sunlight. Store in a well-ventilated place.

**Other Hazards** Exposure to high vapor concentrations can lead to nausea, headache, dizziness, and in extreme cases, loss of consciousness and death in oxygen deficient environments. Prolonged exposure to vapor may affect the central nervous system. Contact with liquid LPG can cause cold burns. Contains Sulfur, may release small amounts of hydrogen sulfide. Hydrogen sulfide is a highly flammable, explosive gas under certain conditions, is a toxic gas, and may be fatal.

**Unknown Acute Toxicity (GHS-US)** Not applicable

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### Mixture

Name	Product Identifier	% (w/w)	Classification (GHS-US)
Petroleum gases, liquefied	(CAS No) 68476-85-7	100	Simple Asphy Flam. Gas 1, H220 Liquefied gas, H280

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Name	Product Identifier	% (w/w)	Classification (GHS-US)
Butane	(CAS No) 106-97-8	60	Simple Asphy Flam. Gas 1, H220 Liquefied gas, H280
Isobutane	(CAS No) 75-28-5	40	Simple Asphy Flam. Gas 1, H220 Liquefied gas, H280
Propane	(CAS No) 74-98-6	<= 1	Simple Asphy Flam. Gas 1, H220 Liquefied gas, H280
Sulfur	(CAS No) 7704-34-9	<= 0.015	Comb. Dust Skin Irrit. 2, H315 Aquatic Acute 3, H402

Full text of H-phrases: see section 16

### SECTION 4: FIRST AID MEASURES

#### Description of First Aid Measures

**General:** Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention. If frostbite or freezing occurs, immediately flush with plenty of lukewarm water to GENTLY warm the affected area. Do not use hot water. Do not rub affected area. Get immediate medical attention.

**Inhalation:** When symptoms occur: go into open air and ventilate suspected area. Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell.

**Skin Contact:** Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation persists.

**Eye Contact:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Obtain medical attention if irritation persists.

**Ingestion:** Rinse mouth. Do NOT induce vomiting.

#### Most Important Symptoms and Effects Both Acute and Delayed

**Symptoms/Injuries:** Asphyxiant gas. Compressed gases may create low temperatures when they expand rapidly. Leaks and uses that allow rapid expansion may cause a frostbite hazard.

**Symptoms/Injuries After Inhalation:** May cause drowsiness or dizziness. Vapors are heavier than air and may cause asphyxia by reduction of the oxygen content.

**Symptoms/Injuries After Skin Contact:** May cause skin irritation. May cause frostbite on contact with the liquefied gas.

**Symptoms/Injuries After Eye Contact:** May cause eye irritation. May cause frostbite.

**Symptoms/Injuries After Ingestion:** Ingestion is an unlikely route of exposure for a gas.

**Chronic Symptoms:** None known.

#### Indication of Any Immediate Medical Attention and Special Treatment Needed

If you feel unwell, seek medical advice (show the label where possible).

### SECTION 5: FIRE-FIGHTING MEASURES

#### Extinguishing Media

**Suitable Extinguishing Media:** Dry chemical, carbon dioxide, water spray, fog.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

#### Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Extremely flammable gas. Vapors are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapors.

**Explosion Hazard:** May form flammable/explosive vapor-air mixture. Heating may cause an explosion. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

**Reactivity:** Hazardous reactions will not occur under normal conditions. Pressurized container: may burst if heated.

#### Advice for Firefighters

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.



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**Firefighting Instructions:** Leaking gas fire: Do not extinguish, unless leak can be stopped safely. In case of leaking gas fire, eliminate all ignition sources if safe to do so. Do not allow run-off from firefighting to enter drains or water courses – may cause explosion hazard in drains and may reignite on surface water. Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** Carbon dioxide, carbon monoxide and low molecular weight hydrocarbons.

### Reference to Other Sections

Refer to section 9 for flammability properties.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Use special care to avoid static electric charges. Eliminate every possible source of ignition. Do not breathe gas. Use only outdoors or in a well-ventilated area. Ruptured cylinders may rocket.

#### For Non-Emergency Personnel

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

#### For Emergency Personnel

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

### Environmental Precautions

Avoid release to the environment.

### Methods and Material for Containment and Cleaning Up

**For Containment:** If possible, stop flow of product.

**Methods for Cleaning Up:** Use water spray to reduce vapors or divert vapor cloud drift.

### Reference to Other Sections

See Section 8, Exposure Controls and Personal Protection. See Section 13, Disposal Considerations.

## SECTION 7: HANDLING AND STORAGE

### Precautions for Safe Handling

**Additional Hazards When Processed:** Use only as directed by the information identified in the package insert. Handle empty containers with care because residual vapors are flammable. Do not puncture or incinerate container.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Do not eat, drink or smoke when using this product.

### Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Proper grounding procedures to avoid static electricity should be followed. Comply with applicable regulations.

**Storage Conditions:** Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep in fireproof place. Protect from heat and direct sunlight.

**Incompatible Materials:** Acids. Solvents.

**Specific End Use(s)** As Gas Cartridge or Energy Cell

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government

<b>Butane (106-97-8)</b>		
<b>Mexico</b>	OEL TWA (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
<b>Mexico</b>	OEL TWA (ppm)	800 ppm
<b>USA ACGIH</b>	ACGIH STEL (ppm)	1000 ppm
<b>USA NIOSH</b>	NIOSH REL (TWA) (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
<b>USA NIOSH</b>	NIOSH REL (TWA) (ppm)	800 ppm
<b>Alberta</b>	OEL TWA (ppm)	1000 ppm
<b>British Columbia</b>	OEL STEL (ppm)	750 ppm

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<b>British Columbia</b>	OEL TWA (ppm)	600 ppm
<b>Manitoba</b>	OEL STEL (ppm)	1000 ppm
<b>New Brunswick</b>	OEL TWA (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
<b>New Brunswick</b>	OEL TWA (ppm)	800 ppm
<b>Newfoundland &amp; Labrador</b>	OEL STEL (ppm)	1000 ppm
<b>Nova Scotia</b>	OEL STEL (ppm)	1000 ppm
<b>Nunavut</b>	OEL STEL (mg/m <sup>3</sup> )	2576 mg/m <sup>3</sup>
<b>Nunavut</b>	OEL STEL (ppm)	1000 ppm
<b>Nunavut</b>	OEL TWA (mg/m <sup>3</sup> )	1901 mg/m <sup>3</sup>
<b>Nunavut</b>	OEL TWA (ppm)	800 ppm
<b>Northwest Territories</b>	OEL STEL (mg/m <sup>3</sup> )	2576 mg/m <sup>3</sup>
<b>Northwest Territories</b>	OEL STEL (ppm)	1000 ppm
<b>Northwest Territories</b>	OEL TWA (mg/m <sup>3</sup> )	1901 mg/m <sup>3</sup>
<b>Northwest Territories</b>	OEL TWA (ppm)	800 ppm
<b>Ontario</b>	OEL TWA (ppm)	800 ppm
<b>Prince Edward Island</b>	OEL STEL (ppm)	1000 ppm
<b>Québec</b>	VEMP (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
<b>Québec</b>	VEMP (ppm)	800 ppm
<b>Saskatchewan</b>	OEL STEL (ppm)	1250 ppm
<b>Saskatchewan</b>	OEL TWA (ppm)	1000 ppm
<b>Yukon</b>	OEL STEL (mg/m <sup>3</sup> )	1600 mg/m <sup>3</sup>
<b>Yukon</b>	OEL STEL (ppm)	750 ppm
<b>Yukon</b>	OEL TWA (mg/m <sup>3</sup> )	1400 mg/m <sup>3</sup>
<b>Yukon</b>	OEL TWA (ppm)	600 ppm
<b>Isobutane (75-28-5)</b>		
<b>USA ACGIH</b>	ACGIH STEL (ppm)	1000 ppm
<b>USA NIOSH</b>	NIOSH REL (TWA) (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
<b>USA NIOSH</b>	NIOSH REL (TWA) (ppm)	800 ppm
<b>Manitoba</b>	OEL STEL (ppm)	1000 ppm
<b>Newfoundland &amp; Labrador</b>	OEL STEL (ppm)	1000 ppm
<b>Nova Scotia</b>	OEL STEL (ppm)	1000 ppm
<b>Ontario</b>	OEL TWA (ppm)	800 ppm
<b>Prince Edward Island</b>	OEL STEL (ppm)	1000 ppm
<b>Saskatchewan</b>	OEL STEL (ppm)	1250 ppm
<b>Saskatchewan</b>	OEL TWA (ppm)	1000 ppm
<b>Sulfur (7704-34-9)</b>		
<b>Alberta</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Petroleum gases, liquefied (68476-85-7)</b>		
<b>Mexico</b>	OEL TWA (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
<b>Mexico</b>	OEL TWA (ppm)	1000 ppm
<b>Mexico</b>	OEL STEL (mg/m <sup>3</sup> )	2250 mg/m <sup>3</sup>
<b>Mexico</b>	OEL STEL (ppm)	1250 ppm
<b>USA ACGIH</b>	ACGIH TWA (ppm)	1000 ppm
<b>USA OSHA</b>	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
<b>USA OSHA</b>	OSHA PEL (TWA) (ppm)	1000 ppm
<b>USA NIOSH</b>	NIOSH REL (TWA) (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
<b>USA NIOSH</b>	NIOSH REL (TWA) (ppm)	1000 ppm
<b>USA IDLH</b>	US IDLH (ppm)	2000 ppm
<b>Alberta</b>	OEL STEL (ppm)	1500 ppm
<b>Alberta</b>	OEL TWA (ppm)	1000 ppm
<b>British Columbia</b>	OEL STEL (ppm)	1250 ppm

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British Columbia	OEL TWA (ppm)	1000 ppm
Manitoba	OEL TWA (ppm)	1000 ppm
New Brunswick	OEL TWA (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
New Brunswick	OEL TWA (ppm)	1000 ppm
Newfoundland & Labrador	OEL TWA (ppm)	1000 ppm
Nova Scotia	OEL TWA (ppm)	1000 ppm
Nunavut	OEL STEL (mg/m <sup>3</sup> )	2250 mg/m <sup>3</sup>
Nunavut	OEL STEL (ppm)	1250 ppm
Nunavut	OEL TWA (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
Nunavut	OEL TWA (ppm)	1000 ppm
Northwest Territories	OEL STEL (mg/m <sup>3</sup> )	2250 mg/m <sup>3</sup>
Northwest Territories	OEL STEL (ppm)	1250 ppm
Northwest Territories	OEL TWA (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
Northwest Territories	OEL TWA (ppm)	1000 ppm
Ontario	OEL TWA (ppm)	1000 ppm
Prince Edward Island	OEL TWA (ppm)	1000 ppm
Québec	VEMP (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
Québec	VEMP (ppm)	1000 ppm
Saskatchewan	OEL STEL (ppm)	1250 ppm
Saskatchewan	OEL TWA (ppm)	1000 ppm
Yukon	OEL STEL (mg/m <sup>3</sup> )	2250 mg/m <sup>3</sup>
Yukon	OEL STEL (ppm)	1250 ppm
Yukon	OEL TWA (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
Yukon	OEL TWA (ppm)	1000 ppm

### Exposure Controls

**Appropriate Engineering Controls:** Ensure adequate ventilation, especially in confined areas. Gas detectors should be used when flammable gases/vapors may be released.

**Personal Protective Equipment:** Not generally required. The use of personal protective equipment may be necessary as conditions warrant.

**Materials for Protective Clothing:** Chemically resistant materials and fabrics. Flame retardant antistatic protective clothing.

**Hand Protection:** Wear chemically resistant protective gloves.

**Eye Protection:** Chemical safety goggles.

**Respiratory Protection:** If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

**Thermal Hazard Protection:** If material is cold, wear thermally resistant protective gloves.

**Other Information:** When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on Basic Physical and Chemical Properties

Physical State	: Gas
Appearance	: Colorless
Odor	: Faint Disagreeable
Odor Threshold	: Not available
pH	: Not available
Evaporation Rate	: Not available
Melting Point	: Not available
Freezing Point	: Not available
Boiling Point	: Not available
Flash Point	: -40 °C (-40 °F)
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not available
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available

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Vapor Pressure	: Not available
Relative Vapor Density at 20 °C	: Not available
Specific Gravity	: Not available
Solubility	: Insoluble in water
Partition Coefficient: N-Octanol/Water	: Not available
Viscosity	: Not available
Explosion Data – Sensitivity to Mechanical Impact	: Sensitive to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	: Static discharge could act as an ignition source.

### SECTION 10: STABILITY AND REACTIVITY

**Reactivity:** Hazardous reactions will not occur under normal conditions. Pressurized container: may burst if heated.

**Chemical Stability:** Extremely flammable gas.

**Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.

**Conditions to Avoid:** Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.

**Incompatible Materials:** Acids. Solvents.

**Hazardous Decomposition Products:** Carbon oxides (CO, CO<sub>2</sub>).

### SECTION 11: TOXICOLOGICAL INFORMATION

#### Information on Toxicological Effects - Product

**Acute Toxicity:** Not classified

**LD50 and LC50 Data:** Not available

**Skin Corrosion/Irritation:** Not classified

**Serious Eye Damage/Irritation:** Not classified

**Respiratory or Skin Sensitization:** 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):** Not classified

**Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** May cause drowsiness or dizziness. Vapors are heavier than air and may cause asphyxia by reduction of the oxygen content.

**Symptoms/Injuries After Skin Contact:** May cause skin irritation. May cause frostbite on contact with the liquefied gas.

**Symptoms/Injuries After Eye Contact:** May cause eye irritation. May cause frostbite.

**Symptoms/Injuries After Ingestion:** Ingestion is an unlikely route of exposure for a gas.

**Chronic Symptoms:** None known.

#### Information on Toxicological Effects - Ingredient(s)

**LD50 and LC50 Data:**

<b>Butane (106-97-8)</b>	
LC50 Inhalation Rat	30957 mg/m <sup>3</sup> (Exposure time: 4 h)
<b>Isobutane (75-28-5)</b>	
LC50 Inhalation Rat	658 mg/l/4h
<b>Sulfur (7704-34-9)</b>	
LD50 Oral Rat	> 3000 mg/kg
LD50 Dermal Rabbit	> 2000 mg/kg
LC50 Inhalation Rat	> 9.23 mg/l/4h

### SECTION 12: ECOLOGICAL INFORMATION

#### Toxicity

**Ecology - General:** Not classified.

<b>Sulfur (7704-34-9)</b>	
LC50 Fish 1	866 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
EC50 Daphnia 1	736 mg/l
LC 50 Fish 2	14 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

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**Persistence and Degradability** Not established

### Bioaccumulative Potential

<b>Butane (106-97-8)</b>	
Log Pow	2.89
<b>Isobutane (75-28-5)</b>	
BCF Fish 1	1.57 - 1.97
Log Pow	2.88 (at 20 °C)
<b>Petroleum gases, liquefied (68476-85-7)</b>	
Log Pow	<= 2.8

**Mobility in Soil** Not available

### Other Adverse Effects

**Other Information:** Avoid release to the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste Disposal Recommendations:** Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

**Additional Information:** Handle empty containers with care because residual vapors are flammable.

## SECTION 14: TRANSPORT INFORMATION

### In Accordance with DOT

**Proper Shipping Name** : GAS CARTRIDGES, (flammable) without a release device, non-refillable  
**Hazard Class** : 2.1  
**Identification Number** : UN2037  
**Label Codes** : 2.1  
**ERG Number** : 115



When in containers of not more than 4 fluid ounces capacity (7.22 cubic inches or less), this product may be shipped as a limited quantity or consumer quantity.

### In Accordance with IMDG

**Proper Shipping Name** : RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) without a release device, non-refillable  
**Hazard Class** : 2  
**Identification Number** : UN2037  
**Label Codes** : 2.1  
**EmS-No. (Fire)** : F-D  
**EmS-No. (Spillage)** : S-U



### In Accordance with IATA

**Proper Shipping Name** : GAS CARTRIDGES without a release device, non-refillable  
**Identification Number** : UN2037  
**Hazard Class** : 2  
**Label Codes** : 2.1  
**ERG Code (IATA)** : 10L



### In Accordance with TDG

**Proper Shipping Name** : GAS CARTRIDGES WITHOUT A RELEASE DEVICE, NON-REFILLABLE  
**Hazard Class** : 2.1  
**Identification Number** : UN2037  
**Label Codes** : 2.1



## SECTION 15: REGULATORY INFORMATION

### US Federal Regulations

<b>C-15 Cartridge</b>	
<b>SARA Section 311/312 Hazard Classes</b>	Sudden release of pressure hazard Fire hazard
<b>Butane (106-97-8)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

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## Safety Data Sheet


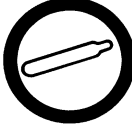
According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

<b>Isobutane (75-28-5)</b>
Listed on the United States TSCA (Toxic Substances Control Act) inventory
<b>Sulfur (7704-34-9)</b>
Listed on the United States TSCA (Toxic Substances Control Act) inventory
<b>Petroleum gases, liquefied (68476-85-7)</b>
Listed on the United States TSCA (Toxic Substances Control Act) inventory

### US State Regulations

<b>Butane (106-97-8)</b>
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List
<b>Isobutane (75-28-5)</b>
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List
<b>Sulfur (7704-34-9)</b>
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List
<b>Petroleum gases, liquefied (68476-85-7)</b>
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

### Canadian Regulations

<b>C-15 Cartridge</b>	
WHMIS Classification	Class B Division 1 - Flammable Gas Class A - Compressed Gas
	
<b>Butane (106-97-8)</b>	
Listed on the Canadian DSL (Domestic Substances List) Listed on the Canadian IDL (Ingredient Disclosure List) IDL Concentration 1 %	
WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas
<b>Isobutane (75-28-5)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas
<b>Sulfur (7704-34-9)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class B Division 4 - Flammable Solid Class D Division 2 Subdivision B - Toxic material causing other toxic effects
<b>Petroleum gases, liquefied (68476-85-7)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas

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This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

### SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

**Revision Date** : 05/07/2015

**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

#### GHS Full Text Phrases:

Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Comb. Dust	Combustible Dust
Flam. Gas 1	Flammable gases Category 1
Liquefied gas	Gases under pressure Liquefied gas
Simple Asphy	Simple Asphyxiant
Skin Irrit. 2	Skin corrosion/irritation Category 2
H220	Extremely flammable gas
Comb. Dust	May form combustible dust concentrations in air
H280	Contains gas under pressure; may explode if heated
H315	Causes skin irritation
H402	Harmful to aquatic life

#### Party Responsible for the Preparation of This Document

Thermacell Repellents, Inc.  
781-541-6900

*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.*

North America GHS US 2012 & WHMIS 2