

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product name: DEFEND
Product type: Bed Bug, Lice and Dust Mite Spray
Effective date 05-Feb-2011
Sold By: Continental Research Corporation
PO Box 15204, St. Louis, MO 63110
Company phone General Assistance 800-325-4869
Emergency telephone 800-255-3924
Emergency Contact: Chem-Tel
Version # 06
Supersedes date 01-Sep-2010

2. Hazards Identification

Emergency overview Aerosol. CONTENTS UNDER PRESSURE.
Potential health effects
Routes of exposure Skin contact. Ingestion.
Eyes Moderately irritating to the eyes. Health injuries are not known or expected under normal use.
Skin Harmful if absorbed through the skin. Health injuries are not known or expected under normal use.
Inhalation Intentional misuse by concentrating and inhaling the product can be harmful or fatal.
Ingestion Exposure by ingestion of an aerosol is unlikely. Components of the product may be absorbed into the body by ingestion.
Target organs Central nervous system.
Chronic effects May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Signs and symptoms Narcosis.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Synthetic Isoparaffinic Hydrocarbon	64742-47-8	15 - 20
Propane	74-98-6	5 - 8
n-Butane	106-97-8	5 - 8
Non-hazardous and other components below reportable levels		60 - 80

4. First Aid Measures

First aid procedures
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.
Skin contact Take off immediately all contaminated clothing. In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops and persists.
Inhalation If symptoms develop move victim to fresh air. Get medical attention if symptoms persist.
Ingestion Call a physician or Poison Control Center immediately. Do not induce vomiting without advice from poison control center. Do not give milk, alcoholic beverages or castor oil. Never give anything by mouth to an unconscious person.
Notes to physician Symptoms may be delayed.

5. Fire Fighting Measures

Flammable properties	Vapor or gas may spread to distant ignition sources and flash back. Runoff to sewer may cause fire or explosion hazard.
Extinguishing media	
Suitable extinguishing media	Large Fires: Water spray, fog or regular foam. Small Fires:
Protection of firefighters	
Protective equipment and precautions for firefighters	In case of fire and/or explosion do not breathe fumes. Containers should be cooled with water to prevent vapor pressure build up.

6. Accidental Release Measures

Methods for containment	Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Stop the flow of material, if this is without risk.
Methods for cleaning up	Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

7. Handling and Storage

Handling	Pressurized container: Do not pierce or burn, even after use. Do not smoke while using or until sprayed surface is thoroughly dry. Do not use if spray button is missing or defective. Do not re-use empty containers. Avoid contact with skin. Avoid contact with eyes. Avoid prolonged exposure.
Storage	Contents under pressure. Do not puncture, incinerate or crush. The pressure in sealed containers can increase under the influence of heat. Keep away from heat, sparks, and flame. Avoid exposure to long periods of sunlight. Store in cool place. Keep container dry. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs. Level 1 Aerosol (NFPA 30B)

8. Exposure Controls / Personal Protection

Exposure limits

ACGIH

Components	CAS #	TWA	STEL	Ceiling
Propane	74-98-6	1000 ppm	Not established	Not established
n-Butane	106-97-8	1000 ppm	Not established	Not established

OSHA

Components	CAS #	TWA	STEL	Ceiling
Propane	74-98-6	1000 ppm	Not established	Not established

Personal protective equipment

Eye / face protection	Chemical goggles are recommended.
Skin protection	Wear appropriate chemical resistant clothing. Chemical resistant gloves. Not normally needed.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.

9. Physical & Chemical Properties

Appearance	Compressed liquefied gas.
Boiling point	206.6 °F (97.2 °C) estimated
Color	White.
Density	0.8574 g/cm ³ estimated
Flammability (HOC)	13.2705 kJ/g estimated
Flash back	No

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Flash point	-156 °F (-104.4 °C) Propellant
Form	Aerosol.
Freezing point	Not available
Odor	None known.
pH	3.7 - 5.7
Physical state	Liquid.
Pressure	75 - 85 psig @70F
Solubility	Partially
Specific gravity	0.8575 estimated

10. Chemical Stability & Reactivity Information

Chemical stability	Risk of ignition.
Conditions to avoid	Heat, flames and sparks.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological Information

Acute effects	Acute LD50: 12478 mg/kg estimated, Rat, Dermal Acute LC50: 32 mg/l/4h estimated, Rat, Inhalation Acute LC50: , Rat, Inhalation
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Component analysis - LD50

Toxicology Data - Selected LD50s and LC50s

n-Butane	106-97-8	Inhalation LC50 Rat 658 mg/L 4 h
Propane	74-98-6	Inhalation LC50 Rat 658 mg/L 4 h
Synthetic Isoparaffinic Hydrocarbon	64742-47-8	Inhalation LC50 Rat >5.2 mg/L 4 h; Oral LD50 Rat >5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg

Sensitization	Not expected to be hazardous by OSHA criteria.
Teratogenicity	Not expected to be hazardous by OSHA criteria.

12. Ecological Information

Ecotoxicity	LC50 280 mg/L estimated, Fish, 96.00 Hours, Components of this product are hazardous to aquatic life.
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13. Disposal Considerations

Waste codes	D001: Waste Flammable material with a flash point <140 F
Disposal instructions	Contents under pressure. Dispose of this material and its container to hazardous or special waste collection point. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies. If discarded, this product is considered a RCRA ignitable waste, D001. Dispose in accordance with all applicable regulations.

14. Transport Information

Department of Transportation (DOT) Requirements

Basic shipping requirements:

Proper shipping name	Consumer commodity
Hazard class	ORM-D
Subsidiary hazard class	None
Additional information:	
Packaging exceptions	156, 306
Packaging non bulk	156, 306
Packaging bulk	None

IMDG**Basic shipping requirements:**

Proper shipping name AEROSOLS
Hazard class 2.1
UN number 1950
Additional information:
Packaging exceptions LTD QTY
Item 5F
Labels required None
Transport Category 2

**IATA****Basic shipping requirements:**

Proper shipping name Aerosols, flammable
Hazard class 2.1
UN number 1950
Additional information:
Packaging exceptions LTD QTY
Labels required 2.1



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/SARA Hazardous Substances - Not applicable.

Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical Yes

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 302 extremely hazardous substance No
Section 311 hazardous chemical Yes
Hazard categories (311/312) Immediate Hazard - Yes
 Delayed Hazard - No
 Fire Hazard - Yes
 Pressure Hazard - Yes
 Reactivity Hazard - No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of New and Existing Chemicals (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations**U.S. - Pennsylvania - RTK (Right to Know) List**

n-Butane	106-97-8	Present
Propane	74-98-6	Present
Synthetic Isoparaffinic Hydrocarbon	64742-47-8	Present

16. Other Information

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

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HMIS® ratings

Health: 1
Flammability: 2
Physical hazard: 0

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. The information in the sheet was written based on the best knowledge and experience currently available.

MSDS sections updated

This document has undergone significant changes and should be reviewed in its entirety.

Prepared by

Tec Service