

MATERIAL SAFETY DATA SHEET

SUTERRA®

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Date of Issue: November 30, 2004
Supersedes: June 4, 2003

Edition: 1
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1 - IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

Identification of the Preparation:	CheckMate® CM-F	
Use of the Preparation:	Preparation is a Straight-Chained Lepidopteran Pheromone (SCLP) mating disruptant, sprayable aqueous suspension of microbead dispensers each encapsulating the synthesized components of the naturally occurring codling moth (<i>Cydia pomonella</i>).	
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2 - COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Family of the Preparation:	Not applicable. The preparation consists of polymeric microbeads containing the codling moth pheromone. The microbeads are held in an aqueous suspension.	
Composition of the Preparation:	E,E,-8,10-Dodecadien-1-ol Water	
Concentration in the Preparation:	E,E,-8,10-Dodecadien-1-ol :	14.30 % w/w
	Water:	75.14 % w/w
Synonyms:	Codlure, Codlemone	
CAS No.:	E,E,-8,10-Dodecadien-1-ol:	33956-49-9
	Water:	7732-18-5
EINECS No.:	E,E,-8,10-Dodecadien-1-ol :	251-761-2
	Water:	231-791-2
Empirical Formula:	E,E,-8,10-Dodecadien-1-ol:	C ₁₂ H ₂₂ O
	Water:	H ₂ O
Toxicological Classification of Preparation:	Non classified	
Symbols & Pictograms:	No Symbols & Pictograms	
Risk Phrases:	No R-Phrases	
Safety Phrases:	S 2, 3, 20/21, 24/25, 29/56, 45*	
* Please refer to Heading 16 Other Information for full text of Risk and Safety Phrases.		

3 - HAZARDS IDENTIFICATION

None of the ingredients in this preparation meet the definition of "Hazardous Substance" as defined in Council Directive 1999/45/EC (67/548/EEC). The information on this form is furnished as a customer service.

Preparation may be mildly irritating and harmful if ingested. Avoid swallowing preparation.

4 - FIRST AID MEASURES

Eye Contact: Flush with plenty of water for at least 15 minutes. Obtain medical attention if irritation persists.

Skin Contact: Wash with soap and water. Obtain medical attention if irritation persists.

Inhalation: Not a likely route of exposure due to preparation form.

Ingestion: May cause upset stomach in large doses. Get medical attention. Do not induce vomiting. Give symptomatic and supportive care.

5 - FIRE-FIGHTING MEASURES

Recommended fire-extinguishing media: Preparation is ~ 75% water. If water boils off use the following: Dry chemicals, foam, and carbon dioxide (CO₂).

Special fire fighting procedures: Evacuate area of all unnecessary personnel. Use standard fire fighting procedures.

Unusual fire and explosion hazards: Carbon oxides are formed if water boils off.

Note: Please refer to Heading 8 Exposure Control / Personal Protection

6 - ACCIDENTAL RELEASE MEASURES

In case material is released or spilled: Contain spill by diking. Use absorbent and shovel into a clean container. Keep out of water sources or sewers.

Environmental hazards/waste disposal: Do not contaminate water sources. Dispose of at approved waste disposal facility. Dispose of in accordance with local regulations.

Note: Please refer to Heading 8 Exposure Control / Personal Protection.

7 - HANDLING AND STORAGE

Handling: Wear protective equipment described under Heading 8 Exposure Control / Personal Protection if exposure conditions warrant. Avoid unnecessary exposure to the skin and eyes. Avoid breathing vapors. Wash hands after handling. Launder contaminated clothing before reuse. Do not allow preparation to contaminate water sources, food or feed.

Storage: Store in a cool, well-ventilated area until use. Provide means of controlling leaks and spills. Any unused product should be tightly closed and returned to a cool place for storage.

8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limit Values:

Recommended Exposure Limits: None established.

Listed as Carcinogen: No.

Other Health Effects: No known adverse effects expected.

Health Hazard Categories: USEPA Toxicity Category III – CAUTION.
EU Non classified. No R-Phrases.

Effects of Overexposure:

Eye Contact: Pheromone is minimally irritating. Avoid contact with eyes.

Skin Contact: Pheromone is moderately irritating. Avoid contact with skin.

Inhalation: Not a likely route of exposure due to preparation form.

Ingestion: May cause upset stomach in large doses.

Chronic: Long-term studies on the concentrated active substance have not been done, however, no adverse effects expected from normal use of preparation.

Exposure Controls:

Respiratory Protection:	None required under normal use conditions.
Hand Protection:	Applicators and other handlers must wear waterproof rubber protective gloves.
Eye Protection:	None required under normal use conditions.
Skin Protection:	Applicators and other handlers must wear long-sleeved shirt and long pants and shoes plus socks.
Ventilation:	None required under normal use conditions.

Note: Personal protection information provided under this heading is based upon label information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Solid microbeads containing pheromone in an aqueous suspension.
Odour:	Mild waxy, fatty odour.
pH:	Neutral. pH ranges from 6.5 to 7.5.
Boiling Point:	70° C for pheromone and ~ 100° C for water component.
Melting Point:	Not applicable.
Flash Point:	Not established.
Flammability:	Not established.
Explosive Properties:	Not applicable.
Oxidizing Properties:	Not applicable.
Vapour Pressure:	2.0×10^{-4} mm Hg @ 25° C (Modified Watson Correlation) for pheromone.
Relative Density:	0.86 ± 0.02 g/ml for pheromone and ~ 0.97 for total preparation.
Solubility:	Not applicable for aqueous suspension. Low solubility for pheromone.
Partition Coefficient:	Very large; Log $K_{ow} = 3.4^9$ for pheromone.
Viscosity:	Not applicable.
Vapour Density:	Not established for preparation. > 1 for pheromone (Air = 1).
Evaporation Rate:	Not established for preparation. UV-light and oxygen rapidly degrade pheromone active substance.

10 - STABILITY AND REACTIVITY

Preparation is stable. No dangerous stability or reactivity reactions are known or expected from the use of the preparation as labeled.

Conditions to Avoid:	None. Pheromone active substance is sensitive to heat and UV-light.
Materials to Avoid:	Preparation will degrade in the presence of strong oxidizers and oxygen.
Hazardous Decomposition Products:	Carbon oxides formed when burned. Hazardous polymerization will not occur. Preparation is ~ 73% water.

11 - TOXICOLOGICAL INFORMATION

None of the ingredients in this preparation meet the definition of "Hazardous Substance" as defined in Council Directive 1999/45/EC (67/548/EEC). The information on this form is furnished as a customer service. The toxicity of the preparation is determined by the toxicity of the pheromone active substances.

- LD₅₀, Acute Oral, Rat: > 5050 mg/kg.
- LD₅₀, Acute Dermal, Rabbit: > 2020 mg/kg.
- LD₅₀, Intratracheal, Rat: > 2.5 ml/kg which is equal to an LC₅₀ > 5.00mg/L of air.
- Eye Irritation, Rabbit: Minimally irritating.
- Skin Irritation, Rabbit: Moderately irritating.
- Ames Mutation Assay: Negative. Non-mutagenic with and without microsomal activation.

12 - ECOLOGICAL INFORMATION

Due to the nature of the pheromone active substance, no effect on soil, water, air, plants, or animals is expected. UV-light and oxygen rapidly degrade the pheromone active substance. In the preparation, the pheromone active substance is slowly released and volatilizes to the surrounding air through the release limiting polymeric shell of the microbead dispensers. The toxicity of the preparation is determined by the toxicity of the pheromone active substance.

- EC₅₀, 48 hours, *Daphnia magna*: 8.6 mg/l.
- LC₅₀, 96 hours, *Oncorhynchus mykiss*: 5.87 mg/l.
- LD₅₀, 48 hours, *Colinus Virginianus*: 2050 mg/kg.

13 - DISPOSAL CONSIDERATIONS

- Product: Insure conformity with all applicable provisions. Dispose of in accordance with Community, national or regional provisions.
- Container: Empty containers retain vapor and preparation residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed. Do not reuse container. Triple rinse, then puncture and dispose of in the trash.

14 - TRANSPORT INFORMATION

RID/ADR: Not classified.

ICAO/IATA/DGR: Under IATA, preparation is not considered a hazardous material.

15 - REGULATORY INFORMATION

None of the ingredients in this preparation meet the definition of "Hazardous Substance" as defined in Council Directive 1999/45/EC (67/548/EEC). The information on this form is furnished as a customer service. No known adverse health effects expected from the use of this preparation. Preparation is listed under USEPA Toxicity Category III – CAUTION health hazard category.

U.S.A. (EPA) Registration: The preparation is fully registered for use with the United States Environmental Protection Agency. U.S. EPA Reg. No. 56336-37.

EU Registration: The pheromone active substance is listed on List 4 of Annex I to the Council Directive 91/414/EEC. Preparations utilizing this pheromone active substance are registered and/or under review for registration in Germany, Italy, Austria and Spain. CheckMate CM-F is registered in Italy under registration no. 12843 of 30/03/2007

16 - OTHER INFORMATION

Preparation is a Straight-Chained Lepidopteran Pheromone (SCLP) mating disruptant, sprayable aqueous suspension of microbead dispensers each encapsulating the synthesized components of the naturally occurring codling moth (*Cydia pomonella*). Due to the nature of the pheromone active substance, no effect on soil, water, air, plants, or animals is expected.

Safety Phrases:

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| S 2: | Keep out of reach of children. |
| S 3: | Keep in a cool place. |
| S 20/21: | When using do not eat, drink or smoke. |
| S 24/25: | Avoid contact with skin and eyes. |
| S 29/56: | Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point. |
| S 45: | In case of accident or if you feel unwell, seek medical advice immediately (show label where possible). |

This information reflects our level of knowledge up to the date hereof. While this information and recommendation set forth are believed to be accurate as for the date hereof, Suterra[®] LLC makes no warranty with respect hereto and disclaims all liability from reliance thereon.