

# Safety Data Sheet

## 1. Identification of Product and Company

**Product Identifier:**

**ISOMATE® CM Flex**  
**U.S. EPA Registration Number: 53575-32**

Identification of the substance:

Codling moth pheromone product.

**Relevant Identified Uses of the Substance or Mixture:**

For Agricultural Use Only. This product contains the mixture of (E,E)-8,10-Dodecadien-1-ol, 1-Dodecanol, 1-Tetradecanol and stabilizers. This product contains behavior modifying biochemicals (pheromones) that disrupts mating of codling moth (CM) and is to be used as directed on its approved U.S. EPA pesticide label.

**Important Notice:**

This product contains a mixture. This SDS applies only in case that the container (pheromone dispenser) breaks and the chemicals inside leak. The product is safe for use. Due to the small amount of the chemicals in the product and the type of container (pheromone dispenser), a spill of the chemicals is highly unlikely.

**Details of the Supplier of the SDS:**

Pacific Biocontrol Corporation  
14615 NE 13th Court, Suite A  
Vancouver, Washington 98685 U.S.A.  
Phone:  
Company URL:

360-571-2247  
[www.pacificbiocontrol.com](http://www.pacificbiocontrol.com)

**Emergency Telephone Numbers:**

<b>Medical:</b>	Call Doctor or
<b>Poison Control Center:</b>	800-222-1222
<b>General Information:</b>	800-999-8805

## 2. Hazards Identification

**Classification of the Substance or Mixture:**

**GHS Classification**

**Physical Hazards**

Flammable liquids:	Category 4
Self-reactive substances:	Not classified
Pyrophoric liquids:	Not classified
Self-heating substances:	Not classified
Substances which, in contact with water, emit flammable gases:	Not classified
Oxidizing liquids:	Not classified

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## Safety Data Sheet

### 2. Hazards Identification continued

#### Classification of the Substance or Mixture:

#### GHS Classification

##### Health Hazards

Acute toxicity:	Category 4
Skin irritation:	Category 2
Eye irritation:	Category 2B
Respiratory sensitization:	Not available
Skin sensitization:	Not available
Germ cell mutagenicity:	Not-classified
Carcinogenicity:	Not available
Reproductive toxicity:	Not available
Specific target organ toxicity single exposure:	Not available
Specific target organ toxicity repeated exposure:	Not available
Aspiration hazard:	Not available

##### Environmental Hazards

Acute aquatic toxicity:	Category 1
Chronic aquatic toxicity:	Category 1

### 3. Composition/Information on Ingredients

#### Description of the Mixture:

This product contains the mixture of (E,E)-8,10-Dodecadien-1-ol, 1-Dodecanol, 1-Tetradecanol and stabilizers.

#### Composition/Ingredients:

Identification name	(E,E)-8,10-Dodecadien-1-ol	1-Dodecanol	1-Tetradecanol
Synonyms	Codlemone, Codelure	Lauryl alcohol	Myristyl alcohol
Chemical formula	C <sub>12</sub> H <sub>22</sub> O	C <sub>12</sub> H <sub>26</sub> O	C <sub>14</sub> H <sub>30</sub> O
Molecular weight	182	186	214
CAS No.	33956-49-9	112-53-8	112-72-1
TSCA No. (USA)	33956-49-9	112-53-8	112-72-1
EINECS No. (ECU)	251-761-2	203-982-0	204-000-3
Impurities contribute to classification	No Data	No Data	No Data
Concentration/Range (wt%)	50-60	25-35	4-10

### 4. First-Aid Measures

Persons using this product should consult a physician or other medical professional if an accident involving this product caused injury. Specific first-aid measures are as follows:

#### Doctor or Poison Control Center (Hot Line Number):

Have the product container (foil packet) or label with you when calling a poison control center or doctor or when going for treatment or seeking medical attention. For medical emergencies, call the poison control center at 1-800-222-1222. For general information on this product, call 1-800-999-8805, Monday through Friday, 9AM to 5PM.

## Safety Data Sheet

### 4. First-Aid Measures continued

**Recommendations for a Doctor or Poison Control Center:**

Symptomatic treatment. The chemical group is pheromone. No specific antidote is known. There are no signs or symptoms of poisoning and, there have been no reports of poisoning.

**If on Skin or Clothing:**

Remove contaminated clothing. Immediately rinse skin for 15-20 minutes using plenty of water. Contact a poison control center or doctor for treatment advice.

**If in Eyes:**

Immediately hold eyes open, slowly and gently rinse with water for 15-20 minutes. If wearing contact lenses, rinse eyes for 5 minutes, remove contact lenses, and continue rinsing. Contact a poison control center or doctor for treatment advice.

**First Aid Safeguards:**

Use gloves, or other protective equipment as required.

### 5. Fire-Fighting Measures

**Flammable Properties:**

**Flash Point:** Not established for pheromone dispenser. 91°C for CM Pheromone Active Ingredients\* Blend.

**Flammable Limits:** Not established.                      **LEL:** Not established.                      **UEL:** Not established.

**Extinguishing Media:**

Suitable extinguishing media: CO<sub>2</sub>, extinguishing powder or alcohol-resistant foam.

Unsuitable extinguishing media: High volume water jet.

**Specific Hazards Arising from the Substance:**

If exposed to heat or fire, the chemicals may decompose and generate toxic irritating gases. If ignited or in high oxygen concentrated atmosphere, the chemicals have the possibility of combustion or explosion.

**Specific Extinction Method:**

Work from the windward position. Fire could be expanded by water spray, use appropriate extinguishing media. If safely possible, move the product from near the fire to out of the area. If it is impossible to move the product, cool down the product with spraying plenty of water. Don't use high volume water jet.

**Advice for Firefighters:**

Use self-contained breathing apparatus, chemical cartridge respirator for organic gases, gloves or other protective equipment for firefighting.

Additional information: Collect contaminated firefighting water separately as it must not enter drains or sewers.

\* Active ingredients are members of the well-characterized group of SCLPs (i.e., Straight Chain Lepidopteran Pheromones).

### 6. Accidental Release Measures

Due to the small amount of chemicals in the product, even if the container (pheromone dispenser) is damaged or broken, a spill of the chemical is highly unlikely

**Methods and Materials for Containment and Cleaning Up:**

Mark off the area near around the spill by roping and seal off except authorized personnel. Ensure adequate ventilation. In the case of an indoor leakage, ventilate before entering them and give plenty of ventilation until finishing the clean-up.

## Safety Data Sheet

### 6. Accidental Release Measures continued

Wear and use self-contained breathing apparatus, chemical cartridge respirator for organic gases, protective gloves, protective eyewear, protective boots or other protective apparel to prevent excessive skin contact and protect eyes.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose of contaminated material as waste according to federal and local law.

**For small spills:** Absorb spill with dry sand, earth or charcoal, then place in chemical waste container. Do not allow to enter drainage system, sewers, surface or ground water.

**For large spills:** Collect with a pump and transfer to a metal container with a seal. Absorb spill with dry sand or charcoal, and do not allow to enter drainage system, sewers, surface or ground water. Mop up the residual spill with charcoal or absorbent materials. Dispose of contaminated absorbents according to federal and local law. Work from the windward position.

#### **Environmental Precautions:**

Do not allow to enter drainage system, sewers, surface or ground water. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high-water mark. Do not contaminate water when disposing of this product. Do not contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes. Do not dispose of new or unused dispensers in or near streams or bodies of water.

### 7. Handling and Storage

#### **General Items:**

Read the instructions on the product label carefully. Do not open product packages (foil envelopes) until ready to use. Do not eat, drink or smoke when handling this product or when in its storage area. Keep out of reach of children. Keep away from ignition sources, heat, sparks and open flame.

#### **Precautions for Safe Handling:**

Keep out of reach of children. Avoid contact with skin, eyes, or clothing. Harmful if absorbed through skin. Causes moderate eye irritation. Applicators and other handlers must wear work clothing consisting of long-sleeved shirt and long pants, shoes plus socks, chemical resistant gloves and protective eyewear. After handling, wash thoroughly with soap and water before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

#### **Conditions for Safe Storage, Including any Incompatibilities:**

Do not contaminate water, food or feed by storage or disposal. Store in original unopened product packages in a dry location at temperatures below 40°F (4°C). To prevent contamination with food or feed, store only unopened product packages in cold storage facilities that are used for food or feed. Protect from heat and direct sunlight.

### 8. Exposure Controls/Personal Protection

Due to the small amount of the chemicals in the product and the type of container (pheromone dispenser), a spill of the chemicals is highly unlikely. The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

#### **Exposure Controls:**

Avoid contact with skin, eyes, or clothing. Harmful if absorbed through skin, swallowed, or inhaled. Causes moderate eye irritation. After handling, wash thoroughly with soap and water before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

## Safety Data Sheet

### 8. Exposure Controls/Personal Protection continued

**Hand protection:** Chemical resistant gloves.

**Eye protection:** Protective eyewear (goggles).

**Protective wear for skin and body:** Long-sleeve shirt. Long pants. Shoes plus socks.

**Exposure Limits:**

ACGH: Not listed.

OSHA: Not listed.

**Health Hazard Categories:**

U.S. EPA Toxicity Category: II -WARNING

**Personal Protection Measures:**

Keep out of reach of children. Applicators and other handlers must wear work clothing consisting of long-sleeved shirt and long pants, shoes plus socks, chemical resistant gloves and protective eyewear. After handling, wash thoroughly with soap and water before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

### 9. Physical and Chemical Properties

**Information on Basic Physical and Chemical Properties of CM Pheromone Active Ingredients\* Blend:**

Appearance	Colorless or light-yellow transparent liquid
Odor	Fatty waxy odor
pH (pH Meter)	5.6
Melting Point/Freezing Point	18-22°C
Initial Boiling Point, Boiling Range	110-120°C (2mmHg)
Flash Point (Pensky-Martens)	91°C
Flammability (solid/gas)	No data
Upper/Lower Flammability or Explosive Limits	No data
Vapor Pressure (estimated, Antoine's equation)	1.428x10 <sup>-2</sup> mmHg
Relative Density (Pycnometer Method)	0.857g/cm <sup>3</sup>
Explosive Properties	Not explosive (judgement)
Oxidizing Properties	Not oxidizing (judgement)

\* Active ingredients are members of the well-characterized group of SCLPs (i.e., Straight Chain Lepidopteran Pheromones).

### 10. Stability and Reactivity

**Stability:**

Product is stable under normal and anticipated storage and handling conditions as labeled. No hazardous reactions are expected from the use of the product as labeled.

**Reactivity:**

May react with oxygen and strong oxidizing agents, such as chlorates, peroxides, etc.

**Conditions to Avoid:**

Avoid contact with excessive heat, sparks, or open flame.

**Incompatible materials:**

Oxidizing agents.

## Safety Data Sheet

### 10. Stability and Reactivity continued

#### Hazardous Decomposition:

Carbon monoxide and carbon dioxide, but no decomposition if used as labeled.

### 11. Toxicological Information

#### Information on Toxicological Effects of CM Pheromone Active Ingredients\* Blend:

Acute toxicity	Oral LD <sub>50</sub>	>2,500 mg/kg (Rats)	Manufacturer in house data
		>1,075 mg/kg (Quail)	Manufacturer in house data
	Dermal LC <sub>50</sub>	>1,000 mg/kg (Rats)	Manufacturer in house data
	Inhalation (Gas)	No data	
	Inhalation (Vapor)	38 mg/l (Rat)	Manufacturer in house data
	Inhalation (Mist) LC <sub>50</sub>	>2.73 mg/kg (Rats)	Manufacturer in house data
Skin Corrosion/Irritation		Slight to moderate dermal irritation (Rabbits)	Manufacturer in house data
Serious eye damage/Eye Irritation		Slight to moderate conjunctival irritation (Rabbits)	Manufacturer in house data
Respiratory or Skin sensitivity		No skin contact sensitization response (Guinea pigs)	Manufacturer in house data
Germ cell mutagenicity		Ames test: Negative	Manufacturer in house data
Carcinogenicity	IARC	Not listed	SCLP
	NTP	Not listed	
	EPA	Not listed	
	ACGIH	Not listed	
	NITE	Not listed	
Reproductive toxicity		No data	
Specific target organ toxicity (Single exposure)		No data	
Specific target organ toxicity (Repeated exposure)		No data	
Aspiration hazard		No data	

\* Active ingredients are members of the well-characterized group of SCLPs (i.e., Straight Chain Lepidopteran Pheromones).

### 12. Ecological Information

#### Ecological Toxicity of CM Pheromone Active Ingredients\*:

<b>(E,E)-8,10-Dodecadien-1-ol</b>	LD <sub>50</sub> /14 d	>2,150 mg/kg (Bobwhite quail)
	LC <sub>50</sub> /96 h	>120 mg/l (Rainbow trout)
	EC <sub>50</sub> /48 h	1.3 mg wm/l (Daphnia)
<b>1-Dodecanol</b>	LC <sub>50</sub> /96 h	>1.01 mg/l (Fathead minnow)
<b>1-Tetradecanol</b>	LC <sub>50</sub> /96	>10 g/l (Zebrafish)
	LC <sub>50</sub> /96 h	>50 mg/l (Scenedesmus)

## Safety Data Sheet

### 12. Ecological Information continued

#### Persistence and Degradability of CM Pheromone Active Ingredients\*:

(E,E)-8,10-Dodecadien-1-ol	Rapidly degradable
1-Dodecanol	Rapidly degradable
1-Tetradecanol	Rapidly degradable

#### Bioaccumulative Potential of CM Pheromone Active Ingredients\*:

(E,E)-8,10-Dodecadien-1-ol	Partition coefficient: n-octanol/water	log Pow: 4.3
1-Dodecanol	Partition coefficient: n-octanol/water	log Pow: 5.1
1-Tetradecanol	Partition coefficient: n-octanol/water	log Pow: 6.19

#### Mobility in Soil of CM Pheromone Active Ingredients\*:

No data available. Exposure not likely.

\* Active ingredients are members of the well-characterized group of SCLPs (i.e., Straight Chain Lepidopteran Pheromones).

### 13. Disposal Considerations

#### Waste Disposal:

Use this product for its intended purpose. Do not contaminate water when disposing of this product. Do not contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes. Wastes resulting from this product may be disposed of on site or at an approved waste disposal facility. Do not dispose of new or unused dispensers in or near streams or bodies of water. Unused material that cannot be used according to label instructions must be disposed of according to local requirements. Dispose of empty dispensers in accordance with local requirements. Nonrefillable container. Do not reuse or refill this container. Dispose of empty foil packet in trash or in accordance with local requirements.

### 14. Transport Information

#### Transportation:

<b>Description:</b>	Plastic hand-applied pheromone dispenser
<b>Hazard Class:</b>	Not applicable – Not classified as dangerous
<b>Freight Class:</b>	CLASS 60
<b>Identification Numbers:</b>	NMFC# S155050-12
<b>Packing Group:</b>	Not applicable

#### Flash Point:

Flash point is 91°C for CM Pheromone Active Ingredients\* Blend.

#### Special Precautions for User:

Follow the precautions as listed on this SDS.

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## Safety Data Sheet

### 15. Regulatory Information

#### U.S. EPA

This is a pesticide product registered by the U.S. EPA and is subject to certain labeling requirements under Federal pesticide law. These requirements differ from the classification criteria and hazard information required for SDSs, and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is below. The pesticide label also includes other important information, including the Directions for Use.

KEEP OUT OF REACH OF CHILDREN. WARNING: Avoid contact with skin, eyes, or clothing. Harmful if absorbed through skin. Causes moderate eye irritation. Wear chemical resistant gloves and protective eyewear. After handling, wash thoroughly with soap and water before eating, drinking, chewing gum, using tobacco, or using toilet. Remove and wash contaminated clothing before reuse.

**ISOMATE CM FLEX** is registered with the U.S. EPA under EPA Registration Number 53575-32. This product is categorized under U.S. EPA Toxicity Category: II -WARNING.

#### Health Canada

**ISOMATE CM FLEX** is registered for sale in Canada under Reg. No. 31589 and has been classified in accordance with the hazard criteria of the Controlled Products Regulations. The hazard information required on the pesticide label is below. The pesticide label also includes other important information, including the Directions for Use.

KEEP OUT OF REACH OF CHILDREN: Do not open foil envelopes until ready to use. Avoid contact with eyes or clothing. Causes skin irritation. DO NOT get on skin. Wear a long-sleeved shirt, long pants, chemical resistant gloves, goggles, shoes and socks. Wash hands with soap and water after use.

Do not contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

### 16. Other Information

These data are based on our current knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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*This safety data sheet is offered solely for your information, consideration and investigation. The data described in this SDS consist of data on literature, our acquisition data and analogical inference by data of similar chemical substances or products. Pacific Biocontrol provides no warranties, either express or implied, and assumes no responsibility for the accuracy or completeness of the data contained herein. Final determination of suitability of any material is the sole responsibility of the user.*

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