

Safety Data Sheet

1. Identification of Product and Company

1.1 Product Identifier:

ISOMATE® NOW Mist

1.2 Other Means of Identification:

U.S. EPA Registration Number: 53575-56

1.3 Recommended Uses and Restrictions on Use:

Recommended Uses:

This product contains the mixture of (Z,Z)-11,13-Hexadecadienal and stabilizers. This product contains behavior modifying biochemicals (pheromones) that disrupts mating of Navel Orangeworm (NOW).

Produced for agricultural use only.

Restrictions on use:

Any use not listed on the approved U.S. EPA pesticide label.

1.4 Details of the Supplier of the SDS:

Supplier:

Pacific Biocontrol Corporation

Address:

14615 NE 13th Court, Suite A; Vancouver, Washington 98685 U.S.A.

Phone:

1-360-571-2247 or 1-800-999-8805

Company URL:

www.pacificbiocontrol.com

1.5 Emergency Phone Numbers:

Medical:

Call Doctor or

Poison Control Center:

1-800-222-1222

Leak, Fire, Spill or Accident:

Call CHEMTREC

CHEMTREC (USA and Canada)

1-800-424-9300

CHEMTREC (International)

1-703-527-3887

2. Hazards Identification

2.1 Classification of the Mixture*:

GHS Classification:

Flammable aerosol, Category 2

Skin irritation, category 2

Eye irritation, category 2

Skin sensitization, category 2

Specific target organ toxicity single exposure, Category 3 (respiratory tract irritation, narcotic effects)

Acute aquatic toxicity, category 1

*Mixture of (Z,Z)-11,13-Hexadecadienal and other ingredients

2.2 Label Elements

Refer to section 15.

2.3 Other Hazards

The product must be handled in accordance with its approved U.S. EPA pesticide label and instructions in this safety data sheet.

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3. Composition/Information on Ingredients

3.1 Description of the Mixture:

Type of formulation:

Pesticide product contains the mixture of (Z,Z)-11,13-Hexadecadienal and other ingredients in aerosol cans.

Mode of Action: Mating disruption

Ingredients:

Identification name	(Z,Z)-11,13-Hexadecadienal*	Other Ingredients**
Common Name/Synonyms	NOW Pheromone	no data
Chemical formula	C ₁₆ H ₂₈ O	no data
Molecular weight	236.4	no data
CAS No.	71317-73-2	no data
Concentration (wt%)	2.36	97.64

*Component is a member of the well-characterized group of SCLPs, i.e., Straight Chain Lepidopteran Pheromones.

**Other ingredients, which are maintained as trade secrets, are any substances other than an active ingredient contained in this product. They are non-hazardous, but their identities are withheld because they are considered trade secrets.

4. First-Aid Measures

4.1 Description of First Aid Measures:

General Information:

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 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 (PST).

If Inhaled:

Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Contact a poison control center or doctor for treatment advice.

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.

If Swallowed:

Contact a poison control center or doctor immediately for treatment advice. Have a person sip a glass of water if able to swallow. Do not induce vomiting unless told so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

First Aid Safeguards:

Avoid breathing vapor. Use protective gloves, or other protective equipment as required.

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5. Fire-Fighting Measures

5.1 Extinguishing Media:

Suitable extinguishing media:

Water spray, foam, dust, carbon dioxide. Extinguishing large fires with water mist or alcohol-resistant foam.

Unsuitable extinguishing media:

The use of running water or high-volume water jet as a means of extinguishing is not recommended.

5.2 Special Hazards Arising from the Mixture:

Flammable. Contents are under pressure. Keep away from ignition sources, heat, sparks and open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.

Heat can be reduced with water. Combustion or thermal decomposition can generate toxic vapors (carbon oxides and hydrocarbons).

5.3 Special Protective Equipment and Precautions for Fire-Fighters:

Special Protective Equipment:

Use standard firefighting procedures and wear complete fire protection equipment. Self-contained breathing apparatus and full protective clothing must be worn if containers rupture and contents are released.

Precautions:

Pressurized container is flammable. Use caution when fighting a chemical fire. Fight the flames from a distanced and safe position. Do not breathe fumes.

Evacuate area of all unnecessary personnel. Eliminate all ignition sources, if safely possible. Move containers away from fire area, if safely possible.

Use water fogging nozzle to cool containers, if safely possible. Don't use high volume water jet. Move containers away from fire area, if safely possible.

Collect contaminated firefighting water as it must not enter drainage systems, sewers, surface or groundwater.

6. Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions:

Harmful if swallowed, inhaled or absorbed through skin. Causes moderate eye and skin irritation. Avoid contact with skin, eyes or clothing. Avoid breathing vapor.

Applicators and other handlers must wear work clothing consisting of long-sleeved shirt and long pants, shoes and socks, protective gloves and protective eyewear.

Flammable. Contents are under pressure. Keep away from ignition sources, heat, sparks and open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.

Protective Equipment and Emergency Procedures for Those Who Do Not Intervene Directly:

The following information is for the personnel where the mixture is used or stored and are intended to ensure, where possible without risk, preliminary safety operations before leaving and waiting for the intervention of the emergency team.

Appropriate means of protection: face mask to avoid breathing vapor and protective gloves, protective eyewear, protective boots and other protective apparel to prevent excessive skin contact and protect eyes. Avoid direct contact with skin, eyes or clothing.

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6. Accidental Release Measures continued

Remove people, who are not involved in emergency intervention, from the area affected by the spillage. Ventilate the area, if safe to do so. Contain and/or stop the spillage, if safe to do so.

Protective Equipment and Emergency Procedures for Experienced Personnel (Emergency Team):

The following information and the information relating to environmental precautions and methods of containment and clean-up is addressed to the experienced personnel who are part of the emergency team and specially trained.

Appropriate means of protection: self-contained breathing apparatus, chemical cartridge respirator for organic gases, protective gloves, protective eyewear, protective boots and other protective apparel to prevent excessive skin contact and protect eyes. Avoid direct contact with skin, eyes or clothing. Avoid breathing vapor.

Evacuate the area. Ensure adequate ventilation. Eliminate all possible sources of ignition, if safe to do so. Avoid dust formation. Where possible operate upwind. All equipment used during the operation must be grounded.

Fire-extinguishing equipment should be prepared in case of a fire.

6.2 Methods and Materials for Containment and Clean-up

For Containment:

If safe to do so, stop spillage by sealing leaking cans. Use appropriate equipment to cover any exhaust and avoid environmental pollution.

Use absorbent material (sand, diatoms, sawdust, clay, other non-combustible material), or absorbent cloths and mats to prevent spillage from leaking.

Clean up:

For small spills, after absorbing the product, collect the mixture and put it in properly labeled chemical containers. Seal the containers and handle them properly. Try not to create dust and clean the area with water after removing any residue. Rinse the equipment with water.

Collect contaminated water and do not allow to enter drainage systems, sewers, surface or groundwater. Dispose of waste in accordance with federal and local regulations.

Do not contaminate water when disposing of this product. Do not contaminate irrigation or drinking water supplies or aquatic habitats by disposal of wastes.

Dispose of packaging, waste and emergency residues in accordance with federal and local environmental health and safety regulations.

7. Handling and Storage

7.1 Precautions for Safe Handling

Precautions:

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

Applicators and other handlers must wear work clothing consisting of long-sleeved shirt and long pants, shoes and socks, protective gloves and protective eyewear.

Flammable. Contents are under pressure. Keep away from ignition sources, heat, sparks and open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.

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7. Handling and Storage continued

7.2 Conditions for Safe Storage, including any Incompatibilities

Store container in a cool, dry place away from heat or open flame.

Flammable. Contents are under pressure. Keep away from ignition sources, heat, sparks and open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.

8. Exposure Controls/Personal Protection

8.1 Exposure Limits

Exposure limits (PEL, ACGIH, or TLV) are not available for any of the ingredients contained in the mixture. There are no known side effects resulting from the use of the finished product.

8.2 Appropriate Engineering Controls

Appropriate engineering controls are not available for any of the ingredients contained in the mixture.

8.3 Individual Protection Measures

Personal Protection Measures:

Use this product for its intended purpose as listed in section 1.2. Read the instructions on the product label carefully.

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

Applicators and other handlers must wear work clothing consisting of long-sleeved shirt and long pants, shoes and socks, protective gloves and protective eyewear.

Personal Protection Equipment:

Hand Protection: Protective gloves with material that is impermeable, such as chemical resistant gloves.

Eye Protection: Protective eyewear, such as goggles or face shield.

Protective wear for skin and body: Work clothing consisting of long-sleeve shirt, long pants, shoes and socks.

9. Physical and Chemical Properties

Physical and Chemical Properties of the Mixture*:

9.1 Physical state	Aerosol
9.2 Color	Not applicable for the product
9.3 Odor (includes odor threshold)	Not applicable for the product
9.4 Melting point/freezing point	Not applicable for the product
9.5 Boiling point (or initial boiling point or boiling range)	Not applicable for the product
9.6 Flammability (Flame projection)	16.0 in (ASTM D3065-01)
9.7 Lower and upper explosion limit/flammability limit	Contents are under pressure. Exposure to temperatures above 130°F may cause bursting.
9.8 Flash point	Not applicable for the product
9.9 Auto-ignition temperature	Not applicable for the product

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9. Physical and Chemical Properties continued

9.10 Decomposition temperature	Not applicable for the product
9.11 pH	Not applicable for the product
9.12 Kinematic viscosity	Not applicable for the product
9.13 Solubility	Not applicable for the product
9.14 Partition coefficient n-octanol/water (log value)	Not applicable for the product
9.15 Vapor pressure (includes evaporation rate)	Not applicable for the product
9.16 Density and/or relative density (Specific gravity)	0.684
9.17 Relative vapor density	Not applicable for the product
9.18 Particle characteristics	Not applicable for the product

*Mixture of (Z,Z)-11,13-Hexadecadienal and other ingredients

10. Stability and Reactivity

Use this product for its intended purpose as listed in section 1.2. Read the instructions on the product label carefully.

Keep out of reach of children.

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

Applicators and other handlers must wear work clothing consisting of long-sleeved shirt and long pants, shoes and socks, protective gloves and protective eyewear.

Flammable. Contents are under pressure. Keep away from ignition sources, heat, sparks and open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.

10.1 Reactivity

Under normal and anticipated storage and handling conditions as labeled on the product, there is no particular danger of reaction with other substances.

10.2 Chemical Stability

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

10.3 Possibility of Dangerous Reactions

No particular risk of dangerous reactions under normal and anticipated storage and handling conditions as labeled on the product.

Conditions to be avoided:

Keep away from ignition sources, heat, sparks and open flame.

Do not puncture or incinerate container.

Heat (temperatures above 130°F) can cause pressurized container to explode.

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10. Stability and Reactivity continued

10.4 Incompatible Materials

Store separately from oxidants, peroxides and acids.

Canister to ignition sources, heat, sparks and open flame.

10.5 Hazardous Decomposition Products

No hazardous decomposition products if stored according to the indicated provisions.

Combustion and thermal decomposition can generate toxic vapors: carbon oxides and hydrocarbons.

11. Toxicological Information

This product has not been tested. The toxicity of the preparation derives from the toxicity of the active ingredient. Therefore, the data reported in this section refers to (Z,Z)-11,13-Hexadecadienal* or similar chemicals.

Acute toxicity	Oral LD ₅₀	>2,000 mg/kg (rats)	Similar material (E,Z)-4,6-Hexadecadienal
	Dermal LC ₅₀	Not available	
	Inhalation (Gas)	Not available	
	Inhalation (Vapor)	Not available	
	Inhalation (Mist) LC ₅₀	Not available	
Skin Corrosion/Irritation		Slight to moderate dermal irritation (rabbits)	Similar material (E,Z)-4,6-Hexadecadienal
Serious eye damage/Eye Irritation		Not available	
Respiratory or Skin sensitivity		Not available	
Germ cell mutagenicity		Ames test: Negative	
Carcinogenicity	IARC	Not listed	
	NTP	Not listed	
	EPA	Not listed	
	ACGIH	Not listed	
	NITE	Not listed	
Reproductive toxicity		Not available	
Specific target organ toxicity (Single exposure)		Not available	
Specific target organ toxicity (Repeated exposure)		Not available	
Aspiration hazard		Not available	

*Component is a member of the well-characterized group of SCLPs (i.e., Straight Chain Lepidopteran Pheromones).

12. Ecological Information

This product has not been tested. The toxicity of the preparation derives from the toxicity of the active ingredient. Therefore, the data reported in this section refers to (Z,Z)-11,13-Hexadecadienal* or similar chemicals. Due to the characteristics of the mixture, effects on soil, air, plants or animals are not expected.

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12. Ecological Information continued

12.1 Ecotoxicity

Aquatic environment acute harmfulness	EC ₅₀ = 0.58 mg/L (<i>Daphnia</i>) (48 hrs)**	Similar material Z-11-Hexadecenal
	EbC ₅₀ = 0.21 mg/L (<i>Green Algae</i>) (72 hrs)	
Aquatic environment chronic harmfulness	Toxic to aquatic life with long lasting effects**	

**Based on EFSA Journal 2014; 12(1): 3524

12.2 Persistence and Degradability

The product is easily biodegradable. No residue in soil.

12.3 Bioaccumulative Potential/12.4 Mobility in Soil

No information.

12.5 Other Adverse Effects

Water hazard, class I (manufacturer): hazardous for water.

*Component is a member of the well-characterized group of SCLPs (i.e., Straight Chain Lepidopteran Pheromones).

13. Disposal Considerations

Use this product for its intended purpose as listed in section 1.2. Read the instructions on the product label carefully.

For terrestrial uses: 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 contaminate water, food or feed by disposal.

Wastes resulting from this product may be disposed of on site or at an approved waste disposal facility.

Nonrefillable container. Do not reuse or refill this container. An empty can may be discarded in trash or at an approved waste disposal facility. Do not puncture or incinerate. If can is empty offer for recycling.

14. Transport Information

Transportation by Road:

Description:	Aerosol, Flammable (each not exceeding 1 L Capacity)
Hazard Class:	2.1
Freight Class:	UN1950
	Limited Quantity
Packing Group:	Not applicable

Transportation by Air:

Description:	Aerosol, Flammable
Hazard Class:	2.1
Freight Class:	UN1950
Hazard Label:	Flammable gas
Packing Group:	Not applicable

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14. Transport Information continued

Special Precautions for User:

Flammable. Contents are under pressure. Keep away from ignition sources, heat, sparks and open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.

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 Insecticide, Fungicide, and Rodenticide Act (FIFRA). These requirements differ from the classification criteria and hazard information required for Safety Data Sheets and for workplace labels of non-pesticide chemicals.

The **Hazards to Humans and Domestic Animals** statement on the pesticide label is as follows:

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

The **Environmental Hazards** statement on the pesticide label is as follows:

For terrestrial uses: 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 by cleaning of equipment or disposing of equipment wash waters.

The **Physical and Chemical Hazards** statement on the pesticide label is as follows:

Flammable. Contents are under pressure. Keep away from ignition sources, heat, sparks and open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.

The pesticide label also includes other important information, including the First Aid, the Storage and Disposal and the Directions for Use statements.

ISOMATE NOW Mist is registered with the U.S. EPA under EPA Registration Number 53575-56. This product is categorized under U.S. EPA Toxicity Category: III - CAUTION.

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.

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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