

PRODUCT CATALOG

SEMIOCHEMICALS

Pheromones, Attractants, Repellents and Fine Chemical Compounds



ISCA Technologies possesses state-of-the-art semiochemical synthesis and analysis capabilities. It is the world's sole source for many difficult to synthesize and important semiochemicals and pheromones.

About ISCA Technologies, Inc.

The mission of ISCA Technologies is to protect the world from damaging insects and disease causing pathogens, by developing tools and solutions that are economical, effective and ecologically friendly.

Presently, its product range comprises more than 300 species-specific semiochemical insect lures and insect traps, and semiochemical controlled release formulations such as SPLAT™ (Specialized Pheromone & Lure Application Technology). ISCA lures are made with the highest quality components available, carefully purified, and optimized for maximum longevity and species specificity. The cost-effective dispensers and traps created by ISCA are based on knowledge generated from a multitude of laboratory and field tests designed to optimize trap catch. ISCA Technologies also possesses state-of-the-art semiochemical synthesis and analysis capabilities, and it is the world's sole source for many difficult to synthesize semiochemicals and pheromones.

ISCA is also heavily involved with integrated pest management (IPM) research and development. It has a multi-disciplinary in-house team of highly specialized researchers - organic chemists, chemical ecologists, engineers, biologists, entomologists and information technologists, who have ample experience with integrated pest management programs, insect pest monitoring programs, monitoring technology, behavioral assays, and semiochemical synthesis and analysis.



ISCA's insect traps and semiochemical lures in the field.

Why Choose ISCA ?

When you purchase products from ISCA, you are purchasing more than just the tangible products that are delivered to you. Your purchase includes many other benefits :

- Access to ISCA's entomologists and customer service personnel. Read customer testimonials at the ISCA website at : <http://www.iscotech.com/exec/testimonials.htm> .
- Pest management solutions that are field tested to determine optimal lure and dispenser formulation, trap design, and field application criterion such as trap placement, timing, frequency and density.
- Access to pest management information and product updates regarding your target pest, where applicable, at ISCA's customer support website : <http://www.iscotech.com/exec/customersupport.htm> .
- Your purchase contributes to ISCA's efforts to conduct on-going pest management R&D, and participate in collaborative R&D efforts with academic, federal and state pest management entities that promote the cost-effective application of environmentally friendly IPM practices for your target pest and many other pests.
- ISCA's funding supports dozens of pest management researchers and programs in the U.S. and internationally.
- Confidence that you are getting the best value price for your products.



ISCA's Semiochemical Synthesis and Analysis Capabilities

Many insects emit precise chemical odors to attract their mates (sex pheromones). Because pheromones are naturally occurring, environmentally friendly, and species specific compounds that do not result in the development of insecticide resistance, they are the alternative of choice for pest management. ISCA possesses the capability to synthetically manufacture highly pure insect semiochemicals such as pheromones. ISCA's in-house insect ecologists and organic chemists can, based on the knowledge of a specific insect species' pheromone, determine the optimal synthetic manufacturing route, and synthetically manufacture the pheromone on a cost-effective basis. After the manufacturing process, the pheromones are tested for chemical purity. In many instances, ISCA's chemical ecologists can determine the target insect's response to the synthetic pheromone by measuring the insect's antennal response, via electroantennogram (EAG) or electroantennogram detector (EAD) coupled with a gas chromatograph. If needed, ISCA can also perform lab and field biological assays to determine a wide variety of pheromone performance metrics, such as the optimal pheromone release method, optimal pheromone trap design, optimal pheromone trap density and placement, among others.

ISCA is the world's sole source for many difficult to synthesize and important semiochemicals and pheromones. Customers include the USDA, state departments of agriculture, growers, entomologists, insect chemical ecologists, and pest management entities in the U.S. and internationally. Some of the semiochemicals and pheromones synthesized by ISCA include those for :

- Brazilian apple leafroller *Bonagota cranaodes*
- Carob moth *Ectomyelois ceratoniae*
- Olive fruit fly *Bactrocera oleae*
- Pecan nutcase bearer *Acrobasis nuxvorella*
- Siberian moth *Dendrolimus superans sibiricus*
- Tomato leafminer *Tuta absoluta*
- Ceralure (B₁ enriched attractant for fruit flies)
- Mosquito oviposition pheromone
- Light brown apple moth *Epiphyas postvittana*
- Gammafly / Silver Y moth *Autographa gamma*
- Citrus leafminer *Phyllocnistis citrella*

Semiochemicals are volatile compounds which require a dispensing system commensurate with the control strategy being used. Whether the lures are designed to maximize insect attraction or be used in a mating disruption program, the dispenser is designed to release pheromones over the optimal period of time. In certain cases, it is advantageous to apply pheromones using thousands of point sources which release pheromones fairly quickly; in other situations the best control strategy is to apply tens or hundreds of point sources which release pheromones in relatively large quantities but over a longer time interval. ISCA possesses a range of semiochemical dispensing technologies that can optimize and modulate the release of semiochemicals over extended periods of weeks or months, some of which are :

- SPLAT (Specialized Pheromone & Lure Application Technology)
- Rubber septa dispensing technology
- Vials with modulated release formulations
- Water soluble lure capsules with modulated release formulations



ISCA possesses a range of semiochemical dispensing technologies. The lures shown above use rubber septa dispensing technology.



SPLAT controlled release formulations are highly adaptable to many types of application methods, viscosity requirements and conditions.

LIST OF SEMIOCHEMICALS

CAS	Chemical Compound	Common Name	Price Class
6728-26-3	E2-6Ald	E-2-Hexenal	1
4798-62-3		6-methyl-4-hydroxi-E-2-heptene	Rhyncophorol
18409-17-1	E2-8OH	E-2-Octen-1-ol	6
	Z5-10Ac	Z-5-Decenyl Acetate	10
		Z&E-5-Decen-1-yl Acetate	6
90839-16-0	S-olean	1,7-Dioxaspiro[5.5]Undecane	Olive fruit fly pheromone
38363-24-5	E3-12Ac	E-3-Dodecen-1-yl Acetate	6
16676-96-3	Z5-12Ac	Z-5-Dodecen-1-yl Acetate	French black cutworm pheromone
14959-86-5	Z7-12Ac	Z-7-Dodecen-1-yl Acetate	6
38363-29-0	E8-12Ac	E-8-Dodecen-1-yl Acetate	6
16974-11-1	Z9-12Ac	Z-9-Dodecen-1-yl Acetate	5
28079-04-1	Z8-12Ac	Z-8-Dodecen-1-yl Acetate	Oriental fruit moth [heromone
35148-19-7	E9-12Ac	E-9-Dodecen-1-yl Acetate	7
35237-62-8	E9-12OH	E-9-Dodecen-1-ol	9
53880-51-6	E8E10-12Ac	E,E-8,10-Dodecadien-1-yl Acetate	7
40642-40-8	Z8-12OH	Z-8-Dodecen-1-ol	6
20056-92-2	Z7-12OH	Z-7-Dodecen-1-ol	***
54364-62-4	E7Z9-12Ac	E,Z-7,9-Dodecadienyl acetate	***
33956-49-9	E8E10-12OH	E,E-8,10-Dodecadien-1-ol	14
	Z7E9,11-12-formate	Z,E-7,9,11-Dodecatrienyl formate	Carob moth pheromone
621-27-2	3-propylphenol	3-n-propylphenol	4
80-26-2	terpinyl acetate	Terpinyl Acetate	2
		E&Z-4-Tridecen-1-yl Acetate	Tomato pinworm pheromone
57981-60-9	E4Z7-13Ac	E,Z-4,7-Tridecadien-1-yl Acetate	Potato tuberworm pheromone
61188-11-2	E4Z7Z10-13Ac	E,Z,Z-4,7,10-Tridecatrien-1-yl Acetate	Potato tuberworm pheromone
		E&Z-11-Tetradecenal	9
65128-96-3	Z7-14Ald	Z-7-Tetradecenal	6
		Z-7-Tetradecen-1-yl Acetate	6
51937-00-9	Z9E12-14OH	Z,E-9,12 Tetradecadien-1-ol	7
35153-15-2	Z9-14OH	Z-9-Tetradecen-1-ol	Beet armyworm pheromone
		Z-7-Tetradecen-2-one	8
		Z-8-Tetradecen-1-yl Acetate	8
16725-53-4	Z9-14Ac	Z-9-Tetradecenyl acetate	6
		Z-9-Tetradecen-1-yl Aldehyde	Tobacco budworm pheromone
20711-10-8	Z11-14Ac	Z-11-Tetradecen-1-yl Acetate	5

33189-72-9	E11-14Ac	E-11-Tetradecen-1-yl Acetate		6
		3,8-Tetradecen-1-yl Acetate		***
	E3Z8-14Ac	E,Z-3,8-Tetradecadien-1-yl Acetate	Tomato leafminer (patent protected)	***
		Z,E-9,11-Tetradecadien-1-yl Acetate		7
30507-70-1	Z9E12-14Ac	Z,E-9,12-Tetradecadien-1-yl Acetate	Beet armyworm pheromone	6
30562-09-5	E9E11-14Ac	E,E-9,11-Tetradecadienyl Acetate	LBAM pheromone	***
	E3Z8Z11-14Ac	E,Z,Z-3,8,11-Tetradecatrien-1-yl Acetate	Tomato leafminer (patent protected)	***
638-59-5	14Ac	Tetradecyl Acetate		4
56683-54-6	Z11-16OH	Z-11-Hexadecen-1-ol		7
61301-56-2	E11-16OH	E-11-Hexadecen-1-ol	Tomato fruit Borer pheromone	***
56219-04-6	Z9-16Ald	Z-9-Hexadecenal		7
53939-28-9	Z11-16Ald	Z-11-Hexadecenal		7
34010-20-3	Z9-16Ac	Z-9-Hexadecen-1-yl Acetate		12
23192-42-9	Z7-16Ac	Z-7-Hexadecen-1-yl Acetate		12
56218-72-5	E11-16Ac	E-11-Hexadecen-1-yl Acetate		7
		Z-11-Hexadecen-1-yl Acetate		7
	Z7Z11-16Ac & Z7E11-16Ac	Z,Z & Z,E-7,11-Hexadecadien-1-yl Acetate	Gossyplure	6
74728-46-4	E9Z11-16Ald	E,Z-9,11-Hexadecadienal	Pecan nut casebearer pheromone	***
52207-99-5	Z7Z11-16Ac	Z,Z-7,11-Hexadecadien-1-yl Acetate		6
51606-94-4	Z7E11-16Ac	Z,E-7,11-Hexadecadien-1-yl Acetate		6
638-66-4	18Ald	Octadecanal		3
112-92-5	18OH	Octadecanol		1
		Z-13-Octadecanal		7
		Z-13-Octadecen-1-yl Acetate		7
86252-65-5	E2Z13-18Ac	E,Z-2,13-Octadecadien-1-yl Acetate		9
53120-26-6	E3Z13-18Ac	E,Z-3,13-Octadecadien-1-yl Acetate		6
66410-24-0	E3Z13-18OH	E,Z-3,13-Octadecadien-1-ol		7
53120-27-7	Z3Z13-18Ac	Z,Z-3,13-Octadecadien-1-yl Acetate		8
63408-44-6	Z7-20-11Kt	Z-7-Eicosen-11-one		7
52078-42-9	Z7-23Hy	Z-7-Tricosene		10
27519-02-4	Z9-23Hy	Z-9-Tricosene		6
		Citrus fruit borer technical pheromone		7
		Disparlure (Racemic)		8
		Grandlure complete		4
		Grandlure I		10
		Grandlure II		7
		Grandlure III and IV		7
		Mosquito oviposition pheromone		9
		Oriental beetle technical pheromone	Blitopertha orientalis	8
		Oriental fruit moth technical pheromone	Grapholita molesta	6
		Peach tree borer technical pheromone	Synanthedon exitiosa	6

LIST OF ATTRACTANTS

Chemical Compound	Price Class
Alfa-bisabol	2
<i>Alpha</i> -farnesene	2
<i>Beta</i> -farnesene	6
Farnesene	6
Verbenone	6

PRICE CATEGORIES

Price Class	1 - 24 grams	25 - 249 grams	250 – 999 grams	1,000+ grams
1	\$12.51	\$7.59	\$5.50	Contact us
2	\$25.03	\$15.18	\$11.00	Contact us
3	\$37.54	\$22.77	\$16.50	Contact us
4	\$50.05	\$30.36	\$22.00	Contact us
5	\$62.56	\$37.95	\$27.50	Contact us
6	\$87.59	\$53.13	\$38.50	Contact us
7	\$100.10	\$60.72	\$44.00	Contact us
8	\$112.61	\$68.31	\$49.50	Contact us
9	\$125.13	\$75.90	\$55.00	Contact us
10	\$137.64	\$83.49	\$60.50	Contact us
11	\$150.15	\$91.08	\$66.00	Contact us
12	\$162.66	\$98.67	\$71.50	Contact us
13	\$175.18	\$106.26	\$77.00	Contact us
14	\$187.69	\$113.85	\$82.50	Contact us
15	\$200.20	\$121.44	\$88.00	Contact us
16	\$212.71	\$129.03	\$93.50	Contact us
17	\$225.23	\$136.62	\$99.00	Contact us
18	\$237.74	\$144.21	\$104.50	Contact us
19	\$250.25	\$151.80	\$110.00	Contact us
20	\$262.76	\$159.39	\$115.50	Contact us

*** This pheromone is not available for sale. ISCA offers this pheromone in formulated products such as rubber septa lures or SPLAT mating disruption or attract & kill products.



A NIST, NIH, NSF, USDA and US Army research award recipient company

ORDER PLACEMENT, PAYMENT AND DELIVERY INFORMATION

- Minimum order quantity is US\$200 before any applicable taxes or shipping costs.
- Normal sales tax applies for sales within California.
- Prices are FOB Riverside, California, shipping fees apply. Delivery cost will be shown in invoice or you may request an estimate. Order is delivered within 14 days after receipt of payment. Please inform us of any special request for delivery, extra charges may apply e.g. for rush deliveries.
- ISCA Technologies' standard terms and conditions of sale apply, which can be viewed at <http://www.iscatech.com/exec/sales.htm> , or you may request that a copy be e-mailed or faxed to you.
- To place your order, please send us your purchase order, or you may place your order online at: www.iscatech.com/ecommerce/
- Payment terms : payment in advance.
- Payment options : credit card, check, or wire transfer.
- Typographical errors subject to correction.

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