

**BEDOUKIAN**

Bedoukian Research, Inc.

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## MATERIAL SAFETY DATA SHEET

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Product #: P6030-95 z-9-TETRADECEN-1-YL ACETATE

## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Bedoukian Research, Inc.                                          Emergency Phone Numbers:  
 21 Finance Drive                                                  1-800-424-9300    Chemtrec (North America)  
 Danbury, CT 06810-4192                                         1-703-527-3887    Chemtrec (International)  
 UNITED STATES  
 Phone: 1-203-830-4000

Product Code: P6030-95  
 Product Name: z-9-TETRADECEN-1-YL ACETATE  
 Last Revision: Apr 05, 2006

## SECTION 2. HAZARDS IDENTIFICATION

## HMIS HAZARD CLASSIFICATIONS

HEALTH = 1    FLAMMABILITY = 1    REACTIVITY = 0    PROTECTION = B

## LABEL PRECAUTIONARY STATEMENTS

## U.S. HAZARD LABELING

May be irritating to skin and eyes.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #: 16725-53-4  
 MF: C16H30O2  
 EC NO: 240-780-1

## SYNONYM(S)

9-Tetradecen-1-ol, acetate, (9Z)-  
 Z-9-Tetradecenyl Acetate  
 Z9-14Ac

## SECTION 4. FIRST-AID MEASURES

INHALATION EXPOSURE: Remove to fresh air. Give oxygen and call a physician.  
 EYE CONTACT: Flush with water for 15 min. Seek medical help if necessary.  
 SKIN CONTACT: Wash area well with water. Seek medical help if necessary.  
 INGESTION: Administer water and call a physician or poison control center immediately. Do not induce vomiting.

## SECTION 5. FIRE FIGHTING MEASURES

## EXTINGUISHING MEDIA

CO<sub>2</sub>, FOAM, DRY CHEMICAL

## SPECIAL FIRE FIGHTING PROCEDURES

Use standard fire fighting procedures.

## UNUSUAL FIRE AND EXPLOSION HAZARDS:

None.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

## STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Standard absorbents can be used.

WASTE DISPOSAL METHOD: Incineration or sanitary landfill in accordance with local, state, and federal regulations.

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SECTION 7. HANDLING AND STORAGE

## HANDLING

Observe all warnings and precautions listed for the product. Use in accordance with good manufacturing and industrial hygiene practices. Use product in a properly ventilated work area. Do not eat, drink or smoke while handling product.

## STORAGE

Store tightly sealed under inert gas in a cool, well-ventilated area.

## FIRE PROTECTION

Keep away from heat, sparks, and open flame.

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION: Mechanical (general)

RESPIRATORY: Usually not required

SKIN: Rubber gloves

EYES: Splash-proof safety glasses

OTHER PROTECTIVE EQUIPMENT: Safety shower, eye wash

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

APPEARANCE: colorless to light yellow liquid

ODOR DESCRIPTION: very mild, waxy

BOILING POINT: 110C @ 0.1 mm Hg

VAPOR PRESSURE : Not found

VAPOR DENSITY (Air = 1): >1

SPECIFIC GRAVITY @ 25C (water = 1): 0.8720:0.8760

SOLUBILITY IN WATER: Insoluble in water.

FLASH POINT (CC): 230 F 110 C

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SECTION 10. STABILITY AND REACTIVITY

## INCOMPATIBILITIES

CONDITIONS TO AVOID: Presents no special reactivity hazard.

MATERIALS TO AVOID: Strong oxidizing agents

## HAZARDOUS COMBUSTION PRODUCTS

CO, CO<sub>2</sub>, water

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SECTION 11. TOXICOLOGICAL INFORMATION

## ACUTE EFFECTS

Most likely route of entry is through the skin.

Full strength may be irritating to skin and eyes.

## TOXICITY DATA

This material is a Straight Chain Lepidopteran Pheromone, a class of pheromones with no expected risks to human health or non-target organisms.

THRESHOLD LIMIT VALUE (TLV): Not established

OSHA PERMISSABLE EXPOSURE LIMIT (PEL): Not established

LISTED AS CARCINOGEN BY NTP, IARC, OR OSHA?: NO

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SECTION 12. ECOLOGICAL INFORMATION

## GENERAL

Prevent contamination of soil, ground- and surface water.

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 SECTION 13. DISPOSAL CONSIDERATION

WASTE DISPOSAL METHOD: Incineration or sanitary landfill in accordance with local, state, and federal regulations.

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 SECTION 14. TRANSPORT INFORMATION

	Class	Pack Group	Sub. Risk	UN No.
Road(U.S.-DOT):	not regulated.			
Air (IATA):	not regulated.			
Sea (IMDG):	not regulated.			

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 SECTION 15. REGULATORY INFORMATION

## EUROPEAN INFORMATION

Based on toxicological studies in the published literature, there are no risk and safety phrases to assign for this product.

## REVIEWS, STANDARDS, AND REGULATIONS

This chemical is listed on the following inventories:

TSCA NDSL ECL EINECS(240-780-1) ENCS

LISTED AS CARCINOGEN BY NTP, IARC, OR OSHA?: NO

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 SECTION 16. OTHER INFORMATION

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# SAFETY DATA SHEET

## 1. Identification

<b>Product identifier</b>	<b>BEDOUKIAN CIS-11-TETRADECENYL ACETATE TECHNICAL PHEROMONE</b>	
<b>Other means of identification</b>		
<b>BRI Product Code</b>	P6040-95	
<b>Product registration number</b>		
<b>FIFRA</b>	52991-8	
<b>Synonyms</b>	11-Tetradecen-1-ol, acetate, (11Z)- * BEDOUKIAN 11-TETRADECENYL ACETATE TECHNICAL PHEROMONE (EPA FIFRA registration name) * cis-11-Tetradecenyl acetate * ECB pheromone * European corn borer pheromone * GBM pheromone component * Grapeberry moth pheromone component * Z11-14Ac * z-11-Tetradecenyl acetate	
<b>Recommended use</b>	insect pheromone For Manufacturing Use Only	
<b>Recommended restrictions</b>	Not for use in Tobacco or Nicotine delivery device applications and/or products.	
<b>Manufacturer/Importer/Supplier/Distributor information</b>		
<b>Manufacturer</b>		
<b>Company name</b>	Bedoukian Research	
<b>Address</b>	21 Finance Drive Danbury, CT 06810 United States	
<b>Telephone</b>	1-203-830-4000	
<b>Website</b>	www.bedoukian.com	
<b>E-mail</b>	customerservice@bedoukian.com	
<b>Contact person</b>	Joseph Bania	
<b>Emergency phone number</b>	Chemtrec (North America)	1-800-424-9300
	Chemtrec (International)	1-703-527-3887

## 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.	
<b>Health hazards</b>	Not classified.	
<b>Environmental hazards</b>	Not classified.	
<b>OSHA defined hazards</b>	Not classified.	
<b>Label elements</b>		
<b>Hazard symbol</b>	None.	
<b>Signal word</b>	None.	
<b>Hazard statement</b>	The substance does not meet the criteria for classification.	
<b>Precautionary statement</b>		
<b>Prevention</b>	Observe good industrial hygiene practices.	
<b>Response</b>	Wash hands after handling.	
<b>Storage</b>	Store away from incompatible materials.	
<b>Disposal</b>	Dispose of waste and residues in accordance with local authority requirements.	
<b>Hazard(s) not otherwise classified (HNOC)</b>	None known.	
<b>Supplemental information</b>	None.	

## 3. Composition/information on ingredients

### Substances

Chemical name	Common name and synonyms	CAS number	%
BEDOUKIAN CIS-11-TETRADECENYL ACETATE TECHNICAL PHEROMONE	11-Tetradecen-1-ol, acetate, (11Z)- BEDOUKIAN 11-TETRADECENYL ACETATE TECHNICAL PHEROMONE (EPA FIFRA registration name) cis-11-Tetradecenyl acetate ECB pheromone European corn borer pheromone GBM pheromone component Grapeberry moth pheromone component Z11-14Ac z-11-Tetradecenyl acetate	20711-10-8	100

#### Stabilizers

Chemical name	CAS number	%
synthetic alpha tocopherol	10191-41-0	0.1

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

**Composition comments** Occupational Exposure Limits for stabilizers are listed in Section 8.

#### 4. First-aid measures

<b>Inhalation</b>	Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Wash off with soap and water. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Rinse with water. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. Get medical attention if symptoms occur.
<b>Most important symptoms/effects, acute and delayed</b>	Direct contact with eyes may cause temporary irritation.
<b>Indication of immediate medical attention and special treatment needed</b>	Treat symptomatically.
<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

#### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	Move containers from fire area if you can do so without risk.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.

#### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.  Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
<b>Environmental precautions</b>	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

<b>Precautions for safe handling</b>	Observe good industrial hygiene practices.
<b>Conditions for safe storage, including any incompatibilities</b>	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Recommended Packaging: Glass, Plastic, Aluminum or Phenolic Lined Steel. Store tightly sealed under inert gas in a cool, well-ventilated area.

## 8. Exposure controls/personal protection

<b>Occupational exposure limits</b>	No exposure limits noted for ingredient(s).
<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Appropriate engineering controls</b>	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin protection</b>	
<b>Hand protection</b>	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
<b>Other</b>	Wear suitable protective clothing.
<b>Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

<b>Appearance</b>	
<b>Physical state</b>	Liquid.
<b>Color</b>	Colorless
<b>Odor</b>	mild and waxy
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	599.38 °F (315.21 °C) US EPA. 2014. Estimation Programs Interface Suite™ for Microsoft® Windows, v 4.11. US EPA, Washington, DC, USA.
<b>Flash point</b>	230 °F (110 °C) Pensky-Martens or Grabner Miniflash
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	0.0001156 kPa at 25 °C
<b>Vapor density</b>	8.8 Relative to air; air = 1
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Not available.
<b>Partition coefficient (n-octanol/water)</b>	6.54 US EPA. 2014. Estimation Programs Interface Suite™ for Microsoft® Windows, v 4.11. US EPA, Washington, DC, USA.
<b>Auto-ignition temperature</b>	Not available.

<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Density</b>	0.871 - 0.876 g/cm <sup>3</sup>
<b>Flammability class</b>	Combustible IIIB estimated
<b>Molecular formula</b>	C <sub>16</sub> H <sub>30</sub> O <sub>2</sub>
<b>Molecular weight</b>	254.41
<b>Specific gravity</b>	0.871 - 0.876 at 25°C

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	No adverse effects due to inhalation are expected.
<b>Skin contact</b>	No adverse effects due to skin contact are expected.
<b>Eye contact</b>	Direct contact with eyes may cause temporary irritation.
<b>Ingestion</b>	Expected to be a low ingestion hazard.

**Symptoms related to the physical, chemical and toxicological characteristics** Direct contact with eyes may cause temporary irritation.

### Information on toxicological effects

<b>Acute toxicity</b>	Not available.
<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.
<b>Serious eye damage/eye irritation</b>	Direct contact with eyes may cause temporary irritation.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>	
Not listed.	
<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.
<b>Specific target organ toxicity - single exposure</b>	Not classified.
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	Not an aspiration hazard.

## 12. Ecological information

<b>Ecotoxicity</b>	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
<b>Persistence and degradability</b>	No data is available on the degradability of this product.
<b>Bioaccumulative potential</b>	

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport information

**DOT**  
Not regulated as dangerous goods.

**IATA**  
Not regulated as dangerous goods.

**IMDG**  
Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not established.

### 15. Regulatory information

**US federal regulations** This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**  
Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**  
Not listed.

**SARA 304 Emergency release notification**  
Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**  
Not listed.

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories** Immediate Hazard - No  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance**  
Not listed.

**SARA 311/312 Hazardous chemical** No

**SARA 313 (TRI reporting)**  
Not regulated.

#### Other federal regulations

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**  
Not regulated.



**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.**US state regulations****US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)**

Not listed.

**US. Massachusetts RTK - Substance List**

Not regulated.

**US. New Jersey Worker and Community Right-to-Know Act**

Not listed.

**US. Pennsylvania Worker and Community Right-to-Know Law**

Not listed.

**US. Rhode Island RTK**

Not regulated.

**US. California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	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)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information, including date of preparation or last revision****Issue date** 05-27-2015**Version #** 01**Disclaimer**

BRI cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.