

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product identifier**

**Product Name** BIOACT™ EC-7M

**Other means of identification**

**Product Code** EC7M  
**UN-No** UN2319

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Technical cleaning solvent.

**Details of the supplier of the safety data sheet**

**Manufacturer Address** Vantage Specialties, Inc.  
 3938 Porett Drive  
 Gurnee, IL 60031 USA  
 847-244-3410

**Emergency Telephone Number**

**Emergency Telephone Number** CHEMTREC International: +1-703-527-3887  
 CHEMTREC US: 1-800-424-9300

## 2. HAZARDS IDENTIFICATION

**Classification**

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2B
Skin sensitization	Category 1
Aspiration toxicity	Category 1
Flammable Liquid	Category 3

**Label Elements**

### EMERGENCY OVERVIEW

**DANGER**

**Hazard statements**

May be fatal if swallowed and enters airways  
 Causes eye irritation  
 Causes skin irritation  
 May cause an allergic skin reaction  
 H410 - Very toxic to aquatic life with long lasting effects  
 Flammable liquid and vapor



**Color** Light yellow

**Physical State** Liquid

**Odor** Citrus

**Precautionary Statements - Prevention**

Keep away from flames and hot surfaces. — No smoking.  
 Take precautionary measures against static discharge  
 Use personal protective equipment as required  
 Use only outdoors or in a well ventilated area  
 Wash hands thoroughly after handling

**Precautionary Statements - Response**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 IF ON SKIN: Rinse exposed skin with plenty of water. If skin irritation occurs: get medical advice/attention.  
 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Consult a physician if breathing is difficult or other respiratory symptoms develop.  
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
 IN CASE OF FIRE: Use CO2, dry chemical, ABC fire extinguisher, or foam for extinction

**Precautionary Statements - Storage**

Store in accordance with local regulations

**Precautionary Statements - Disposal**

Dispose of contents/container in accordance with applicable regulations.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%
D-Limonene	5989-27-5	60-100

### 4. FIRST AID MEASURES

**FIRST AID MEASURES**

<b>Eye contact</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>Skin contact</b>	IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: get medical advice/attention.
<b>Inhalation</b>	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
<b>Ingestion</b>	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Seek immediate medical attention.
<b>Self-protection of the first aider</b>	Use personal protective equipment.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** Headache/dizziness. Skin irritation, allergic reaction.

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

<b><u>Suitable extinguishing media</u></b>	Dry chemical. Foam. Carbon dioxide. Water spray or fog. Class ABC/BC fire extinguisher.
<b><u>Unsuitable extinguishing media</u></b>	Do not use a solid water stream as it may scatter and spread fire.
<b><u>Specific hazards arising from the chemical</u></b>	Discarded towels or wipes soaked with solvent may smolder if

not properly contained.

**Explosion Data**

**Sensitivity to Mechanical Impact**

None.

**Sensitivity to Static Discharge**

May be ignited by heat, sparks or flames.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions**

Use personal protective equipment. Remove all sources of ignition. Ensure adequate ventilation.

**Environmental precautions**

**Environmental precautions**

Prevent release to surface water. Prevent product from entering drains.

**Methods and material for containment and cleaning up**

**Methods for Containment**

Dike to collect large liquid spills.

**Methods for Cleaning Up**

Take up with sand or other noncombustible absorbent material and place into containers for later disposal.

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

**Handling**

Wear personal protective equipment. Avoid contact with eyes, skin and clothing. Do not breathe mist/vapors/spray. Ensure adequate ventilation. Take precautionary measures against static discharges.

**Conditions for safe storage, including any incompatibilities**

**Storage**

Keep away from open flames, hot surfaces and sources of ignition. Keep containers tightly closed in a cool, well-ventilated place.

**Incompatible materials**

Strong acids. Strong oxidizing agents.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure Guidelines**

This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Appropriate engineering controls**

**Engineering Measures**

Provide showers, eyewash stations, and ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection**

Safety glasses with side-shields.

**Skin and Body Protection**

Long sleeved clothing. Wear personal protective equipment as required.

**Respiratory Protection**

In case of insufficient ventilation, wear suitable respiratory equipment.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State</b>	Liquid	<b>Odor</b>	Citrus
<b>Appearance</b>	Clear	<b>Odor threshold</b>	Not determined
<b>Color</b>	Light yellow		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH		Not Applicable
Melting point / freezing point		Not determined
Boiling point / boiling range	> 150 °C / >300 °F	
Flash Point	47 °C / 117 °F	CC (closed cup)
Evaporation Rate	<1	(BUAC = 1)
Flammability (solid, gas)		Flammable liquid and vapor
Flammability Limit in Air		Published data for d-Limonene
Upper flammability limit	6.1%	
Lower Flammability Limit	0.7%	
Vapor pressure	1.6	mm Hg
Vapor Density	>1	(air = 1)
Specific Gravity	0.84	@ 25°C
Water Solubility	Immiscible	
Solubility in other solvents		Not determined
Partition coefficient		No data available
Autoignition Temperature		No data available
Decomposition temperature		No data available
Kinematic viscosity	0.8 cps @ 25°C	No data available
Dynamic viscosity		No data available
Explosive Properties	None	
Oxidizing Properties	None	

### Other Information

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	Not reactive
<b>Remarks</b>	
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Possibility of Hazardous Reactions</b>	
<b>Hazardous Reactions</b>	None under normal processing.
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to Avoid</b>	Extremes of temperature and direct sunlight
<b>Incompatible materials</b>	Strong acids. Strong oxidizing agents.

**Hazardous Decomposition Products**  
Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Product Information

<b>Inhalation</b>	May cause drowsiness and dizziness.
<b>Eye contact</b>	Irritating to eyes.
<b>Skin contact</b>	May cause sensitization by skin contact.
<b>Ingestion</b>	May be harmful if swallowed. Potential for aspiration if swallowed.

**Component Information**

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
D-Limonene 5989-27-5	= 4400 mg/kg ( Rat ) = 5200 mg/kg ( Rat )	> 5 g/kg ( Rabbit )	-

**Information on toxicological effects**

**Symptoms** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Skin corrosion/irritation** dry skin, eczema.  
**Serious eye damage/eye irritation** pain, tearing.  
**Sensitization** Repeated or prolonged contact may cause allergic reactions in very susceptible persons.  
**Mutagenic Effects** No known hazard.  
**Carcinogenicity** No known hazard.

Chemical Name	ACGIH	IARC	NTP	OSHA
D-Limonene 5989-27-5				X

**Reproductive Toxicity** No known hazard.

**Aspiration hazard** May be fatal if swallowed and enters airways.

**Numerical measures of toxicity-Product Information** Not determined

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

H410 - Very toxic to aquatic life with long lasting effects

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
D-Limonene 5989-27-5		LC50= 35 mg/L Oncorhynchus mykiss 96 h LC50 0.619 - 0.796 mg/L Pimephales promelas 96 h		LC50 (48h): 0.58 - 0.92 mg/l Daphnia magna

**Persistence and degradability**

No data available.

**Bioaccumulation/Accumulation**

d-Limonene BCF: 683

**Mobility**

No data available.

**Other Adverse Effects**

## 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

<b>Waste Disposal Method</b>	This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261).
<b>Contaminated Packaging</b>	Dispose of in accordance with applicable regulations.
<b>US EPA Waste Number</b>	D001

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
D-Limonene 5989-27-5	Toxic

#### 14. TRANSPORT INFORMATION

<b>DOT</b>	-
<b>UN-No</b>	UN2319
<b>Proper Shipping Name</b>	Terpene Hydrocarbons, N.O.S.
<b>Hazard Class</b>	3
<b>Packing Group</b>	III
<b>Special Provisions</b>	Exempt from regulation by US DOT when shipped in the USA solely by land in containers less than 119 gallons, refer to 49 CFR 173.150(f).

<b>IATA</b>	-
<b>UN-No</b>	UN2319
<b>Proper Shipping Name</b>	Terpene Hydrocarbons, N.O.S.
<b>Hazard Class</b>	3
<b>Packing Group</b>	III

<b>IMDG / IMO</b>	-
<b>UN-No</b>	UN2319
<b>Proper Shipping Name</b>	Terpene Hydrocarbons, N.O.S.
<b>Hazard Class</b>	3
<b>Packing Group</b>	III
<b>Marine Pollutant</b>	Yes
<b>Description</b>	d-Limonene

#### 15. REGULATORY INFORMATION

##### International Inventories

<b>TSCA</b>	Complies
<b>DSL</b>	Complies
<b>EINECS</b>	Complies
<b>ELINCS</b>	Complies
<b>ENCS</b>	Complies
<b>IECSC</b>	Complies
<b>KECL</b>	Complies
<b>PICCS</b>	Complies
<b>AICS</b>	Complies

##### Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
 DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List  
 EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
 ENCS - Japan Existing and New Chemical Substances  
 IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances  
 PICCS - Philippines Inventory of Chemicals and Chemical Substances  
 AICS - Australian Inventory of Chemical Substances

**U.S. Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372: 1,2-epoxybutane, 2-methyl-2-propanol.

**SARA 311/312 Hazard Categories**

<b>Acute health hazard</b>	Yes
<b>Chronic Health Hazard</b>	No
<b>Fire hazard</b>	Yes
<b>Sudden release of pressure hazard</b>	No
<b>Reactive Hazard</b>	No

**Clean Water Act**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

**U.S. State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals

**U.S. State Right-to-Know Regulations**

This product does not contain any substances regulated by state right-to-know regulations

**16. OTHER INFORMATION**

<b><u>NFPA</u></b>	<b>Health Hazard</b> 1	<b>Flammability</b> 2	<b>Instability</b> 0	<b>Physical and Chemical Hazards</b> n/a
<b><u>HMIS</u></b>	<b>Health Hazard</b> 1	<b>Flammability</b> 2	<b>Physical hazards</b> 0	<b>Personal Precautions</b> B

**Prepared by** Product Steward  
**Issuing Date** 27-Apr-2017  
**Revision Date** 27-Apr-2017  
**Revision Note**  
**Reason for Revision** Updated supplier information

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**

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