

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

Product identifier

Product Name BIOACT™ AE-O

Other means of identification

Product Code AEO

UN-No UN2319

Recommended use of the chemical and restrictions on use

Recommended Use Adhesive removal. Asphalt extraction reagent.

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

2. HAZARDS IDENTIFICATION

Classification

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

Label Elements

EMERGENCY OVERVIEW

DANGER

Hazard statements

Causes serious eye damage

Causes skin irritation

May cause an allergic skin reaction

May be fatal if swallowed and enters airways

Flammable liquid and vapor



Color Light yellow

Physical State Liquid

Odor Citrus

Precautionary Statements - Prevention

Wear protective gloves/eye protection/face protection

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

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or rash occurs: Get medical advice/attention
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting
IN CASE OF FIRE: Use CO2, dry chemical, ABC fire extinguisher, or foam for extinction

Precautionary Statements - Storage

Keep container tightly closed

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
Alkylphenol ethoxylate	26027-38-3	1 - 5

4. FIRST AID MEASURES**FIRST AID MEASURES**

Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
Skin contact	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. In the case of skin irritation or allergic reactions see a physician.
Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Ingestion	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed

Symptoms	Skin irritation, allergic reaction.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

<u>Suitable extinguishing media</u>	Dry chemical. Foam. Carbon dioxide. Water spray or fog. Class ABC/BC fire extinguisher.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Hazardous combustion products	Carbon oxides.
<u>Explosion Data</u>	
Sensitivity to Mechanical Impact	None.

Sensitivity to Static Discharge

Yes.

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 product from entering drains. Prevent release to surface water.

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. 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 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**

Showers, Eyewash stations, Ventilation systems.

Individual protection measures, such as personal protective equipment**Eye/Face Protection**

Safety glasses with side-shields, Goggles.

Skin and Body Protection

DO NOT wear natural rubber gloves. Use nitrile, PVC, laminate, or viton gloves. Long sleeved clothing.

Respiratory Protection

In case of inadequate ventilation wear respiratory protection.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid	Odor	Citrus
Appearance	Clear	Odor threshold	Not determined
Color	Light yellow		
Property	Values	Remarks • Method	
pH		Not Applicable	
Melting point / freezing point		Not determined	
Boiling point / boiling range	171 - 189 °C / 340 - 372 °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	< 2	mm Hg	
Vapor Density	>1	(air = 1)	
Specific Gravity	0.84	@ 25°C	
Water Solubility	Immiscible		
Solubility in other solvents		Not determined	
Partition coefficient	4.4	Published data for d-Limonene	
Autoignition Temperature		No data available	
Decomposition temperature		No data available	
Kinematic viscosity		Not determined	
Dynamic viscosity		Not determined	
Explosive Properties	None		
Oxidizing Properties	None		

Other Information**10. STABILITY AND REACTIVITY**

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

Hazardous Decomposition Products

Oxidized d-Limonene has been shown to produce greater irritation and sensitization than pure d-limonene in animal studies.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure****Product Information**

Inhalation	Inhalation of aerosol or mist may cause irritation of the respiratory tract.
Eye contact	Causes serious eye irritation. May cause irreversible damage to eyes.

Skin contact Irritating to skin.

Ingestion 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)	-
Alkylphenol ethoxylate 26027-38-3	500 - 2000 mg/kg (rat)	> 2000 mg/kg (rabbit)	> 5 mg/l (mist)

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.
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.

Chronic Toxicity Contains a suspected endocrine disruptor (< 1%).
Aspiration hazard May be fatal if swallowed and enters airways.

Numerical measures of toxicity-Product Information Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life

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
Alkylphenol ethoxylate 26027-38-3				1 - 10 mg/l

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

Waste Disposal Method	Dispose of in accordance with applicable regulations.
Contaminated Packaging	Dispose of in accordance with applicable regulations.
US EPA Waste Number	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

DOT	-
UN-No	UN2319
Proper Shipping Name	Terpene Hydrocarbons, N.O.S.
Hazard Class	3
Packing Group	III

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

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

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	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 does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	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 may contain trace levels of chemicals known to the state of California to cause cancer and birth defects and reproductive harm: ethylene oxide (75-21-8), and 1,4-Dioxane (123-91-1).

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

Ethoxylated nonylphenol (CAS 26027-38-3) is subject to TSCA 12(b) export notification.

16. OTHER INFORMATION

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

Prepared by	Regulatory Specialist
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Revision Note	
Reason for Revision	Periodic review and update

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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