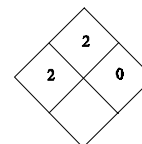


MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION



PRODUCT NAME: AMVAC AZA 3% EC; Ecozin™ 3% EC; Amazin™ 3% EC;
Ornazin™ 3% EC

GENERAL USE: Bio-pesticide

PRODUCT DESCRIPTION: Dark brown liquid with a sweet odor

EPA Registration Number: 5481-476

Registration Number(s) (Under the Canadian Pest control Products Act): Not currently registered

MSDS No.: 280_2

Current MSDS Revision Date: 19 May, 1999

MANUFACTURER:
AMVAC CHEMICAL CORPORATION
4100 E. Washington Blvd.
Los Angeles, CA 90023-4406
Ph: 323-264-3910
FAX: 323-268-1028

EMERGENCY TELEPHONE NUMBERS:
MANUFACTURER: 323-264-3910
TRANSPORTATION (24 HOURS)
CHEMTREC: 800-424-9300
MEDICAL (24 HOURS)
HIS: 800-228-5635, Ext. 169

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	WT %	CAS No.
Azadirachtin	3.0%	11141-17-6
Inert Ingredients	97.0%	

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)

COMPONENT	HAZARD	OSHA PEL*	ACGIH TLV*
None			

* Exposure Limits 8 hrs. TWA (ppm)

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

CAUTION. May cause eye irritation. May cause skin irritation. May cause skin sensitization. May cause central nervous system depression (CNS). Contains a combustible liquid.

POTENTIAL HEALTH EFFECTS

ROUTE(S) OF ENTRY: Potential routes of entry include skin and eye contact, ingestion, and inhalation of mists.

SIGNS OF ACUTE OVEREXPOSURE: May cause skin and eye irritation. May cause skin sensitization.

SIGNS OF CHRONIC OVEREXPOSURE: None known.

CARCINOGENICITY: None of the components of this product are known to be carcinogenic.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

4. FIRST AID MEASURES

EYES: Immediately flush the eyes with copious amounts of clear, cool running water for a minimum of 15 minutes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eyes and lids with water. Contact a physician immediately. If there will be a delay in getting medical attention, rinse the eyes for at least another 15 minutes.

INHALATION: Remove victim to fresh air. If breathing has ceased, clear the victim's airway and start mouth-to-mouth artificial respiration. If breathing is difficult, give oxygen. Contact a physician immediately. Be sure the contact areas are clean to prevent contamination of the rescuer.

INGESTION: Immediately dilute the swallowed product by giving large quantities of water, but do not induce vomiting. If vomiting occurs, give fluids again. Have a physician determine if condition of patient will permit induction of vomiting or evacuation of stomach. Never give anything by mouth to an unconscious person. Contact a physician immediately.

SKIN: Immediately flush all affected areas with large amounts of clear water for at least 15 minutes. Remove contaminated clothing. Do not attempt to neutralize with chemical agents. Wash clothing before reuse. If skin irritation develops, contact a physician immediately.

4. FIRST AID MEASURES, cont'd

NOTE TO PHYSICIANS: Treat symptomatically. Contact HEALTH INFORMATION SERVICES (HIS) at 1-800-228-5635, EXT 169, or your local POISON CONTROL Center for more information.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

Flash Point (TCC):	165°F (74°C)
Autoignition Temperature:	540°F (282°C)
Flammable Limits:	
Lower flammable limit:	1.5%
Upper flammable limit:	9.7%

EXPLOSIVITY:

Mechanical Impact:	Will not occur
Static Discharge:	Will not occur

HAZARDOUS COMBUSTION PRODUCTS: Incomplete combustion of this product may result in fumes and vapors of unknown composition. Stay upwind in case of fire.

EXTINGUISHING MEDIA: Foam, carbon dioxide, dry chemical, water fog, water spray.

FIRE FIGHTING INSTRUCTIONS: Do not breathe fumes. Wear complete fire fighting gear, including protective gloves, eye protection, and self-contained breathing apparatus. Wash clothing before reuse.

6. ACCIDENTAL RELEASE MEASURES

GENERAL: Use adequate ventilation, as well as impervious clothing and safety goggles. Keep bystanders upwind and away from the spill. If the spill is in an enclosed area it may be necessary to wear a self-contained respirator.

SMALL SPILL: Cover with absorbent (clay, sawdust, straw, kitty litter, etc.), to absorb the liquid. Sweep into an open drum. Clean the area with common powdered household detergent and a stiff brush and just enough water to make a slurry. Absorb and sweep into the same open drum. Rinse with water, absorb, and add to the waste drum. Close the drum and dispose of properly.

LARGE SPILL: Dike the spill to prevent contamination of local water sources. Siphon the majority of the liquid into drums for use or disposal, depending on the circumstances. Clean the area as described for a small spill.

7. HANDLING AND STORAGE

HANDLING: Wear recommended personal protective equipment (PPE) (See Section 8). Avoid breathing fumes or spray. Avoid contact with skin, eyes, or clothing. Wash PPE after each day of use and before reuse. Wash hands and face thoroughly after use.

STORAGE: Store product in original container in a secure, dry and temperate area. do not freeeze. Do not use, pour, spill or store product near heat or open flame. Keep container closed when not in use. Do not sotre near food, feed, fertilizers, or seeds. Do not use or store around the home. Avoid contact with water. Keep away from children and pets.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide fresh air or general ventilation during formulation, mixing, application and after application.

RESPIRATORY PROTECTION: A properly FIT-TESTED NIOSH/MSHA approved respirator fitted with organic vapor cartridges may be required when working with this product. Specific use regulations are listed on the label.

SKIN PROTECTION: Long-sleeved shirt and long pants, chemical resistant gloves, and shoes plus socks are required when working with this product. If there is a possibility of splashing or spillage, a chemical resistant apron or chemical resistant coverall should also be worn.

EYE PROTECTION: Safety glasses must be worn when working with any chemical. If there is a possibility of splashing or spillage, safety goggles or a faceshield should also be worn.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance:	Clear brown liquid
Odor:	Slightly pungent odor
Odor Threshold:	Not determined
Boiling Point:	approx. 178°C (334°F)
Freezing/Melting Point:	Not determined
Specific Gravity:	1.08
Density:	9.01 lb/gal
Evaporation Rate:	0.03 (relative to n-butyl acetate = 1.00)
Vapor Pressure (mm Hg):	0.20
Vapor Density:	Not available
Percent Volatile by Vol:	Not determined

9. **PHYSICAL AND CHEMICAL PROPERTIES, cont'd**

Solubility (Water):	Emulsifies
Solubility (Other):	Soluble in alcohols and low molecular weight ketones
pH:	4.2-4.4 as 5% solution
Partition Coefficient (O/W):	Not available

10. **STABILITY AND REACTIVITY**

CHEMICAL STABILITY (Conditions to avoid): This product is stable under normal storage and use conditions. Avoid high temperatures and direct sunlight during storage.

INCOMPATIBILITY: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: None known from normal decomposition. Partial combustion may result in carbon monoxide and carbon dioxide, as well as unknown compounds.

HAZARDOUS POLYMERIZATION: This product will not polymerize.

11. **TOXICOLOGICAL INFORMATION**

INGESTION:	Oral LD ₅₀ (rat):	> 5050 mg/kg
INHALATION:	Inhalation LC ₅₀ (rat):	> 2.6 mg/L
DERMAL:	Skin LD ₅₀ (rabbit):	> 5050 mg/kg
IRRITATION:	Eye irritation:	Moderate Irritant (Toxicity Category II)
	Skin irritation:	Slight Irritant (Toxicity Category IV)
SENSITIZATION:	Skin sensitization: (guinea pig)	Sensitizer
TERATOGENICITY:	No evidence is available to indicate this product will be teratogenic.	
MUTAGENICITY:	No evidence is available to indicate this product will be mutagenic.	
CARCINOGENITY:	None of the components of this product have been found to be carcinogenic.	
REPRODUCTIVE TOXICITY:	May cause reproductive toxicity based on animal data for one of the ingredients.	
TOXICOLOGICAL SYNERGISTIC PRODUCTS:	No information is available.	

12. **ECOLOGICAL INFORMATION**

Not expected to cause ecological problems. Uncontrolled releases of this product should be avoided.

13. DISPOSAL CONSIDERATIONS

All recovered product should be packaged, labeled, transported, and disposed or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices. Avoid landfilling liquids. Reclaim where possible. Contact Federal, State, and local agencies for further information on disposal.

14. TRANSPORTATION INFORMATION

DOT Class	: Not regulated
UN Number	: Not regulated
IMDG Class (sea)	: Not regulated
IATA Class (air)	: Not regulated
Marine Pollutant	: No
Packing Group	: Not regulated
Hazard label(s)	: Not regulated
ADR Class (road)	: Not regulated
Proper shipping name(s)	:Not regulated
Reportable Quantity	: No

PACKAGING

General description : Half-Pint, pint, quart, and gallon bottles.

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

Registration of this product is registered under EPA/FIFRA Regulations. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

CANADIAN REGULATIONS: This product is not registered in Canada.

EUROPEAN UNION REGULATIONS: This product is not registered in the European Union.

SARA TITLE III DATA

Section 311 & 312 Hazard Categories:

Immediate Health Hazard:	Yes
Delayed Health Hazard:	Yes
Fire Hazard:	Yes
Reactive Hazard:	No
Sudden Pressure Release Hazard:	No

Section 302 Extremely Hazardous Substances: None

Section 313 Toxic Chemicals: None

15. REGULATORY INFORMATION, cont'd

CERCLA/EPCRA REPORTABLE QUANTITIES (RQ): None

STATE REGULATIONS:

CALIFORNIA (Proposition 65): None

OTHERS: None

16. OTHER INFORMATION

MSDS Status:

Date This Revision: 5/19/99

Date Previous Revision: 8/04/98

Person Responsible for Preparation: Gary A. Braden

Reasons for Revision: New information is available regarding the toxicological properties of this product, resulting in an update to information in section 11. Also, registration of the product is complete, so the EPA registration number has been added.

DISCLAIMER:

This information is provided for the limited guidance to the user. While Amvac believes that the information is, as of the date hereof, reliable, it is the user's responsibility to determine the suitability of the information for its purposes. The user is advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional, or variable conditions or circumstances exist (like combinations with other materials), or because of applicable regulations. No express or implied warranty of merchantability or fitness for a particular purpose or otherwise is made hereunder with respect to the information or the product to which the information relates.

ABBREVIATIONS:

ACGIH	-	American Conference of Governmental Industrial Hygienists
ADR	-	European Agreement Concerning the International Carriage of Dangerous Goods by Road
CERCLA	-	Comprehensive Environmental Response, Compensation, and Liability Act
DOT	-	Department of Transportation
EPA	-	Environmental Protection Agency
EPCRA	-	Emergency Planning and Community Right-to-Know Act
FIFRA	-	Federal Insecticide, Fungicide, and Rodenticide Act
IARC	-	International Agency for Research on Cancer
IATA	-	International Air Transport Association
IMDG	-	International Maritime Dangerous Goods
NTP	-	National Toxicology Program
SARA	-	Superfund Amendments and Reauthorization Act
TSCA	-	Toxic Substances Control Act