



Safety Data Sheet - GHS

1. IDENTIFICATION: CHEMICAL PRODUCT AND COMPANY

PRODUCT NAME: ZEAL® Miticide¹
EPA REGISTRATION NUMBER: 59639-138
VC NUMBER(S): 1540, 1935
SYNONYM(S): None
PRODUCT DESCRIPTION: Miticide

Zeal is a registered trademark of Valent U.S.A. LLC

MANUFACTURER/DISTRIBUTOR
 VALENT U.S.A. LLC
 P.O. Box 8025
 1600 Riviera Avenue, Suite 200
 Walnut Creek, CA 94596-8025

EMERGENCY TELEPHONE NUMBERS
 HEALTH EMERGENCY OR SPILL (24 hr):
 (800) 892-0099
 TRANSPORTATION (24 hr.): CHEMTREC
 (800) 424-9300 or (202) 483-7616

PRODUCT INFORMATION
 AGRICULTURAL PRODUCTS: (800) 682-5368

The current SDS is available through our website (www.valent.com), or by calling the product information numbers listed above.

2. HAZARDS IDENTIFICATION

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not the same as the FIFRA-required classifications on the product label. Certain sections of this SDS are superseded by federal law under EPA FIFRA for a registered pesticide. Please see Section 15, REGULATORY INFORMATION for an explanation.

Classification - (per U.S. OSHA 29 CFR 1910.1200 (Hazcom 2012))

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
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Label elements

EMERGENCY OVERVIEW

WARNING



Hazard statements
 Harmful if inhaled

Precautionary statements**Prevention**

Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

Response

Eyes None.

Skin None.

Inhalation IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Ingestion None.

FIRE None.

Spill None.

Storage

None.

Disposal

None.

Hazards not otherwise classified (HNOC)**Other Information**

- Very toxic to aquatic life with long lasting effects
- 9.45 % of the mixture consists of ingredient(s) of unknown toxicity

For information on Transportation requirements see Section 14.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	TRADE SECRET
Etozazole	153233-91-1	72	
Ammonium sulfate	7783-20-2	6 - 9	*
Kaolin clay	1332-58-7	1	
Others	No CAS#	16 - 21	*

Other ingredients, which may be maintained as trade secrets, are any substances other than an active ingredient contained in this product. Some of these may be hazardous, but their identities are withheld because they are considered trade secrets. The hazards associated with the other ingredients are addressed in this document. Specific information on other ingredients for the management of exposures, spills, or safety assessments can be obtained by a treating physician or nurse by calling **(800) 892-0099** at any time.

4. FIRST AID MEASURES

EMERGENCY NUMBER (800) 892-0099

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact **1-800-892-0099** for emergency medical treatment information.

EYE CONTACT:

Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the

first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

SKIN CONTACT:

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

INGESTION:

Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless told to do so by the poison control center or doctor. Do not give anything to an unconscious person.

INHALATION:

Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

NOTES TO PHYSICIAN:

None

5. FIRE FIGHTING MEASURES

Flash point °C

Flash point °F

Not applicable

EXTINGUISHING MEDIA:

Suitable extinguishing media: Foam, dry chemical powder, CO₂ or dry sand, water spray

Unsuitable extinguishing media: Rod-like water (straight streams of water).

FLAMMABLE LIMITS IN AIR - LOWER (%):

Not applicable

FLAMMABLE LIMITS IN AIR - UPPER (%):

Not applicable

NFPA RATING:

Health:	1
Flammability:	1
Reactivity:	0
Special:	None

(Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using professional judgement. Values were not available in the guidelines or published evaluations prepared by the National Fire Protection Association, NFPA.

FIRE FIGHTING INSTRUCTIONS: Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse.

Powders and dusts may form explosive dust clouds with air. Containers may explode when heated. Runoff and fire-control water may pollute waters. May be ignited by ignition sources such as heat, mechanical sparks, static discharge or open flames. Risk of fire and explosion on contact with incompatible materials.

HAZARDOUS DECOMPOSITION PRODUCTS: Normal combustion forms carbon dioxide, water vapor and may produce: Oxides of nitrogen;. Combustion may produce toxic: Fluorine compounds. Incomplete combustion can produce carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

Emergency Telephone: (800) 892-0099
REVISION NUMBER: 2

SDS NO.: 0268
REVISION DATE: 02/21/2018

VALENT EMERGENCY PHONE NUMBER: (800) 892-0099
CHEMTREC EMERGENCY PHONE NUMBER: (800) 424-9300
OBSERVE PRECAUTIONS IN SECTION 8: PERSONAL PROTECTION

Stop the source of the spill if safe to do so. Contain the spill to prevent further contamination of the soil, surface water, or ground water. For additional spill response information refer to the North American Emergency Response Guidebook.

UN/NA NUMBER: Not applicable
FOR SPILLS ON LAND:

EMERGENCY RESPONSE GUIDEBOOK NO.: Not applicable

CONTAINMENT: Reduce airborne dust. Avoid runoff into storm sewers or other bodies of water.

CLEANUP: Clean up spill immediately. Vacuum or sweep up material and place in a chemical waste container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a chemical waste container.

FOR SPILLS IN WATER:

CONTAINMENT: This material will disperse or dissolve in water. Stop the source of the release. Contain and isolate to prevent further release into soil, surface water and ground water.

CLEANUP: Clean up spill immediately. Absorb spill with inert material. Remove contaminated water for treatment or disposal.

7. HANDLING AND STORAGE

END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.

HANDLING:

Avoid contact with eyes, skin or clothing. Users should wash hands thoroughly with soap and water before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of the gloves before removing. As soon as possible, wash thoroughly and change into clean clothing. Applicators and other handlers must wear long-sleeved shirt and long pants, chemical resistant gloves, shoes plus socks. Avoid and minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate.

STORAGE:

Keep pesticide in original container only. Keep containers tightly closed when not in use. Do not contaminate water, food, or feed by storage or disposal. Store product in original container in a dark, cool, dry area away from children and pets. Do not use or store near heat or open flame. Do not put concentrate into food or drink containers. Do not dilute concentrate in food or drink containers. Do not store diluted spray. Keep away from heat, sparks, static electricity and open flame.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.

EYES & FACE: Do not get this material in your eyes. Eye contact can be avoided by wearing protective eyewear.

RESPIRATORY PROTECTION: Use this material only in well ventilated areas. If ventilation is not adequate to keep airborne concentrations below recommended exposure standards, approved respiratory protection should be worn.

SKIN & HAND PROTECTION: Avoid contact with skin or clothing. Skin contact can be minimized by wearing

protective clothing including gloves.

SPECIFIC HYGIENE MEASURES: PREVENT GENERATION OF DUST. Avoid inhalation. Avoid contact with skin and eyes. Do not eat, drink or smoke during work. Wash thoroughly after handling and before eating or drinking. Contaminated work clothing should not be allowed out of the workplace.

EXPOSURE LIMITS

Chemical Name	ACGIH TLV	8 Hr. TWA:	Manufacturer's Exposure Limits
Etoxazole	None	None	None
Ammonium sulfate	None	None	None
Kaolin clay	TWA: 2 mg/m ³ particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 10 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	None
Others	None	None	Not known

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid	Odor	No information available
Appearance	Powder	Odor threshold	No information available
Color	Grey		

<u>PROPERTIES</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	7.1 @ 22°C	1% solution
Melting point/freezing point	No information available	
Boiling point/boiling range	No information available	
Flash point	Not applicable	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limits in Air		
Upper flammability limits	No information available	
Lower flammability limit	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific Gravity	No information available	
Water solubility	Dispersible in water	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Viscosity	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	
Density	No information available	
Bulk density	23.3 lb/cubic foot	

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Emergency Telephone: (800) 892-0099
REVISION NUMBER: 2

SDS NO.: 0268
REVISION DATE: 02/21/2018

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Extremes of temperature and direct sunlight.

Incompatible materials

Strong oxidizers, strong acids, strong bases.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide, hydrocarbons, Nitrogen oxides, fluoric compounds, ammonia, soot;

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Oral Toxicity LD ₅₀ (rats)	>5000 mg/kg	EPA Tox Category	IV
Dermal Toxicity LD ₅₀ (rabbits)	>5000 mg/kg	EPA Tox Category	IV
Inhalation Toxicity LC ₅₀ (rats)	>2.28 mg/L	EPA Tox Category	IV
Eye Irritation (rabbits)	Brief and/or minor irritation	EPA Tox Category	III
Skin Irritation (rabbits)	Brief and/or minor irritation	EPA Tox Category	IV
Skin Sensitization (guinea pigs)	Non-sensitizer	EPA Tox Category	Not applicable

CARCINOGEN CLASSIFICATION

Chemical Name	IARC	OSHA - Select Carcinogens	NTP Carcinogen List
Etoazazole	Not listed	Not listed	Not listed
Ammonium sulfate	Not listed	Not listed	Not listed
Kaolin clay	Not listed	Not listed	Not listed
Others	Not Listed	Not listed	Not Listed

TOXICITY OF ETOAZOLE TECHNICAL

SUBCHRONIC: Compound-related effects observed in rodent studies, at high dietary dose levels of Etoazazole Technical, included increased liver weight, histological changes in the liver, and slight changes in hematology and blood biochemistry parameters. The NOELs in rats and mice were 100 and 400 ppm, respectively. In a 13-week feeding study in dogs with Etoazazole Technical, dose-related effects noted at the top two levels (10000 and 2000 ppm) included increased liver weights, decreased prostate weights, histological changes of the liver and prostate (acinar cell atrophy), and changes in blood biochemistry (high dose only). The NOEL for this study was 200 ppm. In a 28-day dermal toxicity study, no adverse effects were observed at doses of Etoazazole Technical up to 1000 mg/kg/day.

CHRONIC/CARCINOGENICITY: Two rat chronic/oncogenicity studies have been conducted with rats fed Etoazazole Technical in the diet. The first study, conducted at dose levels of 0, 4, 16 and 64 mg/kg/day, indicated liver toxicity and tumors of the testis and pancreas, but a MTD was not achieved. A second confirmatory study was conducted at dose levels of 0, 50, 5000 and 10000 ppm. The findings of the second study confirm that Etoazazole Technical is not carcinogenic. Two oncogenicity studies were also conducted in mice using dietary levels ranging from 15 to 4500 ppm. Again, Etoazazole Technical was found to be toxic to the liver at high doses, but not carcinogenic. In a one year study in dogs with Etoazazole Technical, an increase in absolute and relative liver weights was observed with corresponding histopathological changes in the liver at 1000 and 5000 ppm. The NOEL for this study was 200 ppm.

DEVELOPMENTAL TOXICITY: No developmental toxicity was observed in rats even at maternally toxic levels of Etoazazole Technical. Based on decreased food consumption at the 1000 mg/kg/day level, the maternal NOEL was

200 mg/kg/day and the developmental NOEL was 1000 mg/kg/day. In rabbits, Etoxazole Technical produced a slight increase in skeletal variations, but only at the maternally toxic level of 1000 mg/kg/day (based on decreased body weight gain, reduced food consumption and enlarged liver). The maternal and developmental NOELs were both 200 mg/kg/day.

REPRODUCTION: In a two-generation rat reproductive study with Etoxazole Technical, an increase in relative liver weight was observed in the F0 and F1 males in the 2000 ppm group. At the 2000 ppm level, the viability index on lactation day 4 was reduced in F1 pups. Body weights of this group were also reduced in F1 and F2 pups during the latter half of the lactation period. The NOEL for both adults and offspring was 400 ppm.

MUTAGENICITY: Etoxazole Technical was negative in the Microbial/Microsome Reverse Mutation Assay (Ames Test), in vivo mouse micronucleus assay, Unscheduled DNA Synthesis and the in vitro chromosome aberration test in Chinese hamster lung cells. A positive response was observed in the mammalian mutation assay using L5178Y mouse lymphoma cells.

For a summary of the potential for adverse health effects from exposure to this product, refer to Section 2. For information regarding regulations pertaining to this product, refer to Section 15.

12. ECOLOGICAL INFORMATION

AVIAN TOXICITY:

Etoxazole Technical is considered to be practically nontoxic to birds based on results of test in the following species:

Oral LD₅₀ Mallard duck: greater than 2000 mg/kg

Dietary LC₅₀ Bobwhite quail: greater than 5200 ppm

No reproductive effects were observed in bobwhite quail exposed to 1000 ppm of Etoxazole Technical, the highest dose tested.

AQUATIC ORGANISM TOXICITY: Etoxazole Technical is moderately to highly toxic to fish and very highly toxic to aquatic invertebrates:

96-Hour LC₅₀ rainbow trout: 2.8 mg/L

96-Hour LC₅₀ bluegill sunfish: 1.4 mg/L

96-Hour LC₅₀ Japanese carp: 0.89 mg/L

48-Hour EC₅₀ Daphnia magna: 7.1 µg/L

Early life-stage rainbow trout MATC: 0.022 mg/L

Life-cycle Daphnia magna MATC: 0.48 µg/L

(MATC - Maximum Acceptable Toxicant Concentration)

OTHER NON-TARGET ORGANISM TOXICITY:

Etoxazole Technical is practically nontoxic to adult worker honey bees. The 48-hour LD₅₀ values were: Oral LD₅₀ > 200 µg/bee & Contact LD₅₀ > 200 µg/bee.

13. DISPOSAL CONSIDERATIONS

END USERS MUST DISPOSE OF ANY UNUSED PRODUCT AS PER THE LABEL RECOMMENDATIONS.

PRODUCT DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Open dumping is prohibited.

CONTAINER DISPOSAL: Non-refillable outer bag. Do not reuse or refill the outer bag. Completely empty bag into application equipment. Offer bag for recycling if available. If recycling is not available, then dispose of empty bag in a sanitary landfill or by incinerations, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

DISPOSAL METHODS: Check government regulations and local authorities for approved disposal of this material. Dispose of in accordance with applicable laws and regulations.

14. TRANSPORTATION INFORMATION

DOT (ground) SHIPPING NAME: Not regulated for domestic ground transport by U.S. DOT

REMARKS: None

EMERGENCY RESPONSE

GUIDEBOOK NO.: Not applicable

ICAO/IATA SHIPPING NAME: UN 3077 Environmentally Hazardous Substance, Solid, N.O.S. (Etoxazole), 9, III, Marine Pollutant

REMARKS: Single or inner packaging less than 5 L (liquid) or 5 Kg net (solids) excepted from Dangerous Goods regulations -- see UN Special Provision 375.

For U.S. shipping, Emergency Response Guidebook No. 171.

IMDG SHIPPING NAME: UN 3077, Environmentally hazardous substance, Solid, N.O.S. (Etoxazole), 9, III, Marine Pollutant

REMARKS: Single or inner packaging less than 5 L (liquid) or 5 Kg net (solids) excepted from Dangerous Goods regulations – see IMDG 2.10.2.7 US shipping, Emergency Response Guidebook No. 171

EMS NO.: F-A, S-F

15. REGULATORY INFORMATION

EPA-FIFRA LABEL INFORMATION THAT DIFFERS FROM OSHA-GHS REQUIREMENTS:

Pesticide products in the U.S. are registered by the EPA under FIFRA and are subject to certain labeling requirements under federal pesticide law. These requirements may differ from the classification criteria and hazard information required by OSHA GHS for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the hazard information as required on the FIFRA pesticide label:

EPA FIFRA SIGNAL WORD: CAUTION

- *May cause skin, eye and respiratory irritation*
- *Avoid breathing dust or spray mist*
- *Do not get in eyes, on skin or on clothing*
- *Keep out of reach of children.*

PESTICIDE REGULATIONS: All pesticides are governed under FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act). Therefore, the regulations presented below are pertinent only when handled outside of the normal

use and applications of pesticides. This includes waste streams resulting from manufacturing/formulation facilities, spills or misuse of products, and storage of large quantities of products containing hazardous or extremely hazardous substances.

U.S. FEDERAL REGULATIONS: Ingredients in this product are reviewed against an inclusive list of federal regulations. Therefore, the user should consult appropriate authorities. The federal regulations reviewed include: Clean Water Act, SARA, CERCLA, RCRA, DOT, TSCA and OSHA. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

SARA (311, 312):

Immediate Health:	Yes
Chronic Health:	No
Fire:	No
Sudden Pressure:	No
Reactivity:	No

STATE REGULATIONS: Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list of all state regulations. Therefore, the user should consult state or local authorities. The state regulations reviewed include: California Proposition 65, California Directors List of Hazardous Substances, Massachusetts Right to Know, Michigan Critical Materials List, New Jersey Right to Know, Pennsylvania Right to Know, Rhode Island Right to Know and the Minnesota Hazardous Substance list. For Washington State Right to Know, see Section 8 for Exposure Limit information. For Louisiana Right to Know refer to SARA information listed under U.S. Regulations above. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

Ammonium sulfate

MA Right To Know	Present
PA Right To Know	Environmental hazard
RI Right To Know	Listed

Kaolin clay

MA Right To Know	Present
NJ Right To Know	4016
PA Right To Know	Present
RI Right To Know	Listed
MN Hazardous Substance	Present

For information regarding potential adverse health effects from exposure to this product, refer to Sections 2 and 11.

16. OTHER INFORMATION

REASON FOR ISSUE:	Add a VC number. Revised Section 2. Minor edits throughout for clarity.
SDS NO.:	0268
EPA REGISTRATION NUMBER:	59639-138
REVISION NUMBER:	2
REVISION DATE:	02/21/2018
SUPERCEDES DATE:	12/23/2014
RESPONSIBLE PERSON(S):	Valent U.S.A. LLC, Corporate EH&S, (925) 256-2803

The information provided in this Safety Data Sheet (SDS) is provided in good faith and believed to be accurate at the time of preparation of the SDS. However, to the extent consistent with applicable law, Valent U.S.A. LLC and its subsidiaries or affiliates extend no warranties, make no representations, and assume no responsibility as to the accuracy, suitability, or completeness of such information. Additionally, to the extent consistent with applicable law,

neither Valent U.S.A. LLC nor any of its subsidiaries or affiliates represents or guarantees that this information or product may be used without infringing the intellectual property rights of others. Except to the extent a particular use and particular information are expressly stated on the product label, it is the users' own responsibility to determine the suitability of this information for their own particular use of this product. If necessary, contact Valent U.S.A. LLC to confirm that you have the most current product label and SDS.

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABEL (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use as required by the Occupational Health and Safety Act (29 CFR 1910.1200, "Hazcom").

The product label provides information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products is regulated by the EPA under the authority of FIFRA through the product label. All necessary hazard classification and appropriate precautionary use, storage, and disposal information is set forth on that label or labeling accompanying the pesticide or to which reference is made on the label. It is a violation of federal law to use an EPA-registered pesticide product in any manner inconsistent with its labeling.

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