



Material Safety Data Sheet

Ultratec[®] Dust 0.5% MUP

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to product container). This MSDS 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, while the labeling provides that 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 the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling. All necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Ultratec[®] Dust 0.5% MUP
EPA REGISTRATION NUMBER: 73049-365
MSDS IDENTIFICATION CODE/NO.: ENV-0078
CHEMICAL FORMULA: Mixture, active ingredient-Deltamethrin
PRODUCT DESCRIPTION: This product is intended for formulation use only. Only for formulation into an insecticide for the following uses: In and around the non-food areas of residential, industrial and institutional structures and their immediate surroundings and various modes of transportation.

Ultratec[®] is a trademark of Valent BioSciences Corporation.

MANUFACTURER

Valent BioSciences Corporation
870 Technology Way
Libertyville, Illinois 60048

EMERGENCY TELEPHONE NUMBERS

HEALTH EMERGENCY OR SPILL (24 hr):
Within the United States (877) 315-9819
Outside the United States (651) 632-6184

PRODUCT INFORMATION

ENVIRONMENTAL SCIENCE PRODUCTS:
(866) 822-3731
www.valentbiosciences.com

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Outside the United States (651) 632-6184

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SECTION 2: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name (CAS #) [Chemical Name]	Weight Percent	Exposure Limit	Ref.
Deltamethrin (52918-63-5) * [(S)-alpha-Cyano-3-phenoxybenzyl (1R)-cis-3-(2,2-dibromovinyl)-2,2-dimethylcyclopropanecarboxylate] Synthetic Pyethroid	= 0.5	None established	OSHA/ACGIH
		TWA-TEL: 45 µg/m3	Mfg.
		STEL (15 minutes): 100 µg/m3	Mfg.
Inert Ingredients Containing: **	= 99.5		
Crystalline Silica (14806-60-7)	< 5	10 mg/m3	ACGIH TLV-TWA
		15 mg/m3	OSHA PEL-TWA
		5 mg/m3	OSHA PEL-TWA

* Active Ingredient

** Other ingredients, which are maintained as trade secrets, are any substances other than an active ingredient contained in this product. Some of these may be hazardous, but their identity is 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 (877) 315-9819 (within the United States) or (651) 632-6184 (outside the United States) at any time.

Respirable silica (quarts is not expected to be present in the dust from this product at levels exceeding 1.0%. If silica levels above 1.0% are present, the TLV value is 0.1 mg of respirable silica per cubic meter.

SECTION 3: HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW**

- CAUTION:**
- HARMFUL IF INHALED, SWALLOWED OR ABSORBED THROUGH THE SKIN.
 - AVOID BREATHING DUST.
 - CONTACT WITH PRODUCT MAY RESULT IN TRANSIENT TINGLING AND REDDENING OF THE SKIN.
 - AVOID CONTACT WITH EYES, SKIN OR CLOTHING. REMOVE CONTAMINATED CLOTHING AND WASH CLOTHING BEFORE REUSE.
 - THIS PRODUCT IS EXTREMELY TOXIC TO FISH AND AQUATIC INVERTEBRATES.

POTENTIAL HEALTH EFFECTS

Acute Toxicity (Primary Routes of Exposure): Inhalation, ingestion and skin contact.

Signs and Symptoms of Systemic Effects: May cause irritation of the eyes, nose and throat.

IMMEDIATE EFFECTS

Eye: May cause moderate irritation

Skin: Harmful if absorbed. Skin contact may result in transient tingling and reddening of the skin.

Ingestion: Harmful if swallowed.

Inhalation: Harmful if inhaled.

DELAYED/LONG TERM EFFECTS**Chronic Toxicity (Including Cancer):**

Prolonged breathing of excessive dust may affect lung function. This product contains small amounts of crystalline silica. Inhalable crystalline silica from occupational sources is considered a human carcinogen.

Silica: Product contains greater than 0.1% total crystalline silica.

Inhalable crystalline silica fraction unknown. The International Agency for Research on Cancer (IARC) believes there is sufficient evidence that crystalline silica is carcinogenic to humans if it is inhaled in the form of quartz or cristobalite from occupational sources. IARC notes that carcinogenicity was not detected in all industrial circumstances studied and that the carcinogenicity of crystalline silica may be dependent on inherent characteristics of the silica, or an external factors affecting its biological activity or on the distribution of its polymorphs (quartz, cristobalite).

Naturally occurring minerals invariably contain trace quantities of materials cited in the California Safe Drinking and Toxic Enforcement Act. In addition to crystalline silica, trace quantities of lead and arsenic may be detected. Test results for these products show that lead and arsenic, if present, are at concentrations of less than 5 PPM each.

SECTION 4: FIRST AID MEASURES

EMERGENCY NUMBER

Within the United States (877) 315-9819

Outside the United States (651) 632-6184

EYES: 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: 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 a poison control center or doctor. Do not give anything by mouth 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 mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Note to physician: This product contains 0.5% synthetic pyrethroid pesticide. Do not administer milk, cream or other substances containing vegetable or animal fats. These only enhance absorption of lipophilic substances.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: N/A **METHOD:** N/A

AUTOIGNITION: N/A

EXTINGUISHING MEDIA: Carbon dioxide, dry chemical, foam or water spray.

FLAMMABLE LIMITS (% by volume in air): Lower: N/A Upper: N/A

FIRE FIGHTING INSTRUCTIONS: FIRE FIGHTING INSTRUCTIONS

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH approved (or equivalent) and full protective gear. Keep upwind. Isolate hazard area. Avoid inhalation of smoke and fumes. Use water or foam to reduce fumes. Do not touch spilled material. If possible, move containers from area. Extinguish only if flow can be stopped. Use flooding amounts of water as a fog. Cool containers with flooding amounts of water from as far a distance as possible. Avoid breathing vapors.

HAZARDOUS COMBUSTION PRODUCTS: Complete combustion produces oxides of carbon, nitrogen and water

SECTION 6: ACCIDENTAL RELEASE MEASURES

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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.

GENERAL AND DISPOSAL: Use proper protective equipment to minimize personal exposure (see Section 8). Take all necessary action to prevent and to remedy the adverse effect of the spill. Ensure that the disposal is in compliance with all Federal, Provincial, and local regulations (See Section 13 for applicable RCRA Number). Refer to Section 15 for applicable Reportable Quantity (RQ) and other regulatory requirements.

LAND SPILL OR LEAK

CONTAINMENT: Prevent spread of dust. Quantity of spill may be limited by packaging design

CLEANUP: Sweep (or vacuum) up and dispose of with chemical waste.

FOR SPILLS IN WATER

CONTAINMENT: Product is hydrophobic and will tend to float on water. Significant spreading may be preventable by the use of booms.

CLEANUP: Remove contaminated water if possible and dispose of as chemical waste

SECTION 7: HANDLING AND STORAGE

HANDLING PRECAUTIONS: Avoid breathing dust. Avoid contact with eyes, skin or clothing.

STORAGE PRECAUTIONS: Store in original container in a cool, dry, locked place out of the reach of children.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use local exhaust ventilation

HYGIENE MEASURES: Wash with soap and water after handling. Wash contaminated clothing before reuse

EYE PROTECTION: Safety glasses or goggles.

RESPIRATION/VENTILATION: Use a MSHA/NIOSH approved dust mask. Long term overexposure to high concentration of this dust without the use of a dust mask may product X-Ray evidence of dust in the lungs. Continued long term overexposure may affect respiratory function in some individuals.

SKIN PROTECTION: Use of butyl or nitrile rubber gloves

BODY PROTECTION: Clothing (disposable or washable) to minimize skin contact

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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APPEARANCE:	White powder.
ODOR:	Very faint, indeterminate to chalk-like odor.
MELTING POINT:	N/A
/SPECIFIC GRAVITY:	2.71 (for inert ingredient)
SOLUBILITY (IN WATER):	Insoluble
SOLUBILITY IN SOLVENTS/OIL (SPECIFIED):	Negligible
pH:	8.5-9.5 at 10% solids (inert ingredient)
CORROSION CHARACTERISTICS:	N/A
PHYSICAL STATE:	Solid

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

INCOMPATIBILITY: Reacts with acids to liberate CO₂

HAZARDOUS DECOMPOSITION PRODUCTS: May include toxic and corrosive fumes of bromide and toxic oxides of Nitrogen and carbon.

OXIDATION/REDUCTION PROPERTIES: N/A

HAZARDOUS POLYMERIZATION: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE (Product Specific Information): Acute toxicological data for this formulation was developed on a similar product containing 0.05% Deltamethrin.

Eye Irritation (rabbit): Minimal irritant.

Skin Irritation (rabbit): Slight irritant

Dermal Toxicity LD₅₀ (rabbit): > 5,000 mg/kg

Oral Toxicity LD₅₀ (rat): > 5,000 mg/kg

Inhalation Toxicity LC₅₀(rat): > 26.1 mg/kg

Skin Sensitization (guinea pig): Non-sensitizer

TOXICITY OF ACTIVE INGREDIENT - DELTAMETHRIN:

Acute:

Eye Irritation (rabbit): Slight irritant.

Skin Irritation (rabbit): Non-irritating,

Dermal Toxicity LD₅₀ (rabbit): > 2,000 mg/kg

Oral Toxicity LD₅₀ (rat): > 66.7 mg/kg

Inhalation Toxicity LC₅₀(rat): > 2.2 mg/kg

Skin Sensitization (guinea pig): Non-sensitizer

CHRONIC/CARCINOGENICITY:

General neurological symptoms were exhibited in studies with rats, mice and dogs. These symptoms included unsteadiness, abnormal gait, tremors and liquid feces. No histopathologic findings were observed except some signs of slight hepatotoxicity in mice. No Observable Effect Levels hepatotoxicity in mice. No Observable Effect Levels (NOEL's) were 1 mg/kg/day in the 2 year rat and dog studies. The NOEL for the 2-year mouse study was approximately 12 mg/kg/day. Deltamethrin was not carcinogenic in rats or mice.

NEUROTOXICITY:

Deltamethrin does not inhibit acetylcholinesterase. Neurobehavioral effects including unsteadiness, excessive salivation, vomiting, liquid feces, uncoordinated

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movement, tremors, spasmodic convulsions which are typically related to Central Nervous System (CNS) stimulation, were observed in some studies. The NOEL for these studies was 1 mg/kg/day or higher.

REPRODUCTIVE/DEVELOPMENTAL:

No developmental effects were observed in studies with rats or rabbits in the absence of maternal toxicity. The developmental NOEL for the rat study was 3.3 mg/kg/day while the developmental NOEL for rabbits was 25 mg/kg/day. Reproduction studies with rats produced clinical signs, reduced body weight gain and mortality in parents and offspring at very high dosages. The NOEL for the parents and offspring was 80 ppm or approximately 4 to 12 mg/kg/day for adults and 18 to 44 mg/kg/day for offspring.

MUTAGENICITY:

No evidence of genotoxicity was observed in a battery of in vitro and in vivo studies.

SECTION 12: ECOLOGICAL INFORMATION

This product is highly toxic to fish and aquatic invertebrates. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

THE FOLLOWING DATA WERE DEVELOPED WITH: Technical Deltamethrin

The active ingredient Deltamethrin is highly toxic to fish and other aquatic species, however, the toxicity to avian species is relatively low.

AVIAN

Bobwhite Quail (LD50): > 2250 mg/kg
Bobwhite Quail (dietary LC50): > 5620 ppm
Mallard Duck (dietary LC50): > 8039 ppm
Quail Reproduction (repro NOEL): 450 ppm
Duck Reproduction (repro NOEL): 450 ppm

AQUATIC

Rainbow Trout (96-Hour LC50): 0.26 ppb
Bluegill Sunfish (96-Hour LC50): 0.17 ppb
Sheepshead Minnow (96-Hour LC50): 0.48ppb
Eastern Oyster (96-Hour LC50): 8.2 ppb
Mysid Shrimp (96-Hour LC50): 4.6 ppt; NOEC = 1. ppt
Mollusk Shell Deposition (EC50): 8.2 ppb
Chronic Toxicity-Fathead Minnow: MATC = 24 ppt
Chronic Daphnia Toxicity: MATC =6.0 ppt

ENVIRONMENTAL FATE: The major routes of dissipation are soil binding and soil microbial degradation. Although soil binding is strong, it is not immediate. It appears that spray drift is the only significant route of exposure to aquatic organism. However, deltamethrin's strong binding capacity to slime, plants, sediment, etc., might rapidly prevent the availability of deltamethrin for bioconcentration in aquatic systems. Additionally, its insolubility in water will be a factor in limiting its bioconcentration as well. Deltamethrin

hydrolyzes under alkaline conditions. Leaching studies indicate that Deltamethrin is immobile.

Water Solubility: <0.20 mg/l @ 25°C

Hydrolytic Half-Life: 2.28-2.70 days @ pH 9.0

Photolytic Half-Life: 64-86 days (water); 9 days (soil)

Soil Half-Life: 14-40 days (cropped plots); 37-69 days (bare ground) in field dissipation studies

Kads: 960 – 4750 depending on soil type

Koc: 204,000 – 577,000 depending upon soil type

Bioconcentration Factor (BCF in bluegill sunfish): 189-3630x

SECTION 13: DISPOSAL CONSIDERATIONS

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

CONTAINER DISPOSAL: Completely empty container into application equipment, triple rinse (or equivalent) then offer for recycling or reconditioning, or puncture and dispose of container in a sanitary landfill or by incineration, or if allowed by state and local authorities.

RCRA INFORMATION:

RCRA HAZARDOUS WASTE INGREDIENTS: None

SECTION 14: TRANSPORT INFORMATION

D.O.T. PROPER SHIPPING NAME: Not DOT regulated

RQ: NA

D.O.T. HAZARD CLASS: NA

U.N./N.A. NUMBER: NA

REMARKS: NA

EXEMPTION REQUIREMENT: NA

SECTION 15: REGULATORY INFORMATION

REGULATIONS UNDER FIFRA: 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 REGULATORY INFORMATION

EPA Registration Number: 73049-365

OTHER U.S. FEDERAL REGULATIONS:

OSHA:

Listed in the NTP Annual Report on Carcinogens? Yes, silica

Found to be a potential carcinogen by OSHA or IARC? Yes, silica

SARA TITLE III:

Sara (313) Chemicals: silica

Sara (311,312): Immediate Health Effects: yes
Chronic Health Effects: yes
Fire Hazard: no
Sudden Release of Pressure: no
Reactivity Hazard: no

TSCA inventory status:

These components are not listed:

Deltamethrin .5% (52918-63-5)

These components are listed:

Inert material contains trace amounts of:

Lead, cadmium, arsenic, respirable crystalline silica

INTERNATIONAL REGULATIONS

The following chemical(s) associated with the product have also been listed on the following International inventories: Deltamethrin (52918-63-5): EINECS

U.S. STATE REGULATORY INFORMATION

CALIFORNIA (Proposition 65): This product contains a chemical known to the State of California to cause cancer. Inert ingredient – contains trace amounts of lead, cadmium, arsenic and respirable crystalline silica.

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

HMIS HAZARD RATING - HEALTH: 1 Slight
- FIRE: 1 Slight
- REACTIVITY: 0 Negligible
- PROTECTION: B

NFPA HAZARD RATING - HEALTH: 1 Slight
- FIRE: 1 Slight
- REACTIVITY: 0 Negligible
- SPECIAL: -

NFPA RATINGS:

(Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using professional judgment.

* RQ: Reportable Quantity

** RCRA waste codes must be determined on a case-by-case basis (i.e., spill, processing waste, etc.).

For information regarding potential adverse health effects from exposure to this product, refer to Sections 3 and 11.

SECTION 16: OTHER INFORMATION

REASON FOR ISSUE: New company name and new EPA number
MSDS NUMBER: ENV-0078
REVISION NUMBER: 0
REVISION DATE: 3/10/04
SUPERSEDES DATE: New
EPA REGISTRY NUMBER: 73049-365

LEGEND: N/A = Not Applicable
N/D = Not Determined
N/L = Not Listed
L = Listed
C = Ceiling
S = Short-term

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

This information is provided in good faith but without express or implied warranty. Buyer assumes all responsibility for safety and use not in accordance with label instructions.

THE INFORMATION IN THIS MSDS IS BASED ON DATA AVAILABLE TO US AS OF THE REVISION DATE GIVEN HEREIN, AND BELIEVED TO BE CORRECT. CONTACT VALENT BIOSCIENCES CORPORATION TO CONFIRM IF YOU HAVE THE MOST CURRENT MSDS.

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