

Material Safety Data Sheet



Ultratec® Technical

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® Technical
EPA REGISTRATION NUMBER: 432-762-73049
MSDS IDENTIFICATION CODE/NO.: ENV-0105
CHEMICAL NAME: Deltamethrin
PRODUCT DESCRIPTION: This product is intended for formulation use only. Only for formulation into an insecticide for the following uses: Domestic Indoor (household), Domestic Outdoor (lawns, perimeters, ornamentals), Commercial/Industrial (indoor & outdoor), Food Handling Establishments (edible product areas), Terrestrial Non-Food (sod farms, golf courses, non-agricultural sites), various modes of transportation.

Ultratec is a registered 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

EMERGENCY TELEPHONE #: Within the United States (877) 315-9819
Outside the United States (651) 632-6184

MSDS NO. ENV-0105

Revision Number: 0

Revision Date: 6/21/2004

SECTION 2: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name (CAS #) [Chemical Name]	Weight Percent	Exposure Limit	Ref.
Deltamethrin (52918-63-5) [1 <i>R</i> -[1α(<i>S</i> *),3α]-cyano(3-phenoxyphenyl)methyl 3-(2,2-dibromoethenyl)-2,2-dimethylcyclopropanecarboxylate Synthetic Pyrethroid	= 98.0	None established	OSHA/ACGI H
		TWA-TLV: 45 µg/m ³	Mfg.
Related Compounds	= 2.0	STEL (15 minutes): 100 µg/m ³	Mfg.

* 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.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

AN ODORLESS WHITE TO BEIGE CRYSTALLINE POWDER

WARNING:

- MAY BE FATAL IF SWALLOWED
- SKIN CONTACT (ESPECIALLY TO THE FACE) MAY RESULT IN A TINGLING SENSATION AND REDDENING OF THE SKIN
- EXTREMELY TOXIC TO FISH AND AQUATIC ORGANISMS

POTENTIAL HEALTH EFFECTS

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

Signs and Symptoms of Systemic Effects: Dizziness, headache, listlessness, nausea and vomiting, epigastric pain, muscular fasciculation of limbs, unconsciousness, convulsions and coma (very high doses).

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Eye: Slightly irritating.

Skin: Harmful if absorbed through skin. Skin contact may result in transient tingling, itching, burning or prickly sensation or reddening of the skin.

Ingestion: May be fatal if swallowed.

Inhalation: Harmful if inhaled. If inhaled may cause irritation to nose and throat.

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.

HINTS FOR THE PHYSICIAN: This product is a synthetic Pyrethroid pesticide. If ingested and vomiting has not occurred, emesis should be induced with supervision. Keep patient's head below hips to prevent aspiration. If symptoms such as loss of gag reflex, convulsions or unconsciousness occur before emesis, gastric lavage using a cuffed endotracheal tube should be considered.

Do not administer milk, cream or other substances containing vegetable or animal fats. These only enhance absorption of lipophilic substances.

If localized paresthesia develops, the site should be thoroughly washed with soap and water. Cold cream can be applied to help diminish the effect.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: Does not flash

AUTOIGNITION: NA

EXTINGUISHING MEDIA: Carbon Dioxide, Dry Chemical, Foam, or Water

FLAMMABLE LIMITS (% by volume in air): Lower: NA Upper: NA

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FIRE AND EXPLOSION HAZARDS: Do not use or store near heat or open flame.

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: May form toxic materials: Carbon dioxide and carbon monoxide, various hydrocarbons, etc.

SECTION 6: ACCIDENTAL RELEASE MEASURES

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OBSERVE PRECAUTIONS IN SECTION 8: PERSONAL PROTECTION

Ventilate area. 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. Where possible drum should be oriented to prevent further leakage. Drum should be placed in a spillage drum for further movement or transport. Avoid creation of dust.

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.

SPILL OR LEAK

CONTAINMENT:

Small Spills: Absorb with an inert absorbent material such as granular clay, sawdust, or pet litter. Sweep up carefully while avoiding the formation of dust cloud. Place in an approved chemical waste container for disposal. Do not allow spill material to enter any body of water.

Large Spills: Eliminate all ignition sources. Stop leak if you can do so without coming into contact with spilled material. Dike far ahead of liquid spill for later disposal. All equipment used to clean up spill should be grounded. Prevent entry into waterways, sewers, basements or confined areas. Inform appropriate authorities immediately if contamination occurs.

CLEANUP:

CLEANUP: Sweep (or vacuum) up and dispose of with chemical waste. Avoid creation of dust. Place in an approved chemical waste container for disposal. Rinse spill area with a small amount of soapy water. Contain and absorb the rinsate with inert absorbents and place in the same chemical waste container

Area can be washed with water to remove the last trace residue. Do not allow water to contaminate water supplies or sewers.

SECTION 7: HANDLING AND STORAGE

HANDLING PRECAUTIONS:

May be fatal if swallowed. Causes substantial but temporary eye injury. Harmful if inhaled or absorbed through skin. Avoid breathing dust. Avoid contact with skin, eyes, or clothing. Skin contact (especially to the face) may result in a tingling sensation and reddening of the skin. Remove contaminated clothing and wash before reuse.

STORAGE PRECAUTIONS:

Store upright in a cool, dry place. Avoid extremes in temperatures. Do not contaminate water, food or feed by storage or disposal.

WORK/HYGIENIC PRACTICES: Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Remove contaminated clothing and wash clothing before reuse.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Control airborne concentrations below the appropriate exposure guidelines. Use local exhaust ventilation.

RESPIRATION/VENTILATION: Ensure good ventilation. If not adequate, use a chemical cartridge-type respirator approved by the National Institute of Occupational Health and Safety.

EYE PROTECTION: Safety glasses or goggles.

SKIN PROTECTION: Use of butyl or nitrile rubber gloves.

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

OTHER/GENERAL PROTECTION: Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse. Eye wash facility and safety shower should be available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	White to beige crystalline powder
ODOR:	Odorless
PHYSICAL STATE:	Solid
SOLUBILITY (H₂O):	< 0.20 micrograms/L @ 25°C
SOLUBILITY (SOLVENTS/OIL):	Soluble in usual organic solvents
pH:	5.9 @ 1% dispersion
BULK DENSITY	0.5 g/cm ³
BOILING POINT/RANGE:	NA
MELTING POINT/RANGE:	208-214°F (98-101°C)
VAPOR RESSURE:	1.5 x 10(-8) mmHg @ 25°C
DUST EXPLOSION SEVERITY DATA:	NA

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

CONDITIONS TO AVOID: Excessive heat and sources of ignition.

INCOMPATIBILITY: Strong oxidizing agents and acids.

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

OXIDATION/REDUCTION PROPERTIES: Product does not have the potential to act as a strong oxidizing or reducing agent.

HAZARDOUS POLYMERIZATION: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE (Product Specific Information):

Oral Toxicity LD₅₀ (rat):	66.7 mg/kg	II EPA Tox Category
Dermal Toxicity LD₅₀ (rabbit):	> 2,000 mg/kg	III EPA Tox Category
Inhalation Toxicity LC₅₀(rat):	2.2 mg/L	IV EPA Tox Category
Eye Irritation (rabbit):	Slightly irritating	III EPA Tox Category
Skin Irritation (rabbit):	Non-irritating	IV EPA Tox Category
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 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.

CARCINOGENICITY: NTP: None ACGIH: None IARC: Deltamethrin (52918-63-5)
OSHA: None

SECTION 12: ECOLOGICAL INFORMATION**ECOTOXICOLOGICAL INFORMATION****ACUTE AND LONG-TERM TOXICITY TO FISH AND INVERTEBRATES:**

This product is extremely toxic to fish and aquatic invertebrates. Do not apply directly to water.

ENVIRONMENTAL INFORMATION:

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. Do not contaminate water when disposing of equipment wash waters.

ECOLOGICAL TOXICITY

While this product is highly toxic to fish and other aquatic species, the toxicity to avian species is relatively low.

THE FOLLOWING DATA WERE DEVELOPED WITH: Technical Deltamethrin

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): 0.48 ppb
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.

THE FOLLOWING DATA WERE DEVELOPED WITH: Technical Deltamethrin

Water Solubility: < 0.20 micrograms/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

Do not contaminate water, food or feed by storage or disposal.

PRODUCT DISPOSAL:

Pesticides wastes are toxic. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed by use according to label instructions, contact your State Pesticide Agency or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL:

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

RCRA INFORMATION

RCRA HAZARDOUS WASTE INGREDIENTS: None

SECTION 14: TRANSPORT INFORMATION

D.O.T. PROPER SHIPPING NAME: Pyrethroid pesticide, solid, toxic, n.o.s. (Deltamethrin), Class 6.1, UN 3349, PG III,

RQ: NA

D.O.T. HAZARD CLASS: 6.1

U.N./N.A. NUMBER: 3349

REMARKS: DOT shipping label: Keep away From Food

EXEMPTION REQUIREMENT: NA

NOTE: For transport purposes (49 CFR Part 173.132), the calculated 1-hour LC50 (Rat) is 8.8 mg/L.

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.

EPA Registration Number: 432-762-73049

OTHER U.S. FEDERAL REGULATIONS:

TSCA Inventory: Registered Pesticide, exempt from TSCA.

SARA TITLE III:

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

CAS NUMBER	INGREDIENT NAME	PERCENT BY WEIGHT
	None	

SARA Title III:

Acute Health Hazard - Yes
 Chronic Health Hazard - No
 Fire Hazard - No
 Sudden Release of Pressure - No
 Reactivity Hazard - No

This information must be included on all MSDSs that are copied and distributed for this material.

REGULATED INGREDIENTS

INGREDIENT: Deltamethrin
 CAS NUMBER: 52918-63-5
 PERCENT BY WEIGHT: = 98
 Regulations: European Inventory of Existing Commercial Substances (EINECS)

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: 2 Slight
 - FIRE: 1 Moderate
 - REACTIVITY: 0 Negligible
 - PROTECTION: E/F

NFPA HAZARD RATING - HEALTH: 2 Slight
 - FIRE: 1 Moderate
 - REACTIVITY: 0 Negligible
 - SPECIAL: -

RATINGS:

(Least-0, Slight-1, Moderate-2, High-3, Extreme-4).

These values are obtained using professional judgment. Because the customer is most aware of the application of the product, he must ensure that the proper personal protective equipment (PPE) is provided consistent with the information contained in the product MSDS.

* 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 MSDS
REVISION NUMBER: N/A
REVISION DATE: 6/21/2004
SUPERSEDES DATE: NA
EPA REGISTRY NUMBER: 432-762-73049
MSDS NUMBER: ENV-0105

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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