



Material Safety Data Sheet

UltraTec® 10% MUP

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: UltraTec® 10% MUP
EPA REGISTRATION NUMBER: 73049-398
CHEMICAL DESCRIPTION: Active ingredient: deltamethrin
SYNONYM(S): None
PRODUCT DESCRIPTION: This product is intended for formulation use only. Insecticide

UltraTec is a registered trademark of Valent BioSciences Corporation.

MANUFACTURER

Valent BioSciences Corporation
870 Technology Way
Libertyville, IL 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

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION

- Harmful if swallowed, inhaled or absorbed through skin.
- Avoid contact with eyes, skin and clothing
- Skin contact (especially to the face) may result in a tingling sensation and reddening of the skin.
- Toxic to fish and other aquatic organisms.
- Keep out of reach of children.

POTENTIAL HEALTH EFFECTS

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

Signs and Symptoms of Systemic Effects: No Data Available

Acute Eye Contact: This product is minimally irritating to the eyes. The expected adverse health effects resulting from an exposure may include redness and possible swelling.

Acute Skin Contact: This product is harmful if absorbed through the skin. The expected adverse health effects resulting from an exposure may include redness and possibly some minor swelling.

Acute Ingestion: May be fatal if swallowed.

Emergency Telephone: In US (877) 315-9819; Outside US (651) 632-6184
REVISION NUMBER: 3

MSDS NO.:
REVISION DATE:

ENV-0058
07/16/2009

Acute Inhalation: This product may be harmful if inhaled in excess. Avoid breathing vapors or spray.

Potentially Aggravated Medical Conditions: None known

For complete discussion of the toxicology data from which this evaluation was made, refer to Section 11. For Ecotox/Environmental Information, refer to Section 12. For Regulatory Information, refer to Section 15.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight/ Percent	Purpose
Deltamethrin	52918-63-5	10	Active Ingredient
Other ingredients	Various CAS#s	90	Other Ingredients

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.

4. FIRST AID MEASURES

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 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 by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

NOTES TO PHYSICIAN:

This product contains a Pyrethroid pesticide. If a small amount is ingested (or if treatment is delayed) oral administration of large amounts of activated charcoal and a cathartic is probably sufficient therapy. If large amounts are ingested and vomiting has not occurred emesis should be induced with supervision. Keep patients 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 substance containing vegetable or animal fats, which enhance the 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.

5. FIRE FIGHTING MEASURES

FLASH POINT: > 200° F (> 93° C)
FLASH POINT METHOD: Not determined
EXTINGUISHING MEDIA: Water fog, carbon dioxide, foam, dry chemical

5. FIRE FIGHTING MEASURES**OSHA FLAMMABILITY CLASS:** IIIB**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: 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 of water 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.

6. ACCIDENTAL RELEASE MEASURES**VALENT BIOSCIENCES EMERGENCY PHONE NUMBER:**

WITHIN THE UNITED STATES: (877) 315-9819
OUTSIDE OF THE UNITED STATES: (651) 632-6184

UN/NA NUMBER: Not applicable **EMERGENCY RESPONSE GUIDEBOOK NO.:** Not applicable

If it is safe to do so:

- Evacuate non-essential personnel from the area to prevent human exposure.
- Remove all sources of ignition.
- Ventilate area, especially low areas where vapors may accumulate.
- Stop the source of the spill. Contain the spill to prevent further contamination of the soil, surface water, or ground water.
- May produce slippery conditions.

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. For additional spill response information refer to the **North American Emergency Response Guidebook**. Ensure that the disposal is in compliance with all Federal, State, and local regulations. Refer to Section 14 for applicable Reportable Quantity (RQ) and other regulatory requirements.

FOR SPILLS OR LEAKS:**CONTAINMENT:**

Small spills: Absorb with an inert absorbent material such as sand, granular clay, sawdust, Fuller's earth, etc. and dispose of in trash. Place in an approved chemical waste container for disposal. Where possible, container should be oriented to prevent further leakage. Do not allow spilled material to enter any body of water.

Large Spills: Eliminate all ignition sources. Ventilate area. Stop leak if you can do so without coming into contact with spilled material. Dike far ahead of the 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:

Rinse spill area with small amount of soapy water. Contain and absorb the rinsate with inert absorbents and place into the same disposal container. Area can be washed with water to remove the last trace of residue. Do not allow water to contaminate water supplies or sewers.

7. HANDLING AND STORAGE

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

HANDLING PRECAUTIONS: Avoid breathing vapors or spray mist. Avoid contact with skin, eyes or clothing.

STORAGE: Do not contaminate water, food or feed by storage or disposal. Keep pesticide in original container only. Store in a cool, dry place.

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 safety goggles or a face shield. Eyewash facilities should be available.

RESPIRATORY PROTECTION: Ensure good ventilation. If not adequate, use a chemical cartridge-type respirator by the NIOSH.

SKIN & HAND PROTECTION: Avoid contact with skin or clothing. Skin contact should be minimized by wearing protective clothing including gloves (PVC disposable or nitrile rubber).

ENGINEERING CONTROLS: Control airborne concentrations below appropriate exposure guidelines. Local exhaust ventilation may be necessary. Eyewash and safety shower equipment should be available.

EXPOSURE LIMITS

Chemical Name	ACGIH Exposure Limits	OSHA Exposure Limits	Manufacturer's Exposure Limits
Deltamethrin	None	None	TWA-TEL: 45 micrograms/m ³ , STEL: 100 micrograms/m ³
Other ingredients	None	None	None

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM:	Liquid
COLOR:	Amber
ODOR:	Odorless , Faint fatty/oily like
FLASH POINT:	> 200° F (> 93° C)
FLASH POINT METHOD:	Not determined
DENSITY:	1.0828 g/cm ³ @ 21° C
BULK DENSITY:	9.02 lb/gal @ 21° C
VISCOSITY:	69.4 cps @ 22° C
SOLUBILITY:	No data available

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:	Stable.
INCOMPATIBILITY:	Oxidizers
OXIDATION/REDUCTION PROPERTIES:	No data available
EXPLODABILITY:	Not expected to be explosive.
HAZARDOUS POLYMERIZATION :	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon dioxide, carbon monoxide,

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

The following information is for the formulated product.

Oral Toxicity LD ₅₀ (rats)	> 2,000 mg/kg	EPA Tox Category	III
Dermal Toxicity LD ₅₀ (rats)	> 2,000 mg/kg	EPA Tox Category	III
Inhalation Toxicity LC ₅₀ (rats)	1.65 mg/L (all animals), 1.37 mg/L (males), 1.98 mg/L (females)	EPA Tox Category	III
Eye Irritation (rabbits)	Slightly irritating and reversible (PII = 9.0/110)	EPA Tox Category	III
Skin Irritation (rabbits)	Non-irritating	EPA Tox Category	IV
Skin Sensitization (guinea pigs)	Non-sensitizer	EPA Tox Category	Not applicable

CARCINOGEN CLASSIFICATION

Chemical Name	IARC - Group 1 (carcinogenic to humans)	IARC - Group 2A (Probably carcinogenic)	IARC - Group 2B (Possibly carcinogenic)	NTP Carcinogen List
Deltamethrin (52918-63-5)	No	No	No	Not listed
Other ingredients (Various CAS#s)	No	No	No	Not listed

TOXICITY OF ACTIVE INGREDIENT: DELTAMETHRIN

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 (NOEL's) were 1 mg/kg/day in the 2-year rat and dog studies. The NOEL for the 2-year mouse.

Deltamethrin was not carcinogenic in rats or mice.

NEUROTOXICITY: Deltamethrin does not inhibit acetylcholinesterase. Neurobehaviorial 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.

DEVELOPMENTAL TOXICITY: No developmental effects were observed in studies with rabbits in the absence of maternal toxicity. The development NOEL for the rat study was 11 mg/kg/day (highest dose tested). The developmental NOEL in rabbits was 25 mg/kg/day.

REPRODUCTION: A 2-generation reproductive study with rats produced clinical signs of toxicity, reduced body weight gain and mortality in both parents and offspring. NOEL's were 80 ppm which is equivalent to approximately 4 mg/kg/day for adults and 18 mg/kg/day for the offspring.

MUTAGENICITY: No evidence of mutagenic effects during *In vivo* and *in-vitro* studies.

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

Data based on technical material.

AVIAN TOXICITY: Deltamethrin Technical is slightly toxic to birds following acute exposures:
Oral LD₅₀ bobwhite quail: > 2250 mg/kg;
Dietary LC₅₀ bobwhite quail: > 5620 ppm;
Dietary LC₅₀ mallard duck: 8039 ppm.
No reproductive effects were observed in mallard ducks or bobwhite quail exposed to dietary levels of Deltamethrin Technical up to 450 ppm.

AQUATIC ORGANISM TOXICITY: This product is extremely toxic to fish and aquatic invertebrates. Do not apply directly to water.
Deltamethrin Technical is very highly toxic to freshwater organisms:
96 hour LC₅₀ rainbow trout: 0.26 ppb;
96 hour LC₅₀ bluegill sunfish: 0.17 ppb;
96 hour LC₅₀ sheepshead minnow: 0.48 ppb;
96 hour LC₅₀ eastern oyster: 8.2 ppb;
96 hour EC₅₀ mollusk shell deposition: 8.2 ppb;
96 hour LC₅₀ mysid shrimp: 4.6 ppt; NOEC = 1 ppt
Chronic toxicity Daphnia magna: MATC 6.0 ppt;
Chronic toxicity fathead minnow: MATC 24 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 organisms. However, deltamethrin's strong binding capacity to slime, plants, sediment, etc. might rapidly prevent the availability of deltamethrin for bioconcentration in aquatic systems. Additionally, the 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 Deltamethrin Technical:
Water Solubility: < 0.20 µg/l @ 25 degrees 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
K_{ads}: 960-4750 depending on soil type
K_{oc}: 204,000-577,000 depending on soil type
Bioconcentration Factor (BCF in bluegill sunfish): 189-3630X

OTHER 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 Pollution Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product into 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.

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.

CONTAINER DISPOSAL:

Non-refillable container. Do not reuse or refill this container. Triple rinse (or equivalent). Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

DISPOSAL METHODS:

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

14. TRANSPORT INFORMATION

UN/NA NUMBER:	Not applicable
DOT (ground) SHIPPING NAME:	Pesticides, liquid, non-regulated
TECHNICAL NAME (hazardous material):	Not applicable
HAZARD CLASS:	Not applicable
PACKING GROUP:	Not applicable
DOT REPORTABLE QUANTITY (RQ):	Not applicable
REMARKS:	None
EXEMPTION REQUIREMENT:	None
EMERGENCY RESPONSE GUIDEBOOK NO.:	Not applicable
MARINE POLLUTANT:	Not applicable
IMDG PROPER SHIPPING NAME:	UN 3082, Environmentally hazardous substance, liquid, n.o.s. (deltamethrin), Marine pollutant

15. REGULATORY INFORMATION

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 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.

Deltamethrin

NJ Right To Know Listed

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

16. OTHER INFORMATION

REASON FOR ISSUE:	Update MSDS with new toxicology data.
EPA REGISTRATION NUMBER:	73049-398
MSDS NO.:	ENV-0058
REVISION NUMBER:	3
REVISION DATE:	07/16/2009
SUPERCEDES DATE:	April 23, 2009
RESPONSIBLE PERSON(S):	Valent U.S.A. Corporation, Corporate EH&S, (925) 256-2803

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the 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, and 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.

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 to confirm if you have the most current MSDS.

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