# ORTHENE TURF, TREE & ORNAMENTAL SPRAY

002 07/20/00 ORTHENE TURF, TREE & ORNAMENTAL SPRAY

----------PRODUCT IDENTIFICATION----------

PRODUCT NAME: ORTHENE TURF, TREE & ORNAMENTAL SPRAY

MSDS#: P12730VS

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SUPERSEDES: 01/01/92

ISSUED BY: 009999

Material Safety Data Sheet

ORTHENE Turf, Tree & Ornamental Spray

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| PRODUCT NAME: | ORTHENE Turf, Tree & Ornamental Spray |
| EPA REGISTRATION NUMBER: | 59639-26 |
| SYNONYM(S): | VC-1119, VC-1166, VC-1167, VC -1168<br>Orthene TTOS |

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

| Ingredient Name (CAS #) (Chemical Name | Weight Percent | Exposure Limit | Ref. |
|---|---|---|---|
| ACEPHATE* (30560-1 9-1) (O,S-Dimethl acetylphosphoramidothioate) | 72 - 77 | | |
| HYDRATED AMORPHOUS SILICA (7631-86-9) (SILICON DIOXIDE) | 20 - 25 | 6 mg/m3 total dust | OSHA |
| | | 10 mg/m3 total amorphous dust, 3 mg/m3 respirable nuisance articulate | ACGIH |
| OTHER INGREDIENTS** | 1 - 10 | NONE | |

* Active Ingredient

** Other ingredients, which are maintained as trade secrets, are any substance 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 the other ingredients for the management of exposures, spills, or safety assessments can be obtained by a treating physician or nurse by calling 1-800-892-0099 at any time.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION: HARMFUL IF SWALLOWED
CAUSES EYE IRRITATION
AVOID BREATHING DUST OR SPRAY MIST
AVOID CONTACT WITH EYES, SKIN, OR CLOTHING

KEEP OUT OF REACH OF CHILDREN

POTENTIAL HEALTH EFFECTS

Acute Toxicity (Primary Routes of Exposure)

Signs and Symptoms of Systemic Effects: This product contains a cholinesterase inhibitor. Signs and symptoms that may be seen, usually within several hours of exposure, include but are not limited to, headaches, dizziness, weakness, constriction of the pupil, blurred or dark vision, excessive salivation or nasal discharge, profuse sweating, abdominal cramps, nausea, diarrhea and vomiting. Severe poisonings may result in incontinence, unconsciousness, convulsions and death.

Eye: This substance is slightly irritating to the eyes and could cause prolonged (days) impairment of your vision. The degree of the injury will depend on the amount of material that gets into the eye and the speed and thoroughness of the first aid treatment. Signs and symptoms may include pain, tears, swelling, redness, and blurred vision.

Skin: This substance is not expected to cause prolonged or significant skin irritation. Based on an evaluation of the ingredients and/or similar products, this product is not expected to cause allergic reactions.

If absorbed through the skin, this substance is considered practically non-toxic to internal organs.

Ingestion: This substance is slightly toxic to internal organs if swallowed. The degree of injury will depend on the amount absorbed from the gut. Signs and symptoms which may be seen are described above.

Inhalation: The inhalation toxicity of this substance has not been determined. However, it may be slightly toxic to internal organs if inhaled. The degree of injury will depend on the airborne concentration and duration of exposure. Signs and symptoms which may be seen are described above. This substance may be irritating if inhaled. Signs and symptoms of respiratory tract irritation may include, but may not be limited to, one or more of the following: nasal discharge, sore throat, coughing, bronchitis, pulmonary edema and difficulty in breathing. This hazard evaluation is based on data from similar materials.

Chronic Toxicity (Including Cancer): High doses of Acephate Technical have produced cancer in mice but there is no evidence that Acephate Technical causes cancer in humans. Occupations where there is long term, high exposure to small silica particles can result in silicosis, a disease in which scarring of the lung occurs, causing shortness of breath and cough. It is unlikely, however, that exposure to this product under the conditions specified on the label will result in silicosis. .

Teratology (Birth Defects) Information: There is no evidence that Acephate Technical causes birth defects.

Reproduction Information: There is no evidence that Acephate Technical causes reproductive effects in humans.

Potentially Aggravated Condition: Individuals with preexisting medical conditions which lower cholinesterase levels may have increased susceptibility to cholinesterase depression. Pre-existing lung disorders may be aggravated by exposure to this material.

For complete discussion of the toxicology data from which this evaluation was made, refer to Section 11. See regulatory information in Section 15.

SECTION 4: FIRST AID MEASURES

EYES: Flush eyes immediately with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. No additional first aid should be necessary. However, if irritation persists, see a doctor.

SKIN: Wash skin thoroughly with soap and water. Remove and wash contaminated clothing,

INGESTION: If swallowed, drink 1 or 2 glasses of water (or milk) and induce vomiting by touching the back of the throat with finger. If possible, contact a physician, Poison Control Center, or emergency center before inducing vomiting. Do not induce vomiting or give anything by mouth to an unconscious person. Take person and product container to the nearest emergency treatment center,

INHALATION: If there are signs or symptoms as described in this document due to breathing this material, move person to fresh air. If breathing has stopped, apply artificial respiration and call a doctor.

NOTES TO PHYSICIAN: This material contains a cholinesterase inhibitor. Measurement of blood cholinesterase activity may be useful in monitoring exposure but decisions regarding treatment will usually need to be made before test results are available. If signs of cholinesterase inhibition appear, atropine sulfate is antidotal. 2-PAM (PROTOPAM) is also antidotal and may be used in conjunction with atropine but should not be used alone.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: NA METHOD: NA
AUTOIGNITION: NA
EXTINGUISHING MEDIA: CO2, dry chemical, foam, water fog.
FLAMMABLE LIMITS (% by volume in air): Lower: NA Upper: NA

NFPA RATINGS: Health 1; Flammability 1; Reactivity 1; Special NDA (Least-0. Slight-1, Moderate-2, High-3, Extreme). These values are obtained using 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. Read the entire document.

HAZARDOUS COMBUSTION PRODUCTS: Normal combustion forms carbon dioxide, water vapor and may produce oxides of sulfur, nitrogen and phosphorous. Incomplete combustion can produce carbon monoxide.

SECTION 6: ACCIDENTAL RELEASE MEASURES

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 SPILLS ON LAND:

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 disposable container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a disposable container.

FOR SPILLS IN WATER:

CONTAINMENT: This material will quickly dissolve in water. Stop the source of the release. Contain and isolate to prevent further release into soil, surface water and ground water. Notify and consult with appropriate regulatory authorities.

CLEANUP: Cleanup spill immediately. Absorb spill with inert material. Vacuum or sweep up and place into a disposable container.

SECTION 7: HANDLING AND STORAGE

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

Keep pesticide in original container. Do not store or transport near food or feed. Do not put concentrate into food or drink containers. Do not dilute concentrate in food or drink containers. Do not store diluted spray, Store in cool, dry place, out of direct sunlight.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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

EYE PROTECTION: Do not get this material in your eyes. Eye contact can be avoided by wearing protective eyewear.

RESPIRATION/VENTILATION: Wear approved respiratory protection when working with this material unless ventilation is adequate to keep airborne concentrations below recommended exposure standards.

SKIN PROTECTION: Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be minimized by wearing protective clothing.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| APPEARANCE; | White powder. |
| ODOR: | Strong cabbage-like or mercaptan-type odor |
| MELTING POINT:: | 82-89 C (Technical) |
| BOILING POINT: | NA |
| DENSITY/BULK DENSITY/ SPECIFIC GRAVITY: | 28-32 lb/ft3 |
| SOLUBILITY: | Dissolves in water |
| VAPOR PRESSURE: | NA |
| DISSOCIATION CONSTANT: | NA |
| OCTANOL/WATER PARTITION COEFFICIENT: | NA |
| pH: | 4.7 (5% dilution) |
| VISCOSITY! | NA |
| MISCIBILITY: | NA |
| CORROSION CHARACTERISTICS: | NA |
| EVAPORATION RATE: | NA |

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable at temperatures below 180 F (82 C).
INCOMPATIBILITY: Avoid contact with alkaline materials.
HAZARDOUS DECOMPOSITION PRODUCTS: Contact with alkaline materials including hypochlorite oxidants, may produce noxious gases.
HAZARDOUS POLYMERIZATION: Polymerization will not occur,
IMPACT EXPLODABILITY: NDA
OXIDATION/REDUCTION PROPERTIES: NDA

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE (Product Specific Information):

Eye Irritation: Minimal irritation clearing within 7 days. (Toxicity Category III)

Skin Irritation: No irritation at 72 hours after exposure, (Toxicity Category IV)

Dermal Toxicity: No product toxicology data available. The hazard evaluation was based on data on the components- The dermal LD50 of Acephate in rabbits is > 10 g/kg. (Toxicity Category IV)

Oral Toxicity: No product toxicology data available. The hazard evaluation was based on data on the components. The oral LD, of Acephate in male rats is 1447 mg/kg. The oral LD50 of Acephate in female rats is 1030 mg/kg. (Toxicity Category III)

Inhalation Toxicity: The 1-hour LC50 in rats is > 12.1 mg/l. (Toxicity Category III)

Skin Sensitization: No product toxicology data available. The hazard evaluation was based on data on the components. The active ingredient, Acephate Technical, did not induce a positive skin sensitization reaction in the guinea pig using the Modified Buehler or the Maximization techniques.

SUBCHRONIC: The dermal administration of Acephate Technical to rats, five days per week for three weeks, at doses up to 300 mg/kg/day produced statistically significant inhibition of cholinesterase activity in the brain of males and females treated with the highest dose (300 mg/kg/day) and in females at the mid-dose (60 mg/kg/day). The degree of inhibition was less than 15% in all cases and no clinical signs of toxicity were observed. The NOEL was 60 mg/kg/day for males and 12 mg/kg/day for females.

CHRONIC/CARCINOGENICITY: When mice were fed diets containing Acephate Technical throughout their entire lifetime, a compound-related increase in liver weight, together with liver carcinoma (a commonly occurring cancer in mice) occurred in high-dose females. These changes were not observed in the males at any dose level or in low-or mid-dose females. When rats were fed diets containing Acephate Technical throughout their entire lifetime, there was no treatment-related increase in tumors at any site. The most significant treatment-related effect was a decrease in cholinesterase activity of plasma, RBC, and brain.

Acephate is classified by the Environmental Protection Agency as a Group C (possible) human carcinogen. This product is not listed as a carcinogen or suspected carcinogen by NTP, IARC, or OSHA,

TERATOLOGY/DEVELOPMENTAL TOXICITY: In a developmental toxicity study in rats, Acephate Technical produced maternal toxicity (tremors, decreased motor activity and/or decreased body weight gain) at dosages of 20 mg/kg/day or higher. Developmental toxicity (decreased fetal body weight and delayed skeletal ossification) was observed in the 75 mg/kg/day dose group. The maternal NOEL was 5 mg/kg/day. The developmental NOEL was 20 mg/kg/day.

In a developmental toxicity study in rabbits. Acephate Technical produced maternal toxicity (increase in nasal discharge and 2/16 abortions) in animals exposed to 10 mg/kg/day. No developmental toxicity was produced at this dose level. The maternal NOEL was 3 mg/kg/day and the developmental NOEL was 10 mg/kg/day.

REPRODUCTION: Tests have been conducted with Acephate Technical. When male and female rats were fed Acephate Technical continuously for two generations through weaning of the third generation, animals in the mid and high-dose groups demonstrated compound-related effects on reproductive performance. The low-dose was judged to be a no-effect level.

MUTAGENICITY: Tests have been conducted with Acephate Technical. Acephate Technical has been shown to have a weak potential to cause mutations when tested in microbes or cultured cells and in some studies using mice. However, the results of most live animal studies indicate that Acephate Technical does not cause mutations in whole animals.

TOXICITY OF OTHER INGREDIENT: Occupations where there is long term, high exposure to small silica particles can result in silicosis, a disease in which scaring of the lung occurs, causing shortness of breath and cough. It is unlikely, however, that exposure to this product under the conditions specified on the label will result in silicosis.

See Section 3 for a summary of the potential for adverse health effects from exposure to this product. See Section 15 for regulatory information.

SECTION 12: ECOLOGICAL INFORMATION

AVIAN TOXICITY: Acephate Technical is moderately toxic to birds.

Oral LD50 Mallard Duck: 350 mg/kg
Oral LD50 Pheasant: 140 mg/kg
Oral LD50 Chickens: 852 mg/kg

In addition, Acephate Technical in the diet causes adverse effects on reproduction in mallard ducks (no effect level greater than 5 ppm. but less than 20 ppm) and in bobwhite quail (no-effect level greater than 20 ppm, but less than 80 ppm),

AQUATIC ORGANISM TOXICITY: Acephate Technical is practically non-toxic to freshwater fish. The 96-hour LC50 for Acephate Technical was found to be higher than 1,000 ppm in rainbow trout, bluegill, and channel catfish. The following LC50 values for Orthene 75 S Soluble Powder substantiate the low toxicity to fish.

| | |
|---|---|
| Bluegill: | 2,050 ppm |
| Black Bass: | 1,725 ppm |
| Catfish: | 2,230 ppm |
| Mosquito Fish: | 6,000 ppm |
| Goldfish: | 9,550 ppm |
| Crayfish: | 750 ppm |

OTHER NON-TARGET ORGANISM TOXICITY: Acephate Technical is highly toxic to bees. The acute oral LD50 for bees is 1.2 ug/bee.

SECTION 13: DISPOSAL CONSIDERATIONS

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

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

SECTION 14: TRANSPORT INFORMATION

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|---|---|
| D.O.T. SHIPPING NAME: | Insecticide, dry, (Non-Regulated) |
| TECHNICAL SHIPPING NAME: | Acephate 75% powder |
| D.O.T. HAZARD CLASS: | NA |

UN./N.A. NUMBER: NA
NMFC#: 102 120

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. The Environmental Protection Agency classifies acephate as a Group C (possible) human carcinogen.

OTHER U.S. FEDERAL REGULATIONS:

OSHA: NONE
CERCLA RQ*: NONE
RCRA**: Not Regulated
SARA Title III:
SARA 311 CATEGORIES:

| | | |
|---|---|---|
| 1. | Immediate (Acute) Health Effects; | YES |
| 2. | Delayed (Chronic) Health Effect; | YES |
| 3. | Fire Hazard; | NO |
| 4. | Sudden Release of Pressure Hazard; | NO |
| 5. | Reactivity Hazard; | NDA |

SARA 313: Acephate is subject to reporting under Section 313 and Section 6077 of the Pollution Prevention Act.

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.

Proposition 65: This product contains a chemical(s) known to the state of California to cause cancer.
New Jersey Environmental Hazardous Substance:
Acephate is listed.

OTHER: This product is not listed as a carcinogen by NTP, IARC, or OSHA,

RQ: Reportable Quantity
RCRA waste codes must be determined on a case by case basis (i.e., spill, processing waste, etc.). The waste code presented is based on available product characteristics only,

See Sections 3 and 11 for toxicology information.

SECTION 16: OTHER INFORMATION