MATERIAL SAFETY DATA SHEET

ELEVATE 50 WDG FUNGICIDE Page 1 of 7

Please read the entire document. This Material Safety Data Sheet contains important environmental, health and toxicology information for your employees, and anyone who will use, transport, store, dispose of or handle this product. Please make sure this information is given to them. It also contains information to help you meet community right-to-know/emergency response reporting requirements under SARA Title III and many other laws. If you resell this product, this MSDS must be given to the buyer or the information contained herein must be incorporated in your MSDS. Changes have been made throughout this Material Safety Data Sheet.

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ELEVATE™ 50 WDG Fungicide
PRODUCT NUMBERS: NA
EPA REGISTRATION NUMBER: 66330-35
SYNONYM(S): Fenhexamid Fungicide WDG 50

MANUFACTURER
TOMEN AGRO, Inc.
100 First Street, Suite 1700
San Francisco, CA 94105

EMERGENCY TELEPHONE NUMBERS
HEALTH EMERGENCY (24hr)
1-800-228-5635 Ext. 174 or
1-612-221-3999 Ext. 174
SPILL (24 hr): CHEMTREC 1-800-424-9300

SECTION 2: CONFIRMATION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>PRODUCT NAME</th>
<th>CAS#</th>
<th>EXPOSURE LIMITS</th>
<th>WEIGHT PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVE INGREDIENTS:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fenhexamid:</td>
<td>126833-17-8</td>
<td>NDA</td>
<td>50.0</td>
</tr>
<tr>
<td>N-(2,3-dichloro-4-hydroxyphenyl) -1-methyl-cyclohexanecarboxamide</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INERT INGREDIENTS*:</td>
<td>50.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Inert ingredients are any substance other than an active ingredient contained in this product. Only those inert ingredients considered hazardous are listed. The identities of any other substance are withheld because they are considered trade secrets. Specific information on the inert ingredients for the management of exposures, spills, or safety assessments can be obtained by the treating physician or nurse by calling 1-800-228-5635 Ext. 174 or 1-612-221-3999 Ext. 174.
SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION:  - AVOID CONTACT WITH EYES, SKIN, OR CLOTHING
- HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN.
- AVOID BREATHING DUST
- KEEP OUT OF REACH OF CHILDREN

POTENTIAL HEALTH EFFECTS

Acute Toxicity

Eye: This product is slightly irritating to the eyes.

Skin: This product is slightly irritating to the skin. This product is not a skin sensitizer. If absorbed through the skin, this substance is considered practically non-toxic to internal organs.

Ingestion: This product is considered practically non-toxic if swallowed.

Inhalation: This product is considered practically non-toxic if inhaled.

Chronic Toxicity (Including Cancer): ELEVATE™ is not a carcinogen.

Teratology (Birth Defects) Information: ELEVATE™ is not a developmental toxicant.

Reproduction Information: ELEVATE™ is not a reproductive toxicant.

For complete discussion of the toxicology data from which this evaluation was made, refer to Section 11.

SECTION 4: FIRST AID MEASURES

EMERGENCY NUMBER: 1-800-228-5635 Ext. 174 or 1-612-221-3999 Ext. 174

EYES: Flush eyes immediately with plenty of fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. Call a physician if irritation persists.

SKIN: Remove contaminated clothing, wash skin with plenty of soap and water. Discard contaminated non-waterproof shoes and boots. Wash contaminated clothing. Call a physician if irritation persists.

INGESTION: If swallowed, call a doctor or get medical attention. Do not induce vomiting. Promptly drink a large quantity of milk, egg whites, gelatin solution, or if these are not available drink large quantities of water. Avoid alcohol.

INHALATION: If respiratory discomfort or irritation occurs, move the person to fresh air. See a doctor if discomfort or irritation continues.
NOTES TO PHYSICIAN: Provide basic first aid measures, decontaminate individual and treat symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: NA, Solid Method: NA
AUTOIGNITION: Spontaneous ignition temperature = 295°C
EXTINGUISHING MEDIA: CO₂, dry chemical, foam, water fog, sand
FLAMMABLE LIMITS: (% by volume in air): Lower: NDA Upper: NDA

NFPA RATINGS: Health NDA; Flammability NDA, Reactivity NDA; Special; NDA
(Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association, NFPA.


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: Does not liberate gases in hazardous amounts in case of contact with water or moist air. Does not undergo spontaneous combustion.

SECTION 6: ACCIDENTAL RELEASE MEASURES

EMERGENCY PHONE NUMBER: 1-800-228-5635 Ext. 174 or 1-612-221-3999 Ext. 174

FOR SPILLS ON LAND:

CONTAINMENT: Avoid runoff into storm sewers and ditches that lead to waterways.

CLEANUP: Clean up spill immediately. Place product and any contaminated cleanup materials in a chemical waste container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a disposable container.

FOR SPILLS ON WATER:

CONTAINMENT: Stop or reduce contamination of any water. Isolate contaminated water.

CLEANUP: Remove contaminated water for removal or treatment.
SECTION 7: HANDLING AND STORAGE

DO NOT USE OR STORE near flame, sparks or hot surfaces. USE ONLY IN WELL VENTILATED AREA. Keep container closed. DO NOT weld, heat or drill container. Replace cap or bung. Before entry into confined spaces that may have contained hazardous material, determine concentrations and take appropriate measures for personal protection.

Keep pesticide in original container. Store in a dry place to preserve product quality. Do not store or transport near food or feed.

This product is dust explosible, and exhibits a lower explosible limit of 90 g/m$^3$

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE PROTECTION: Avoid contact with your eyes. Eye contact can be avoided by wearing chemical eyewear.

RESPIRATORY/VENTILATION REQUIREMENTS: This material is not expected to present an inhalation hazard. However, the use of approved respiratory protection is recommended (fine dust mask).

Use this material only in well-ventilated areas.

SKIN PROTECTION: Avoid contact with skin or clothing. Skin contact should be minimized by wearing protective clothing including gloves.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Beige, granule</td>
</tr>
<tr>
<td>Odor</td>
<td>Weak, not characteristic</td>
</tr>
<tr>
<td>Melting Point</td>
<td>153°C</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>NA, Solid</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>Approx. 164 ml/100g (fluffed) Approx. 154 ml/100g (jolted)</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>NA</td>
</tr>
<tr>
<td>Solubility</td>
<td>Water: varies between pH 3 and 9 from soluble to very soluble. Soluble in most polar organic solvents (pure a.i.)</td>
</tr>
<tr>
<td>Dissociation Constant (pka) (pure a.i.)</td>
<td>7.3</td>
</tr>
</tbody>
</table>
SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable for 52 weeks at ambient temperature.

INCOMPATIBILITY: NDA

HAZARDOUS DECOMPOSITION PRODUCTS: NDA

HAZARDOUS POLYMERIZATION: NDA

IMPACT EXPLODABILITY: Not an explosive.

OXIDATION/REDUCTION PROPERTIES: Not an oxidizer.

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE (Product Specific Information)

Eye Irritation: Slightly irritating in rabbits.

Skin Irritation: Slightly irritating in rabbits.

Dermal Toxicity: The dermal LD$_{50}$ in rats is > 2,000 mg/kg.

Oral Toxicity: The oral LD$_{50}$ in rats is > 2,000 mg/kg.

Inhalation Toxicity: The 4 hour inhalation LC$_{50}$ (dust) of Fenhexamid Technical in rats is >5057 mg/m$^3$ air. The 4-hour inhalation in LC$_{50}$ (aerosol) of Fenhexamid Technical in rats is >332 mg/m$^3$ air.

Skin Sensitization: Negative

SUBCHRONIC: In subchronic studies with Fenhexamid Technical, the NOEL for rat, mice and dog were 5,000 ppm, 1000 ppm and 1000 ppm respectively. Reduced body weight development, increased feed and water intake was seen in rats and mice. The liver is the main toxicological target organ. In dogs, effects in the red blood system were also observed.

CHRONIC/CARCINOGENICITY: Fenhexamid Technical is not carcinogenic to the rat or mouse. Unspecific signs of toxicity seen in rats treated with Fenhexamid Technical were reduced body weight development, increased feed and water intake and slight effects on liver and thyroid. In mice the main effects were with the kidney. In dogs the red blood system was the main toxicological target.

TERATOLOGY/DEVELOPMENTAL TOXICITY: Fenhexamid Technical is not a teratogen or developmental toxicant. The NOEL for both maternal and developmental effects in rats was 1,000 mg/kg bw/day. No maternal toxicity, no clinical signs, no necropsy findings, no compound related effects in body weight or food consumption, mating, fertility, gestation indices, embryo toxicity, fetotoxicity or teratogenicity were observed.

REPRODUCTION: No reproduction toxicity was observed in a 2-generation study with rats exposed to
Fenhexamid Technical.

**MUTAGENICITY:** Fenhexamid Technical is negative in the following genotoxicity assays: Salmonella/microsome test (Ames test), mouse micronucleus test, Reverse mutation, chromosome aberration in vitro, V79-HGPRT in vitro, rat primary hepatocyte UDS in vitro. Fenhexamid Technical does not present a genetic hazard to intact animal systems.

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### SECTION 12: ECOLOGICAL INFORMATION

**AVIAN TOXICITY:** The acute toxicity of Fenhexamid Technical is very low.

- Bobwhite quail: \(LD_{50} = >2,000\) mg a.i./kg bw
- Bobwhite quail: Dietary \(LC_{50} = >5,000\) mg a.i./kg diet
- Mallard duck: Dietary \(LC_{50} = >5,000\) mg a.i./kg diet

**AQUATIC ORGANISM TOXICITY:** ELEVATE™ is moderately toxic to fish, has a low toxicity to Daphnia magna and the sensitivity to green algae ranges from low to moderate.

- Rainbow trout: 96-hour \(LC_{50} = 2.66\) mg/l
- Daphnia magna: 48-hour \(EC_{50} = 200\) mg/l
- Green algae (growth rate): 72-hour \(EC_{50} = 11.1\) mg/l

**OTHER NON-TARGET ORGANISMS:** In acute toxicity studies, Fenhexamid Technical was found to be nontoxic to honey bees.

- Oral \(LD_{50} = >100\) ug a.i./bee
- Contact \(LD_{50} = >200\) ug a.i./bee

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### SECTION 13: DISPOSAL CONSIDERATIONS

**END USERS SHOULD CONTACT TOMEN PRIOR TO DISPOSAL OF ANY UNUSED PRODUCT.**

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

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### SECTION 14: TRANSPORT INFORMATION

**D.O.T. SHIPPING NAME:** Pesticide, Non-regulated

**TECHNICAL SHIPPING NAME:** NA

**D.O.T. HAZARD CLASS:** NA

**U.N/N.A. NUMBER:** 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 REGULATIONS:

OSHA Status: NA
TSCA Status: NA
CERCLA Reportable Quantity: NA
RCRA*: NA
SARA Title III Status:
1. Immediate (Acute) Health Effects; YES
2. Delayed (Chronic) Health Effects; NDA
3. Fire Hazard; NO
4. Sudden Release of Pressure Hazard; NO
5. Reactivity Hazard; 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.

* 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.

SECTION 16:  OTHER INFORMATION

REASON FOR ISSUE: Update Sections 1, 2, 3, 10, 11, 12, and 16
PREPARED BY: James J. Reilly, Jr.
APPROVAL DATE: May 19, 1999
SUPERSEDES DATE: August 11, 1998
MSDS NUMBER: F-001

The information in this MSDS is based on data available to us as of the revision data given herein, and believed to be correct. Contact Tomen's Compliance Officer - Safety, Health & Environmental Affairs at (415) 536-3491, Fax (415) 546-7699 to determine if additional data and information have become available since the revision date.

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