



Material Safety Data Sheet

Adorn™ Fungicide

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.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Adorn™ Fungicide
VC NUMBER(S): 1635
PRODUCT CODE: 61510
SYNONYM(S): V-10161 4 SC
EPA REGISTRATION NUMBER: 59639-141

MANUFACTURER/DISTRIBUTOR

VALENT U.S.A. CORPORATION
P.O. Box 8025
1600 Riviera Avenue, Suite 200
Walnut Creek, CA 94596-8025

EMERGENCY TELEPHONE NUMBERS

HEALTH EMERGENCY OR SPILL (24 hr):
(800) 892-0099
TRANSPORTATION (24 hr.): CHEMTREC
(800) 424-9300 or (202) 483-7616

PRODUCT INFORMATION

AGRICULTURAL PRODUCTS: (800) 682-5368
PROFESSIONAL PRODUCTS: (800) 898-2536

The current MSDS is available through our website or by calling the product information numbers listed above. (www.valent.com)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION

- Keep out of reach of children.
- Avoid contact with eyes, skin and clothing
- Avoid breathing vapors or spray mist.
- Highly toxic to fish.
- May cause long-term adverse effects in the aquatic environment.
- Harmful if swallowed, inhaled or absorbed through skin.
- Causes moderate eye irritation

POTENTIAL HEALTH EFFECTS

Acute Toxicity (Primary Routes of Exposure): None known

Acute Eye Contact: This product can cause moderate eye irritation. The expected adverse health effects resulting from an exposure may include redness and possible swelling.

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Acute Skin Contact: This product is not expected to cause allergic skin reactions. This product can cause brief and/or minor irritation. The expected adverse health effects resulting from an exposure may include redness and possibly some minor swelling. This product is harmful if absorbed through the skin.

Acute Ingestion: This product is slightly toxic when ingested.

Acute Inhalation: This product is harmful if inhaled.

Chronic Toxicity (including cancer): Fluopicolide Technical produced liver tumors in high dose studies in mice, but is unlikely to be carcinogenic to humans. This product is not listed as a carcinogen by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), the Occupational Safety and Health Administration (OSHA) or ACGIH.

Developmental Toxicity (birth defects): Fluopicolide Technical did not produce developmental effects in animal experiments.

Reproductive Toxicity: No reproductive effects were observed in animal studies.

Signs and Symptoms of Systemic Effects: The information provided is based on the technical material or a similar product.

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 |
|---|---------------|-----------------|-------------------|
| Fluopicolide (2,6-dichloro-N-[[3-chloro-5-(trifluoromethyl)-2-pyridinyl]methyl]benzamide) | 239110-15-7 | 38 - 41 | Active Ingredient |
| Others | Various CAS#s | 59 - 62 | 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 identities are 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 **(800) 892-0099** at any time.

4. FIRST AID MEASURES

EMERGENCY NUMBER (800) 892-0099

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact **1-800-892-0099** for emergency medical treatment information.

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, if possible. Call a poison control center or doctor for further treatment advice.

NOTES TO PHYSICIAN:

Treatment is supportive and symptomatic.

5. FIRE FIGHTING MEASURES

FLASH POINT: >212° F (>100° C)
AUTOIGNITION: > 878° F (> 470° C) (This product is not self-ignitable.)
EXTINGUISHING MEDIA: Water fog, carbon dioxide, foam, sand

FLAMMABLE LIMITS IN AIR - LOWER (%): Not applicable
FLAMMABLE LIMITS IN AIR - UPPER (%): Not applicable

NFPA RATING:

| | |
|---------------|------|
| Health: | 1 |
| Flammability: | 0 |
| 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: 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.

HAZARDOUS COMBUSTION PRODUCTS: Combustion may produce toxic gases of: hydrogen chloride, hydrogen cyanide, carbon monoxide, oxides of nitrogen,

6. ACCIDENTAL RELEASE MEASURES

VALENT EMERGENCY PHONE NUMBER: (800) 892-0099
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 additional spill response information refer to the North American Emergency Response Guidebook.

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

FOR SPILLS ON LAND:

CONTAINMENT: Avoid runoff into storm sewers and ditches which lead to waterways. Contain spilled liquids with dry sorbents.

CLEANUP: Clean up spill immediately. Absorb spill with inert material (such as dry sand or earth), then place in a chemical waste container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a chemical waste container.

FOR SPILLS IN WATER:

CONTAINMENT: This material will disperse or dissolve in water. Stop the source of the release. Contain and isolate to prevent further release into soil, surface water and ground water.

CLEANUP: Clean up spill immediately. Absorb spill with inert material. Remove contaminated water for treatment or disposal.

7. HANDLING AND STORAGE

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

HANDLING:

Keep pesticide in original container. Do not store or transport near food or feed. Do not contaminate food or feed. Do not put concentrate into food or drink containers. Do not dilute concentrate in food or drink containers. .

Use only in well ventilated area. Avoid contact with skin and eyes.

STORAGE:

Do not store at temperatures below 32° F (0° C). If the product is exposed to temperatures below 32° F (0° C), thaw at room temperature to 50° F (10° C) or warmer and shake gently to unify the product.

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 protective eyewear.

RESPIRATORY PROTECTION: Use this material only in well ventilated areas. Unless ventilation is adequate to keep airborne concentrations below recommended exposure standards, approved respiratory protection should be worn.

SKIN & HAND PROTECTION: Avoid contact with skin or clothing. Skin contact should be minimized by wearing protective clothing including gloves. Remove soiled clothing immediately and wash before re-use. Avoid contact with the skin and the eyes. Wash hands before breaks and at the end of the day. Garments that cannot be cleaned must be destroyed (burnt).

EXPOSURE LIMITS

| Chemical Name | ACGIH Exposure Limits | OSHA Exposure Limits | Manufacturer's Exposure Limits |
|---|-----------------------|----------------------|--------------------------------|
| Fluopicolide (2,6-dichloro-N-[[3-chloro-5-(trifluoromethyl)-2-pyridinyl]methyl]benzamide) | None | None | None |
| Others | None | None | None |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|------------------------|----------------------|
| PHYSICAL FORM: | Viscous liquid |
| COLOR: | Beige |
| ODOR: | Odorless |
| FLASH POINT: | >212° F (>100° C) |
| DENSITY: | 10.1 lb/gal |
| VAPOR PRESSURE: | No data available |
| pH: | 7.0 - 8.5 |
| SOLUBILITY: | Dispersible in water |

10. STABILITY AND REACTIVITY

| | |
|--|--|
| CHEMICAL STABILITY: | Stable at normal ambient temperatures. |
| INCOMPATIBILITY: | None known |
| OXIDATION/REDUCTION PROPERTIES: | No chemical incompatibility in contact with reducing (zinc powder) or oxidizing (ammonium nitrate) agents. |
| EXPLODABILITY: | No shock sensitivity or thermal sensitivity to explosion. Not explosive. |

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

The following information is for the technical material.

| | | | |
|---|--------------------------|------------------|----------------|
| Oral Toxicity LD ₅₀ (rats) | > 2,000 mg/kg | EPA Tox Category | III |
| Dermal Toxicity LD ₅₀ (rats) | > 4,000 mg/kg | EPA Tox Category | III |
| Inhalation Toxicity LC ₅₀ (rats) | > 1.789 mg/L | EPA Tox Category | III |
| Eye Irritation (rabbits) | Moderately irritating | EPA Tox Category | III |
| Skin Irritation (rabbits) | Non-irritating | EPA Tox Category | IV |
| Skin Sensitization (guinea pigs) | Non-sensitizer (Buehler) | 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 |
|---|--|--|--|---------------------|
| Others (Various CAS#s) | No | No | No | Not listed |
| Fluopicolide (2,6-dichloro-N-[[3-chloro-5-(trifluoromethyl)-2-pyridinyl]methyl]benzamide) (239110-15-7) | No | No | No | Not listed |

CHRONIC/CARCINOGENICITY: The liver and kidney are target organs in high dose animal experiments. Fluopicolide Technical did not cause cancer in rats, but produced benign liver tumors in mice at the maximum tolerated dose. The mechanism of liver tumor formation in the mouse is believed to be not relevant to humans.

DEVELOPMENTAL TOXICITY: Fluopicolide Technical did not cause any teratogenic effects in animal experiments. Ingestion of excessive amounts by pregnant animals resulted in maternal and fetal toxicity.

REPRODUCTION: No indications of reprotoxic effects were observed in reproduction studies in animals.

MUTAGENICITY: Fluopicolide Technical is not genotoxic.

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

AVIAN TOXICITY: Based upon EPA designation, fluopicolide technical is practically non-toxic to avian species. The following results were obtained from studies with fluopicolide technical:

Oral LD₅₀ mallard duck: greater than 2250 mg/kg
 Dietary LC₅₀ bobwhite quail: greater than 5620 ppm
 Dietary LC₅₀ mallard duck: greater than 5620 ppm

AQUATIC ORGANISM TOXICITY: Based upon EPA designation, flupicolide technical may be highly toxic to aquatic organisms. The following are results of tests with flupicolide technical:

Rainbow trout 96-hr LC₅₀ : = 0.36 mg/L
 Sheepshead minnow 96-hr LC₅₀ : = 0.41 mg/L
 Daphnia 48-hr LC₅₀ : > 1.8 mg/L
 Fathead minnow Chronic NOEC = 0.155 mg/L
 Daphnia Chronic NOEC = 0.37 mg/L
 Algae (Pseudokirchneriella) 72-hr LC₅₀ : > 4.3 mg/L
 Bioaccumulation, Bluegill sunfish: BCF 117

OTHER NON-TARGET ORGANISM TOXICITY: Fluopicolide technical is practically non-toxic to bees. The acute contact LC50 in bees was greater than 100 µg/bee.

13. DISPOSAL CONSIDERATIONS

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

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: | Fungicide, liquid, non-regulated |
| TECHNICAL NAME (hazardous material): | Not applicable |
| HAZARD CLASS: | Not applicable |
| PACKING GROUP: | Not applicable |
| DOT REPORTABLE QUANTITY (RQ): | None |
| REMARKS: | None |
| EXEMPTION REQUIREMENT: | None |
| EMERGENCY RESPONSE GUIDEBOOK NO.: | Not applicable |
| MARINE POLLUTANT: | Marine Pollutant when shipped in bulk or non-bulk by water. |

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: | Yes |
| Fire: | No |

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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.

Fluopicolide (2,6-dichloro-N-[[3-chloro-5-(trifluoromethyl)-2-pyridinyl]methyl]benzamide)

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: Minor revisions to Sections 1, 9 and 14
MSDS NO.: 0380
EPA REGISTRATION NUMBER: 59639-141
REVISION NUMBER: 2
REVISION DATE: 02/17/2009
SUPERCEDES DATE: 02/06/09
RESPONSIBLE PERSON(S): Valent U.S.A. Corporation, Corporate EH&S, (925) 256-2803

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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 U.S.A. Corporation to confirm if you have the most current MSDS.

Judgements as to the suitability of information herein for the individual's own use or purposes are necessarily the individual's own responsibility. Although reasonable care has been taken in the preparation of such information, Valent extends no warranties, makes no representations, and assumes no responsibility as to the accuracy or suitability of such information for application to the individual's purposes or the consequences of its use.

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