



Material Safety Data Sheet

INOVATE™ Seed Protectant

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: INOVATE™ Seed Protectant
EPA REGISTRATION NUMBER: 59639-176
PRODUCT CODE: 61460
PRODUCT DESCRIPTION: Insecticide & Fungicide Mixture

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

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

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION

- Harmful if swallowed or absorbed through skin
- Avoid contact with eyes, skin and clothing
- Avoid breathing vapors or spray mist
- Keep out of reach of children

POTENTIAL HEALTH EFFECTS

Acute Toxicity (Primary Routes of Exposure): None known

Acute Eye Contact: This product is expected to cause minimal or no eye irritation. The expected adverse health effects resulting from an exposure may include redness and possibly some minor swelling.

Acute Skin Contact: This product is minimally toxic when absorbed through the skin. 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 not expected to cause allergic skin reactions.

Acute Ingestion: This product is slightly toxic when ingested.

Acute Inhalation: This product is minimally toxic when inhaled.

Chronic Toxicity (including cancer): The active ingredient did not cause cancer in long-term animal studies. 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.

Emergency Telephone: (800) 892-0099
REVISION NUMBER: 2

MSDS NO.: 0408
REVISION DATE: 08/03/2011

Developmental Toxicity (birth defects): Not considered a developmental hazard.

Reproductive Toxicity: Not considered a reproductive hazard.

Signs and Symptoms of Systemic Effects: No Data Available

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
Ipconazole	125225-28-7	0.65-0.75	Active Ingredient
Clothianidin [(E)-1-(2-chloro-1,3-thiazol-5-ylmethyl)-3-methyl-2-nitroguanidine]	210880-92-5	13-15	Active Ingredient
Metalaxyl (N-(2,6-dimethylphenyl)-N-(methoxyacetyl)alaninemethyl ester)	57837-19-1	1-2	Active Ingredient
Glycerine	56-81-5	12-16	Solvent
Inert/Other Ingredients	No CAS#	64-68	Other Ingredients
Alkylene glycol	Proprietary	1.1-1.7	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: > 200° F
AUTOIGNITION: No data available
EXTINGUISHING MEDIA: Water fog, carbon dioxide, foam, dry chemical
FLAMMABLE LIMITS IN AIR - LOWER (%): Not applicable
FLAMMABLE LIMITS IN AIR - UPPER (%): Not applicable

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: 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 DECOMPOSITION PRODUCTS: May form toxic materials such as: Carbon dioxide, hydrogen chloride, Oxides of sulfur, Oxides of Nitrogen, Carbon monoxide, various hydrocarbons, etc

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 for Domestic Ground

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 is miscible in water. Stop or reduce contamination of any water. Isolate contaminated 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. Store in a cool, dry place, out of direct sunlight

Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing and shoes immediately. Then wash thoroughly and put on clean clothing

Keep container tightly closed. Keep container in a cool well ventilated area. Stable at normal temperatures and storage conditions in closed original package

Emergency Telephone: (800) 892-0099
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MSDS NO.: 0408
REVISION DATE: 08/03/2011

STORAGE:

Do not reuse empty container Open dumping is prohibited Do not store at temperatures below 32°F. If the product is exposed to temperatures below 32°F, thaw at room temperature to 50°F or warmer and shake gently to unify the product

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. If operating conditions result in airborne concentrations of this material, the use of an approved respirator is recommended.

SKIN & HAND PROTECTION: Avoid contact with skin or clothing. Skin contact should be minimized by wearing protective clothing including long pants, long-sleeved shirt and shoes plus socks and chemical-resistant gloves. Remove contaminated clothing.

ENGINEERING CONTROLS: Use in a well ventilated area.

EXPOSURE LIMITS

Chemical Name	ACGIH Exposure Limits	OSHA Exposure Limits	Manufacturer's Exposure Limits
Ipconazole	None	None	None
Clothianidin [(E)-1-(2-chloro-1,3-thiazol-5-ylmethyl)-3-methyl-2-nitroguanidine]	None	None	None
Metalaxyl (N-(2,6-dimethylphenyl)-N-(methoxyacetyl)alaninemethyl ester)	None	None	None
Glycerine	10 mg/m ³ TWA	15 mg/m ³ TWA 5 mg/m ³ TWA	None
Inert/Other Ingredients	None	None	None
Alkylene glycol	None	None	None

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM:

Liquid

COLOR:

Red

ODOR:

Paint-like

FLASH POINT:

> 200° F

DENSITY:

1.123 g/cm³ @ 20°C

VAPOR PRESSURE:

No data available

pH:

4.66 @ 25°C (1% dilution)

VISCOSITY:

147 cps at 20 °C

SOLUBILITY:

Miscible/dispersible in water

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:

Stable at normal ambient temperatures.

OXIDATION/REDUCTION PROPERTIES:

Not reactive with water, monoammonium phosphate, zinc, and potassium permanganate.

EXPLODABILITY:

No data available

HAZARDOUS DECOMPOSITION PRODUCTS:

May form toxic materials such as: Carbon dioxide, hydrogen chloride, Oxides of sulfur, Oxides of Nitrogen, Carbon monoxide, various hydrocarbons, etc

HAZARDOUS POLYMERIZATION :

Will not occur

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Based on an evaluation of the ingredients and/or similar products.

Oral Toxicity LD ₅₀ (rats)	3,044 mg/kg	EPA Tox Category	III
Dermal Toxicity LD ₅₀ (rats)	> 5,000 mg/kg	EPA Tox Category	IV
Inhalation Toxicity LC ₅₀ (rats)	> 2.13 mg/L	EPA Tox Category	IV
Eye Irritation (rabbits)	Mildly irritating	EPA Tox Category	IV
Skin Irritation (rabbits)	Slightly irritating	EPA Tox Category	IV
Skin Sensitization (guinea pigs)	Non-sensitizer	EPA Tox Category	Not applicable

Chemical Name	IARC - Group 1 (carcinogenic to humans)	IARC - Group 2A (Probably carcinogenic)	IARC - Group 2B (Possibly carcinogenic)	NTP Carcinogen List
Clothianidin [(E)-1-(2-chloro-1,3-thiazol-5-ylmethyl)-3-methyl-2-nitroguanidine]	No	No	No	Not listed
Ipconazole	No	No	No	Not listed
Metalaxyl (N-(2,6-dimethylphenyl)-N-(methoxyacetyl)alaninemethyl ester)	No	No	No	Not listed
Alkylene glycol	No	No	No	Not listed
Glycerine	No	No	No	Not listed
Inert/Other Ingredients	No	No	No	Not listed

TOXICITY OF CLOTHIANIDIN TECHNICAL

SUBCHRONIC: The NOEL in a 3-month rat feeding study with Clothianidin Technical was 27.9 mg/kg/day (male) and 34.0 mg/kg/day (female) The NOEL in a 90-day dog feeding study was 19.3 mg/kg/day (male) and 21.2 mg/kg/day (female). In a subchronic dermal study with rats, the NOAEL is > 1,000 mg/kg/day.

CHRONIC/CARCINOGENICITY: The Clothianidin NOEL for a 2-year rat study was 9.7 mg/kg/day (female); for a 18-month mouse study was 47.2 mg/kg/day (male) and for a 12-month dog study was 7.8 mg/kg/day (male). The principal target organs were the glandular stomach, kidney, ovary, and liver. No oncogenic effects were observed in the 2-year rat or 18-month mouse feeding studies.

NEUROTOXICITY: Clothianidin is not a neural toxin.

DEVELOPMENTAL TOXICITY: No teratogenic effects on rats or rabbits were observed Transient developmental effects (delayed ossification) were observed in rabbits at maternally toxic doses (100 mg/kg/d). The technical material is fetotoxic in animal studies at maternally toxic doses

REPRODUCTION: No reproductive effects were observed in rats at the highest dose tested (2500 ppm).

MUTAGENICITY: *In vivo* tests have demonstrated that the technical material is not mutagenic. Some *in-vitro* tests were positive for mutagenicity. The observed effects *in-vitro* were due to cytotoxic effects. The weight-of-evidence from the *in vivo* whole animal tests suggest that this product does not present a mutagenic hazard.

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:

The following information is based upon component(s) of this material
96-hr Oral Bobwhite quail: > 2,000 mg/kg
96-hr Oral Mallard duck: = 503 mg/kg
96-hr Dietary Mallard duck: > 5,200 ppm

AQUATIC ORGANISM TOXICITY: This product is toxic to aquatic invertebrates. The following are results from testing of product components.

The following are results from testing of Clothianidin Technical:

96-hr Bluegill LC₅₀: > 117 mg/L
96-hr Sheepshead minnow LC₅₀: > 102 mg/L
96-hr Mysid LC₅₀: = 0.053 mg/L

The following are results from testing of Ipconazole:

96-hr Common Carp LC₅₀: = 1.6 mg/L
72-hr Selenastrum capricornutum LC₅₀: > 0.7 mg/L
48-hr Daphnia Magna EC₅₀: > 1.5 mg/L

The following are results from testing of Metalaxyl:

96-hr Rainbow trout LC₅₀: > 100 mg/L
120-hr Freshwater Green Algae: = 33 mg/L
48-hr Daphnia magna LC₅₀: > 28 mg/L

OTHER NON-TARGET ORGANISM TOXICITY:

Honeybee 48-hour oral LD₅₀: = 0.044ug (microgram)/bee
Honeybee 48-hour contact LD₅₀: = 0.004 ug (microgram)/bee
Earthworm 7-day LC₅₀: = 19 mg/kg dry soil

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:

DOT (ground) SHIPPING NAME:

TECHNICAL NAME (hazardous material):

HAZARD CLASS:

PACKING GROUP:

Not applicable for Domestic Ground

Pesticides, liquid, non-regulated

Not applicable

Not applicable

Not applicable

DOT REPORTABLE QUANTITY (RQ):	Not applicable
REMARKS:	None
EXEMPTION REQUIREMENT:	None
EMERGENCY RESPONSE GUIDEBOOK NO.:	Not applicable
MARINE POLLUTANT:	Not applicable

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, TSCA and OSHA. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

Glycerine

TSCA Inventory List -	Listed
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SARA (311, 312):

Immediate Health:	No
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.

Glycerine

MA Right To Know	Listed
PA Right To Know	Listed
RI Right To Know	Listed
MN Hazardous Substance	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:	Added the EPA registration number.
MSDS NO.:	0408
EPA REGISTRATION NUMBER:	59639-176
REVISION NUMBER:	2
REVISION DATE:	08/03/2011
SUPERCEDES DATE:	November 23, 2010
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, 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 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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