



Material Safety Data Sheet

Arena® 50 WDG Insecticide

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Arena® 50 WDG Insecticide
PCPA REGISTRATION NUMBER: 29383
PRODUCT CODE: 61400
VC NUMBER(S): 1689
PRODUCT DESCRIPTION: Insecticide

MANUFACTURER/DISTRIBUTOR

VALENT CANADA, INC.
107 Woodlawn Road West
Suite 502 - B
Guelph ONT N1H 1B4

EMERGENCY TELEPHONE NUMBERS

HEALTH EMERGENCY OR SPILL (24 hr.):
(800) 682-5368
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 or by calling the product information numbers listed above. (www.valent.ca)

2. HAZARDS IDENTIFICATION

Emergency Overview

Caution

- May cause moderate eye irritation
- Harmful if swallowed, inhaled or absorbed through skin
- Avoid contact with eyes, skin and clothing
- Avoid breathing dust or spray mist.
- Toxic to aquatic invertebrates and bees.
- Keep out of reach of children

POTENTIAL HEALTH EFFECTS

Acute Toxicity (Primary Routes of Exposure): None known

Acute Eye Contact: This product may cause slight to moderate eye irritation. Adverse health effects resulting from an exposure may include redness, swelling and pain which could last for an extended period of time.

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. Exposure to high concentrations in the air may result in respiratory irritation. Signs and symptoms may include, but not be limited to, nasal discharge, sore throat, coughing and difficulty in breathing.

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

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
Clothianidin [(E)-1-(2-chloro-1,3-thiazol-5-ylmethyl)-3-methyl-2-nitroguanidine]	210880-92-5	40 - 70	Active ingredient
Kaolin clay	1332-58-7	17.8 - 19.7	Carrier
Others	Various CAS#s	30.3 - 32.2	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 (800) 682-5368 at any time

4. FIRST AID MEASURES

EMERGENCY NUMBER (800) 682-5368

Have the product container or label with you when calling a poison control centre or doctor, or going for treatment. You may also contact **1-800-682-5368** 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 centre 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 centre or doctor for treatment advice.

Ingestion:

Call a poison control centre or doctor immediately for treatment advice. Have a person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control centre 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 centre or doctor for further treatment advice.

Notes to physician:

None

5. FIRE FIGHTING MEASURES

FLASH POINT: Not applicable
AUTOIGNITION: > 150° C (the technical material decomposes at 150° C)
 Self-Ignition temperature: 208° C
EXTINGUISHING MEDIA: Dry chemical powder, carbon dioxide, foam. Unsuitable extinguishing media - none known.
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.

This material is combustible.

Hazardous decomposition products: May emit toxic gases and irritating fumes under fire conditions. (See Section 5.)

6. ACCIDENTAL RELEASE MEASURES

VALENT EMERGENCY PHONE NUMBER: (800) 682-5368
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: 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 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 (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.

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.

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

Use only in well ventilated area. Avoid contact with skin and eyes. Do not breath dust.

Storage:

Do not contaminate water, food, or feed by storage or disposal. Store product in original container in a cool, dry area away from children, pets and direct sunlight. Do not use or store near heat or open flame. Do not store near food or feed.

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. In case of dust formation use a dust mask.

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

ENGINEERING CONTROLS: Use in a well ventilated area.

Exposure limits

Chemical Name	Canadian OELs
Clothianidin [(E)-1-(2-chloro-1,3-thiazol-5-ylmethyl)-3-methyl-2-nitroguanidine]	none
Kaolin clay	none
Others	none

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM:	Solid Granule
COLOUR:	Dark brown
ODOUR:	Glue, faint paint, very mild soap-like
FLASH POINT:	Not applicable
MELTING POINT:	176.8° C (technical)
BOILING POINT:	Not applicable
BULK DENSITY:	37.4 lb/cubic foot @ 20° C = 0.599 g/cubic centimeter
SPECIFIC GRAVITY:	1.61 (20° C, technical)
VAPOUR PRESSURE:	1.3x10 ⁻¹⁰ Pa (25° C, technical)
DISSOCIATION CONSTANT:	pKa 11.09 (20° C, technical)
pH:	6.4 @ 26 - 27° C
CORROSION CHARACTERISTICS:	no data available
OCTANOL/WATER PARTITION COEFFICIENT:	log Pow=0.7 (25° C, technical)

9. PHYSICAL AND CHEMICAL PROPERTIES

SOLUBILITY: Dispersible in water

10. STABILITY AND REACTIVITY

Chemical stability: Stable at 25°C for 4 months (pH 4 - 9). Stable at 40°C for 3 months.

Incompatibility: None known

Oxidation/Reduction properties: Not an oxidizer.

Explosibility: Minimum Explosive Concentration (dust): 25 g/m³

Hazardous decomposition products: May emit toxic gases and irritating fumes under fire conditions. (See Section 5.)

Materials to avoid: None known

Conditions to avoid: High temperatures

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Oral Toxicity LD ₅₀ (rats)	3,900 mg/kg (male) 4,700 mg/kg (female)	EPA Tox Category	III
Dermal Toxicity LD ₅₀ (rats)	> 5,000 mg/kg	EPA Tox Category	IV
Inhalation Toxicity LC ₅₀ (rats)	> 2.3 mg/L	EPA Tox Category	IV
Eye Irritation (rabbits)	Moderately irritating	EPA Tox Category	III
Skin Irritation (rabbits)	Slightly irritating	EPA Tox Category	IV
Skin Sensitization (guinea pigs)	Non-sensitizer	EPA Tox Category	Not available

CARCINOGEN CLASSIFICATION

Chemical Name	IARC - Group 1 (carcinogenic to humans)	IARC - Group 2A (Probably carcinogenic)	IARC - Group 2B (Possibly carcinogenic)	NTP Carcinogen List
Kaolin clay	no	no	no	Not listed
Others	no	no	no	Not listed
Clothianidin [(E)-1-(2-chloro-1,3-thiazol-5-ylmethyl)-3-methyl-2-nitroguanidine]	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.

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Developmental Toxicity: 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. No teratogenic effects on rats or rabbits were observed.

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 results were obtained from studies with Clothianidin Technical:
 LD₅₀ Japanese quail: = 430 mg/kg
 LD₅₀ Northern bobwhite: > 2000 mg/kg
 LC₅₀ Northern bobwhite: > 5200 ppm
 LC₅₀ Mallard duck: > 5200 ppm

AQUATIC ORGANISM TOXICITY: This product is toxic to aquatic invertebrates. The following are results from testing of Clothianidin Technical:
 Bluegill 96 hr. LC₅₀: > 120 mg/L
 Rainbow trout 96 hr. LC₅₀: > 100 mg/L
 Sheepshead minnow 96 hr. LC₅₀: > 100 mg/L
 Water flea 48 hr. EC₅₀: 40 mg/L
 Mysid 96 hr. LC₅₀: = 0.053 mg/L
 Algae 72 hr. ErC₅₀: > 120 mg/L
 Partition coefficient: log Pow=0.7 @ 25 C; Degradation in soil: DT₅₀: >140 days

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

TDG proper shipping name:	Not regulated.
UN/NA Number:	Not applicable
DOT (ground) shipping name:	Pesticide, Solid, Non-regulated
Technical Name (hazardous material):	Not applicable
Hazard class:	Not applicable
Packing group:	Not applicable

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14. TRANSPORT INFORMATION

DOT reportable quantity (RQ): Not applicable
 Remarks: None
 Exemption requirement: None
 Emergency Response Guidebook No.: Not applicable
 Marine pollutant: Not applicable

15. REGULATORY INFORMATION

CANADIAN REGULATIONS:

WHMIS Hazard Class: Non-controlled
 This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations (CPR)* and the MSDS contains all information required by the CPR.

Kaolin clay

Canada DSL Inventory List - Listed
 EINECS Inventory List - 310-194-1

Others

Canada DSL Inventory List - Not listed/Not determined
 Canada NDSL Inventory List - Not listed/Not determined
 EINECS Inventory List - Not listed/Not determined

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

PESTICIDE REGULATIONS: All pesticides are governed under PCPA (Pest Control Products 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.

16. OTHER INFORMATION

REASON FOR ISSUE: Added Canadian registration number (PCPA). Add a VC number.
MSDS NO.: CAN-0277
PCPA REGISTRATION NUMBER: 29383
REVISION NUMBER: 3
REVISION DATE: 08/26/2009
SUPERCEDES DATE: May 18, 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 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 are regulated by the PMRA under the authority of the Pest Control Products Act through the product labeling. All necessary and appropriate precautionary, use, storage and disposal information is set forth on the labeling. It is a violation of Federal law to use a pesticide product in a manner not prescribed on the PMRA-accepted 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. Corporaton to confirm if you have the most current MSDS.

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