MATERIAL SAFETY DATA SHEET

BAYER HEALTHCARE LLC
Animal Health Division
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(West 63rd)
Shawnee, KS 66216-1846

TRANSPORTATION EMERGENCY
CALL CHEMTREC..... : (800) 424-9300
INTERNATIONAL ..... : (703) 527-3887

NON-TRANSPORTATION
BAYER EMERGENCY PHONE : (800) 422-9874
BAYER INFORMATION PHONE: (800) 633-3796

Section 1: Product and Company Identification

Product Name:	ADVANTAGE Topical Solution
Material Number:	837885
Chemical Family:	Chloronicotinyl
Chemical Name:	1-((6-chloro-3-pyridinyl)methyl)-N -nitro-2-imidazolidinimine
Synonyms:	Imidacloprid
Formula:	Mixture

Section 2: Composition/Information on Ingredients

HAZARDOUS INGREDIENTS

Ingredient Name/ CAS Number	Exposure Limits	Concentration Min.	Concentration Max.
Aromatic alcohol CAS# is a trade secret	**OSHA (PEL):** Not Established **ACGIH (TLV):** Not Established	60%	100%
Carbonate derivative CAS# is a trade secret	**OSHA (PEL):** Not Established **ACGIH (TLV):** Not Established	10%	30%
Imidacloprid 138261-41-3	**OSHA (PEL):** Not Established **ACGIH (TLV):** Not Established	7%	13%

Section 3: Hazards Identification

EMERGENCY OVERVIEW

CAUTION! Color: Light tan to light yellow **Form:** Liquid Pipettes **Odor:** Mild
May cause respiratory tract irritation. Inhalation may cause nausea or dizziness. May cause eye irritation.

POTENTIAL HEALTH EFFECTS

Route(s) of Entry: Eye Contact, Inhalation, Skin Contact

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

Inhalation Hazards
Acute Inhalation Hazards: May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose. Overexposure to vapor may produce dizziness, drowsiness, or nausea.

Skin Hazards
Acute Skin Hazards: May cause slight irritation.

Eye Hazards
Acute Eye Hazards: May cause irritation with symptoms of reddening, tearing and stinging.

Ingestion Hazards
Acute Ingestion Hazards: Moderately toxic by ingestion.

General Effects of Exposure
Chronic Effects of Exposure: Prolonged contact with this product may cause defatting of the skin due to the solvent component in the product.

Carcinogenic Components:
NTP: None

IARC: None

OSHA: None

Medical Conditions Aggravated by Exposure: Eye disorders, Skin disorders, Respiratory tract disorders

Section 4: First Aid Measures

First Aid for Eye: Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Get medical attention if irritation develops or persists.

First Aid for Skin: In case of skin contact, wash affected areas with soap and water. Contact a physician if irritation develops.

First Aid for Inhalation: If inhaled, remove to fresh air. If breathing is difficult, give oxygen. Call a physician.

First Aid for Ingestion: Contact a physician or Poison Control Center. Give two glasses of water for dilution. Avoid alcohol. If ingested, do not induce vomiting unless directed to do so by medical personnel. Do not give anything by mouth to an unconscious person.

Note to Physician: In case of human or animal poisoning, please contact the Poison Control Center at (800)938-3578. Please also notify Bayer at (800)422-9874.

Section 5: Fire Fighting Measures

Flash Point: 210 °F

Flammable Limits:

Upper Explosion Limit (UEL %): Not Established

Lower Explosion Limit (LEL %): Not Established

Extinguishing Media:

Suitable: Water, Carbon Dioxide, Dry Chemical, Foam

Special Fire Fighting Procedures: Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. Do not allow fire fighting water to enter sewer, surface waters, or ground water systems. Equipment and materials used in fighting pesticide fires may become contaminated.

Section 6: Accidental Release Measures

Spill or Leak Procedures: Evacuate and keep unnecessary people out of spill area. Use appropriate personal protective equipment during clean up. Recover uncontaminated product, if possible. Cover spill with inert material (e. g., dry sand or earth) and collect for proper disposal. Wash spill area with soap and water. Soil, absorbents, and other materials that are contaminated by the spilled product should be collected for proper disposal. Do not allow spilled material or wash water to enter sewers, surface waters, or groundwater systems.

Section 7: Handling and Storage

Storage Temperature:

Maximum: 100 °F

Shelf Life: Not Established

Special Sensitivity: Not Established

Handling/Storage Precautions: Store in a dry place in orginal or waterproof containers. Store separate from food products. Store in an area designated specifically for pesticides. Avoid contact with eyes. Avoid excessive contact with skin or clothing.

Section 8: Exposure Controls/Personal Protection

Personal Protection Equipment

Eye Protection Requirements: Chemical safety goggles or glasses.

Skin Protection Requirements: Gloves, long sleeved shirts and pants.

Ventilation Requirements: Under normal conditions of use, special ventilation is not required.

Respirator Requirements: A NIOSH approved respirator for pesticides can be used to minimize exposure.

Additional Protective Measures: Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product. Follow all label instructions. Launder clothing separately after use. Employees should wash their hands and face before eating, drinking, or using tobacco products.

Section 9: Physical and Chemical Properties

Physical Form: Liquid
Appearance: Pipettes
Color: Light tan to light yellow
Odor: Mild
Odor Threshold: Not Established
pH: Not Applicable
Boiling Point: Not Established
Melting/Freezing Point: Not Established
Solubility in Water: Soluble
Specific Gravity: 1.093 - 1.103 @ 20 °C
Bulk Density: Not Applicable
Vapor Pressure: Not Established
Vapor Density: Not Established

Section 10: Stability and Reactivity

Stability: Stable

Hazardous Polymerization: Will not occur

Substances to Avoid: Oxidizing agents

Conditions to Avoid: Avoid extreme heat.

Decomposition Products: Carbon monoxide, Carbon Dioxide, Oxides of Nitrogen, Hydrogen cyanide, Hydrogen chloride

Section 11: Toxicological Information

Toxicity Data for ADVANTAGE Topical Solution

Acute oral toxicity: LD50 = 1,943 mg/kg bw (Male Rat)

LD50 = 1,732 mg/kg bw (Female Rat)

Acute dermal toxicity: LD50 = > 2,000 mg/kg bw (Rat)

Acute inhalation toxicity: > 2,415 mg/m3, 4 hrs, (Rat)

Eye Irritation: Moderately irritating (Rabbit)

Skin Irritation: Slightly irritating (Rabbit)

Sensitization: Non-sensitizer (Guinea pig)

Toxicity Data for Aromatic alcohol

Acute oral toxicity: LD50 = 1,230 mg/kg bw (Rat)

Eye Irritation: Moderately irritating (Rabbit)

Skin Irritation: Moderately irritating 24 h, (Rabbit)

Toxicity Data for Carbonate derivative

Acute oral toxicity: LD50 = > 5,000 mg/kg bw (Rat)

Acute dermal toxicity: LD50 = > 5,000 mg/kg bw (Rabbit)

Eye Irritation: Moderately irritating (Rabbit)

Skin Irritation: Moderately irritating (Rabbit)

Sensitization: Non-sensitizer dermal (Human) Patch Test

Mutagenicity: Ames, with/without, negative

Toxicity Data for Imidacloprid

Acute oral toxicity: LD50 = 424 mg/kg bw (Male Rat)

LD50 = 450 - 475 mg/kg bw (Female Rat)

Acute dermal toxicity: LD50 = > 5,000 mg/kg bw (Rat)

Acute inhalation toxicity: > 0.07 mg/L, 4 hrs, aerosol (Rat)

> 5.32 mg/L, 4 hrs, dust/particulate (Rat)

Eye Irritation: Minimally irritating (Rabbit)

Skin Irritation: Non-irritating (Rabbit)

Sensitization: Non-sensitizer (Guinea pig)

Carcinogenicity: Imidacloprid was investigated for carcinogenicity in chronic feeding studies using mice and rats at maximum levels of 2000 and 1800 ppm, respectively. There was no evidence of a carcinogenic potential observed in either species.

Mutagenicity: Imidacloprid was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Developmental Toxicity/Teratogenicity: No evidence of embryonic or teratogenic potential for the active ingredient in developmental rats and rabbit toxicity studies. Developmental effects in both sexes were observed only at high doses, in conjunction with material toxicity.

Toxicity to Reproduction/Fertility: Imidacloprid was not a reproductive toxicant in a multigeneration rat study.

Neurotoxicity: Rats showed slight behavioral and activity changes only at the highest dose tested in neurotoxicity studies. No correlating morphol

Section 12: Ecological Information

Ecological Data for ADVANTAGE Topical Solution
Fish Toxicity: > 105 ppm, Bluegill (Lepomis macrochirus)

Ecological Data for Aromatic alcohol
Ecological Note: No data available for this component.

Ecological Data for Carbonate derivative
Fish Toxicity: LC50 = > 1,000 mg/L, 48 hrs. Golden orfe (Leuciscus idus)

Invertebrate Toxicity: EC50 = > 500 mg/L, 24 hrs. Water flea (Daphnia magna)

Ecological Note: No data available for this component.

Ecological Data for Imidacloprid
Fish Toxicity: LC50 = 211 mg/L, 96 hrs. Rainbow (Donaldson)Trout (Oncorhynchus mykiss)

Invertebrate Toxicity: EC50 = 85 mg/L, 48 hrs. Water flea (Daphnia magna)

Plant Toxicity: Aquatic Plants growth rate = > 10 mg/L, 72 hrs.

Section 13: Disposal Considerations

Waste Disposal Method: Follow container label instructions for disposal of wastes generated during use in compliance with the FDA product label. Do not reuse container.

Section 14: Transportation Information

Technical shipping name: Pesticide

Freight Class
Bulk: Insecticides, N.O.I. (NMFC 102120)
Package: Insecticides, N.O.I. (NMFC 102120)

Domestic Surface Transportation (DOT)
Hazard Class or Division: Non-Regulated

Marine Transportation (IMO / IMDG)
Hazard Class Division Number: Non-Regulated

Air Transportation (ICAO / IATA)
Hazard Class Division Number: Non-Regulated

Section 15: Regulatory Information

United States Federal Regulations

OSHA Hazcom Standard Rating: Hazardous

TSCA Inventory List: **This product is excluded from TSCA Regulation under FIFRA Section 3 (2)(B)(ii) when used as a pesticide.**

FIFRA Status: This product is registered with the EPA under FIFRA.

CERCLA Hazardous Substance:

Component(s)	Reportable Quantity
None	

SARA Title III
SARA Section 302 Extremely Hazardous Substances:

Component(s)/ CAS Number	Concentration Min.	Concentration Max.
None		

SARA Section 311/312 Hazard Categories: Immediate Health Hazard

SARA Section 313 Toxic Chemicals:

Component(s)/ CAS Number	Reporting Threshold	Concentration Min.	Concentration Max.
None			

RCRA Status: If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine

at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

State Right-to-Know Information

Component(s)/ CAS Number	State Code	Concentration Min.	Concentration Max.
Aromatic alcohol	PA-H, NJ-N, MA-H	60%	100%
Carbonate derivative	PA-N, NJ-N	10%	30%
Imidacloprid 138261-41-3	PA-N, NJ-N	7%	13%

State Code Translation Table

PA-N = Pennsylvania Non-hazardous
PA-H = Pennsylvania Hazardous Substance List
NJ-N = New Jersey Other - includes predominant ingredients
MA-H = Massachusetts Hazardous Substance List

Section 16: Other Information

NFPA 704M Rating

Health	2
Flammability	1
Reactivity	0
Other	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

BAYER HEALTHCARE LLC's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by BAYER HEALTHCARE LLC as a customer service.

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