



**Material Safety Data Sheet**

**BAYER ADVANCED 2-IN-1 INSECT CONTROL PLUS  
FERTILIZER PLANT SPIKES**

MSDS Number: 102000007185  
MSDS Version 2.0  
Revision Date: 05/04/2007

**SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION**

**Product Name** BAYER ADVANCED 2-IN-1 INSECT CONTROL PLUS FERTILIZER PLANT SPIKES  
**MSDS Number** 102000007185  
**EPA Registration No.** 432-1399-72155

Bayer Environmental Science  
2 T.W. Alexander Drive  
Research Triangle PK, NC 27709  
USA

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)  
For Product Information call: 1-800-331-2867

**SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS**

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Imidacloprid	138261-41-3	2.50
Copper(II)-sulphate pentahydrate	7758-99-8	0.50

**SECTION 3. HAZARDS IDENTIFICATION**

*NOTE: Please refer to Section 11 for detailed toxicological information.*

**Emergency Overview** Caution! Harmful if swallowed or absorbed through skin. Causes eye irritation. Avoid contact with skin, eyes and clothing.

**Physical State** small rod

**Odor** weak characteristic

**Appearance** beige to pale grey

**Routes of Exposure** Eye contact, Skin Absorption, Ingestion, Inhalation

**Immediate Effects**

**Eye** Causes eye irritation. Avoid contact with eyes.

**Skin** Harmful if absorbed through skin. Avoid contact with skin and clothing.

**Ingestion** Harmful if swallowed. Do not take internally.

**Inhalation** May cause irritation of the mucous membranes. Avoid breathing dust.



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<b>Chronic or Delayed Long-Term</b>	This product or its components may have target organ effects.
<b>Medical Conditions Aggravated by Exposure</b>	Prolonged exposure and inhalation may aggravate pre-existing conditions of the respiratory system.
<b>Potential Environmental Effect</b>	Highly toxic to aquatic invertebrates.

**SECTION 4. FIRST AID MEASURES**

<b>General</b>	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
<b>Eye</b>	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 physician or poison control center immediately.
<b>Skin</b>	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
<b>Ingestion</b>	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.
<b>Inhalation</b>	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
<b>Notes to Physician Treatment</b>	Treat symptomatically. Monitoring of respiratory and cardiac functions. Gastric lavage, then charcoal (carbo medicalis) and sodium sulfate.

**SECTION 5. FIRE FIGHTING MEASURES**

<b>Fire and Explosion Hazards</b>	In the event of fire the following can be released: hydrogen chloride (HCl) Hydrogen cyanide (hydrocyanic acid) carbon monoxide (CO) nitrogen oxides (NOx)
<b>Suitable Extinguishing Media</b>	Water spray, Carbon dioxide (CO2), Foam, Sand



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**Fire Fighting Instructions**                      Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.

In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

**Personal Precautions**                      Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.

**Methods for Cleaning Up**                Use mechanical handling equipment. Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.

**Additional Advice**                          Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.

**SECTION 7. HANDLING AND STORAGE**

**Handling Procedures**                      No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice.

**Storing Procedures**                        Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container. Store in a place accessible by authorized persons only.

Keep away from food, drink and animal feedingstuffs.

**Min/Max Storage Temperatures**        Do not transport or store above 38 °C / 100 °F  
The 30-day storage temperature average must not exceed the recommended maximum.

**SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**General Protection**                        There are no known hazards associated with this product when used according to the label directions. The following guidelines should be followed.

Avoid contact with skin and eyes. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

**Eye/Face Protection**                      Safety glasses

**Hand Protection**                            Chemical resistant nitrile rubber gloves



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**Exposure Limits**

Copper(II)-sulphate pentahydrate	7758-99-8	NIOSH	REL	1 mg/m3
		Expressed as	as Cu	
		Form of exposure	Dust and mist.	
		ACGIH NIC	TWA	0.05 mg/m3
		Expressed as	as Cu	
		Form of exposure	Respirable fraction.	
		US CA OEL	TWA PEL	1 mg/m3
		Expressed as	as Cu	
		Form of exposure	Dust and mist.	
Starch	9005-25-8	ACGIH	TWA	10 mg/m3
		NIOSH	REL	5 mg/m3
		Form of exposure	Respirable.	
		NIOSH	REL	10 mg/m3
		Form of exposure	Total	
		OSHA Z1	PEL	5 mg/m3
		Form of exposure	Respirable fraction.	
		OSHA Z1	PEL	15 mg/m3
		Form of exposure	Total dust.	
		OSHA Z1A	TWA	5 mg/m3
		Form of exposure	Respirable fraction.	
		OSHA Z1A	TWA	15 mg/m3
		Form of exposure	Total dust.	
		US CA OEL	TWA PEL	5 mg/m3
		Form of exposure	Respirable fraction.	
		US CA OEL	TWA PEL	10 mg/m3
		Form of exposure	Total dust.	
		Z3	TWA	15 millions of particles per cubic foot of air
		Form of exposure	Respirable fraction.	
		Z3	TWA	50 millions of particles per cubic foot of air
		Form of exposure	Total dust.	
		Z3	TWA	5 mg/m3
		Form of exposure	Respirable fraction.	
		Z3	TWA	15 mg/m3
		Form of exposure	Total dust.	

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	beige to pale grey
<b>Physical State</b>	small rod
<b>Odor</b>	weak characteristic



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<b>pH</b>	6.4 (10 %) at 25 °C
<b>Density</b>	1.61 g/cm <sup>3</sup>
<b>Water solubility</b>	not dispersible
<b>Decomposition Temperature</b>	from 175 °C Heating rate: 3 K/min

**SECTION 10. STABILITY AND REACTIVITY**

<b>Hazardous Reactions</b>	No hazardous reactions when stored and handled according to prescribed instructions.  Stable under recommended storage conditions.
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**SECTION 11. TOXICOLOGICAL INFORMATION**

Acute toxicity data have been bridged from a granular formulation containing a similar percentage of the active ingredient, imidacloprid. The non-acute information pertains to the technical-grade active ingredient.

<b>Acute Oral Toxicity</b>	rat: LD50: > 4,820 mg/kg
<b>Acute Dermal Toxicity</b>	rabbit: LD50: > 2,000 mg/kg
<b>Acute Inhalation Toxicity</b>	rat: LC50: > 5.1 mg/l Exposure time: 4 h Determined in the form of dust.  rat: LC50: > 20 mg/l Exposure time: 1 h Determined in the form of dust. Extrapolated from the 4 hr LC50.
<b>Skin Irritation</b>	rabbit: No skin irritation.
<b>Eye Irritation</b>	rabbit: Mild eye irritation.
<b>Sensitization</b>	guinea pig: Non-sensitizing.
<b>Chronic Toxicity</b>	Imidacloprid caused thyroid and/or liver effects in chronic dietary studies in rats and dogs.

**Assessment Carcinogenicity**

Imidacloprid was not carcinogenic in studies in rats and mice.

**ACGIH**



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None.  
**NTP**  
None.  
**IARC**  
None.  
**OSHA**  
None.

**Reproductive & Developmental Toxicity**      REPRODUCTION: Imidacloprid was not a reproductive toxicant in a multi-generation study in rats.

DEVELOPMENTAL TOXICITY: Imidacloprid is not considered a primary developmental toxicant in rats and rabbits. Developmental effects were observed at doses that caused maternal toxicity.

**Neurotoxicity**      Imidacloprid showed slight behavioral and activity changes only at the highest dose tested in neurotoxicity studies in rats. There were no correlating morphological changes observed in the neural tissues.

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

**SECTION 12. ECOLOGICAL INFORMATION**

**Toxicity to Fish**      Rainbow trout (*Oncorhynchus mykiss*)  
LC50: 211 mg/l  
Exposure time: 96 h  
The value mentioned relates to the active ingredient imidacloprid.

**Toxicity to Aquatic Plants**      *Desmodium subspicatus*  
Growth rate  
EC50: > 10 mg/l  
Exposure time: 72 h  
The value mentioned relates to the active ingredient imidacloprid.

**Acute Toxicity to Aquatic Invertebrates**      Water flea (*Daphnia magna*)  
EC50: 85 mg/l  
Exposure time: 48 h  
The value mentioned relates to the active ingredient imidacloprid.

**Environmental Precautions**      Do not allow to get into surface water, drains and ground water.



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**SECTION 13. DISPOSAL CONSIDERATIONS**

**General Disposal Guidance** In accordance with current regulations and, if necessary, after consultation with the site operator and/or with the responsible authority, the product may be taken to a waste disposal site or incineration plant.

**Container Disposal** Do not re-use empty containers. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning. If burned, stay out of smoke. Follow advice on product label and/or leaflet.

**SECTION 14. TRANSPORT INFORMATION**

DOT CLASSIFICATION:  
Not regulated for Domestic Surface Transportation

FREIGHT CLASSIFICATION:  
Insecticides or Fungicides, N.O.I.; other than poison

**SECTION 15. REGULATORY INFORMATION**

**EPA Registration No.** 432-1399-72155

**US Federal Regulations**

**TSCA list**

None.

**US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)**

None.

**SARA Title III - Section 302 - Notification and Information**

None.

**SARA Title III - Section 313 - Toxic Chemical Release Reporting**

Copper(II)-sulphate pentahydrate 7758-99-8 1.0%

**US States Regulatory Reporting**

**CA Prop65**

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

**US State Right-To-Know Ingredients**

Copper(II)-sulphate pentahydrate 7758-99-8 CA, CT, IL, MI, NJ, PA

**Canadian Regulations**

**Canadian Domestic Substance List**



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None.

**Environmental**

**CERCLA**

Copper(II)-sulphate pentahydrate 7758-99-8 10 lbs

**Clean Water Section 307 Priority Pollutants**

None.

**Safe Drinking Water Act Maximum Contaminant Levels**

None.

**SECTION 16. OTHER INFORMATION**

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 1 Reactivity - 1 Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason to Revise: Updated for general editorial purposes. Updated due to new system and numbering scheme. Updated Section 11: Toxicological Information.

Revision Date: 05/04/2007

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