Material Safety Data Sheet
BAYER ADVANCED SEASON LONG GRUB CONTROL GRANULES

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

<table>
<thead>
<tr>
<th>Product Name</th>
<th>BAYER ADVANCED SEASON LONG GRUB CONTROL GRANULES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSDS Number</td>
<td>102000012223</td>
</tr>
<tr>
<td>EPA Registration No.</td>
<td>72155-36</td>
</tr>
<tr>
<td>Product Use</td>
<td>For fertilization and insect control in turfgrass and landscape ornamentals.</td>
</tr>
</tbody>
</table>

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

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

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Component Name</th>
<th>CAS-No.</th>
<th>Average % by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imidacloprid</td>
<td>138261-41-3</td>
<td>0.25</td>
</tr>
</tbody>
</table>

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. Wash thoroughly with soap and water after handling.

Physical State
solid granular

Appearance
various, depending on coloration

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

Immediate Effects
Eye
Causes eye irritation. Do not get in eyes.

Skin
May cause irritation. Avoid contact with skin and clothing.

Ingestion
Harmful if swallowed. Do not take internally.

Inhalation
Inhalation not likely. Avoid breathing dust.
Medical Conditions Aggravated by Exposure
No specific medical conditions are known which may be aggravated by exposure to this product.

SECTION 4. FIRST AID MEASURES

General
Have the product container or label with you when calling a poison control center or doctor for treatment.

Eye
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
Take off all contaminated clothing immediately. Rinse immediately with plenty of water for at least 15 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 directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person.

Inhalation
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 poison control center or doctor for further treatment advice.

Notes to Physician Treatment
There is no specific antidote. Treat symptomatically.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point
not applicable

Fire and Explosion Hazards
Under fire conditions, toxic, corrosive fumes are emitted.

Suitable Extinguishing Media
water, carbon dioxide (CO2), dry chemical, foam

Fire Fighting Instructions
Keep out of smoke. Fight fire from upwind position. Do not allow run-off from fire fighting to enter drains or water courses. Equipment or materials involved in pesticide fires may become contaminated.

Wear self-contained breathing apparatus and protective suit.
SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions  Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods for Cleaning Up  Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional Advice  Use personal protective equipment. Do not allow material to enter streams, sewers, or other waterways.

SECTION 7. HANDLING AND STORAGE

Handling Procedures  Handle and open container in a manner as to prevent spillage.

Storing Procedures  Do not contaminate water, food, or feed by storage or disposal.

Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

Work/Hygienic Procedures  Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. As soon as practical, wash thoroughly and change into clean clothing.

Min/Max Storage Temperatures  30 day average not to exceed 38°C (100°F)

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection  There are no known hazards associated with this product when used according to the label directions. At the same time, the following guidelines should be used.

Avoid breathing dust. Avoid contact with skin and eyes.

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Do not allow children or pets on treated areas until granules have been watered into the soil and the grass or soil is dry.

Hand Protection  Chemical resistant gloves made of waterproof material such as polyethylene or polyvinyl chloride.
Body Protection
Wear long-sleeved shirt and long pants and shoes plus socks.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
various, depending on coloration

Physical State
solid granular

Bulk Density
32 - 40 lbs/cu. ft.

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability
Stable under recommended storage conditions.

Conditions to Avoid
Exposure to extreme heat.

Hazardous Decomposition Products
Thermal decomposition
hydrogen chloride (HCl)
hydrogen cyanide (hydrocyanic acid)
Carbon monoxide
nitrogen oxides (NOx)
ammonia
biuret
cyanuric acid
oxides of iron
oxides of magnesium
oxides of manganese
oxides of phosphorus
oxides of potassium
formaldehyde
Sulphur oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity studies have not been conducted on this product as formulated. The acute toxicity data provided has been bridged from a similar product, Merit 0.5% on 32-5-7 Granular Fertilizer. The non-acute information pertains to the active ingredient, imidacloprid technical.

Acute Oral Toxicity
male/female rat: LD50: > 5,136 mg/kg

Acute Dermal Toxicity
male/female rat: LD50: > 2,000 mg/kg
Acute Inhalation Toxicity  
- male/female rat: LC50: > 5.016 mg/l  
- Exposure time: 4 h  
- (actual)  
- Determined in the form of dust.  
- male/female rat: LC50: > 20 mg/l  
- Exposure time: 1 h  
- Determined in the form of dust.  
- Extrapolated from the 4 hr LC50.  
- (actual)

Skin Irritation  
rabbit: Mild skin irritation

Eye Irritation  
rabbit: Mild eye irritation

Sensitization  
guinea pig: Non-sensitizing

Subchronic Toxicity  
In a 3-week dermal toxicity study, rabbits treated with imidacloprid showed no local or systemic effects at levels up to and including 1000 mg/kg, the limit dose.  
In a 4-week inhalation study, rats exposed to high concentrations of imidacloprid exhibited decreased body weight gains and changes in clinical chemistries and organ weights.

Chronic Toxicity  
In chronic dietary studies in rats and dogs exposed to imidacloprid, the target organs were the thyroids and/or liver.

Assessment Carcinogenicity  
In oncogenicity studies in rats and mice, imidacloprid was not considered carcinogenic in either species.

ACGIH  
None.

NTP  
None.

IARC  
None.

OSHA  
None.

Reproductive & Developmental Toxicity  
REPRODUCTION: In a two-generation reproduction study in rats, imidacloprid was not a primary reproductive toxicant. Offspring exhibited reduced body weights at the high dose and in conjunction with maternal toxicity.  
DEVELOPMENTAL TOXICITY: In developmental toxicity studies in rats and rabbits, there was no evidence of an embryotoxic or teratogenic potential for imidacloprid. In both species, developmental effects were observed only at high doses and in conjunction with maternal toxicity.

Neurotoxicity  
In acute and subchronic neurotoxicity screening studies in rats, imidacloprid
produced slight neurobehavioral effects in each study at the highest dose tested. There were no correlating morphological changes observed in the neural tissues.

In a one-generation developmental neurotoxicity screening study in rats, offspring exposed to imidacloprid showed decreased motor activities. These effects occurred at the highest dose tested and in conjunction with maternal toxicity. There were no correlating morphological changes observed in the neural tissues.

**Mutagenicity**
The imidacloprid mutagenicity studies, taken collectively, demonstrate that the active ingredient is not genotoxic or mutagenic.

### SECTION 12. ECOLOGICAL INFORMATION

#### Environmental Precautions
This product is toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product only as specified on the label.

#### Ecological Information
This chemical demonstrates the properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

### SECTION 13. DISPOSAL CONSIDERATIONS

#### General Disposal Guidance
Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

#### Container Disposal
Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities. If burned, stay out of smoke.

### SECTION 14. TRANSPORT INFORMATION

**TRANSPORTATION CLASSIFICATION:**
Not regulated for transportation

**FREIGHT CLASSIFICATION:**
Fertilizing Compounds, N.O.I., Dry, having a density of equal to or greater than 20 LBS. per cubic foot

### SECTION 15. REGULATORY INFORMATION
Material Safety Data Sheet
BAYER ADVANCED SEASON LONG GRUB CONTROL GRANULES

EPA Registration No. 72155-36

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
None.

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
None.

Canadian Regulations
Canadian Domestic Substance List
None.

Environmental
CERCLA
None.

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 bulk density in Section 9.
Revision Date: 08/10/2005

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.