SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name: GUTHION® SOLUPAK 50% WETTABLE POWDER CROP INSECTICIDE IN WATER SOLUBLE PACKETS
MSDS Number: 102000014237
EPA Registration No.: 264-733

Bayer CropScience
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: 1-866-99BAYER (1-866-992-2937)

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>Azinphos-methyl</td>
<td>86-50-0</td>
<td>50.00</td>
</tr>
</tbody>
</table>

SECTION 3. HAZARDS IDENTIFICATION

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

Emergency Overview: Danger! Fatal if swallowed. May be fatal if inhaled. Harmful if absorbed through skin. Moderate eye irritation. Do not breathe dust or spray mist. Do not get in eyes, on skin, or on clothing. Cholinesterase inhibitor. Extremely toxic to fish.

Physical State: powder

Odor: sulfur-like

Appearance: tan

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

Immediate Effects:
- Eye: Moderate eye irritation. Do not get in eyes.
- Skin: Causes skin irritation. May produce symptoms similar to those from ingestion. Harmful if absorbed through skin. Avoid contact with skin and clothing.
Ingestion
Cause nausea, vomiting, diarrhea, abdominal cramps, excess salivation, pinpoint pupils, blurred vision, profuse sweating, muscle spasms. Fatal if swallowed. Do not take internally.

Inhalation
May produce symptoms similar to those from ingestion. May be fatal if inhaled. Do not breathe dust or spray mist.

Chronic or Delayed Long-Term
This product or its components may have target organ effects.

Medical Conditions Aggravated by Exposure
No specific medical conditions are known which may be aggravated by exposure to this product. Any disease, medication or prior exposure which reduces normal cholinesterase activity may increase susceptibility to the toxic effects of the active ingredient.

SECTION 4. FIRST AID MEASURES

General
When possible, have the product container or label with you when calling a poison control center or doctor or going 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 physician or poison control center immediately.

Skin
Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Call a physician or poison control center immediately.

Ingestion
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.

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 physician or poison control center immediately.

Notes to Physician Hazards
This product is a cholinesterase inhibiting organophosphorous pesticide.

Treatment
ANTIDOTE: Administer atropine sulfate in large therapeutic doses. Repeat as necessary to the point of tolerance. 2-PAM is also antidotal and may be administered in conjunction with atropine.

The product inhibits cholinesterase resulting in stimulation of the central nervous system, the parasympathetic nervous system, and the somatic motor nerves. Do not give morphine. Watch for pulmonary edema, which may develop in serious cases of poisoning even after 24-48 hours. At first sign of pulmonary edema, the
patient should be placed in an oxygen tent and treated symptomatically.

SECTION 5. FIRE FIGHTING MEASURES

| Flash Point | not applicable |
| Fire and Explosion Hazards | Accumulation of fine dust may entail the risk of a dust explosion in the presence of air. Heating or fire can release toxic gas. |
| Suitable Extinguishing Media | water, foam, dry chemical, carbon dioxide (CO2) |
| Fire Fighting Instructions | Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Dike area to prevent runoff and contamination of water sources. Equipment or materials involved in pesticide fires may become contaminated. Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing. |

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 product to enter streams, sewers or other waterways. Do not allow product to contact vegetation. |

SECTION 7. HANDLING AND STORAGE

| Handling Procedures | Handle and open container in a manner as to prevent spillage. Keep away from heat and flame. |
| Storing Procedures | 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 | Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. |
Take off contaminated clothing and shoes immediately. Then wash thoroughly and put on clean clothing.

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
Do not transport or store below 0 °C / 32 °F
30 day average temperature not to exceed 37.8°C / 100°F

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection
Follow all label instructions. Train employees in safe use of the product.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

Engineering Controls
Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.

Eye/Face Protection
tightly fitting safety goggles

Hand Protection
Chemical resistant nitrile rubber gloves

Body Protection
Wear long-sleeved shirt and long pants and shoes plus socks.

Respiratory Protection
When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or Industry recommendations.

Exposure Limits
This product contains material which are Trade Secret and may have Occupational Exposure Limits. If more information is required, call the product information number listed in Section 1.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>ACGIH</th>
<th>TWA</th>
<th>Certain Form of Exposure</th>
<th>Inhalable fraction and vapor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azinphos-methyl</td>
<td>86-50-0</td>
<td></td>
<td>NIOSH REL</td>
<td>0.2 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OSHA Z1 PEL</td>
<td>0.2 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OSHA Z1A TWA</td>
<td>0.2 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>US CA OEL TWA PEL</td>
<td>0.2 mg/m3</td>
</tr>
</tbody>
</table>
### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>tan</td>
</tr>
<tr>
<td>Physical State</td>
<td>powder</td>
</tr>
<tr>
<td>Odor</td>
<td>sulfur-like</td>
</tr>
<tr>
<td>pH</td>
<td>5.3 (10 %)</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>12 - 16 lb./cu.ft. fluffed</td>
</tr>
<tr>
<td></td>
<td>21 - 25 lb./cu.ft. packed</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>The substance decomposes before reaching the boiling point.</td>
</tr>
</tbody>
</table>

### SECTION 10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Stability</td>
<td>Stable</td>
</tr>
<tr>
<td>Conditions to Avoid</td>
<td>Sustained temperatures above 37.8 °C (100 °F).</td>
</tr>
<tr>
<td>Incompatibility</td>
<td>strong oxidizing agents bases</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>In case of fire hazardous decomposition products may be produced such as: hydrogen sulfide dimethyl sulphide sulfur dioxide Carbon monoxide</td>
</tr>
<tr>
<td>Hazardous Reactions</td>
<td>No hazardous reactions when stored and handled according to prescribed instructions.</td>
</tr>
</tbody>
</table>

### SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on this product as formulated. The non-acute information pertains to the active ingredient, azinphos-methyl.

<table>
<thead>
<tr>
<th>Toxicity Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Oral Toxicity</td>
<td>male rat: LD50: 12.3 mg/kg</td>
</tr>
<tr>
<td></td>
<td>female rat: LD50: 24.7 mg/kg</td>
</tr>
<tr>
<td>Acute Dermal Toxicity</td>
<td>male/female rat: LD50: &gt; 2,000 mg/kg</td>
</tr>
</tbody>
</table>
Acute Inhalation Toxicity

male rat: LC50: 0.166 mg/l
Exposure time: 4 h
Determined in the form of dust.
(actual)

female rat: LC50: ca. 0.146 mg/l
Exposure time: 4 h
Determined in the form of dust.
(actual)

male rat: LC50: 0.664 mg/l
Exposure time: 1 h
Determined in the form of dust.
Extrapolated from the 4 hr LC50.
(actual)

female rat: LC50: 0.584 mg/l
Exposure time: 1 h
Determined in the form of dust.
Extrapolated from the 4 hr LC50.
(actual)

Skin Irritation
rabbit: Moderate skin irritation.

Eye Irritation
rabbit: Mild eye irritation.

Sensitization
guinea pig: Non-sensitizing.

Chronic Toxicity
Major effects in rats and dogs from long-term exposure to azinphos-methyl included alopecia, diarrhea, reduced body weight gains, elevated liver enzymes and/or cholinesterase inhibition.

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

ACGIH
Azinphos-methyl 86-50-0
NTP
None.
IARC
None.
OSHA
None.

Reproductive & Developmental Toxicity
REPRODUCTION: Azinphos-methyl was not a primary reproductive toxicant in a two-generation study in rats. Reproductive effects observed occurred only in conjunction with maternal toxicity.
DEVELOPMENTAL TOXICITY: Azinphos-methyl did not produce any developmental, embryonic or teratogenic effects in developmental toxicity studies in rats and rabbits.

Neurotoxicity

There was no evidence of delayed neurotoxicity in hens treated by oral gavage with azinphos-methyl.

Azinphos-methyl produced clinical signs of toxicity, cholinesterase inhibition and neurobehavioral effects in acute and subchronic neurotoxicity screening studies in rats. All of these effects were ascribed to cholinergic toxicity. There were no correlative micropathologic findings within the skeletal muscles or neural tissues.

Azinphos-methyl caused a dose-related increase in cholinesterase inhibition in dams in a developmental neurotoxicity screening study in rats. There was no detectable effect on the offspring, including cholinesterase inhibition.

Mutagenicity

Several positive in vitro mutagenicity studies have been reported on azinphos-methyl, however, negative results have been obtained in all in vivo studies conducted on azinphos-methyl.

SECTION 12. ECOLOGICAL INFORMATION

Environmental Precautions

Highly toxic to bees. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

Extremely toxic to fish. Toxic to wildlife. For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Drift or run-off from treated areas may be hazardous to aquatic organisms in neighboring areas. Apply this product only as specified on the label.
SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance
Pesticide wastes are acutely hazardous. Follow container label instructions for disposal of wastes generated during use in compliance with the product label. The product should not be allowed to enter drains, water courses or the soil.

Container Disposal
Do not re-use empty containers. 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. Refer to the product label for other disposal instructions.

SECTION 14. TRANSPORT INFORMATION

TRANSPORTATION CLASSIFICATION:
Organophosphorus Pesticides, Solid, Toxic // 6.1 // UN2783 // PG II // RQ (Guthion)

FREIGHT CLASSIFICATION:
Insecticides or Fungicides, N.O.I.; poison, other than gases that are poisonous by inhalation

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 264-733

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
Azinphos-methyl 86-50-0
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
Azinphos-methyl 86-50-0 CA, CT, IL, LA, MA, MN, NJ, PA, RI

Canadian Regulations
Canadian Domestic Substance List
Environmental
*CERCLA*
Azinphos-methyl 86-50-0 1 lbs

*Clean Water Section 307 Priority Pollutants*
None.

*Safe Drinking Water Act Maximum Contaminant Levels*
None.

International Regulations
*European Inventory of Existing Commercial Substances (EINECS)*
Azinphos-methyl 86-50-0

**SECTION 16. OTHER INFORMATION**

NFPA 704 (National Fire Protection Association):
Health - 3  Flammability - 2  Reactivity - 2  Others - none
0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason to Revise: Re-numbered due to system update; Updated sections as needed.

Revision Date: 05/12/2006

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.