



MSDS Number: R000008625

AZTEC® 2.1% Granular Insecticide

MSDS Version 2.0

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name AZTEC® 2.1% Granular Insecticide
Chemical Name
Common Name
MSDS Number R000008625
Chemical Family
Chemical Formulation
EPA Registration No. 264-813

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)

Product Use Description Insecticide for control of corn rootworms, cutworms and other soil insect pests in corn.

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS No.</u>	<u>Concentration % by Weight</u>	
		<u>Minimum</u>	<u>Maximum</u>
Tebupirimphos Technical	96182-53-5	1.9000	2.1000
Cyfluthrin Technical	68359-37-5	0.0900	0.1100
Crystalline Silica (Quartz)	14808-60-7	6.2300	9.4500

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SECTION 3. HAZARDS IDENTIFICATION

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

Emergency Overview

Warning! May be fatal if swallowed. Harmful if inhaled or absorbed through skin. Causes moderate eye irritation. Avoid breathing dust or vapor. Avoid contact with skin, eyes and clothing.

Physical State

Granules

Odor

Slight Mercaptan like

Appearance

Grey Tan or Reddish

Routes of Exposure

Inhalation, skin contact, skin absorption, eye contact.

Immediate Effects

General

CARCINOGENICITY: This product is not listed as a carcinogen by NTP or IARC, or regulated as a carcinogen by OSHA. However, it may contain crystalline silica (quartz), a substance which is classified by NTP as a Group 2 carcinogen and by IARC as a Group I carcinogen. Crystalline silica is a naturally-occurring mineral component of many sands and clays. Although controversial, the carcinogenic potential of crystalline silica must be considered if it is inhaled under excessive exposure conditions. However, the respirable portion of the silica which may be contained in this product is small, such that excessive inhalation exposure during normal conditions of use is unlikely.

NTP: Crystalline silica is classified as an NTP Anticipated Human Carcinogen - "Substances or groups of substances that may reasonably be anticipated to be carcinogens."

IARC: IARC has classified crystalline silica as a Group I carcinogen. "There is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica (quartz) from occupational sources."

OSHA: Not regulated.

Eye

Avoid contact with eyes. Causes moderate eye irritation.

Skin

Harmful if absorbed through skin. May cause irritation, redness. May cause a transient, localized parasthesia, characterized by tingling, burning or numbness sensation in some individuals.

Ingestion

May be fatal if swallowed. Do not take internally.

Inhalation

Harmful if inhaled. Do not breathe vapours/dust. May cause respiratory tract irritation.

Chronic or Delayed Long-Term

This product contains respirable crystalline silica. Excessive long-term exposure to respirable crystalline silica may cause silicosis, a form of progressive

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pulmonary fibrosis. Severe and permanent lung damage may result.

Medical Conditions Aggravated by Exposure

Any disease, medication or prior exposure which reduces normal cholinesterase activity may increase susceptibility to the toxic effects of the active ingredient. No specific medical conditions are known which may be aggravated by exposure to this product. As with all materials which can cause upper respiratory tract irritation, persons with a history of asthma, emphysema, or hyperreactive airways disease may be more susceptible to overexposure.

Pulmonary and respiratory diseases may be aggravated by exposure to respirable crystalline silica.

SECTION 4. FIRST AID MEASURES

General

This product is a cholinesterase inhibiting organophosphorous pesticide.

This product causes reversible cholinesterase inhibition. Repeated overexposure may cause more severe cholinesterase inhibition with more pronounced signs and symptoms.

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 contaminated clothing. Rinse skin immediately with plenty of water for 15-20 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 told to do so by a poison control center 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 mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Notes to physician

Signs and Symptoms

Repeated overexposure may cause more severe cholinesterase inhibition with more pronounced signs and symptoms. Symptoms of poisoning may not appear for several hours. Keep under medical supervision for at least 48 hours.

The symptoms of cholinesterase inhibition include:

nausea

salivation

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blurred vision

excessive lachrymation

constriction of pupils

Hazards This product is a cholinesterase inhibitor. Allow no further exposure to any cholinesterase inhibitor until full recovery is assured.

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. Compound 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

Suitable Extinguishing Media Water, Dry chemical

Fire Fighting Instructions Keep out of smoke. Cool exposed containers with water spray. Fight fire from upwind position. Use self-contained breathing equipment. Contain runoff to prevent entry into sewers or waterways. Equipment or materials involved in pesticide fires may become contaminated.

SECTION 6. ACCIDENTAL RELEASE MEASURES

General and Disposal Keep unnecessary people away, isolate hazard area and deny entry. Avoid contact with spilled product or contaminated surfaces.

Land Spill or Leaks Avoid creation of dusty conditions. Avoid breathing dusts and skin contact. Use recommended protective equipment while carefully sweeping up spilled material. Place in covered container for reuse or disposal. Scrub contaminated area with soap and water. Rinse with water. Use dry absorbent material such as clay granules to absorb and collect wash solution for proper disposal. Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers, or other waterways or contact vegetation.

SECTION 7. HANDLING AND STORAGE

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

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Keep out of the reach of children.

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 before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. As soon as practical, wash thoroughly and change into clean clothing.

Min/Max Storage Temperatures

Do not transport or store above 38 °C / 100 °F

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

When handlers use closed systems, enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Eye/Face Protection

Protective eyewear

Hand Protection

Chemical-resistant gloves.

Waterproof gloves

Body Protection

Long-sleeved shirt and long pants.

Shoes plus socks.

Respiratory Protection

A dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C) or a NIOSH approved respirator with any N, R, P or HE filter.

General Protection

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

Exposure Limits

Crystalline Silica
(Quartz)

14808-60-7

NIOSH

REL

0.05 mg/m3

Form of Exposure Respirable dust.

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OSHA Z1A	TWA		0.1 mg/m3
Form of Exposure		Respirable dust.	
US CA OEL	TWA PEL		0.1 mg/m3
Form of Exposure		Respirable dust.	
US CA OEL	TWA PEL		0.3 mg/m3
Form of Exposure		Total dust.	
ACGIH	TWA		0.05 mg/m3

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Grey Tan or Reddish
Physical State	Granules
Odor	Slight Mercaptan like
Bulk Density	35-45 lbs/cu ft

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	This material is stable under normal handling and storage conditions described in Section 7.
Conditions to Avoid	Heat Moisture
Incompatibility	Strong bases Strong oxidizers Methanol
Hazardous Polymerization (Conditions to avoid)	Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on this product as formulated. The non-acute toxicological information pertains to the active ingredients, tebuiprimphos and cyfluthrin.

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Acute Oral Toxicity	Male Rat: LD50: 190 mg/kg Female Rat: LD50: 132 mg/kg
Acute Dermal Toxicity	Male and Female Rabbit: LD50: > 2,000 mg/kg
Acute Inhalation Toxicity	Male Rat: LC50: 4-hr exposure to dust: > 4.920 mg/l (actual) Female Rat: LC50: 4-hr exposure to dust: 2.860 mg/l (actual) Male Rat: 1-hr exposure to dust (extrapolated from 4-hr LC50): > 19.68 mg/l (actual) Female Rat: 1-hr exposure to dust (extrapolated from 4-hr LC50): 11.44 mg/l (actual)
Skin Irritation	Rabbit: Mild skin irritant.
Eye Irritation	Rabbit: Mild eye irritant.
Sensitization	Guinea pig: Not a skin sensitizer.
Sub-Chronic Toxicity	TEBUPIRIMPHOS TECHNICAL Tebupirimphos caused cholinesterase inhibition in subacute toxicity studies in rats via dietary and inhalation exposure, and in rabbits via dermal exposure. Cholinergic symptoms were observed in rabbits at the high dose. CYFLUTHRIN TECHNICAL In a 3 week dermal toxicity study in rats treated with cyfluthrin, effects observed included clinical signs of toxicity, as well as, topical and microscopic alterations in the treated tissue at the dose site. In a 13 week inhalation study in rats exposed to cyfluthrin, effects included reduced body weight gains and non-specific behavioral disturbances at the mid- and high concentrations (0.71 and 4.5 mg/m ³).
Chronic Toxicity	TEBUPIRIMPHOS TECHNICAL Cholinesterase inhibition was the primary effect in chronic feeding studies in rats, mice and dogs treated with tebupirimphos. CYFLUTHRIN TECHNICAL In chronic dietary studies in rats treated with cyfluthrin, compound-related effects included decreased body weight gains and slight changes in clinical chemistries. In chronic dietary studies in dogs treated with cyfluthrin, compound-related effects were observed at the higher concentrations (>360 ppm). These effects included an increased incidence of vomiting, decreased body weights, soft feces and clinical neurological symptoms.

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Assessment Carcinogenicity

TEBUPIRIMPHOS TECHNICAL

In oncogenicity studies in rats and mice, tebupirimphos was not considered carcinogenic in either species.

CYFLUTHRIN TECHNICAL

In oncogenicity studies in rats and mice, cyfluthrin was not considered carcinogenic in either species

ACGIH

Crystalline Silica (Quartz) 14808-60-7 Group A2

NTP

Crystalline Silica (Quartz) 14808-60-7

IARC

OSHA

None

Reproductive & Developmental Toxicity

TEBUPIRIMPHOS TECHNICAL

REPRODUCTION: Reproductive effects occurred in conjunction with maternal toxicity at the high dose in a two generation study in rats treated with tebupirimphos. These effects included clinical signs of toxicity, cholinesterase inhibition, and decreases in fertility, growth and survival rates.

DEVELOPMENTAL TOXICITY: There was no evidence of a teratogenic potential for tebupirimphos in developmental toxicity studies in rats and rabbits. In rabbits, there was an increased incidence of resorptions observed at the high dose in conjunction with maternal toxicity.

CYFLUTHRIN TECHNICAL

REPRODUCTION: In reproduction studies in rats treated with cyfluthrin, reproductive effects occurred in conjunction with parental toxicity. These effects included reductions in viability, lactation, litter size, feed consumption and body weights. In addition, coarse tremors were observed in offspring at higher concentrations (>125 ppm).

DEVELOPMENTAL TOXICITY: In developmental toxicity studies in rats treated with cyfluthrin, there were no embryotoxic or teratogenic effects via the oral route of exposure. When rats were exposed to cyfluthrin via inhalation, embryotoxic effects occurred in conjunction with maternal toxicity. In rabbits treated orally with cyfluthrin, there was an increased incidence of post-implantation losses at maternally toxic dose levels.

Neurotoxicity

TEBUPIRIMPHOS TECHNICAL

There was no evidence of a neurotoxic effect in antidote protected hens treated by oral gavage with tebupirimphos.

Tebupirimphos has been investigated in acute and subchronic neurotoxicity screening studies in rats. All clinical signs and neurobehavioral effects observed were ascribed to cholinergic toxicity occurring at exposure levels that produced substantial inhibition of cholinesterase activity. There were no correlative morphological changes observed within the skeletal muscle or neural tissues.

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CYFLUTHRIN TECHNICAL

In neurotoxicity studies with cyfluthrin, minimal nerve damage occurred in rats and hens treated by oral gavage. In dermal and inhalation studies, which are more relevant to field exposure, there was no evidence of delayed neurotoxicity in hens treated with cyfluthrin.

In a special investigative inhalation study with cyfluthrin in neonatal mice, effects observed included clinical signs of toxicity, mortality and neurobehavioral effects indicative of treatment-related hyperactivity. There were no correlating morphological changes in neural tissues in mice at 4 months of age.

Mutagenicity

TEBUPIRIMPHOS TECHNICAL

Numerous in vitro and in vivo mutagenicity studies have been conducted on tebupirimphos, all of which are negative.

CYFLUTHRIN TECHNICAL

Numerous in vitro and in vivo mutagenicity studies have been conducted on cyfluthrin, all of which are negative.

SECTION 12. ECOLOGICAL INFORMATION

Environmental Precautions

This product is toxic to fish and wildlife. 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 washwater.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance

Pesticide Disposal: Do not contaminate water, food, or feed by storage or disposal. 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 bag into application equipment. If burned, stay out of smoke.

RCRA Classification

Not Regulated under this Statute

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SECTION 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:

Organophosphorus Pesticides, Solid, Toxic // 6.1 // UN2783 // PG III // NAERG 152

IMDG CLASSIFICATION:

Organophosphorus Pesticides, Solid, Toxic (Tebupirimphos) // 6.1 // UN2783 // PG III // NAERG 152

FREIGHT CLASSIFICATION:

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

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 264-813

US Federal Regulations

TSCA list

Crystalline Silica (Quartz) 14808-60-7

TSCA 12b export notification

None

SARA Title III - section 302 - notification and information

None

SARA Title III - section 313 - toxic chemical release reporting

Cyfluthrin Technical 68359-37-5 1.0%

US States Regulatory Reporting

CA Prop65

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

US State right-to-know ingredients

Cyfluthrin Technical	68359-37-5	US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required IL, MA, MN, PA
Crystalline Silica (Quartz)	14808-60-7	

Canadian Regulations

Canadian Domestic Substance List

Crystalline Silica (Quartz) 14808-60-7

**Environmental
CERCLA**

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None
Clean Water Section 307 Priority Pollutants
None
Safe Drinking Water Act Maximum Contaminant Levels
None

International Regulations

EU Classification

None

European Inventory of Existing Commercial Substances (EINECS)

Crystalline Silica (Quartz) 14808-60-7

SECTION 16. OTHER INFORMATION

	Health	Flammability	Reactivity	Others
NFPA	2	0	0	

MSDS REVISION INDICATOR: New Format; Update sections as needed.

Approval Date: 12/03/2003

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