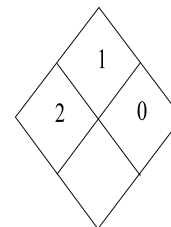


MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION



PRODUCT NAME: Aztec® 2.1% Granular Insecticide
CHEMICAL NAME (Active Ingredients): O-[2-(1,2-Dimethylethyl)-5-pyrimidinyl]-O-ethyl O-(1-methylethyl) phosphorothioate; Cyano(4-fluoro-3-phenoxyphenyl)-methyl 3-(2,2-dichloroethenyl)-2,2-dimethyl cyclopropanecarboxylate

SYNONYMS (for active ingredient): Tebupirimphos; Cyfluthrin

GENERAL USE: Organophosphorus pesticide

PRODUCT DESCRIPTION: Reddish to brown granules

EPA REGISTRATION NUMBER: 5481-9030

MSDS NUMBER: 437_1

CURRENT REVISION DATE: 4 October, 2011

MANUFACTURER:
AMVAC CHEMICAL CORPORATION
4100 E. Washington Blvd.
Los Angeles, CA 90023-4406
PHONE: 323-264-3910
FAX: 323-268-1028

EMERGENCY TELEPHONE NUMBERS:
MANUFACTURER: 323-264-3910
TRANSPORTATION (24 HOURS)
CHEMTREC: 800-424-9300
OTHER (24 HOURS)
AMVAC: 323-264-3910

2. COMPOSITION/INFORMATION ON INGREDIENTS

ACTIVE INGREDIENTS/OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)

COMPONENT	Tebupirimphos	Cyfluthrin	Respirable crystalline quartz (in carrier)	Nuisance Dust, Total
CAS No.	96182-53-5	68359-37-5	14808-60-7	
Wt.% (Typical)	2.0	0.1	7.8	<0.1%
HAZARD	Toxic		Carcinogen, irritation	Irritation
OSHA PEL* (skin)			0.1 mg/m ³ 0.05 mg/m ³ (CalOSHA)	15 mg/m ³
ACGIH TLV* (skin)			0.05 mg/m ³	10 mg/m ³ (inhalable)

* Exposure Limits 8 hrs, TWA

Aztec is a registered trademark of Bayer Cropscience, currently being transferred to AMVAC Chemical Corporation.

3. **HAZARDS IDENTIFICATION**

EMERGENCY OVERVIEW:

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

Keep out of reach of children! Do not contaminate food or feed products.

Toxic to fish, birds and other wildlife. Do not contaminate bodies of water.

POTENTIAL HEALTH EFFECTS

ROUTE(S) OF ENTRY: Poisonous if swallowed, inhaled or absorbed through skin. Inhalation or skin contact may, without symptoms, progressively increase susceptibility to organophosphate poisoning.

SIGNS OF ACUTE OVEREXPOSURE: Symptoms of overexposure to an organophosphate include weakness, headache, tightness in chest, blurred vision, non-reactive pinpoint pupils, salivation, sweating, nausea, vomiting, diarrhea, and abdominal cramps. In extreme cases unconsciousness, convulsions, severe respiratory depression and death may occur. In addition to the above symptoms, this product may also cause a transient, localized paresthesia, characterized by tingling, burning or numbness of the skin where the overexposure occurred. Overexposure may cause a respiratory tract irritation of dust or vapors are inhaled.

SIGNS OF CHRONIC OVEREXPOSURE: Repeated exposures to small doses of this pesticide and other organophosphates may lower the cholinesterase to levels where the above symptoms of acute overexposure are observed.

OTHER POTENTIAL HEALTH EFFECTS: Laboratory studies have shown no carcinogenic or reproductive effects in laboratory animals.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Preexisting skin or respiratory disorders may be aggravated by exposure to components of this product. Preexisting conditions which lower cholinesterase levels increase vulnerability to cholinesterase depression. These include: (for plasma) chronic alcoholism; malnutrition; dermatomyositis; existing toxicity from exposure to carbon disulfide; benzalkonium salts, organic mercury compounds, ciguatoxins or solanines; and (for RBC) hemolytic anemia.

CARE SHOULD BE TAKEN WHEN HANDLING FORMULATIONS CONTAINING PESTICIDES .

4. FIRST AID MEASURES

AZTEC® 2.1% GRANULAR INSECTICIDE IS A CHOLINESTERASE INHIBITOR. A PHYSICIAN SHOULD BE CONTACTED IN ALL CASES OF OVEREXPOSURE TO THIS TYPE OF FORMULATION. WEAR PROTECTIVE EQUIPMENT WHEN TREATING SOMEONE EXPOSED TO ORGANOPHOSPHATES TO PREVENT EXPOSURE OF THE RESCUER.

EYES: Immediately flush the eyes with copious amounts of clear, cool running water for a minimum of 15 minutes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eyes and lids with water. Contact a physician immediately. If there will be a delay in getting medical attention, rinse the eyes for at least another 15 minutes.

INHALATION: Remove victim to fresh air. If breathing has ceased, clear the victim's airway and start mouth-to-mouth artificial respiration. If breathing is difficult, give oxygen. Contact a physician immediately. Be sure the contact areas are clean to prevent contamination of the rescuer.

INGESTION: Immediately dilute the swallowed product by giving large quantities of water. Induce vomiting by giving Syrup of Ipecac according to directions on the bottle or by sticking a finger down the throat. Never give anything by mouth to an unconscious or convulsing person. Contact a physician immediately. Be sure the mouth is clean or wear a rubber glove to prevent contamination of the rescuer.

SKIN: Immediately flush all affected areas with large amounts of clear water for at least 15 minutes. Remove contaminated clothing. Do not attempt to neutralize with chemical agents. Wash clothing before reuse. If skin irritation develops, contact a physician immediately.

NOTE TO PHYSICIANS: **This is an Organophosphate (OP) Insecticide.** Do not wait for laboratory confirmation to treat patients with strong clinical evidence of poisoning. In the USA and other countries, contact your local or national poison control center for more information.

Do Not handle the patient without the following protective equipment in place: chemical resistant gloves and apron (preferably nitrile). Remove contaminated clothing and do not reuse without thorough cleaning with detergent and hot water. Dispose of heavily contaminated clothing, including shoes, as a hazardous waste.

Establish airway and oxygenation. IV Atropine sulfate is the antidote of choice against parasympathetic nervous stimulation. If there are signs of parasympathetic stimulation, Atropine Sulfate should be injected at 10 minute intervals in doses of 1 to 2 milligrams until complete atropinization has occurred. Pralidoxime chloride (2-PAM chloride) may also be used as an effective antidote in addition to and while maintaining full atropinization. In adults, an initial dose of 1 gram of 2-PAM should be injected, preferably as an infusion, in 250 cc of saline over a 15 to 20 minute period. If this is not practical, 2-PAM may be administered slowly by intravenous injection as a 5% solution in water over not less than 2 minutes. After about an hour, a second dose of 1 gram of 2-PAM will be indicated if muscle weakness has not been relieved. For infants and children, the dose of 2-PAM is 0.25 grams. Avoid morphine, aminophylline, phenothiazine, reserpine, furosemide and ethacrynic acid. Clear chest by postural drainage. Oxygen administration may be necessary.

4. FIRST AID MEASURES, cont'd

Observe patient continuously for 48 hours. Repeated exposure to cholinesterase inhibitors may without warning cause prolonged susceptibility to very small doses of any cholinesterase inhibitor. Allow no further exposure until time for cholinesterase regeneration has been attained as determined by a blood test.

Bathe and shampoo contaminated skin and hair. If ingested, empty stomach; activated charcoal is useful to further limit absorption. If victim is alert, Syrup of Ipecac (2 tablespoons in adults, 1 tablespoon in small children) followed by water (2 glasses for adults, 1 glass for children) is indicated. If symptoms such as loss of gag reflex, convulsions, or unconsciousness occur before emesis, gastric lavage should be considered following intubation with a cuffed endotracheal tube.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: Not applicable

Autoignition Temperature: Not applicable

Flammable Limits:

Lower flammable limit: Not determined

Upper flammable limit: Not determined

Flammability: This is a noncombustible granule coated with an organic compound that will support fire in a direct flame (NFPA rating = 1)

EXPLOSIVITY:

Mechanical Impact: Not explosive

Static Discharge: Will not occur

HAZARDOUS COMBUSTION PRODUCTS: Heating or burning may release highly toxic vapors or fumes. Containers exposed to intense heat from fires should be cooled with water to prevent vapor pressure buildup, which could result in container rupture.

EXTINGUISHING MEDIA: Water fog, "Alcohol" Foam, Dry Chemical, CO₂.

FIRE FIGHTING INSTRUCTIONS: Evacuate nonessential personnel to a safe area upwind of the fire. Wear self-contained breathing apparatus. Wear full protective equipment to prevent skin contact. Runoff from fire control may be a pollution hazard. Wash all equipment thoroughly with detergent and water before reuse.

6. ACCIDENTAL RELEASE MEASURES

GENERAL: Evacuate personnel and thoroughly ventilate the area. Use adequate ventilation and appropriate personal protective equipment (PPE, Section 8). Keep bystanders upwind and away from the spill.

6. ACCIDENTAL RELEASE MEASURES, cont'd

SMALL SPILL: Avoid dust formation. Sweep or shovel into an open drum. Decontaminate the area and equipment with dilute alkali or ammonia (less than 5% solution) and detergent. Absorb and sweep into the same open drum. Rinse with water, absorb, and add to the waste drum. Close the drum and dispose of properly, according to hazardous waste disposal procedures for your locality.

LARGE SPILL: Dike the spill to prevent contamination of local water sources. Sweep, vacuum, or shovel the spilled granules into drums for use or disposal, depending on the circumstances. Clean the area as described for a small spill.

7. HANDLING AND STORAGE

HANDLING: Avoid exposure to dust and vapors by wearing appropriate personal protective equipment (PPE, section 8) and adequate ventilation. Always wash hands, face, and arms with soap and water before smoking, eating, drinking, or going to the toilet.

STORAGE: Store in the original container in a secure, temperate, dry place. Keep away from heat and open flame. Do not contaminate water, food, or feed. Do not contaminate bodies of water.

MIN/MAX STORAGE TEMPERATURES: Recommended maximum transport/storage temperature is: 38°C/100°F

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use of mechanical or local exhaust systems is recommended.

RESPIRATORY PROTECTION: When respiratory protection is required, or concentrations may exceed the PEL, use a NIOSH/MSHA approved air-purifying respirator equipped with organic vapor cartridges or canisters. It is recommended that the canisters be changed whenever breakthrough occurs or eight (8) hours of use has occurred, whichever comes first. For emergency and other conditions where the exposure limit may be greatly exceeded, use an approved positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.

SKIN PROTECTION: Prevent skin contact. Chemical resistant gloves (preferably nitrile), coveralls or long-sleeved shirt and pants, and chemical resistant shoes or boots, are necessary to prevent skin contamination. A chemical resistant apron or chemical resistant clothing will provide additional protection when there is a risk of spillage or splashing. Remove contaminated clothing as soon as possible. Wash dirty or contaminated clothing separately from other clothes. Wear clean clothes daily. Wash well with soap and water after handling this product. See the label for more specific instructions.

EYE PROTECTION: Safety glasses should be worn whenever working with chemicals. In addition, goggles or a faceshield are required if there is a chance of splashing or dust formation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OTHER PROTECTION: There should be an eyewash station and a safety shower in the work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Solid
APPEARANCE:	Reddish to brown granule
ODOR:	Mild mercaptan odor
ODOR THRESHOLD:	Not available
BOILING POINT:	Not available
FREEZING/MELTING POINT:	Not available
DENSITY:	37-42 lb/cu. ft.
SOLUBILITY (Water):	Negligible
SOLUBILITY (Other):	The active ingredients are miscible in aromatic and aliphatic hydrocarbons, alcohols, ketones, ethers, esters, chlorinated solvents and vegetable oils
pH:	4-7, depending on carrier
REACTIVITY WITH WATER:	Slowly decomposes (hydrolysis) over several days (a.i)
EVAPORATION RATE:	Not available

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (Conditions to avoid): Stable at normal temperatures and storage conditions. Store and less than 38°C/100°F

INCOMPATIBILITY: Strong oxidizers, strong bases, and methanol.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition products may include but are not limited to hydrogen sulfide, mercaptans (including methyl mercaptan), thiophosphates, dialkylsulfides (including dimethylsulfide) and non-specified oxides of carbon, phosphorus, and sulfur.

HAZARDOUS POLYMERIZATION: This product will not polymerize.

11. TOXICOLOGICAL INFORMATION

INGESTION:	Oral LD ₅₀ (rat):	190/132 mg/kg (male/female)
INHALATION:	Inhalation LC ₅₀ (rat):	2.86/>4.92mg/L (4 hr, f/m, dust, actual)
DERMAL:	Skin LD ₅₀ (rabbit):	>2000 mg/kg (combined sexes)
IRRITATION:	Eye irritation (rabbit):	Mild eye irritation
	Skin irritation (rabbit):	Mild skin irritation
SENSITIZATION:	Skin sensitization: (guinea pig)	Non-sensitizing

11. TOXICOLOGICAL INFORMATION, cont'd

TERATOGENICITY: Tebupirimphos was not a primary developmental toxicant in rats and rabbits. Developmental effects were seen in rabbits but were secondary to maternal toxicity. Cyfluthrin was not a primary developmental toxicant in rats and rabbits. Developmental effects were seen but considered secondary to maternal toxicity.

MUTAGENICITY: Neither Tebupirimphos nor Cyfluthrin were mutagenic or genotoxic in a battery of in vitro and in vivo tests.

CARCINOGENICITY: Neither Tebupirimphos nor Cyfluthrin were carcinogenic in lifetime feeding studies in rats and mice. This product does contain quartz (silica, crystalline) that has been classified as carcinogenic by both ACGIH and IARC.

REPRODUCTIVE TOXICITY: Tebupirimphos was not a primary reproductive toxicant in a two-generation reproduction study in rats. Reproductive effects were observed only at doses that caused systemic toxicity in parental animals.

Cyfluthrin caused toxicity in offspring at doses producing systemic toxicity in adult rats.

TOXICOLOGICAL SYNERGISTIC PRODUCTS: No data are available.

12. ECOLOGICAL INFORMATION

GENERAL: 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 wash water. Apply this product as specified on the label.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide or rinsate is a violation of Federal law. If these wastes cannot be disposed by use according to label instructions, contact your nearest state Pesticide or Environmental Control Agency, the Hazardous Waste representative at the nearest EPA regional office or national equivalent to these agencies, for guidance. Open dumping is prohibited.

CONTAINER DISPOSAL: Completely empty container into application equipment. Dispose of the empty container according to the procedures approved by state/provincial and local authorities. Contact these agencies for guidance.

14. TRANSPORTATION INFORMATION

DOT CLASS:	6.1
UN NUMBER:	UN2783
IMDG CLASS (sea):	6.1
IATA CLASS (air):	6.1
MARINE POLLUTANT:	No

14. TRANSPORTATION INFORMATION, cont'd

PACKING GROUP: III
HAZARD LABEL(s): TOXIC
PROPER SHIPPING NAME(s): Organophosphorus pesticide(s), solid, toxic,
(Tebupirimphos)
REPORTABLE QUANTITY: No
(DOT, 172.101, Appendix A)
FREIGHT CLASSIFICATION: Insecticides or Fungicides, N.O.I., poison, other than
gases that are poisonous by inhalation

PACKAGING

GENERAL DESCRIPTION: 50 lb bags

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: This product is registered under EPA/FIFRA Regulations as a RESTRICTED USE PESTICIDE. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

SARA TITLE III DATA

Section 311 & 312 Hazard Categories:

Immediate Health Hazard:	Yes
Delayed Health Hazard:	Yes
Fire Hazard:	No
Reactive Hazard:	No
Sudden Pressure Release Hazard:	No

Section 302 Extremely Hazardous Substances: None

Section 313 Toxic Chemicals: Cyfluthrin (CAS No. 68359-37-5) - 0.1%

CERCLA Reportable Quantity (RQ):

STATE REGULATIONS:

CALIFORNIA (Proposition 65): This product contains a chemical known to the state of California to be carcinogenic: Crystalline silica.

16. OTHER INFORMATION

MSDS STATUS:

Date This Revision: 4 October, 2011

Date Previous Revision: New MSDS

Person Responsible for Preparation: Gary A. Braden

16. OTHER INFORMATION, cont'd

REASONS FOR REVISION: New product for AMVAC.

DISCLAIMER: This information is provided for the limited guidance to the user. While AMVAC believes that the information is, as of the date hereof, reliable, it is the user's responsibility to determine the suitability of the information for its purposes. The user is advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional, or variable conditions or circumstances exist (like combinations with other materials), or because of applicable regulations. No express or implied warranty of merchantability or fitness for a particular purpose or otherwise is made hereunder with respect to the information or the product to which the information relates.

ABBREVIATIONS:

a.i.	-	Active Ingredient
ACGIH	-	American Conference of Governmental Industrial Hygienists
ADR	-	European <u>A</u> greement Concerning the International Carriage of <u>D</u> angerous Goods by <u>R</u> oad
CERCLA	-	Comprehensive Environmental Response, Compensation, and Liability Act
DOT	-	Department of Transportation
EHS	-	Extremely Hazardous Substances
EPA	-	Environmental Protection Agency
EPCRA	-	Emergency Planning and Community Right-to-Know Act
FIFRA	-	Federal Insecticide, Fungicide, and Rodenticide Act
IARC	-	International Agency for Research on Cancer
IATA	-	International Air Transport Association
IMDG	-	International Maritime Dangerous Goods
NTP	-	National Toxicology Program
OSHA	-	Occupational Safety and Health Agency
SARA	-	Superfund Amendments and Reauthorization Act
TSCA	-	Toxic Substances Control Act

This is the last page of this MSDS. There should be 9 pages.