

**Material Safety Data Sheet****CHIPCO® SIGNATURE™ FUNGICIDE**

MSDS Number: 102000012508

MSDS Version 2.1

Revision Date: 10/16/2006

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name CHIPCO® SIGNATURE™ FUNGICIDE
MSDS Number 102000012508
EPA Registration No. 432-890

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>
Fosetyl Aluminium	39148-24-8	80.00
Quartz (Silica, Crystalline)	14808-60-7	0.054
Trade Secret Ingredient(s)		

SECTION 3. HAZARDS IDENTIFICATION

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

Emergency Overview Caution! Harmful if swallowed, inhaled or absorbed through the skin. Hazard to humans and domestic animals. Causes moderate eye injury. Keep out of the reach of children. Avoid contact with skin, eyes and clothing.

Physical State granular

Odor slightly acidic

Appearance green

Immediate Effects

Eye Irritant. Causes redness, tearing.

Skin Irritant. Causes redness, swelling.

Inhalation May cause upper respiratory tract irritation.

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**Chronic or Delayed
Long-Term**

This product contains ingredients that are considered to be probable or suspected human carcinogens (see Section 11 - Chronic).

This product is not listed as a carcinogen by ACGIH, NTP, IARC or OSHA. However, it may contain crystalline silica (quartz), a substance which has been listed as a carcinogen by ACGIH, NTP and IARC. Crystalline silica is a naturally-occurring mineral component of many sands and clays. Although the carcinogenic potential of crystalline silica in humans is controversial, it must be considered if it is inhaled under excessive exposure conditions. The respirable portion of the silica that may be contained in this product, however, is small, such that inhalation exposure during anticipated conditions of use is minimal.

**Medical Conditions
Aggravated by Exposure**

Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

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

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.

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**

Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Treatment

There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

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SECTION 5. FIRE FIGHTING MEASURES

Flash point	not applicable
Fire and Explosion Hazards	Under fire conditions, toxic, corrosive fumes are emitted.
Suitable Extinguishing Media	foam, dry powder, carbon dioxide (CO ₂)
Fire Fighting Instructions	Keep out of smoke. Fight fire from upwind position. Cool containers / tanks with water spray. Do not allow run-off from fire fighting to enter drains or water courses. 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.

SECTION 7. HANDLING AND STORAGE

Handling Procedures	Smoking, eating and drinking should be prohibited in the application area. Handle and open container in a manner as to prevent spillage.
Storing Procedures	Do not contaminate water, food, or feed by storage or handling. 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



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product. Before removing gloves clean them with soap and water. As soon as practical, wash thoroughly and change into clean clothing.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection	These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.			
Engineering Controls	Provide appropriate exhaust ventilation at places where dust is formed.			
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 respiratory protection is necessary under the conditions of use, wear a NIOSH approved respirator.			
Exposure Limits				
Quartz (Silica, Crystalline)	14808-60-7	ACGIH	TWA	0.05 mg/m3
		Form of Exposure		Respirable fraction.
		ACGIH NIC	TWA	0.025 mg/m3
		Form of Exposure		Respirable fraction.
		NIOSH	REL	0.05 mg/m3
		Form of Exposure		Respirable dust.
		OSHA Z1A	TWA	0.1 mg/m3
		Form of Exposure		Respirable dust.
		Z3	TWA	2.4 millions of particles per cubic foot of air
		Form of Exposure		Respirable.
		Remarks		The value is calculated from a specified equation using a value of 100%. Lower values of % will give higher exposure limits. See regulation for specific equation.
		Z3	TWA	0.1 mg/m3
		Form of Exposure		Respirable.
		Remarks		The value is calculated from a specified equation using a



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			value of 100%. Lower values of % will give higher exposure limits. See regulation for specific equation.
Amorphous silica	63231-67-4	Z3	0.3 mg/m3
		TWA	
		Form of Exposure	Total dust.
		Remarks	The value is calculated from a specified equation using a value of 100%. Lower values of % will give higher exposure limits. See regulation for specific equation.
		US CA OEL	0.1 mg/m3
		TWA PEL	
		Form of Exposure	Respirable dust.
		US CA OEL	0.3 mg/m3
		TWA PEL	
		Form of Exposure	Total dust.
		OSHA Z1	5 mg/m3
		PEL	
		Form of Exposure	Respirable fraction.
		OSHA Z1	15 mg/m3
		PEL	
		Form of Exposure	Total dust.
		ACGIH	10 mg/m3
		TWA	
		Form of Exposure	Inhalable particles.
		ACGIH	3 mg/m3
		TWA	
		Form of Exposure	Respirable particles.
		OSHA Z1	5 mg/m3
		PEL	
		Form of Exposure	Respirable fraction.
		OSHA Z1	15 mg/m3
		PEL	
		Form of Exposure	Total dust.
		OSHA Z1A	5 mg/m3
		TWA	
		Form of Exposure	Respirable fraction.
		OSHA Z1A	15 mg/m3
		TWA	
		Form of Exposure	Total dust.
		Z3	15 millions of particles per cubic foot of air
		TWA	
		Form of Exposure	Respirable fraction.
		Z3	50 millions of particles per cubic foot of air
		TWA	
		Form of Exposure	Total dust.
		Z3	5 mg/m3
		TWA	
		Form of Exposure	Respirable fraction.
		Z3	15 mg/m3
		TWA	
		Form of Exposure	Total dust.
		US CA OEL	5 mg/m3
		TWA PEL	
		Form of Exposure	Respirable fraction.
		US CA OEL	10 mg/m3
		TWA PEL	
		Form of Exposure	Total dust.
		US CA OEL	5 mg/m3
		TWA PEL	
		Form of Exposure	Respirable fraction.



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US CA OEL	TWA PEL	10 mg/m3
Form of Exposure		
US CA OEL	TWA PEL	5 mg/m3
Form of Exposure		
US CA OEL	TWA PEL	10 mg/m3
Form of Exposure		
Z3	TWA	20 millions of particles per cubic foot of air
Z3	TWA	0.8 mg/m3
Remarks		The value is calculated from a specified equation using a value of 100%. Lower values of % will give higher exposure limits. See regulation for specific equation.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	green
Physical State	granular
Odor	slightly acidic
pH	3.5 - 4.0 (5 %)
Water solubility	dispersible
Partition coefficient (n-octanol/water)	log Pow: -2.1 The value mentioned relates to the active ingredient fosetyl aluminium.

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Exposure to moisture.
Incompatibility	mineral acids strong bases strong oxidizing agents strong reducing agents
Hazardous Decomposition Products	Thermal decomposition phosphine gas oxides of phosphorus Carbon oxides

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SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on this product as formulated. The non-acute information pertains to the technical-grade active ingredient, fosetyl aluminum.

Acute Oral Toxicity	rat: LD50: 2,860 mg/kg
Acute Dermal Toxicity	male/female rabbit: LD50: > 2,020 mg/kg
Acute Inhalation Toxicity	male/female rat: LC50: > 5.0 mg/l Exposure time: 4 h Determined in the form of dust. male/female rat: LC50: > 20.0 mg/l Exposure time: 1 h Determined in the form of dust. Extrapolated from the 4 hr LC50.
Skin Irritation	rabbit: Slight irritation.
Eye Irritation	rabbit: Mild eye irritation.
Sensitization	guinea pig: Non-sensitizing.
Chronic Toxicity	Long-term dietary exposure to fosetyl-al caused histopathological changes in rats (adrenals, urinary bladder) and dogs (testis).

Assessment Carcinogenicity

Fosetyl-al was not carcinogenic in an oncogenicity study in mice. In a carcinogenicity study in rats, there was an increased incidence of urinary bladder tumors. EPA classified fosetyl-al as a Group C (possible human carcinogen) chemical based on urinary bladder tumors in high-dosed male rats. The Agency used a non-linear methodology approach for determining the Margin of Exposure (MOE) for the estimation of cancer risk. Therefore, EPA has a reasonable certainty that no harm will result from exposure to residues of fosetyl-al.

ACGIH

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

Quartz (Silica, Crystalline)	14808-60-7
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IARC

Quartz (Silica, Crystalline)	14808-60-7	Overall evaluation: 1
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OSHA

None.

Reproductive & Developmental Toxicity	REPRODUCTION: Fosetyl-al was not a reproductive toxicant in a multi-generation reproduction study in rats.
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DEVELOPMENTAL TOXICITY: Fosetyl-al was not a primary developmental toxicant in rats and rabbits. Developmental effects were observed in rats but

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were considered secondary to maternal toxicity.

Mutagenicity

Fosetyl-al was not mutagenic or genotoxic in a battery of in vitro and in vivo mutagenicity studies.

SECTION 12. ECOLOGICAL INFORMATION**Environmental
Precautions**

Toxic to aquatic and estuarine 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. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites.

SECTION 13. DISPOSAL CONSIDERATIONS**General Disposal
Guidance**

In accordance with current regulations may be taken to waste disposal site or incineration plant, after consultation with site operator and/or with the responsible authority.

Container Disposal

Empty remaining contents. Triple rinse containers. Puncture container to avoid re-use. Consult state and local regulations regarding the proper disposal of container. Follow advice on product label and/or leaflet.

SECTION 14. TRANSPORT INFORMATION**DOT TRANSPORTATION CLASSIFICATION:**

Not regulated for shipment by any mode of transportation

FREIGHT TRANSPORTATION:

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

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 432-890

US Federal Regulations**TSCA list**

Quartz (Silica, Crystalline)

14808-60-7

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



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CA Prop65

This product contains a chemical known to the State of California to cause cancer.

Quartz (Silica, Crystalline)

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

US State Right-To-Know Ingredients

Fosetyl Aluminium

39148-24-8

CA, IL, MN

Quartz (Silica, Crystalline)

14808-60-7

IL, MA, MN, RI

Canadian Regulations

Canadian Domestic Substance List

Quartz (Silica, Crystalline)

14808-60-7

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

International Regulations

European Inventory of Existing Commercial Substances (EINECS)

Fosetyl Aluminium

39148-24-8

Quartz (Silica, Crystalline)

14808-60-7

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1

Flammability - 0

Reactivity - 1

Others - none

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

Reason to Revise: Updated Section 11, Toxicological Information.

Revision Date: 10/16/2006

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