SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier
Trade name: CHIPCO® SIGNATURE™ FUNGICIDE
Product code (UVP): 79988761, 80888988
SDS Number: 102000024562
EPA Registration No.: 432-890

Relevant identified uses of the substance or mixture and uses advised against
Use: Fungicide
Restrictions on use: See product label for restrictions.

Information on manufacturer
Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
United States

Emergency Telephone Number (24hr/7 days): 1-800-334-7577 (24 hours/day)
Product Information Telephone Number: 1-800-331-2867
SDS Information or Request: SDSINFO.BCS-NA@bayer.com

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200
Eye irritation: Category 2B
Signal word: Warning

Hazard statements
Causes eye irritation.

Precautionary statements
Wash thoroughly after handling.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Other hazards
No other hazards known.
SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Component Name</th>
<th>CAS-No.</th>
<th>Concentration % by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fosetyl Aluminium</td>
<td>39148-24-8</td>
<td>80.00</td>
</tr>
<tr>
<td>Sodium diisopropynaphthalene sulphonate</td>
<td>1322-93-6</td>
<td>4.50</td>
</tr>
<tr>
<td>Crystalline quartz (respirable)</td>
<td>14808-60-7</td>
<td>0.12</td>
</tr>
</tbody>
</table>

SECTION 4: FIRST AID MEASURES

Description of first aid measures

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

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.

Skin contact
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.

Eye contact
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.

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.

Most important symptoms and effects, both acute and delayed

Symptoms
The following symptoms may occur: Skin, eye and mucous membrane irritation

Indication of any immediate medical attention and special treatment needed

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

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

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable
Foam, Dry powder, Carbon dioxide (CO2), Water spray

Unsuitable
None known.
Special hazards arising from the substance or mixture
In the event of fire the following may be released: Carbon monoxide (CO), Nitrogen oxides (NOx), Oxides of phosphorus

Advice for firefighters
Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information
Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

Flash point
not applicable

Autoignition temperature
no data available

Lower explosion limit
not applicable

Upper explosion limit
not applicable

Explosivity
no data available

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Precautions
Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

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 to enter soil, waterways or waste water canal.

Reference to other sections
Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling
Advice on safe handling
Handle and open container in a manner as to prevent spillage. Use only in area provided with appropriate exhaust ventilation.

Hygiene measures
Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Smoking, eating and drinking should be prohibited.
Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

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

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fosetyl Aluminium</td>
<td>39148-24-8</td>
<td>10 mg/m³ (TWA)</td>
<td></td>
<td>OES BCS*</td>
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<tr>
<td>Crystalline quartz (respirable)</td>
<td>14808-60-7</td>
<td>0.1 mg/m³ (TWA)</td>
<td>1998</td>
<td>JO TLV</td>
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<tr>
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<td>ACGIH</td>
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<td>0.05 mg/m³ (REL)</td>
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<td>NIOSH</td>
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<td>14808-60-7</td>
<td>0.1 mg/m³ (TWA)</td>
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<td>OSHA Z1A</td>
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<tr>
<td>Crystalline quartz (respirable)</td>
<td>14808-60-7</td>
<td>0.1 mg/m³ (TWA)</td>
<td>06 2008</td>
<td>TN OEL</td>
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<tr>
<td>Crystalline quartz (respirable)</td>
<td>14808-60-7</td>
<td>14 ug/m³ (ST ESL)</td>
<td>02 2013</td>
<td>TX ESL</td>
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<tr>
<td>Crystalline quartz (respirable)</td>
<td>14808-60-7</td>
<td>0.27 ug/m³ (AN ESL)</td>
<td>02 2013</td>
<td>TX ESL</td>
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<tr>
<td>Crystalline quartz (respirable)</td>
<td>14808-60-7</td>
<td>0.3 mg/m³ (TWA PEL)</td>
<td>08 2010</td>
<td>US CA OEL</td>
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<tr>
<td>Crystalline quartz (respirable)</td>
<td>14808-60-7</td>
<td>0.1 mg/m³ (TWA PEL)</td>
<td>08 2010</td>
<td>US CA OEL</td>
</tr>
<tr>
<td>Crystalline quartz (respirable)</td>
<td>14808-60-7</td>
<td>2.4 millions of particles per cubic foot of air (TWA)</td>
<td>2000</td>
<td>Z3</td>
</tr>
</tbody>
</table>
Crystalline quartz (respirable) 14808-60-7 0.1 mg/m³ (TWA) 2000 Z3
Crystalline quartz (respirable) (Total dust.) 14808-60-7 0.3 mg/m³ (TWA) 2000 Z3

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

Exposure controls

Personal protective equipment
In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

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.

Hand protection
Chemical resistant nitrile rubber gloves

Eye protection
Goggles

Skin and body protection
Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures
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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance green
Physical State water-dispersible granules
Odor slightly acidic
Odour Threshold no data available
pH 3.9
Vapor Pressure no data available
Vapor Density (Air = 1) no data available
Bulk density 32 - 38 lb/ft³
Evaporation rate not applicable
Boiling Point not applicable
Melting / Freezing Point not applicable
Water solubility dispersible
Minimum Ignition Energy no data available
Decomposition temperature: no data available
Partition coefficient: n-octanol/water: no data available
Viscosity: not applicable
Flash point: not applicable
Autoignition temperature: no data available
Lower explosion limit: not applicable
Upper explosion limit: not applicable
Explosivity: no data available

SECTION 10: STABILITY AND REACTIVITY

Reactivity
Thermal decomposition: no data available
Chemical stability: Stable under normal conditions.
Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.
Conditions to avoid: Exposure to moisture.
Incompatible materials: Strong oxidizing agents, Strong acids, Strong bases
Hazardous decomposition products: No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes
Immediate Effects
Eye: Causes redness, irritation, tearing. Causes moderate eye injury.
Skin: Causes irritation, redness, swelling. Harmful if absorbed through skin.
Ingestion: Harmful if swallowed.
Inhalation: May cause upper respiratory tract irritation. Harmful if inhaled.
Information on toxicological effects
Acute oral toxicity: LD50 (male/female combined rat) 2,860 mg/kg
Acute inhalation toxicity
LC50 (male/female combined rat) > 5.0 mg/l
Exposure time: 4 h
Determined in the form of dust.
LC50 (male/female combined rat) > 20.0 mg/l
Exposure time: 1 h
Determined in the form of dust.
Extrapolated from the 4 hr LC50.

Acute dermal toxicity
LD50 (rabbit) > 2,020 mg/kg

Skin irritation
Slight irritation (rabbit)

Eye irritation
Mild eye irritation. (rabbit)

Sensitisation
Non-sensitizing. (guinea pig)

Assessment repeated dose toxicity
Fosetyl Aluminium did not cause specific target organ toxicity in experimental animal studies.

Assessment Mutagenicity
Fosetyl Aluminium was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment Carcinogenicity
Fosetyl Aluminium was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH
Crystalline quartz ( respirable) 14808-60-7 Group A2

NTP
Crystalline quartz ( respirable) 14808-60-7 2000

IARC
Crystalline quartz ( respirable) 14808-60-7 Overall evaluation: 1

OSHA
None.

Assessment toxicity to reproduction
Fosetyl Aluminium did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity
Fosetyl Aluminium did not cause developmental toxicity in rats and rabbits.

Further information
Acute toxicity studies have been bridged from a similar formulation(s).
The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish
LC50 (Rainbow trout (Oncorhynchus mykiss)) > 120 mg/l
Exposure time: 96 h
Test conducted with a similar formulation.

**Toxicity to aquatic invertebrates**
EC50 (Water flea (Daphnia magna)) 37 mg/l
Exposure time: 48 h
Test conducted with a similar formulation.

**Toxicity to aquatic plants**
EC50 (Scenedesmus subspicatus) 27.7 mg/l
Growth rate; Exposure time: 72 h
Test conducted with a similar formulation.

**Biodegradability**
Fosetyl Aluminium: ; rapidly biodegradable

**Koc**
Fosetyl Aluminium: Koc: 0.1

**Bioaccumulation**
Fosetyl Aluminium: ; Does not bioaccumulate.

**Mobility in soil**
Fosetyl Aluminium: Highly mobile in soils

**Environmental precautions**
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.
Apply this product as specified on the label.

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**SECTION 13: DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Product**
Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law.
Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.

**Contaminated packaging**
Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning.
If burned, stay out of smoke.
Follow advice on product label and/or leaflet.

**RCRA Information**
Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

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**SECTION 14: TRANSPORT INFORMATION**

According to national and international transport regulations this material is not classified as dangerous goods / hazardous material.
SECTION 15: REGULATORY INFORMATION

EPA Registration No. 432-890
US Federal Regulations
TSCA list
Sodium diisopropynaphthalene sulphonate 1322-93-6
Crystalline quartz (respirable) 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
CA Prop65
This product contains a chemical known to the State of California to cause cancer.
Crystalline quartz (respirable) 14808-60-7

US State Right-To-Know Ingredients
Crystalline quartz (respirable) 14808-60-7 MN

Canadian Regulations
Canadian Domestic Substance List
Sodium diisopropynaphthalene sulphonate 1322-93-6
Crystalline quartz (respirable) 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
Sodium diisopropynaphthalene sulphonate 1322-93-6
Crystalline quartz (respirable) 14808-60-7

EPA/FIFRA Information:
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

**Signal word:** Caution!

**Hazard statements:** Harmful if swallowed, inhaled or absorbed through the skin.
Causes moderate eye injury.
Avoid contact with skin, eyes and clothing.

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**SECTION 16: OTHER INFORMATION**

**NFPA 704 (National Fire Protection Association):**
- Health - 1
- Flammability - 0
- Instability - 0
- Others - none

- Health - 1
- Flammability - 0
- Physical Hazard - 0
- PPE -

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

**Reason for Revision:** Revised according to the current OSHA Hazard Communication Standard (29CFR1910.1200)

**Revision Date:** 07/29/2014

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