



Material Safety Data Sheet

TEMPO® 1% DUST INSECTICIDE READY TO USE

MSDS Number: 102000006700
 MSDS Version 2.0
 Revision Date: 08/31/2006

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name TEMPO® 1% DUST INSECTICIDE READY TO USE
MSDS Number 102000006700
EPA Registration No. 432-1373

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> |
|---------------------------------|----------------|----------------------------|
| Cyfluthrin | 68359-37-5 | 1.00 |
| Quartz (Silica, Crystalline) | 14808-60-7 | 0.28 |
| 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. Moderate eye irritation. Do not get in eyes, on skin, or on clothing. Avoid breathing dust. Toxic to fish. Toxic to aquatic organisms.

Physical State powder

Odor musty

Appearance white to off-white

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

Immediate Effects

Eye Moderate eye irritation. Do not get in eyes.

Skin Can cause irritation to the skin resulting in effects such as burning and/or tingling sensation. May cause irritation, redness. Harmful if absorbed through skin. Do not get in eyes, on skin, or on clothing.



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| | |
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| Ingestion | Harmful if swallowed. Do not take internally. |
| Inhalation | Harmful if inhaled. May cause upper respiratory tract irritation. Avoid breathing dust. |
| Chronic or Delayed Long-Term | 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 | 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

| | |
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| 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 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

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| Suitable Extinguishing Media | water, dry chemical |
| Fire Fighting Instructions | <p>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.</p> <p>Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.</p> |

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 to enter soil, waterways or waste water canal. |

SECTION 7. HANDLING AND STORAGE

| | |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Handling Procedures | Handle and open container in a manner as to prevent spillage. |
| 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 | <p>Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.</p> <p>Take off contaminated clothing and shoes immediately. Then wash thoroughly and put on clean clothing.</p> <p>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.</p> |
| Min/Max Storage Temperatures | Do not transport or store below -18 °C / -0 °F 30 day average temperature is not to exceed 37.8°C / 100°F. |



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SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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| 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 | 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.

| | | | | |
|------------------------------|------------|-------------------------------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Quartz (Silica, Crystalline) | 14808-60-7 | ACGIH | TWA | 0.05 mg/m3 |
| | | Form of Exposure ACGIH NIC | TWA | Respirable fraction. 0.025 mg/m3 |
| | | Form of Exposure NIOSH | REL | Respirable fraction. 0.05 mg/m3 |
| | | Form of Exposure OSHA Z1A | TWA | Respirable dust. 0.1 mg/m3 |
| | | Z3 | TWA | Respirable dust. 2.4 millions of particles per cubic foot of air |
| | | Form of Exposure Remarks | | Respirable. 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 Remarks | | Respirable. The value is calculated from a specified equation using a value of 100%. Lower values |



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|------------------|---------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Z3 | TWA | | of % will give higher exposure limits. See regulation for specific equation. | 0.3 mg/m3 |
| Form of Exposure | | Total dust. | 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. | |
| Remarks | | Respirable dust. | | 0.1 mg/m3 |
| US CA OEL | TWA PEL | Total dust. | | 0.3 mg/m3 |
| Form of Exposure | | Respirable fraction. | | 5 mg/m3 |
| US CA OEL | TWA PEL | Total dust. | | 15 mg/m3 |
| Form of Exposure | | | | |
| OSHA Z1 | PEL | | | |
| Form of Exposure | | | | |
| OSHA Z1 | PEL | | | |
| Form of Exposure | | | | |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|----------------------------------|-------------------------------------------------|
| Appearance | white to off-white |
| Physical State | powder |
| Odor | musty |
| Bulk Density | 61 lb./cu.ft. (packed); 35 lb./cu.ft. (fluffed) |
| Decomposition Temperature | ca. 500 °C |

SECTION 10. STABILITY AND REACTIVITY

| | |
|----------------------------|---------------------------------------------------|
| Chemical Stability | Stable under recommended storage conditions. |
| Conditions to Avoid | Heat, flames and sparks. Exposure to moisture. |

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity data has been bridged from a similar formulation containing a higher percentage of the active ingredient, cyfluthrin. The non-acute information pertains to the technical-grade active ingredient.



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Acute Oral Toxicity male rat: LD50: 3,084 mg/kg
female rat: LD50: 1,733 mg/kg

Acute Dermal Toxicity male/female rabbit: LD50: > 2,000 mg/kg

Acute Inhalation Toxicity male/female rat: LC50: > 1.18 mg/l
Exposure time: 4 h
Determined in the form of dust.
Highest attainable concentration.
No deaths

male/female rat: LC50: > 4.72 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 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.

Assessment Carcinogenicity

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

| | | |
|------------------------------|------------|-----------------------|
| ACGIH | | |
| Quartz (Silica, Crystalline) | 14808-60-7 | Group A2 |
| NTP | | |
| Quartz (Silica, Crystalline) | 14808-60-7 | |
| IARC | | |
| Quartz (Silica, Crystalline) | 14808-60-7 | Overall evaluation: 1 |
| OSHA | | |
| None. | | |

Reproductive & Developmental Toxicity 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



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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 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.

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

SECTION 12. ECOLOGICAL INFORMATION

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. Apply this product as specified on the label.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance 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.

Container Disposal 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. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

TRANSPORTATION CLASSIFICATION:
Not Regulated For Transportation

FREIGHT CLASSIFICATION:
Insecticides or Fungicides, N.O.I., other than poison

SECTION 15. REGULATORY INFORMATION

This product contains material(s) which are Trade Secret and are on various Regulatory Lists. These material(s) are not listed below.

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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

Cyfluthrin 68359-37-5 1.0%

US States Regulatory Reporting

CA Prop65

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

Quartz (Silica, Crystalline) 14808-60-7

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

US State Right-To-Know Ingredients

Cyfluthrin 68359-37-5 NJ
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)

Cyfluthrin 68359-37-5
Quartz (Silica, Crystalline) 14808-60-7

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Reactivity - 0 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.

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