



MATERIAL SAFETY DATA SHEET

BAYER CORPORATION
AGRICULTURE DIVISION
P.O. Box 4913 Hawthorn Road
Kansas City, MO 64120-0013

TRANSPORTATION EMERGENCY

CALL CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

NON-TRANSPORTATION

BAYER EMERGENCY PHONE...: (800) 414-0244
BAYER INFORMATION PHONE.: (800) 842-8020

1. CHEMICAL PRODUCT IDENTIFICATION:

PRODUCT NAME.....: GEM Fungicide
PRODUCT CODE.....: 12941
CHEMICAL NAME.....: Methyl (aE)-a-(methoxyimino)-2-(((E)-(1-(3-(triflourome-
thyl)phenyl)ethylidene)amino)oxy)me
SYNONYMS.....: Trifloxystrobin
PRODUCT USE.....: Fungicide

2. COMPOSITION/INFORMATION ON INGREDIENTS:

INGREDIENT NAME /CAS NUMBER EXPOSURE LIMITS CONCENTRATION (%)

\*\*\*\*\* HAZARDOUS INGREDIENTS \*\*\*\*\*

Trifloxystrobin
141517-21-7 OSHA : Not Established 25%
ACGIH: Not Established

Ingredient 2009
Specific chemical identity is withheld as a trade secret.
OSHA : Not Established 3-5 %
ACGIH: Not Established

Ingredient 1081
Specific chemical identity is withheld as a trade secret.
OSHA : Not Established 3-5 %
ACGIH: Not Established

2. COMPOSITION/INFORMATION ON INGREDIENTS (Continued)

INGREDIENT NAME /CAS NUMBER	EXPOSURE LIMITS	CONCENTRATION (%)
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Ingredient 2046		
Specific chemical identity is withheld as a trade secret.		
	OSHA : Not Established	0.5-1%
	ACGIH: Not Established	
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Ingredient 2018		
Specific chemical identity is withheld as a trade secret.		
	OSHA : Not Established	1-2 %
	ACGIH: Not Established	
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Ingredient 2038		
Specific chemical identity is withheld as a trade secret.		
	OSHA : Not Established	15-20 %
	ACGIH: Not Established	
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Diatomaceous earth		
61790-53-2	OSHA : 20.00 mppcf TWA	30-40 %
	ACGIH: 3.00 mg/m3 TWA (respirable)	

3. HAZARDS IDENTIFICATION:

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\* EMERGENCY OVERVIEW \*  
\* \*  
\* CAUTION! Color: Brown; Form: Solid; Granules; Odor: Not \*  
\* established; Harmful if absorbed through skin; Causes eye \*  
\* irritation. \*  
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POTENTIAL HEALTH EFFECTS:

ROUTE(S) OF ENTRY.....: Inhalation; Skin Contact; Skin Absorption;  
Eye Contact

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE EFFECTS OF EXPOSURE.....: Based on animal studies of a similar  
formulation with a higher content of active ingredient, this material is  
mildly toxic by the oral and dermal routes of exposure. It is mildly  
irritating to the eyes and slightly irritating to the skin.

CHRONIC EFFECTS OF EXPOSURE...: No chronic effects are known to occur in  
humans.

CARCINOGENICITY.....: This product is not listed by NTP, IARC or  
regulated as a carcinogen by OSHA.

MEDICAL CONDITIONS

AGGRAVATED BY EXPOSURE.....: None known

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4. FIRST AID MEASURES:  
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FIRST AID FOR EYES.....: 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.

FIRST AID FOR 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.

FIRST AID FOR INHALATION: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment information.

FIRST AID FOR INGESTION.: Call 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 physician or poison control center. Do not give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN.....: There is no specific antidote if this product is ingested. Treat symptomatically.

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5. FIRE FIGHTING MEASURES:  
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FLASH POINT.....: Not Applicable

EXTINGUISHING MEDIA.....: Dry Chemical; Foam; Carbon Dioxide

SPECIAL FIRE FIGHTING PROCEDURES: Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated.

UNUSUAL FIRE / EXPLOSION HAZARDS: None Known

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6. ACCIDENTAL RELEASE MEASURES:  
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SPILL OR LEAK PROCEDURES.....: Wear chemical safety glasses with side shields or chemical goggles, rubber gloves, rubber boots, long-sleeved shirt, long pants, head covering, and use of particulate filter, NIOSH approved per 42 CFR Part 84. Select N or R or P type as appropriate for the oil characteristics of any other air contaminants present. Filter efficiency may range from 95 - 99.97% as appropriate for the size distribution of dusts present. For small spills, sweep up, keeping dust to a minimum, and place in an approved chemical container. Wash the spill area with water containing a strong detergent, absorb with pet litter or other absorbent material, sweep up and place in a chemical container. Seal

6. ACCIDENTAL RELEASE MEASURES (Continued)

the container and handle in an approved manner. Flush the area with water to remove any residue. Do not allow wash water to contaminate water supplies.

7. HANDLING AND STORAGE:

STORAGE TEMPERATURE.....: Not Noted  
SHELF LIFE.....: Not Noted  
SPECIAL SENSITIVITY.....: Not Noted  
HANDLING/STORAGE PRECAUTIONS: Store the material in well-ventilated, secure area out of the reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco usage, and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.

8. PERSONAL PROTECTION:

REQUIRED WORK/HYGIENE PROCEDURES...: The following recommendations for exposure control/personal protection are intended for the manufacture, formulation and packaging of the product. For end-use applications consult the product label.  
EYE PROTECTION REQUIREMENTS.....: To avoid eye contact, wear safety glasses with side shields or chemical goggles.  
SKIN PROTECTION REQUIREMENTS.....: To avoid skin contact, wear rubber gloves, rubber boots, long-sleeved shirt, long pants and a head covering.  
RESPIRATOR REQUIREMENTS.....: When needed based on the conditions of use, wear a NIOSH-approved particulate respirator.  
ADDITIONAL PROTECTIVE MEASURES.....: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL FORM.....: Solid  
APPEARANCE.....: Granules  
COLOR.....: Brown  
ODOR.....: Not established  
BOILING POINT.....: Not Applicable  
MELTING/FREEZING POINT....: Not established  
SOLUBILITY IN WATER .....: 0.00061 g/L (trifloxystrobin)  
SPECIFIC GRAVITY .....: Not applicable

9. PHYSICAL AND CHEMICAL PROPERTIES (Continued)

BULK DENSITY.....: 29-34 lb/ft<sup>3</sup>  
VAPOR PRESSURE .....: 2.56 x 10<sup>-11</sup> Torr @ 20 C (trifloxystrobin)

10. STABILITY AND REACTIVITY:

STABILITY.....: This is a stable material.  
HAZARDOUS POLYMERIZATION...: Will not occur.  
INCOMPATIBILITIES.....: Not known  
INSTABILITY CONDITIONS.....: Not known  
DECOMPOSITION PRODUCTS.....: Not established

11. TOXICOLOGICAL INFORMATION:

Only an eye irritation study has been performed on this product as formulated. All other acute toxicity data are from a similar formulation containing a higher percentage of the active ingredient, trifloxystrobin. The non-acute information pertains to trifloxystrobin technical.

ACUTE TOXICITY

ORAL LD50.....: Male and Female Rat: >5050 mg/kg  
DERMAL LD50.....: Male and Female Rat: >2000 mg/kg  
INHALATION LC50....: 4 Hr Exposure to Dust: Male and Female Rat: >2.74 mg/L (actual)  
EYE EFFECTS.....: Rabbit: Mild irritation to the cornea, iritis and conjunctiva was observed with all irritation clearing completely within 7 days post-treatment.  
SKIN EFFECTS.....: Rabbit: Slight dermal irritant.  
SENSITIZATION.....: Guinea Pig: Not a dermal sensitizer.  
SUBCHRONIC TOXICITY...: In a 28-day dermal toxicity study in rats, trifloxystrobin was tolerated without local effects at doses up to and including the limit dose of 1000 mg/kg/day. Systemic effects were observed in males at the limit dose and included increased organ weights (liver & kidney).  
CHRONIC TOXICITY.....: In chronic toxicity studies in mice and dogs, the major primary target organ appears to be the liver following dietary administration of trifloxystrobin. Liver effects were not seen in a chronic toxicity rat study with trifloxystrobin.  
CARCINOGENICITY.....: Trifloxystrobin did not cause any treatment-related increase in general tumor incidence, any elevated incidence of rare tumors, or shortened time to the development of palpable or rapidly lethal tumors in an 18-month mouse and a 24-month rat study.  
MUTAGENICITY.....: Trifloxystrobin has been tested for its potential to induce gene mutation and chromosomal changes in 5 different test systems. Taken collectively, these studies demonstrate trifloxystrobin is not genotoxic or mutagenic.  
DEVELOPMENTAL TOXICITY: In developmental toxicity studies using rats and

11. TOXICOLOGICAL INFORMATION (Continued)

rabbits, trifloxystrobin was not a primary developmental toxicant.  
REPRODUCTION.....: In a two generation reproduction study using rats,  
trifloxystrobin was not a primary reproductive toxicant.

12. ECOLOGICAL INFORMATION:

This product is toxic to fish and aquatic invertebrates. Contact Bayer for  
specific information. In event of a spill emergency, call the Bayer Emergency  
Response Number at 1.800.414.0244.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD.....: Do not reuse product containers. Dispose of  
product containers, waste containers, and residues according to local,  
state, and federal health and environmental regulations.

14. TRANSPORTATION INFORMATION:

TECHNICAL SHIPPING NAME.....: Fungicide  
FREIGHT CLASS BULK.....: Insecticides or Fungicides; Agricultural,  
N.O.S.  
FREIGHT CLASS PACKAGE.....: Insecticides or Fungicides; Agricultural,  
N.O.S.  
PRODUCT LABEL.....: GEM Fungicide

DOT (DOMESTIC SURFACE)

HAZARD CLASS OR DIVISION .....: Non-Regulated

IMO / IMDG CODE (OCEAN)

HAZARD CLASS DIVISION NUMBER...: Non-Regulated

ICAO / IATA (AIR)

HAZARD CLASS DIVISION NUMBER...: Non-Regulated

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15. REGULATORY INFORMATION:  
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OSHA STATUS.....: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.  
TSCA STATUS.....: This product is exempt from TSCA Regulation under FIFRA Section 3 (2)(B)(ii) when used as a pesticide.  
CERCLA REPORTABLE QUANTITY..: None  
SARA TITLE III:  
SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES..: None  
SECTION 311/312 HAZARD CATEGORIES.....: Immediate Health Hazard  
SECTION 313 TOXIC CHEMICALS.....: None  
RCRA STATUS.....: If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

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16. OTHER INFORMATION:  
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NFPA 704M RATINGS:      Health      Flammability      Reactivity      Other  
                                 1                                   1                                   0  
                                 0=Insignificant    1=Slight    2=Moderate    3=High    4=Extreme

Bayer's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. NFPA ratings are provided by Bayer as a customer service.

REASON FOR ISSUE.....: Create New MSDS  
PREPARED BY.....: V. C. Standart  
APPROVED BY.....: D. C. Eberhart  
TITLE.....: Director Product Safety & Stewardship  
APPROVAL DATE.....: 01/18/2002  
SUPERSEDES DATE.....: None  
MSDS NUMBER.....: 44681

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Approval date: 01/18/2002

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