



Material Safety Data Sheet

ARMADA 50 WP

MSDS Number: 102000011765

MSDS Version 1.1

Revision Date: 10/05/2005

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name ARMADA 50 WP
MSDS Number 102000011765
EPA Registration No. 432-1412

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>
Triadimefon	43121-43-3	41.67
Trifloxystrobin	141517-21-7	8.30
Quartz (Silica, Crystalline)	14808-60-7	1.20

SECTION 3. HAZARDS IDENTIFICATION

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

Emergency Overview May be harmful by inhalation, ingestion, skin adsorption. Do not get in eyes, on skin, or on clothing. Do not take internally.

Physical State powder

Appearance powder
off-white

Chronic or Delayed Long-Term **Severe and permanent lung damage may result. Excessive long-term exposure to respirable crystalline silica may cause silicosis, a form of progressive pulmonary fibrosis. This product contains respirable crystalline silica.**



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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

General In case of poisoning, call the Medical Emergency Telephone Number on page 1.

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 poison control center or doctor for treatment advice.

Skin Take off all contaminated clothing immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a poison control center or doctor for treatment advice.

Ingestion Call a 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 directed to do so by a physician or poison control center. Do not give anything by mouth to an unconscious or convulsing person.

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 poison control center or doctor for further treatment advice.

Notes to Physician Treatment Treat symptomatically.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point not applicable

Suitable Extinguishing Media carbon dioxide (CO2), dry chemical, foam

Fire Fighting Instructions Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Contain contaminated water/fire fighting water. Dike area to prevent runoff and contamination of water sources. Equipment or materials involved in pesticide fires may become contaminated. Prevent use of contaminated buildings, area and equipment until decontaminated.

Wear self-contained breathing apparatus and protective suit.



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SECTION 6. ACCIDENTAL RELEASE MEASURES

- Methods for Cleaning Up** Keep unnecessary people away, isolate hazard area and deny entry. Avoid contact with spilled product or contaminated surfaces.
- Additional Advice** Avoid breathing dust. Use recommended protective equipment while carefully sweeping up spilled material. Place in covered container for reuse or disposal. Scrub contaminated area with soap and water. Rinse with water. Use dry absorbent material such as clay granules to absorb and collect wash solution for proper disposal. Avoid dust formation. Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers, or other waterways or contact vegetation.

SECTION 7. HANDLING AND STORAGE

- Storing Procedures** Do not contaminate water, food, or feed by storage or disposal.
- 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 always before eating, drinking, smoking or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Wash contaminated clothing before reuse.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- General Protection** Train employees in safe use of the product.
- Engineering Controls** Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.
- Eye/Face Protection** protective eyewear
- Hand Protection** Chemical resistant nitrile rubber gloves
- Body Protection** Long-sleeved shirt and long pants
Shoes plus socks
- Respiratory Protection** When respiratory protection is necessary under the conditions of use, wear a respirator approved by the National Institute for Occupational Safety and Health (NIOSH).



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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	off-white
Physical State	powder
pH	powder 7.5 - 9.0 at 25 °C (as aqueous solution)
Bulk Density	13-16 lb/cu ft

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Exposure to moisture. Exposure to extreme heat.
Incompatibility	strong oxidizing agents acids
Hazardous Decomposition Products	Thermal decomposition hydrogen chloride (HCl) amines nitrogen oxides (NOx) Carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity studies have not been performed on this product but have been bridged from the acute toxicity database of similar "50 WP" formulations performed on the two separate active ingredients, triadimefon and trifloxystrobin, as well as, the acute toxicity database of each active ingredient. The acute toxicity values presented represent the expected US EPA Toxicity Category III classification for each acute hazard. The non-acute information pertains to the technical-grade active ingredients.

Acute Oral Toxicity	rat: > 500 - 5,000 mg/kg
Acute Dermal Toxicity	rat: > 2,000 - 5,000 mg/kg



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Acute Inhalation Toxicity rat: LC50: > 0.5 - 2.0 mg/l
Exposure time: 4 h
Determined in the form of dust.

male/female rat: LC50: > 2.0 - 8.0 mg/l
Exposure time: 1 h
Determined in the form of dust.
Extrapolated from the 4 hr LC50.

Skin Irritation rabbit: Moderate skin irritation.

Eye Irritation rabbit: Mild eye irritation.

Sensitization guinea pig: May cause sensitisation by skin contact.

Subchronic Toxicity TRIADIMEFON: In subacute dermal toxicity studies in rats and rabbits, triadimefon caused slight dermal irritation and/or increases in activity and reactivity. In a subchronic inhalation study, daily exposure to triadimefon resulted in increased organ weights (liver).

TRIFLOXYSTROBIN: 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. Systemic effects were observed in males at the limit dose and included increased organ weights (liver & kidney).

Chronic Toxicity TRIADIMEFON: The major organs affected from long-term exposure to triadimefon in chronic studies in rats and dogs were the liver and/or thyroid (secondary effects).

TRIFLOXYSTROBIN: The major organ affected from long-term exposure to trifloxystrobin in chronic studies in mice and dogs was the liver.

Assessment Carcinogenicity

TRIADIMEFON: EPA has classified triadimefon as a Group C (possible human carcinogen) based on borderline statistically significant increases in thyroid adenomas in male rats, and increases in liver adenomas in both sexes in mice. The Agency used a non-linear methodology approach for determining the Margin of Exposure (MOE) for the estimation of human cancer risk because the tumors were benign, and there were no apparent genotoxicity concerns. Therefore, EPA has a reasonable certainty that no harm will result from exposure to residues of triadimefon.

TRIFLOXYSTROBIN: Trifloxystrobin is not carcinogenic based on oncogenicity studies in rats and mice.

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.



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Reproductive & Developmental Toxicity

TRIADIMEFON TECHNICAL

REPRODUCTION: In reproduction studies in rats, triadimefon caused reproductive effects (e.g., smaller litter sizes) in conjunction with parental toxicity at the highest dose tested.

DEVELOPMENTAL TOXICITY: Triadimefon is not a primary developmental toxicant based on developmental toxicity studies in rats and rabbits. Malformations were observed in both species but only at maternally-toxic dose levels.

TRIFLOXYSTROBIN TECHNICAL

REPRODUCTION: Trifloxystrobin is not a primary reproductive toxicant based on a two-generation reproduction study in rats

DEVELOPMENTAL TOXICITY: Trifloxystrobin is not a primary developmental toxicant based on developmental toxicity studies in rats and rabbits. Any developmental effects observed were secondary to maternal toxicity.

Neurotoxicity

TRIADIMEFON: Triadimefon caused prominent hyperactivity-related neurobehavioral changes in acute (oral gavage) and subchronic (diet) neurotoxicity screening studies in rats. There were no neuropathologic alterations in the skeletal muscle or neural tissues in either study.

TRIFLOXYSTROBIN: Trifloxystrobin is not a primary neurotoxicant based on an acute (oral gavage) neurotoxicity screening study in rats.

Mutagenicity

TRIADIMEFON: Triadimefon is not considered genotoxic or mutagenic based on in vitro and in vivo mutagenicity studies.

TRIFLOXYSTROBIN: Trifloxystrobin is not considered genotoxic or mutagenic based on in vitro and in vivo mutagenicity studies.

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.



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SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance Pesticide Disposal: Contact manufacturer.

SECTION 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:
Not regulated for Domestic Surface Transportation

FREIGHT CLASSIFICATION:
Compounds, Tree or Weedkilling, N.O.I., other than poison, having a density of 20 LBS or greater per cubic foot

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 432-1412

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

Triadimefon 43121-43-3 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 contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Triadimefon	43121-43-3	Developmental toxin.
Triadimefon	43121-43-3	Female reproductive toxin.
Triadimefon	43121-43-3	Male reproductive toxin.

US State Right-To-Know Ingredients

Triadimefon	43121-43-3	NJ
Quartz (Silica, Crystalline)	14808-60-7	IL, MA, MN, RI

Canadian Regulations

Canadian Domestic Substance List

Quartz (Silica, Crystalline) 14808-60-7



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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)

Triadimefon 43121-43-3

Quartz (Silica, Crystalline) 14808-60-7

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Reactivity - 1 Others - none

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

Reason to Revise: Revised the composition amounts to averages.

Revision Date: 10/05/2005

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