



Material Safety Data Sheet

FORBID™ 4 F ORNAMENTAL INSECTICIDE/MITICIDE

MSDS Number: 102000012417
 MSDS Version 1.0
 Revision Date: 05/16/2005

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name FORBID™ 4 F ORNAMENTAL INSECTICIDE/MITICIDE
MSDS Number 102000012417
EPA Registration No. 432-1279
Product Use For control of mites and whiteflies on ornamental plants, flowers and foliage plants.

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>
Spiromesifen	283594-90-1	45.20

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. Avoid contact with skin, eyes and clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling.

Physical State liquid
Odor musty earthy
Appearance white
Routes of Exposure Ingestion, Inhalation, Eye contact, Skin Absorption
Immediate Effects
Eye Avoid contact with eyes. May be minimally irritating following prolonged direct contact.
Skin Harmful if absorbed through skin. Avoid contact with skin and clothing. May cause slight irritation.



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Ingestion	Harmful if swallowed. Do not take internally.
Inhalation	Harmful if inhaled. Avoid breathing spray mist. Mists may cause respiratory tract irritation.

SECTION 4. FIRST AID MEASURES

General	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 poison control center or doctor for treatment advice.
Skin	Take off all contaminated clothing immediately. Rinse 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. Never give anything by mouth to an unconscious 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	There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point	Not combustible.
Suitable Extinguishing Media	water spray, carbon dioxide (CO2), dry chemical
Fire Fighting Instructions	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. Equipment or materials involved in pesticide fires may become contaminated. Wear self-contained breathing apparatus and protective suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES



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Personal Precautions	Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.
Methods for Cleaning Up	Take up with absorbent material (e.g. sand, earth or a proprietary absorbent material). Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations.
Additional Advice	Use personal protective equipment. Avoid breathing vapors and avoid skin contact. Do not allow material to enter streams, sewers, or other waterways.

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 before eating, drinking, chewing gum, using tobacco or using the toilet.</p> <p>Remove clothing immediately if pesticide gets inside. 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>

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection	<p>Follow all label instructions. Educate and train employees in safe use of the product.</p> <p>Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.</p>
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 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



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actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or Industry recommendations.

Exposure Limits

Glycerine	56-81-5	ACGIH	TWA		10 mg/m3
		Form of Exposure		Mist.	
		OSHA Z1	PEL		5 mg/m3
		Form of Exposure		Respirable fraction.	
		OSHA Z1	PEL		15 mg/m3
		Form of Exposure		Total dust.	
		OSHA Z1A	TWA		5 mg/m3
		Form of Exposure		Respirable fraction.	
		OSHA Z1A	TWA		10 mg/m3
		Form of Exposure		Total dust.	
		US CA OEL	TWA PEL		5 mg/m3
		Form of Exposure		Respirable fraction.	
		US CA OEL	TWA PEL		10 mg/m3
		Form of Exposure		Total dust.	

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	white
Physical State	liquid
Odor	musty earthy
pH	3.5 - 5.5
Density	ca. 1.09 g/cm ³ at 20 °C
Viscosity	884 mPa.s at 25 °C

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.
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SECTION 11. TOXICOLOGICAL INFORMATION

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

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



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Acute Inhalation Toxicity male/female rat: LC50: 1.8 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.
(actual)
Maximum attainable concentration.
No deaths

male/female rat: LC50: > 7.2 mg/l
Exposure time: 1 h
Determined in the form of liquid aerosol.
Extrapolated from the 4 hr LC50.
(actual)

Skin Irritation rabbit: slight irritation

Eye Irritation rabbit: Minimally irritating.

Sensitization guinea pig: Non-sensitizing

Chronic Toxicity The major organs affected from long-term exposure to spiromesifen in studies in rats and dogs included the liver, uterus, adrenal and/or thyroid (secondary effect).

Assessment Carcinogenicity

Spiromesifen is not carcinogenic based on oncogenicity studies in rats and mice.

ACGIH

None.

NTP

None.

IARC

None.

OSHA

None.

Reproductive & Developmental Toxicity

REPRODUCTION: Spiromesifen is not a primary reproductive toxicant based on two-generation reproduction studies in rats. Reproductive effects observed in high-dosed animals (e.g., reduced estrous cycling) were secondary to stark maternal toxicity.

DEVELOPMENTAL TOXICITY: Spiromesifen is not a primary developmental toxicant based on developmental toxicity studies in rats and rabbits. Developmental effects observed in rats at high doses were secondary to maternal toxicity.

Neurotoxicity

Spiromesifen was not neurotoxic in acute (oral gavage) and subchronic (diet) neurotoxicity screening studies in rats. Transient neurobehavioral effects were observed in these studies without correlating neuropathologic alterations.

Mutagenicity

Spiromesifen is not mutagenic or genotoxic based on in vitro and in vivo



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mutagenicity studies.

SECTION 12. ECOLOGICAL INFORMATION

Environmental Precautions Apply this product only as specified on the label. This pesticide is toxic to fish and aquatic invertebrates. Avoid direct application or spray drift to water surfaces. 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.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal Triple rinse containers. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or incineration, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

SECTION 14. TRANSPORT INFORMATION

TRANSPORTATION CLASSIFICATION:
Not regulated for all modes of Transportation

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

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 432-1279

US Federal Regulations

TSCA list

None.

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 does not contain any substances known to the State of California to cause cancer.

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

US State Right-To-Know Ingredients

None.

Canadian Regulations

Canadian Domestic Substance List

None.

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

SECTION 16. OTHER INFORMATION

NFPA

Health - 2 Flammability - 0 Reactivity - 1 Others - none

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

Reason to Revise: New Material Safety Data Sheet

Revision Date: 05/16/2005

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