



**Material Safety Data Sheet**

**PROKOZ® ZENITH® 0.5G INSECTICIDE**

MSDS Number: 102000007119

MSDS Version 1.1

Revision Date: 03/03/2005

**SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION**

**Product Name** PROKOZ® ZENITH® 0.5G INSECTICIDE  
**MSDS Number** 102000007119  
**EPA Registration No.** 432-1328  
**Product Use** Insecticide for systemic insect control in turfgrass and landscape ornamentals.

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>
Imidacloprid	138261-41-3	0.50
Quartz (Silica, Crystalline)	14808-60-7	3.82

**SECTION 3. HAZARDS IDENTIFICATION**

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

**Emergency Overview** Caution! Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes and clothing. Wash thoroughly with soap and water after handling.

**Physical State** solid granular

**Odor** none

**Appearance** grey

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

**Immediate Effects**

**Eye** Causes eye irritation. Do not get in eyes.

**Skin** Harmful if absorbed through skin. Avoid contact with skin and clothing.



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<b>Ingestion</b>	Harmful if swallowed. Do not take internally.
<b>Chronic or Delayed Long-Term</b>	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 excessive inhalation exposure during anticipated conditions of use is unlikely.
<b>Medical Conditions Aggravated by Exposure</b>	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**

<b>General</b>	Have the product container or label with you when calling a poison control center or doctor or going for treatment.
<b>Eye</b>	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.
<b>Skin</b>	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.
<b>Ingestion</b>	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.
<b>Inhalation</b>	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.
<b>Notes to Physician Treatment</b>	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**

<b>Flash Point</b>	not applicable
<b>Suitable Extinguishing Media</b>	water, carbon dioxide (CO2), dry chemical, foam
<b>Fire Fighting Instructions</b>	<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>In the event of fire, wear self-contained breathing apparatus.</p>

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

<b>Methods for Cleaning Up</b>	Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.
<b>Additional Advice</b>	<p>Avoid dust formation. Avoid breathing dust. Avoid contact with skin and eyes. 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. Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers, or other waterways.</p>

**SECTION 7. HANDLING AND STORAGE**

<b>Handling Procedures</b>	Handle and open container in a manner as to prevent spillage.
<b>Storing Procedures</b>	<p>Do not contaminate water, food, or feed by storage or disposal.</p> <p>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.</p>
<b>Work/Hygienic Procedures</b>	<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>



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**Min/Max Storage Temperatures**                      30 day average temperature not to exceed 38°C (100°F)

**SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Engineering Controls**                      Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.

**Eye/Face Protection**                      tightly fitting safety goggles

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

**General Protection**                              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.

Educate and train employees in safe use of the product. Follow all label instructions.

**Exposure Limits**

Quartz (Silica, Crystalline)	14808-60-7	ACGIH	TWA	0.05 mg/m3
		Form of Exposure		Respirable fraction.
		ACGIH NIC	TWA	0.025 mg/m3
		Form of Exposure		Respirable fraction.
		NIOSH	REL	0.05 mg/m3
		Form of Exposure		Respirable dust.
		OSHA Z1A	TWA	0.1 mg/m3
		Form of Exposure		Respirable dust.
		US CA OEL	TWA PEL	0.1 mg/m3
		Form of Exposure		Respirable dust.
		US CA OEL	TWA PEL	0.3 mg/m3
		Form of Exposure		Total dust.
		OSHA Z1	PEL	15 mg/m3
		Form of Exposure		Total dust.
		OSHA Z1	PEL	5 mg/m3
		Form of Exposure		Respirable fraction.
		Z3	TWA	2.4 millions of particles per cubic foot of air
		Form of Exposure		Respirable.
		Remarks		The value is calculated from a specified equation using a value of 100%. Lower values



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Z3 TWA  
 Form of Exposure  
 Remarks

of % will give higher exposure limits. See regulation for specific equation.

0.1 mg/m3

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  
 Form of Exposure  
 Remarks

0.3 mg/m3

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.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	grey
<b>Physical State</b>	solid granular
<b>Odor</b>	none
<b>Bulk Density</b>	55-60 lbs/cu ft
<b>Water Solubility</b>	insoluble

**SECTION 10. STABILITY AND REACTIVITY**

<b>Chemical Stability</b>	Stable
<b>Conditions to Avoid</b>	extreme temperatures
<b>Hazardous Decomposition Products</b>	hydrogen chloride (HCl) hydrogen cyanide (hydrocyanic acid) carbon dioxide (CO2) nitrogen oxides (NOx)
<b>Hazardous Reactions</b>	Hazardous polymerisation does not occur.



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**SECTION 11. TOXICOLOGICAL INFORMATION**

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

<b>Acute Oral Toxicity</b>	male/female rat: LD50: > 4,820 mg/kg
<b>Acute Dermal Toxicity</b>	male/female rabbit: LD50: > 2,000 mg/kg
<b>Acute Inhalation Toxicity</b>	male/female rat: LC50: > 5.09 mg/l Exposure time: 4 h Determined in the form of dust. (actual)
	male/female rat: LC50: > 20 mg/l Exposure time: 1 h Determined in the form of dust. Extrapolated from the 4 hr LC50. (actual)
<b>Skin Irritation</b>	rabbit: non-irritant
<b>Eye Irritation</b>	rabbit: Mild eye irritation
<b>Sensitization</b>	guinea pig: Non-sensitizing
<b>Subchronic Toxicity</b>	In a 3-week dermal toxicity study, rabbits treated with imidacloprid showed no local or systemic effects at levels up to and including 1000 mg/kg, the limit dose.  In a 4-week inhalation study, rats exposed to high concentrations of imidacloprid exhibited decreased body weight gains and changes in clinical chemistries and organ weights.
<b>Chronic Toxicity</b>	In chronic dietary studies in rats and dogs exposed to imidacloprid, the target organs were the thyroids and/or liver.

**Assessment Carcinogenicity**

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

**ACGIH**

Quartz (Silica, Crystalline)	14808-60-7	Group A2
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**NTP**

Quartz (Silica, Crystalline)	14808-60-7
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**IARC**

Quartz (Silica, Crystalline)	14808-60-7	Overall evaluation: 1
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**OSHA**

None.



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**Reproductive & Developmental Toxicity**

**REPRODUCTION:** In a two-generation reproduction study in rats, imidacloprid was not a primary reproductive toxicant. Offspring exhibited reduced body weights at the high dose and in conjunction with maternal toxicity.

**DEVELOPMENTAL TOXICITY:** In developmental toxicity studies in rats and rabbits, there was no evidence of an embryotoxic or teratogenic potential for imidacloprid. In both species, developmental effects were observed only at high doses and in conjunction with maternal toxicity.

**Neurotoxicity**

In acute and subchronic neurotoxicity screening studies in rats, imidacloprid produced slight neurobehavioral effects in each study at the highest dose tested. There were no correlating morphological changes observed in the neural tissues.

In a one-generation developmental neurotoxicity screening study in rats, offspring exposed to imidacloprid showed decreased motor activities. These effects occurred at the highest dose tested and in conjunction with maternal toxicity. There were no correlating morphological changes observed in the neural tissues.

**Mutagenicity**

The imidacloprid mutagenicity studies, taken collectively, demonstrate that the active ingredient is not genotoxic or mutagenic.

**SECTION 12. ECOLOGICAL INFORMATION**

**Environmental Precautions**

Highly toxic to aquatic invertebrates. 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.

**Ecological Information**

This chemical demonstrates the properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.



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**SECTION 13. DISPOSAL CONSIDERATIONS**

**General Disposal Guidance** Pesticide Disposal: Wastes resulting from the use of this product 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. If burned, stay out of smoke.

**SECTION 14. TRANSPORT INFORMATION**

**DOT CLASSIFICATION:**  
 Not regulated for Domestic Surface Shipment

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

**SECTION 15. REGULATORY INFORMATION**

**EPA Registration No.** 432-1328

**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**

None.

**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**

Quartz (Silica, Crystalline) 14808-60-7 IL, MA, MN, RI

**Canadian Regulations**

**Canadian Domestic Substance List**

Quartz (Silica, Crystalline) 14808-60-7

**Environmental**





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**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)**

Quartz (Silica, Crystalline)

14808-60-7

**SECTION 16. OTHER INFORMATION**

**NFPA**

Health - 1      Flammability - 1      Reactivity - 1      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.

Revision Date: 03/03/2005

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