

**BANOL® FUNGICIDE**

MSDS Version 1.4

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name	BANOL® FUNGICIDE
Chemical Name	Propyl-3 {3-dimethylamino}propyl}-carbamate monohydrochloride
Synonym	
MSDS Number	16
Chemical Family	
Chemical Formulation	Mixture (active ingredient: C ₉ H ₂₁ N ₂ O ₂ Cl)
EPA Registration No.	432-942
Canadian Registrat. No.	

Bayer Environmental Science
 95 Chestnut Ridge Road
 Montvale, NJ 07645
 USA

For Product Use Information: (800)331-2867 Monday through Friday
 8:00AM-4:30PM

For Medical Emergency contact DART: (800) 334-7577 24 Hours/Day

For Transportation Emergency CHEMTREC: (800) 424-9300 24 Hours/Day

Product Use Description A fungicide for use on turf and ornamentals.

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component Name</u>	<u>CAS No.</u>	<u>Concentration % by Weight</u>	
		<u>Minimum</u>	<u>Maximum</u>
Propamocarb hydrochloride	25606-41-1	66.5000	
Inert ingredients		33.5000	

INERT INGREDIENTS (33.5%): None of the inert ingredients are regulated hazardous chemicals (OSHA, ACGIH, or EPA) and therefore are not listed above.

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SECTION 3. HAZARDS IDENTIFICATION

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

Emergency Overview	Caution. May be harmful if swallowed, inhaled or absorbed through the skin. A moderate skin irritant. A slight eye irritant.
Physical State	liquid
Odor	Faint; aromatic.
Appearance	Straw-colored
Routes of Exposure	Mist inhalation, skin contact.
Immediate Effects	
Eye	May cause slight irritation.
Skin	May be harmful if absorbed through skin. A slight to moderate skin irritant. Not likely to cause skin sensitization.
Ingestion	May be harmful if swallowed. Effects are probably slight and non-specific if minute amount was accidentally ingested.
Inhalation	May be harmful if inhaled. Effects are probably slight and non-specific if incidental to routine handling and use.
Chronic or Delayed Long-Term	This product does not contain any ingredients designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.
Medical Conditions Aggravated by Exposure	None specific
Signs and Symptoms	Ingestion of high doses of propamocarb hydrochloride may cause lethargy, convulsions and collapse.

SECTION 4. FIRST AID MEASURES

Eye	Immediately flush eye(s) with plenty of water. Get medical attention if irritation persists.
Skin	Wash with soap and water.
Ingestion	Seek immediate medical attention.
Inhalation	Remove person to fresh air. Support respiration if necessary. Seek medical advice.
Note to Physician	Do not administer atropine unless cholinesterase inhibition is measured or

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patient shows distinct symptoms thereof. Oxime therapy is contraindicated. Otherwise, administration of gastric lavage or induction of vomiting followed by application of activated charcoal is the recommended treatment.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point	Does not flash
Fire and Explosion Hazards	When exposed to extremely high temperatures, such as in a warehouse fire, propamocarb hydrochloride may decompose and give off toxic fumes which include nitrogen oxides.
Suitable Extinguishing Media	foam, carbon dioxide (CO ₂), dry powder, sand, earth, water spray
Fire Fighting Instructions	Fire fighters should wear positive pressure self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

General and Disposal	Use proper protective equipment to minimize personal exposure (see Section 8). Take all necessary action to prevent and to remedy the effects of the spill. Ensure that the disposal is in compliance with Federal or local disposal regulations.
Land Spill or Leaks	Sweep up carefully while avoiding the formation of a dust cloud. Place in suitable container and seal. Area can be washed with water to remove last trace of the material but keep out of watercourse or sewers. Inform appropriate authorities immediately if contamination occurs.

SECTION 7. HANDLING AND STORAGE

Handling Procedures	Caution. May be harmful if swallowed, inhaled or absorbed through the skin. Avoid breathing spray mist. Avoid contact with skin, eyes and clothing.
Storing Procedures	Store in original container. Keep tightly closed. Keep in a dry, cool place. Do not contaminate water, food, or feed by storage or handling.
Work/Hygienic Procedures	Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Keep and wash PPE separately from other laundry. Follow manufacturer's instructions for cleaning/maintaining Personal Protective Equipment (PPE). Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. Do not apply this product through any type of irrigation system.

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For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls	Maintain good ventilation in handling area to minimize exposure. Local exhaust ventilation may be necessary if used in a confined area.
Eye/Face Protection	safety glasses chemical goggles
Body Protection	Rubber (synthetic or natural) gloves
Respiratory Protection	Ensure good ventilation. If not adequate, use a suitable respirator for added protection.

NOTE TO APPLICATORS AND HANDLERS OF AGRICULTURAL PRODUCTS:
For agricultural products which are within the scope of the EPA Worker Protection Standards (WPS) (40 CFR Part 170) all users must refer to the statement below or the Product Label for WPS-specified Personal Protective Equipment (PPE), Restricted Entry Interval (REI), and other Precautionary Statements.

PERSONAL PROTECTIVE EQUIPMENT FOR APPLICATORS AND HANDLERS:

Applicators and other handlers must wear:

- Long-sleeved shirts and long pants
- Waterproof gloves
- Shoes plus socks

PERSONAL PROTECTIVE EQUIPMENT REQUIRED FOR EARLY ENTRY INTO TREATED AREAS:

For entry into treated area during the restricted entry interval (REI) of 12 hours that involves contact with anything that has been treated such as plants, soil, or water, the PPE required is:

- Coveralls
- Waterproof gloves
- Shoes plus socks

Do not enter areas until spray deposit has completely dried.

Exposure Limits

None Established

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Straw-colored
Physical State	liquid
Odor	Faint; aromatic.
pH	Not available
Vapor Pressure	Propamocarb HCl Technical: 6 X 10 ⁽⁻⁶⁾ Torr at 25 °C
Specific Gravity	1.08 (water=1)
Density	1.085 g/ml
Boiling Point	100 °C
Solubility (in water)	(50.0%) 500 g/l
Octanol/Water Partition Coefficient	Not available

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Hazardous Products of Decomposition	Decomposition Type: thermal carbon oxides oxides of nitrogen

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Hazardous Polymerization (Conditions to avoid) Will not occur

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity Rat: 2,000 - 8,550 mg/kg
Low toxicity.

Acute Dermal Toxicity Rat: > 3,920 mg/kg
Low toxicity.

Rabbit: > 3,920 mg/kg
Low toxicity.

Acute Inhalation Toxicity Rat: LC50: > 6.2 mg/l 4 h
Low toxicity.
The highest attainable aerosol concentration in the air.
No toxicity or mortality was observed in rats exposed to this maximum dose.

Skin Irritation A slight to moderate skin irritant.

Eye Irritation May cause slight irritation.

ANTICHOLINESTERASE ACTIVITY:

Propamocarb hydrochloride was not an inhibitor of blood or brain cholinesterase on repeated oral administration to rats or dogs. With rat or dog plasma in vitro, it was weakly inhibitory at levels equivalent to 2,200 mg/kg.

Sub-Chronic Toxicity Results from 90-day animal studies suggest no target organ effects under the conditions of normal handling and use.

Chronic Toxicity In two-year feeding studies with propamocarb hydrochloride, no adverse effects were seen in mice, rats and dogs receiving, respectively, up to 500 ppm, 1000 ppm and 3000 ppm of propamocarb in their diet. At 10,000 ppm a species-specific oculotoxic effects was seen in dogs.

Assessment Carcinogenicity

ACGIH

None

NTP

None

IARC

None

OSHA

None

Reproductive & Propamocarb hydrochloride showed no adverse effects on reproductive function

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Developmental Toxicity	or capacity in a three-generation rat reproductions study at a dietary level of 1000 ppm.
Teratogenicity	Propamocarb hydrochloride was not teratogenic in rats or rabbits at maternally toxic dose levels. The no-effect level (NOEL) in rats and rabbits was 235 mg/kg/day and 164 mg/kg/day, respectively.
Mutagenicity	Propamocarb hydrochloride was not mutagenic or genotoxic when tested in the Ames gene mutation assay and in six other mutagenesis systems.

SECTION 12. ECOLOGICAL INFORMATION

Environmental Precautions	Propamocarb hydrochloride, the active ingredient of this product, is of low toxicity to birds, fish and bees. For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. DO NOT graze or feed clippings from treated areas to livestock.
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SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance	Handling and disposal of pesticide wastes, including spills or rinsates, must be in accordance with federal requirements under the Resource Conservation and Recovery Act (RCRA). Also must ensure that the waste disposal is in compliance with state and local regulations which may be more restrictive or otherwise different from the RCRA requirements. Do not contaminate water, food or feed by storage or disposal. Pesticide Disposal: Wastes resulting from use of this product may be disposed of on site or at an approved waste disposal facility.
Container Disposal	Triple rinse (or equivalent). If burned, stay out of smoke. 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.
RCRA Classification	Not Regulated under this Statute

SECTION 14. TRANSPORT INFORMATION

Not Regulated for Domestic Transportation

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SECTION 15. REGULATORY INFORMATION

US Federal

EPA Registration No. 432-942

TSCA list

None

TSCA 12b export notification

None

SARA Title III - section 302 - notification and information

None

SARA Title III - section 313 - toxic chemical release reporting

None

US States Regulatory

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 Registrat. No.

Canadian Domestic Substance List

None

Environmental

CERCLA

None

Clean Water Section 307 Priority Pollutants

None

Safe Drinking Water Act Maximum Contaminant Levels

None

International Regulations

EU Classification

None

European Inventory of Existing Commercial Substances (EINECS)

Propamocarb hydrochloride 25606-41-1

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SECTION 16. OTHER INFORMATION

	Health	Flammability	Reactivity	Others
HMIS	1	1	0	E
NFPA	1	1	0	none

REVISED SECTIONS:

MSDS REVISION INDICATOR: Company name change.

Print Date: 12/03/2002

Supersedes MSDS, which is older than: 12/03/2002

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