



**Material Safety Data Sheet**  
**BANOL® FUNGICIDE**

MSDS Number: 102000000806  
 MSDS Version 2.0  
 Revision Date: 03/21/2007

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

**Product Name** BANOL® FUNGICIDE  
**MSDS Number** 102000000806  
**EPA Registration No.** 432-942

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>
Propamocarb hydrochloride	25606-41-1	66.50

**SECTION 3. HAZARDS IDENTIFICATION**

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

**Emergency Overview** Caution! Harmful if swallowed or absorbed through skin. Causes eye irritation. Avoid contact with skin, eyes and clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

**Physical State** liquid, clear

**Odor** slightly perceptible

**Appearance** almost colourless

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

**Immediate Effects**

**Eye** May cause slight irritation. Do not get in eyes.

**Skin** Moderate skin irritation. Harmful if absorbed through skin.

**Ingestion** May be harmful if swallowed.

**Inhalation** May be harmful if inhaled.

**SECTION 4. FIRST AID MEASURES**



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<b>General</b>	When possible, 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 physician or poison control center immediately.
<b>Skin</b>	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
<b>Ingestion</b>	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. 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. Do not leave victim unattended.
<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 physician or poison control center immediately.
<b>Notes to Physician Signs and Symptoms</b>	The following symptoms may occur: lethargy ataxia spasm
<b>Hazards</b>	This product, although being a carbamate, is NOT a cholinesterase inhibitor.
<b>Treatment</b>	There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

**SECTION 5. FIRE FIGHTING MEASURES**

<b>Flash point</b>	> 100 °C / 212 °F No flash point - Determination conducted up to the boiling point.
<b>Fire and Explosion Hazards</b>	In the event of fire the following can be released: nitrogen oxides (NOx)
<b>Suitable Extinguishing Media</b>	Water spray, Sand, Dry powder, Carbon dioxide (CO2), Foam
<b>Fire Fighting Instructions</b>	Evacuate personnel to safe areas. Keep out of smoke. Fight fire from upwind position. Do not allow run-off from fire fighting to enter drains or water courses.  Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.



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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

<b>Personal Precautions</b>	Avoid contact with spilled product or contaminated surfaces. Keep unauthorized people away. Use personal protective equipment.
<b>Methods for Cleaning Up</b>	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations. Contaminated soil may have to be removed and disposed.
<b>Additional Advice</b>	Do not allow to enter soil, waterways or waste water canal. Do not allow product to contact vegetation. Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.

**SECTION 7. HANDLING AND STORAGE**

<b>Handling Procedures</b>	Handle and open container in a manner as to prevent spillage. Use only in area provided with appropriate exhaust ventilation.
<b>Storing Procedures</b>	Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place.  Keep away from food, drink and animal feedingstuffs.
<b>Work/Hygienic Procedures</b>	Handle in accordance with good industrial hygiene and safety practice. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.  Remove contaminated clothing immediately and dispose of safely. Wash thoroughly and put on clean clothing.  Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Wash thoroughly and put on clean clothing.

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

<b>General Protection</b>	Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.
<b>Eye/Face Protection</b>	Tightly fitting safety goggles
<b>Hand Protection</b>	Wear suitable gloves.



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**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.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	almost colourless
<b>Physical State</b>	liquid, clear
<b>Odor</b>	slightly perceptible
<b>pH</b>	2 - 4 (100 %) at 20 °C
<b>Vapor Pressure</b>	at 25 °C
<b>Vapor Density (Air = 1)</b>	no data available
<b>Specific Gravity</b>	1.08
<b>Density</b>	approx. 1.085 g/cm <sup>3</sup> at 20 °C
<b>Evaporation rate</b>	no data available
<b>Boiling Point</b>	100 °C / 212 °F
<b>Melting / Freezing Point</b>	no data available
<b>Water solubility</b>	completely miscible
<b>Partition coefficient (n-octanol/water)</b>	log Pow: -2.6 The value mentioned relates to the active ingredient propamocarb-hydrochloride.
<b>Viscosity</b>	34.23 mPa.s at 20 °C

**SECTION 10. STABILITY AND REACTIVITY**

<b>Hazardous Decomposition Products</b>	Thermal decomposition Carbon oxides nitrogen oxides (NOx)
<b>Hazardous Reactions</b>	No hazardous reactions when stored and handled according to prescribed instructions.



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**SECTION 11. TOXICOLOGICAL INFORMATION**

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

- Acute Oral Toxicity**            male rat: LD50: 2,900 mg/kg  
    female rat: LD50: 2,000 mg/kg
- Acute Dermal Toxicity**       male/female combined rat: LD50: > 3,000 mg/kg
- Acute Inhalation Toxicity**   male/female combined rat: LC50: > 7.9 mg/l  
    Exposure time: 4 h  
    Determined in the form of liquid aerosol.
- male/female combined rat: LC50: > 31.6 mg/l  
    Exposure time: 1 h  
    Determined in the form of liquid aerosol.  
    Extrapolated from the 4 hr LC50.
- Skin Irritation**                rabbit: Slight irritation.
- Eye Irritation**                 rabbit: Mild eye irritation.
- Sensitization**                 Local Lymph Node Assay: Skin sensitizer.
- Chronic Toxicity**              Propamocarb hydrochloride caused clinical signs of toxicity and/or pathological changes in the stomach or central nervous system at high doses in chronic studies in rats and dogs.

**Assessment Carcinogenicity**

Propamocarb hydrochloride is not carcinogenic in rats or mice. EPA has classified propamocarb hydrochloride as "not likely to be carcinogenic in humans."

- ACGIH**  
None.
- NTP**  
None.
- IARC**  
None.
- OSHA**  
None.

- Reproductive & Developmental Toxicity**        REPRODUCTION: Propamocarb hydrochloride was not a reproductive toxicant in multi-generation studies in rats.
- DEVELOPMENTAL TOXICITY: Propamocarb hydrochloride was not a primary developmental toxicant in rats or rabbits.



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**Neurotoxicity** Propamocarb hydrochloride was not a neurotoxicant in acute and subchronic neurotoxicity screening studies in rats.

**Mutagenicity** Propamocarb hydrochloride was not genotoxic in a battery of in vivo and in vitro tests.

**SECTION 12. ECOLOGICAL INFORMATION**

**Toxicity to Fish** Lepomis macrochirus (Bluegill sunfish)  
static test  
LC50: > 92 mg/l  
Exposure time: 96 h  
The value mentioned relates to the active ingredient propamocarb-hydrochloride.

**Toxicity to Aquatic Plants** Pseudokirchneriella subcapitata  
IC50: > 85 mg/l  
Exposure time: 72 h  
The value mentioned relates to the active ingredient propamocarb-hydrochloride.

**Acute Toxicity to Aquatic Invertebrates** Water flea (Daphnia magna)  
static test  
EC50: > 106 mg/l  
Exposure time: 48 h  
The value mentioned relates to the active ingredient propamocarb-hydrochloride.

**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. Do not apply when weather conditions favor runoff or drift.



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**SECTION 13. DISPOSAL CONSIDERATIONS**

- General Disposal Guidance** Do not contaminate water, food, or feed by disposal. Dispose in accordance with all local, state/provincial and federal regulations. Follow advice on product label and/or leaflet.
- Container Disposal** Do not re-use empty containers. Triple rinse containers. Consult state and local regulations regarding the proper disposal of container. Follow advice on product label and/or leaflet.

**SECTION 14. TRANSPORT INFORMATION**

- DOT CLASSIFICATION:**  
Not Regulated for Domestic Surface Transportation
- FREIGHT CLASSIFICATION:**  
Insecticides or Fungicides, N.O.I.; other than poison.

**SECTION 15. REGULATORY INFORMATION**

**EPA Registration No.** 432-942

**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**

**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**



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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)**

Propamocarb hydrochloride 25606-41-1

**SECTION 16. OTHER INFORMATION**

NFPA 704 (National Fire Protection Association):

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

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

Reason to Revise: Updated due to new system and numbering scheme. Updated for general editorial purposes. Updated Section 11: Toxicological Information; Updated Section 14: Transport Information.

Revision Date: 03/21/2007

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