



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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General	When possible, 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 physician or poison control center immediately.
Skin	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.
Ingestion	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.
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 physician or poison control center immediately.
Notes to Physician Signs and Symptoms	The following symptoms may occur: lethargy ataxia spasm
Hazards	This product, although being a carbamate, is NOT a cholinesterase inhibitor.
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	> 100 °C / 212 °F No flash point - Determination conducted up to the boiling point.
Fire and Explosion Hazards	In the event of fire the following can be released: nitrogen oxides (NOx)
Suitable Extinguishing Media	Water spray, Sand, Dry powder, Carbon dioxide (CO2), Foam
Fire Fighting Instructions	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

Personal Precautions	Avoid contact with spilled product or contaminated surfaces. Keep unauthorized people away. Use personal protective equipment.
Methods for Cleaning Up	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.
Additional Advice	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

Handling Procedures	Handle and open container in a manner as to prevent spillage. Use only in area provided with appropriate exhaust ventilation.
Storing Procedures	Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from food, drink and animal feedingstuffs.
Work/Hygienic Procedures	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

General Protection	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.
Eye/Face Protection	Tightly fitting safety goggles
Hand Protection	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

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

SECTION 10. STABILITY AND REACTIVITY

Hazardous Decomposition Products	Thermal decomposition Carbon oxides nitrogen oxides (NOx)
Hazardous Reactions	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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