

BANOL® FUNGICIDE

For Product Use Information: (800)331-2867 24 Hours/Day

Medic./Trans. Emergency:

(DART) (800)334-7577 24 Hours/Day
(CHEMTREC) (800)424-9300 24 Hours/Day
Product Code: 15442
MSDS Number: C2951
Version Date: April 25 2000

1. CHEMICAL PRODUCT and COMPANY IDENTIFICATION

Product Name: BANOL® FUNGICIDE

Product Code: 15442

MSDS Number: C2951

Chemical Name: Propyl-3 {3-dimethylamino}propyl}-carbamate monohydrochloride
Chemical Formula: Mixture (active ingredient: C₉H₂₁N₂O₂Cl)

EPA Registry Number: 432-942

AVENTIS ENVIRONMENTAL SCIENCE USA LP

95 CHESTNUT RIDGE ROAD

MONTVALE, NJ 07645

UNITED STATES

PRODUCT USE:

END-USE PRODUCT DESCRIPTION: A fungicide for use on turf and ornamentals.

2. COMPOSITION / INFORMATION on INGREDIENTS

Component	Cas number	%
Propamocarb hydrochloride	25606-41-1	66.5%
Inert ingredients	Trade Secret	33.5%

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

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 AND A SLIGHT EYE IRRITANT. PRODUCT IS A STRAW-COLORED LIQUID WITH A FAINT AROMATIC ODOR.

POTENTIAL HEALTH EFFECTS**ROUTES OF EXPOSURE:**

Skin contact, mist inhalation

SIGNS AND SYMPTOMS OF EXPOSURE:

EFFECTS OF OVEREXPOSURE: Ingestion of high doses of propamocarb hydrochloride may cause lethargy, convulsions and collapse.

IMMEDIATE EFFECTS**SKIN:**

May be harmful if absorbed through the skin. A slight to moderate skin irritant. Not likely to cause skin sensitization.

EYES:

May cause slight eye irritation.

INHALATION:

May be harmful if inhaled. Effects are probably slight and non-specific for inhalation incidental to routine handling and use.

INGESTION:

May be harmful if swallowed. Effects are probably slight and non-specific if minute amount was accidentally ingested.

DELAYED/LONG TERM EFFECTS**CARCINOGENIC:**

None of the product ingredients are listed as carcinogenic by NTP, IARC, or OSHA.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

None specific

4. FIRST AID MEASURES**After contact with skin:**

Wash with soap and water.

After contact with eyes:

Immediately flush eyes with plenty of water. Get medical attention if irritation persists.

After inhalation:

Remove person to fresh air. Support respiration if necessary. Seek medical advice.

After ingestion:

Seek medical attention immediately. See "Hints for the Physician" below.

Hints for the physician:

Do not administer atropine unless cholinesterase inhibition is measured or 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.

5. FIRE FIGHTING MEASURES**FLAMMABLE PROPERTIES**

Flash Point: Does not flash

Advice on protection against fire and explosion:

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.

FIRE FIGHTING INSTRUCTIONS: Wear positive pressure self-contained breathing apparatus.

Suitable extinguishing media:

Foam, carbon dioxide, dry powder, sand, earth, or water spray.

6. ACCIDENTAL RELEASE MEASURES

GENERAL AND DISPOSAL: Use proper protective equipment to minimize exposure (see Section 8). Take all necessary action to prevent and to remedy the adverse effect of the spill. Ensure the disposal is in compliance with federal requirements and state or local regulations.

LAND SPILL OR LEAK: Carefully sweep up while avoiding the formation of a dust cloud. Place in suitable container and seal for disposal. Area can be washed with water to remove last traces of material, by keep out of watercourses or sewers. Inform authorities immediately if contamination occurs.

7. HANDLING and STORAGE**Handling:**

CAUTION. May be harmful if swallowed, inhaled or absorbed through the skin. Avoid breathing spray mist. Avoid contact with skin, eyes or clothing. **USERS SHOULD:**

- Wash before eating, drinking, chewing gum, using tobacco, or using the toilet.
- 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.
- 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.
- For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.
- Do not apply this product through any type of irrigation system.

Storage:

Store in the original container and keep tightly closed. Store in a cool, dry place. Do not contaminate water, food or feed by storage or handling.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Additional advice on system design:**

ENGINEERING CONTROLS: Maintain good ventilation in handling area to minimize exposure. Local exhaust ventilation may be necessary if used in a confined area.

Personal protective equipment

FOR APPLICATORS AND HANDLERS (AGRICULTURAL USES): The personal protective equipment (PPE) for agricultural uses are specified under the Subtitle: "Note to Applicators and Handlers of Agricultural Products."

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

NON-AGRICULTURAL USE REQUIREMENTS

The requirements listed under the heading **NON-AGRICULTURAL USE REQUIREMENTS** apply to uses of this product that are not within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

- Do not enter areas until spray deposit has completely dried.

FOR MANUFACTURING AND PACKAGING EMPLOYEES: The personal protective equipment (PPE) in accordance with OSHA standards are recommended immediately below.

Body protection:

Rubber (synthetic or natural) gloves

Eye protection:

Safety glasses; chemical goggles

Respiratory protection:

Ensure good ventilation. If not adequate, use a suitable respirator for added protection.

9. PHYSICAL and CHEMICAL PROPERTIES

APPEARANCE: Straw-colored liquid.

ODOR: Faint; aromatic.

BASIC PHYSICAL PROPERTIES

PHYSICAL STATE: Liquid

BOILING POINT: 100°C

VAPOR PRESSURE: 6 X 10⁻⁶ Torr (*)

SEPCIFIC GRAVITY: 1.085 (water=1)

SOLUBILITY (H₂O): 500 g/l (50.0%)

PH: Not available

DENSITY: 1.085 g/ml

OCTONAL/WATER PARTITION COEFFICIENT: Not available

***VAPOR PRESSURE:** The data above (6 x 10⁻⁶ Torr) was at 25°C (77°F) for the Propamocarb HCl Technical.

10. STABILITY and REACTIVITY**CHEMICAL STABILITY:**

Stable

HAZARDOUS DECOMPOSITION PRODUCTS:

When heated to the point of decomposition, propamocarb hydrochloride may give off toxic fumes of oxides of carbon and nitrogens.

HAZARDOUS POLYMERIZATION:

Will not occur

11. TOXICOLOGICAL INFORMATION**EYE EFFECTS**

May cause slight irritation to eyes.

SKIN EFFECTS

Dermal LD₅₀ (rat, rabbit): > 3,920 mg/kg (low toxicity).

A slight to moderate skin irritant.

ACUTE ORAL EFFECTS

Oral LD₅₀ (rat): 2,000-8,550 mg/kg (low toxicity)

ACUTE INHALATION EFFECTS

Inhalation LC₅₀ (rat-4hrs): greater than 6.2 mg/liter (low toxicity), the highest attainable aerosol concentration in the air. No toxicity or mortality was observed in rats exposed to this maximum dose.

SUBCHRONIC (TARGET ORGAN EFFECTS)

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

CHRONIC (CANCER INFORMATION)

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.

CARCINOGENICITY: NTP: No IARC: No
OSHA: No

TERATOGENICITY (BIRTH DEFECTS)

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.

REPRODUCTIVE EFFECTS

Propamocarb hydrochloride showed no adverse effects on reproductive function or capacity in a three-generation rat reproductions study at a dietary level of 1000 ppm.

MUTAGENICITY (GENETIC EFFECTS)

Propamocarb hydrochloride was not mutagenic or genotoxic when tested in the Ames gene mutation assay and in six other mutagenesis systems.

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.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

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.

OTHER ENVIRONMENTAL INFORMATION

USE PRECAUTIONS: DO NOT graze or feed clippings from treated areas to livestock.

13. DISPOSAL CONSIDERATIONS

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: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

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.

RCRA CLASSIFICATION:

Hazardous Waste Ingredients: None

14. TRANSPORT INFORMATION

PROPER SHIPPING NAME: None

DOT SHIPPING LABEL: None

15. REGULATORY INFORMATION

STATE REGULATIONS

The following chemicals associated with the product are subject to the right-to-know regulations in these states: No components regulated

U.S. FEDERAL REGULATIONS

SARA TITLE III Section 302 (EHS) Ingredients: Not listed

SARA TITLE III Section 304 (CERCLA & EHS) Ingredients (RQ): Not listed

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION

None of the product ingredients are SARA 313 Listed chemicals.

TSCA inventory status

These components are not listed:

Inert ingredients 33.5%

Propamocarb hydrochloride 66.5% (25606-41-1)

INTERNATIONAL REGULATIONS

Die folgende(n) Chemikalie(n), die mit dem Produkt verbunden sind, sind auch auf folgenden internationalen Listen aufgefuehrt:

Propamocarb hydrochloride (25606-41-1): EINECS
WHMIS INGREDIENT DISCLOSURE LISTED COMPONENTS:

CANADA WHMIS CONTROLLED-PRODUCT REGULATIONS: Banol is a registered pesticide under US FIFRA regulations and is therefore exempted from WHMIS classification. Toxicity indicates that Banol is not a Controlled Product under WHMIS criteria.

16. OTHER INFORMATION

HAZARD RATINGS

	HEALTH	FLAMM	REACT	OTHER
NFPA	1	1	0	None
HMS	1	1	0	E

REVISED SECTIONS:

MSDS REVISION INDICATOR: New Format, Company Name and EPA Number.

PREPARED BY: Dept. of Regulatory Affairs

PHONE: 800-438-5837

SUPERCEDES MSDS DATES: 10/07/96

DISCLAIMER:

THIS INFORMATION IS PROVIDED IN GOOD FAITH BUT WITHOUT EXPRESS OR IMPLIED WARRANTY.