SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name: BANOL® FUNGICIDE
Product code (UVP): 05933765
SDS Number: 102000000806
EPA Registration No.: 432-942

Relevant identified uses of the substance or mixture and uses advised against

Use: Fungicide
Restrictions on use: See product label for restrictions.

Information on manufacturer

Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
United States

Emergency telephone no.
All Emergencies, 24hr/7 days: 1-800-334-7577

Product Information
Telephone No.

SDS Information or Request: SDSINFO.BCS-NA@bayer.com

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200
Skin sensitisation: Category 1B
Acute toxicity (Oral): Category 4

Signal word: Warning

Hazard statements

May cause an allergic skin reaction.
Harmful if swallowed.

Precautionary statements

Avoid breathing mist and spray.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention. Specific treatment (see supplemental first aid instructions on this label).
Wash contaminated clothing before reuse.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
Rinse mouth.
Dispose of contents/container in accordance with local regulation.

Other hazards
No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Component Name</th>
<th>CAS-No.</th>
<th>Average % by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propamocarb hydrochloride</td>
<td>25606-41-1</td>
<td>66.50</td>
</tr>
</tbody>
</table>

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice
When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

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.

Skin contact
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.

Eye contact
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.

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.

Most important symptoms and effects, both acute and delayed
Symptoms
The following symptoms may occur: Lethargy, Ataxia, Spasm

Indication of any immediate medical attention and special treatment needed
Risks
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. Gastric lavage is not normally required. However, if a significant amount (more than a mouthful) has been ingested, administer activated charcoal and sodium sulphate.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable
High volume water jet

Special hazards arising from the substance or mixture
In the event of fire the following may be released:; Carbon monoxide (CO), Hydrogen chloride (HCl), Nitrogen oxides (NOx)

Advice for firefighters

Special protective equipment for fire-fighters
Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information
Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

Flash point
> 100 °C
No flash point - Determination conducted up to the boiling point.

Autoignition temperature
The product is not self-ignitable.

Lower explosion limit
no data available

Upper explosion limit
no data available

Explosivity
not applicable
SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions
Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). 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
Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal.

Reference to other sections
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

Precautions for safe handling

Advice on safe handling
Handle and open container in a manner as to prevent spillage. Use only in area provided with appropriate exhaust ventilation.

Hygiene measures
Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers
Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

Advice on common storage
Keep away from food, drink and animal feedingstuffs.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propamocarb hydrochloride</td>
<td>25606-41-1</td>
<td>1.1 mg/m3 (TWA)</td>
<td></td>
<td>OES BCS*</td>
</tr>
</tbody>
</table>
Exposure controls

Personal protective equipment
In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

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.

Hand protection
Chemical resistant gloves made of waterproof material such as polyethylene or polyvinyl chloride

Eye protection
Tightly fitting safety goggles

Skin and body protection
Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures
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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>colourless to light yellow</td>
</tr>
<tr>
<td>Physical State</td>
<td>liquid, clear</td>
</tr>
<tr>
<td>Odor</td>
<td>slightly perceptible</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>no data available</td>
</tr>
<tr>
<td>pH</td>
<td>2.0 - 4.0 (100 %) at 23 °C</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>no data available</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>no data available</td>
</tr>
<tr>
<td>Density</td>
<td>ca. 1.09 g/cm³ at 20 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>no data available</td>
</tr>
</tbody>
</table>
Boiling Point: ca. 100 °C / 212 °F
Melting / Freezing Point: no data available
Water solubility: completely miscible
Minimum Ignition Energy: not applicable
Decomposition temperature: not applicable
Partition coefficient: n-octanol/water: no data available
Viscosity: 34.23 mPa.s at 20 °C
Flash point: > 100 °C
No flash point - Determination conducted up to the boiling point.
Autoignition temperature: The product is not self-ignitable.
Lower explosion limit: no data available
Upper explosion limit: no data available
Explosivity: not applicable
Other information: Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

Reactivity
Thermal decomposition: not applicable

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions: No hazardous reactions when stored and handled according to prescribed instructions.

Conditions to avoid: Extremes of temperature and direct sunlight.

Incompatible materials: no data available
Hazardous decomposition products

No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes
Eye contact, Ingestion, Skin Absorption, Inhalation

Immediate Effects

Eye
Moderate eye irritation.

Skin
Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Harmful if absorbed through skin.

Ingestion
Harmful if swallowed.

Information on toxicological effects

Acute oral toxicity
LD50 (male rat) 2,900 mg/kg
LD50 (female rat) 2,000 mg/kg

Acute inhalation toxicity
LC50 (male/female combined rat) > 7.9 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.

LC50 (male/female combined rat) > 31.6 mg/l
Exposure time: 1 h
Determined in the form of liquid aerosol.
Extrapolated from the 4 hr LC50.

Acute dermal toxicity
LD50 (male/female combined rat) > 3,000 mg/kg

Skin irritation
Slight irritation (rabbit)

Eye irritation
Mild eye irritation. (rabbit)

Sensitisation
Sensitising
OECD Test Guideline 429, local lymph node assay (LLNA)

Assessment repeated dose toxicity
Propamocarb hydrochloride did not cause specific target organ toxicity in experimental animal studies.

Assessment Mutagenicity
Propamocarb hydrochloride was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment Carcinogenicity
Propamocarb hydrochloride was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH
None.

NTP
None.

IARC
None.

OSHA
None.

Assessment toxicity to reproduction
Propamocarb hydrochloride did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity
Propamocarb hydrochloride caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Propamocarb hydrochloride are related to maternal toxicity.

Further information
Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

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

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

Toxicity to aquatic plants
IC50 (Pseudokirchneriella subcapitata) > 85 mg/l Exposure time: 72 h
The value mentioned relates to the active ingredient propamocarb-hydrochloride.

Biodegradability
Propamocarb hydrochloride: rapidly biodegradable

Koc
Propamocarb hydrochloride: Koc:719

Bioaccumulation
Propamocarb hydrochloride: Does not bioaccumulate.

Mobility in soil
Propamocarb hydrochloride: Slightly mobile in soils
Additional ecological information

No other effects to be mentioned.

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.
Apply this product as specified on the label.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product
Do not contaminate water, food, or feed by disposal.
Dispose in accordance with all local, state/provincial and federal regulations.
Follow container label instructions for disposal of wastes generated during use in compliance with the product label.

Contaminated packaging
Do not re-use empty containers.
Triple rinse containers.
Puncture container to avoid re-use.
Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning.
If burned, stay out of smoke.
Follow advice on product label and/or leaflet.

RCRA Information
Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user’s responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

According to national and international transport regulations this material is not classified as dangerous goods / hazardous material.

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 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

EPA/FIFRA Information:
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word: Caution!

Hazard statements: Harmful if swallowed or absorbed through skin.
Moderate eye irritation.
Avoid contact with skin, eyes and clothing.
Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

SECTION 16: OTHER INFORMATION
NFPA 704 (National Fire Protection Association):
Health - 1  Flammability - 1  Instability - 0  Others - none

Health - 1  Flammability - 1  Physical Hazard - 0  PPE -
0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: Revised according to the current OSHA Hazard Communication Standard (29CFR1910.1200)
Revision Date: 01/16/2014

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.