



MATERIAL SAFETY DATA SHEET

Manufacturer/information service:

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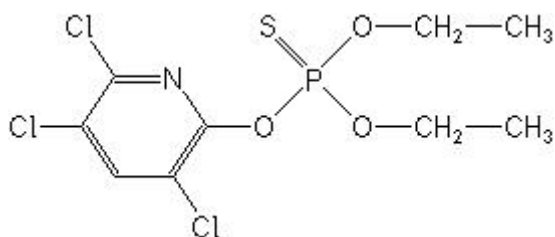
1. Chemical Product Identification

Product Name: Benomyl 50% WP

Molecular Formula: C₁₄H₁₈N₄O₃

Molecular Weight: 290.32 g/mol

Structural Formula:



Chemical Name:

methyl 1-(butylcarbamoyl) benzimidazol-2-ylcarbamate (IUPAC);

Form: WP;

Color: White;

CAS No.: 17804-35-2

2. Composition / Information On Ingredients

Composition	CAS No.	Content %
Benomyl	17804-35-2	50%
Other ingredients		50%

3. Hazards Identification

Likely routes of exposure: Ingestion, skin and eye contact.



Eye contact: Mild eye irritant.

Skin contact: Mild irritant. Moderate sensitizer. Repeated exposure to product may cause temporary allergic skin reaction.

Inhalation: Mild irritant to the nose, throat and respiratory system.

4. First Aid Measures

Symptoms of exposure to the product include itching, scratchy throat, sneezing and coughing. Accidental swallowing has caused nausea, vomiting, diarrhoea, headache, ataxia, confusion and fatigue in man.

Skin: Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.

Eyes: First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.

Inhalation: Move affect person to fresh air and keep at rest until recovered. If not breathing, give artificial respiration and get to a doctor.

Ingestion: Do not induce vomiting if the person is conscious. Give glass of water. Get to a doctor.

5. Fire-Fighting Measures

Fire and explosion hazard: Product is not flammable. Dust particles may form explosive mixtures in air.

Special Hazards: Fire may produce poisonous gases of combustion, namely n-butyliocyanate.

Extinguishing media: Extinguish small fires with carbon dioxide, dry powder, or alcohol-resistant foam. Water spray can be used for cooling of unaffected stock, but avoid water coming in contact with the product. Contain water used for fire fighting for later disposal. Avoid the accumulation of polluted run-off from the site.

Measures of personal protection: Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

6. Accidental Release Measures

Personal cautions: Do not inhale dusts. Ventilate area of spill or leak, especially confined areas. Avoid contact with skin, eyes or clothes. For personal protection see Section 8.



Environmental cautions

Do not allow entering drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs.

7. Handling And Storage

Handling: Remove sources of naked flame or sparks. Avoid contact with eyes and skin and inhalation of dust and fumes. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the insecticide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination

Storage: Store at normal temperatures, away from children, domestic animals, food and feed products, seed and fertilizer. Do not contaminate other stored products or the storage area by handling or storage of this product. Keep in a well-ventilated room.

8. Exposure Controls / Personal Protection

Personal protective equipment: If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal equipment including approved respiratory protection.

Respiratory protection: An approved full-face respirator suitable for protection from mists of pesticides is required. Limitations of respirator use specified by the approving agency and the manufacturer must be observed.

Protective gloves: Employee must wear appropriate chemical resistant protective gloves to prevent contact with this substance.

Eye protection: Employee must wear splash-proof safety goggles and face-shield to prevent contact with this substance.

9. Physical And Chemical Properties

Appearance: White loose powder

pH: 5.0-8.0

Suspensibility: $\geq 80\%$



Wetting time: 45s

Bulk density: 0.55g/ml

Fineness (through 325 mesh): $\geq 98\%$

10. Stability And Reactivity

Storage stability: Considered stable at normal warehouse and storage conditions, if kept in closed, original container. Stable in light.

Stability: Decomposes in strong acidic and strong basic media. Decomposes with heat. Decomposes slowly in the presence of moisture.

Incompatibility: Compatible with most other pesticides, except strong alkaline materials, when used at normal rates. However, a compatibility test is required before using with other products. Do not physically mix concentrate directly with other herbicides or pesticide concentrates; always dilute first.

Hazardous decomposition products: Toxic n-butyl isocyanate is released when the product decomposes on heating. High humidity or moisture levels and/or high temperatures can also lead to generation of n-butyl isocyanate.

11. Toxicological Information

Acute oral LD50 for rat: >10000 a.i.mg/kg

Acute dermal LD50 for rat: >5000 a.i.mg/kg

Acute inhalation LD50 (4~6h) for rat: 2.0 a.i.mg/l

Contact with the skin: Negligible irritant to skin (rabbits)

Contact with the eyes: Mild irritation to eyes

Dermal sensitization: Not a skin sensitiser (guinea pigs).

12. Ecological And Ecotoxicological Information

Effect on birds: moderate toxicity to birds, acute LD₅₀ for Mallard ducks is 1000 a.i.mg/kg.

Effect on fish: moderate toxicity to fish, acute 96 hour LC₅₀ for Rainbow trout is 0.17 a.i.mg/L.

Effect on aquatic invertebrates: moderate toxicity to aquatic invertebrates, acute 48 hour EC₅₀ for Daphnia magna is 0.28 a.i.mg/L.

Effect on algae: moderate toxicity to algae, acute 72 hour EC₅₀ for Scenedesmus acutus is 2 a.i.mg/L.



Effect on honeybees: moderate toxicity to honeybees, contact acute 48 hour LD₅₀ is 10 a.i.µg/bee.

Effect on earthworms: moderate toxicity to earthworms, acute 14 day LC₅₀ is 10.5 a.i.mg/kg.

13. Disposal Considerations

Pesticide disposal: Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product that cannot be reused or reprocessed. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers. Comply with local legislation applying to waste disposal.

Package product wastes: Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed. Empty the container of excess product into the container of the applicator. Destroy the emptied containers by perforation and flattening. Bury in an approved, designated landfill. Do not re-use the empty container for any other purpose. Comply with any local legislation applying to disposal.

14. Transport Information

Not applicable

15. Regulatory Information

Not applicable

16. Other Information

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the PRODUCT AS SUCH. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons on receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produce formulations containing this product, it is the recipients sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.