

Carbendazim -MATERIAL SAFETY DATA SHEET

Manufacturer/information service:

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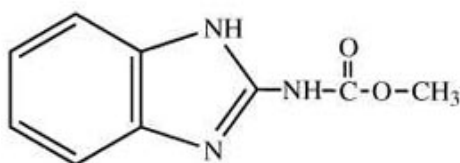
1. Chemical Product Identification

Product Name: Carbendazim

Molecular Formula: C₉H₉N₃O₂

Molecular Weight: 191.22

Structural Formula:



Chemical Name:

Methylbenzimidazole-2-ylcarbamate (IUPAC).

Form: powder

Colour: Blight grey

Odour: odorless

CAS No.: 10605-21-7

UN No.: 3077

2. Composition / Information On Ingredients

Composition	CAS No.	Content %
Carbendazim	10605-21-7	95.0
Others ingredients		5.0

3. Hazards Identification

Possible risk of irreversible effects.

4. First Aid Measures

Skin: Remove contaminated clothes. Rinse and then wash skin with plenty of water immediately.

Eyes: Rinse with plenty of water for several minutes (remove contact lenses if easily possible) immediately.

Ingestion: If swallowed induce vomiting by tickling the back of throat. Be quiet and call a physician

Notes to physician: No specific antidote if ingested. Treat symptomatically.

5. Fire-Fighting Measures

Extinguishing media

To be used: Powder, Water spray.

Don't use: Not applicable

Particular risk: None

Measures of personal protection: Safety glasses or goggles, rubber gloves, shoes plus socks, long-sleeved shirt, and long pants.

6. Accidental Release Measures

Personal cautions: Safety glasses or goggles, rubber gloves, shoes plus socks, long-sleeved shirt, and long pants.

Cleaning methods

EX: The empty container may be decontaminated by rinsing two or three times with water and detergent and scrubbing the sides.

Environmental cautions

EX: Prevent the contamination of the floor and the beds of water.

7. Handling and Storage

Handling: Do not apply to humans, their clothing, or bedding. Do not contaminate food or use on household tanks.

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

Respiratory protection: Approved respirator

Protective gloves: Rubber gloves

Eye protection: Safety goggles or face shield.

Industrial hygiene: adequate ventilation.

9. Physical And Chemical Properties

Appearance: Blight grey powder;

Melting point: 302~307°C (decompose.);

Density: 1.45 at 20°C;

Water solubility: 29 mg/l (pH 4), 8mg /l (pH 7), 7mg/l (pH 8) (24°C);

Other solubility: In dimethylformamide 5, acetone 0.3, ethanol 0.3, chloroform 0.1, ethyl acetate 0.135, dichloromethane 0.068, benzene 0.036, cyclohexane <0.01, diethyl ether <0.01, hexane 0.0005 (all in g/l, 24°C);

Acidity: ≤0.5% (calculated as H₂SO₄);

Flash point: non-inflammable;

Octanol/water partition coefficient: Kow log P= 1.49 (Ph=9);

10. Stability And Reactivity

Stability: Decomposes at m.p.. stable for at least 2 y below 50°C. Slowly decomposed in alkaline solution (22°C); DT₅₀ >350 d (pH 5 and pH 7), 124 d (pH 9). Stable in acids, forming water-soluble salts.

Incompatibility (Materials to Avoid): Incompatible with alkaline materials;

Hazardous reaction: The substance decomposes slowly on contact with bases.

11. Toxicological Information

Acute oral LD50: rat >15000mg/kg; dog >2500mg/kg

Acute dermal LD50: rabbit >10000mg/kg; rat >2000mg/kg

Contact with the skin: no irritant to skin

Contact with the eyes: Not irritant to eyes;.

Inhalation: LC₅₀ (4 h) for rats 300 mg/kg diet; Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying or when dispersed, especially if powdered

Effects for chronic toxicity:

Animal tests show that this substance possibly causes toxicity to human reproduction or development.

12. Ecological And Ecotoxicological Information

Aquatic organisms: LC₅₀ (96 h) for rainbow trout 0.83, carp 0.61, bluegill sunfish >17.25, guppy >8 mg/l.

Bird: Acute oral LC₅₀ for quail 5826~15595mg/kg;

Other Animals (Non-target species)

Bee: LD₅₀ (contact) >50µg/bee

Earth worms: LC₅₀ (4 w) for Eisenia foetida 6 mg/kg soil.

13. Disposal Considerations

Disposal must be in accordance with applicable local regulations. Remove nonusable solid materials and/or contaminated soil for disposal in an approved and permitted landfill. Do not flush into surface water or sanitary sewer systems.

Spillage disposal: Do not wash away into sewer. Do not let this chemical enter the environment. Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.

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.