



Hangzhou Tianlong Biotechnology Co., Ltd.

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MATERIAL SAFETY DATA SHEET

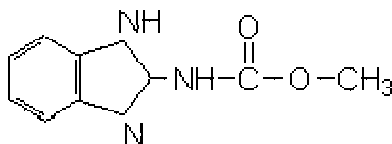
1. Chemical Product and company Identification

Product Name: Carbendazim

Molecular Formula: C₉H₉N₃O₂

Molecular Weight: 191.2

Structural Formula:



Chemical Name: N-(benzimidazolyl-2) methyl carbanate

CAS No.: 10605-21-7

Supplier: HANZHOU TIANLONG BIOTECHNOLOGY CO., LTD

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2. Composition / Information on Ingredients

Composition	CAS No.	Content %
Carbendazim	10605-21-7	98.0
Other ingredients		2.0

3. Hazards Summarizing

Emergency Overview:

- Carbendazim is very rapidly absorbed and eliminated from the body.
- Carbendazim is NOT a cholinesterase inhibitor.
- Harmful if absorbed through skin or inhaled.
- Avoid breathing product vapors or spray mist.
- Avoid contact with eyes, skin or clothing.
- Keep out of reach of children.

Symptoms of over exposure are headache, nausea, vomiting, cramps, weakness, blurred vision, pin point pupils, tightness in chest, labored breathing, nervousness, sweating, watering of eyes, drooling, muscle spasms and coma.

Potential Health Hazards:

Eye- No irritant to eye

Skin-No irritant to skin. The dermal toxicity of this product is low. However, skin contact should be avoided. This product is not a skin sensitiser.

Inhalation- May be a slight respiratory irritant.

Ingestion- The acute toxicity of this product is low, but it may be harmful if a large amount is swallowed.

Potential Physical Hazards: Oxides of carbon and nitrogen may be given off when exposed to extreme heat or fire.

4. First Aid Measures

Inhalation: If inhaled, remove to fresh air and keep at rest. Obtain medical advice if at all worried.

Skin contact: Carefully remove contaminated clothing. Wash affected areas with soap and water. Seek medical aid if at all worried.

Eye contact: Rinse eyes immediately with clean water for at least 15 minutes and obtain medical aid.

Ingestion: Wash out mouth with water. Do not induce vomiting. Keep patient at rest and seek medical advice as above.

5. Fire-Fighting Measures

Extinguishing media: Water spray, foam, dry agent, carbon dioxide

Hazards from combustion products:

Oxides of carbon and nitrogen may be given off when exposed to extreme heat or fire.

Precautions for fire fighters:

Firefighters should wear full protective gear, including self-contained breathing apparatus. If possible and without risk, remove intact containers from exposure to fire. Otherwise, spray unopened containers with water to keep cool. Contain fire-fighting water by bounding area with sand or earth to prevent it entering any bodies of water. Dispose of fire control water or other extinguishing agent and spillage later.

6. Accidental Release Measures

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

Avoid contact with the spilled material or contaminated surfaces. When dealing with spills do not eat, drink or smoke and wear personal protective clothing and equipment as described in the PERSONAL PROTECTION section below. Prevent spilled material from entering drains or watercourses. Contain spill and absorb with earth, sand, clay, or other absorbent material. Collect and store in properly labelled, sealed drums for safe disposal. Deal with all spillages immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority. Neutralizing chemicals are not required.

7. Handling and Storage

Handling: Keep out of reach of children. Avoid contact with the eyes and skin.

Storage: Store in the closed, original container in a dry, cool, well-ventilated area. Do not store for prolonged periods in direct sunlight. Store in a locked room or place away from children, animals, food, animal

feed, seed and fertilizers. Store below 40°C. Protect from frost.

8. Exposure Controls/Personal Protection

Exposure standards:

No exposure standard has been assigned by the National Occupational Health and Safety Commission for the product or its ingredients. The exposure standard for Carbendazim set is 0.5 mg/m³.

Engineering Controls: Control process conditions to avoid contact. Use local exhaust ventilation during manufacture. Use in a well-ventilated area only.

Personal Protective Equipment:

To avoid eye and skin contact, wearing the following personal protective clothing and equipment is recommended:

Eyes: Safety goggles or face shield

Clothing: Cotton overalls buttoned to the neck and wrist and a washable hat.

Gloves: Elbow length PVC gloves.

Respiratory: Respiratory protection is not normally required. If airborne concentrations are likely to exceed the exposure standard above, an AS/NZS 1715/1716 approved respirator should be worn.

Other: After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use wash gloves, goggles or face shield and contaminated clothing.

9. Physical and Chemical Properties

Form: crystalline powder

Color: White to gray

Melting point: 302-307°C

Boiling point: Not available

Specific gravity: 1.45 (20°C)

Decomposition point: 290°C

Stability: Insoluble in water, slightly soluble in acetone, chloroform and some other organic solvents. Soluble in inorganic acids and acetic acid, meantime forming salts.

Vapor Pressure: 11×10^{-2} mPa(20°C).

10. Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Extreme heat and fire.

Incompatibilities with Other Materials: incompatible with alkaline materials.

Hazardous Polymerization: Non-known.

11. Toxicological Information

Acute toxicity:

Oral LD50 (rat) - >15000 mg/Kg

Dermal LD50 (rabbit) - >10000 mg/Kg

Inhalation LC50 (rat) - Not effect with suspension (10 g/l water)

Eye Irritation (rabbit) - Non-irritating

Skin Irritation (rabbit) - Non-irritating

Sensitization (guinea pig) - Not-sensitizer

Mutagenic date: Carbendazim is classified as a Category 3 Mutagen, i.e. insufficient evidence to classify as a mutagen. Studies indicate that reproductive and teratogenic effects in humans are unlikely at expected exposure levels.

12. Ecological Information

Environmental summary: Do not contaminate streams, rivers or waterways with the chemical or used containers. Toxic to aquatic organisms. Low hazard to birds. Do not apply directly to water, or to areas where surface water is present. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites.

Fish toxicity: 96 hour LC50, Rainbow trout – 0.83 mg/l

Avian toxicity: Oral LD50, quail - 5826-15 595 mg/kg.

Bee toxicity: LD50 (contact) >50 µg/bee. Environmental fate, persistence and degradation:

Carbendazim decomposes in the environment DT50 6 to 12 months on bare soil, 3 to 6 months on turf and 2 and 25 months in water under aerobic and anaerobic conditions respectively.

13. Disposal Considerations

Waste: Pesticide wastes are toxic and hazardous. Dispose of in accordance with applicable and local laws and regulations. Do not discharge or pour into soil, drainage system or bodies of water.

Container: Triple rinse (or equivalent). Then offer for recycling or

reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning (plastic containers). If burned, stay out of smoke.

14. Transport Information

Class: 9

UN No: UN 3077

Packaging Group III

15. Regulatory Information

Safety Phrases: Keep out of reach of children

Keep away from food, drink and animal feeding stuff

Do not breathe spray

When using do not eat, drink or smoke

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

In case of accident or if you feel unwell, seek medical advice immediately (Show the label where possible)

Use appropriate containment to avoid environmental contamination

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.