



Hangzhou Tianlong Biotechnology Co., Ltd.

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MATERIAL SAFETY DATA SHEET

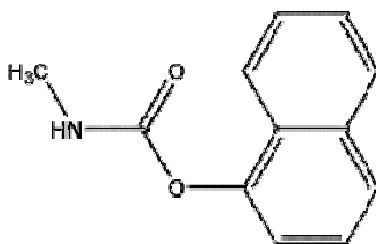
1. Chemical Product Identification

Product Name: Carbaryl

Molecular Formula: $C_{12}H_{11}NO_2$

Molecular Weight: 201.23

Structural Formula:



Chemical Name: 1-naphthyl methylcarbamate

CAS No.: 63-25-2

Supplier: HANZHOU TIANLONG BIOTECHNOLOGY CO., LTD

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2. Composition / Information on Ingredients

Composition	CAS No.	Content %
Carbaryl	63-25-2	98.0
Other ingredients		2.0

3. Hazards Identification

Route of entry: Eye, skin,

Emergency overview: Warning! May be fatal if swallowed.

Eye: Causes redness, irritation, tearing.

Skin: Harmful if absorbed through skin. May produce symptoms similar to those from ingestion.

Inhalation: Harmful if inhaled. May produce symptoms similar to those from ingestion.

Ingestion: May be fatal if swallowed. This product causes reversible cholinesterase inhibition.

Repeated overexposure may cause more severe cholinesterase inhibition with more pronounced signs and symptoms. May lead to rapid onset of nausea, vomiting, diarrhea, abdominal pain, involuntary shaking, excess salivation, pinpoint pupils, blurred vision, profuse sweating, temporary paralysis,

respiratory depression, convulsions.

4. First Aid Measures

Eye: Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek medical attention.

Skin: In case of contact, immediately wash with plenty of soap and water for at least 5 minutes. Seek medical attention if irritation develops or persists.

Remove contaminated clothing and shoes. Clean contaminated clothing and

shoes before re-use.

Ingestion: If victim is conscious and alert, give 2-3 glasses of water to drink and induce vomiting by touching back of throat with a finger. Do not induce vomiting or give anything by mouth to an unconscious person. Seek immediate medical attention. Do not leave victim unattended. Vomiting may occur spontaneously. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

Inhalation: Remove victim from immediate source of exposure and assure that the victim is breathing, administer CPR (cardio-pulmonary resuscitation). Seek medical attention.

5. Fire-Fighting Measures

Flash point (Method): Not applicable

Fire and explosion hazards: Like all organic and most dry chemicals, as a powder or dust, this product (when mixed with air in critical proportions and in the presence of an ignition source) may present an explosion hazard.

Suitable extinguishing media: small fires, carbon dioxide, dry chemical

Large fires: alcohol foam, polymer foam, and water spray

Fire fighting instructions: Firefighters should wear niosh/msha approved self-contained breathing apparatus and full protective clothing. Keep unnecessary people away, isolate hazard area and deny entry. Evacuate residents who are downwind of fire, Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later, Persons who may have been exposed to contaminated smoke should be immediately examined by a physician and checked for symptoms of poisoning. The symptoms should not be mistaken for heat exhaustion or smoke inhalation.

6. Accidental Release Measures

General and Disposal: Evacuation Procedures and safety: wear appropriate gear for the situation, See Personal Protection Information in Section 8.

Cleanup and Disposal of spill: Shoved up into an appropriate closed container(see Section 7: Handling and Storage). Clean up residual material by washing area with water. Decontaminate tools and equipment following cleanup. Avoid creation of dusty conditions.

Land Spill or Leaks: Containment of spill: Follow procedure under Cleanup and Disposal of spill.

Environment and Regulatory Reporting: If spilled on the ground, the affected area should be scraped clean and placed in an appropriate container for disposal. Runoff from fire control or dilution water may cause pollution.

Prevent material from entering public sewer system or any waterway.

7. Handling And Storage

Handling Procedures: Avoid direct or prolonged contact with skin and eyes. Avoid breathing dusts. Do not ingest.

Storing Procedures: Store in original. Keep in a dry, cool place. Store in an area that is away from foodstuffs or animal feed, out of reach of children and animals.

Work/Hygienic Procedures: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored. Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet. Wash exposed skin promptly to remove accidental splashes of contact with this material. In addition, based upon the specific hazard of this product: Do not take clothing/objects contaminated by this material off the work site, Shower and change into street clothes before leaving the work site.

8. Exposure Controls/Personal Protection

Engineering Controls: Where engineering controls are indicated by use conditions of a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: general area dilution/exhaust ventilation.

Eye/Face Protection: Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate equipment should be selected for the particular use intended for this material. Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles, An emergency eye wash must be readily accessible to the work area.

Body Protection: Skin contact should be prevented through use of suitable protective clothing, gloves and footwear, selected with regards of use conditions and exposure potential. Consideration must be given both to durability as well as permeation resistance.

9. Physical and Chemical Properties

Appearance: White crystalline.

Water Solubility: 40 mg/L @ 30 C

Solubility in Other Solvents: dimethylformaldehyde v.s.; acetone s.; dimethyl sulfoxide v.s.; cyclohexanone s.

Vapor Pressure: <5.3 mPa @ 25 C
Partition Coefficient: Not Available
Adsorption Coefficient: 300
Melting point: :142 °C

10. Stability and Reactivity

Chemical Stability: This material is stable under normal handling and storage conditions described in Section 7.

Conditions to avoid: Extreme heat, open flame

Incompatibility: strong acids

Hazardous Products of Decomposition: Decomposition Type: thermal, oxides of nitrogen, carbon oxides. Methyl isocyanate (trace, no adverse effects expected)

Hazardous Polymerization (Conditions to avoid): not applicable

11. Toxicological Information

Acute oral toxicity: Rat: LD50: 850mg/kg

Acute dermal toxicity: Rabbit: LD50:>4000mg/kg

Acute inhalation toxicity: No test data found for product.

Skin irritation: Rabbit: Minimally irritating

Eye irritation: Rabbit: Slightly irritating.

Reproductive effects: No reproductive or fetal effects were observed during a long-term study of rats fed high doses of carbaryl.

Teratogenic effects: The evidence for teratogenic effects due to chronic exposure is minimal in test animals. Birth defects in rabbit and guinea pig offspring occurred only at dosage levels that were highly toxic to the mother.

Mutagenic effects: Carbaryl has been shown to affect cell division and chromosomes in rats. However, numerous studies indicate that carbaryl poses only a slight mutagenic risk. There is a possibility that carbaryl may react in the human stomach to form a more mutagenic compound, but this has not been demonstrated. In sum, the evidence suggests that carbaryl is unlikely to be mutagenic to humans.

Carcinogenic effects: Technical-grade carbaryl has not caused tumors in long-term and lifetime studies of mice and rats. Rats were administered high daily doses of the pesticide for 2 years, and mice for 18 months, with no signs of carcinogenicity. While N-nitrosocarbaryl, a possible by-product, has been shown to be carcinogenic in rats at high doses, this product has not been detected. Thus, the evidence indicates that carbaryl is unlikely to be carcinogenic to humans.

Organ toxicity: Ingestion of carbaryl affects the lungs, kidneys, and liver. Inhalation will also affect the lungs. Nerve damage can occur after administration of high doses for 50 days in rats and pigs. Several studies indicate that carbaryl can affect the immune system in animals and insects. Male volunteers who consumed low doses of carbaryl for 6 weeks did not show symptoms, but tests indicate slight changes in their body chemistry. A 2-year study with rats revealed no effects at or below a dose of 10 mg/kg/day.

12. Ecological And Ecotoxicological Information

Effects on birds: Carbaryl is practically nontoxic to wild bird species. The LD50 values are greater than 2000 mg/kg in mallards and pheasants, 2230 mg/kg in quail, and 1000 to 3000 mg/kg in pigeons.

Effects on aquatic organisms: Carbaryl is moderately toxic to aquatic organisms, such as rainbow trout (LC50 of 1.3 mg/L), and bluegill (LC50 of 10 mg/L). Some accumulation of carbaryl can occur in catfish, crawfish, and snails, as well as in algae and duckweed. Residue levels in fish were 140-fold greater than the concentration of carbaryl in water. In general, due to its rapid metabolism and rapid degradation, carbaryl should not pose a significant bioaccumulation risk in alkaline waters. However, under conditions below neutrality, it may be significant.

Effects on other organisms: Carbaryl is lethal to many non-target insects, including bees and beneficial insects.

13. Disposal Considerations

General Disposal Guidance: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations the proper disposal of this material.

14. Transport Information

CLASS: 9,
UN : 3077,
PKG : III

15. Reactivity data

Risk phrases:
Harmful, N - Dangerous for the environment
Possible risk of irreversible effects
Harmful if swallowed
Very toxic to aquatic organisms

16. Other Information

This MSDS summarizes our best knowledge of the health and safety hazard

information of the product and how to safely handle and use the product in

the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.