

Material Safety Data Sheet

Carbaryl 99%TC

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Chemical product name: Carbaryl 99%TC
Common chemical name: 1-naphthyl methylcarbamate
Company information: Choice Chemicals Ltd.
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SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average by Weight</u>
Carbaryl	63-25-2	99%

SECTION 3 - IDENTIFICATION OF HAZARDS

Emergency Overview:

Immediate Effects:

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.

Chronic or Delayed Long-Term: This product contains ingredients that are considered to be probable or suspected human carcinogens (see Section 11 - Chronic).

Medical Conditions: Inhalation of product may aggravate existing chronic respiratory problems

Aggravated by Exposure: such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

SECTION 4 - HAZARDS IDENTIFICATION

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. If breathing is difficult, administer oxygen, if available. If victim is not breathing, administer CPR (cardio-pulmonary resuscitation). Seek medical attention.

Note to Physician: All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

This product contains a methyl carbamate insecticide, which is a cholinesterase inhibitor. Overexposure to this substance may cause toxic signs and symptoms due to stimulation of the cholinergic nervous system. These effects of overexposure are spontaneously and rapidly reversible.

Specific treatment consists of potential atropine sulfate. Improve tissue oxygenation as much as possible before administering atropine to minimize the risk of ventricular fibrillation. Mild cases may be given 1 to 2 mg intramuscularly every 10 minutes until full atropinization has been achieved and repeated thereafter whenever symptoms reappear. Severe cases should be given 2 to 4 mg intravenously every 10 minutes until fully atropinized, and then intramuscularly every 30 to 60 minutes as needed to maintain the effect for at least 12 hours. Dosages for children should be appropriately reduced. Complete recovery from overexposure is to be expected within 24 hours.

To aid in confirmation of a diagnosis, urine samples should be obtained within 24 hours of exposure and immediately frozen.

Persons regularly exposed in manufacturing and handling this product should have a pre-exposure and periodic red blood cell cholinesterase level checks.

Narcotics and other sedatives should not be used. Further, drugs like 2-PAM (pyridine-2-

aldoxime methiodide) are NOT recommended.

SECTION 5 - FIRE FIGHTING MEASURES

Flash point: 165°C

Extinguishing Media: Foam, CO₂ or dry chemical. Soft stream water fog only if necessary. Contain all runoff.

Fire / explosion hazards: Slightly combustible. This material may support combustion at elevated temperatures.

Fire fighting procedures: Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke, gases or vapors generated.

Hazardous decomposition products: Carbon, monoxide, carbon, dioxide, chlorine, fluorine, hydrogen chloride and hydrogen fluoride.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Avoid contact with the spilled material or contaminated surfaces. Do not smoke, eat or drink during the cleanup process. Personnel involved in cleanup should wear full body protective clothing and equipment as described in Section 8 – PERSONAL PROTECTION. Keep people and animals away. Consider evacuation and obtain assistance from emergency services if needed.

Prevent spilled material from entering drains or watercourses.

Contain spill and sweep up carefully. Avoid creating dust. Collect and store in recovery drums. Clean floor with detergent and water, absorbing wash water with clay granules and transfer this to the drum. Seal and label drums for safe disposal. Deal with all spillages immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority. Decontaminate tools, equipment and clothing used in the cleanup. Dispose of any heavily soiled clothing, placing it in disposal drum.

SECTION 7 - HANDLING AND STORAGE

HANDLING: Keep out of reach of children. Very dangerous. Poisonous if absorbed by skin contact, inhaled or swallowed. Avoid contact with eyes and skin. Do not touch or rub eyes, nose or mouth with hand during handling. Wear protective clothing and equipment as above. Keep away from volatile chemicals and sources of ignition.

Avoid creating dust. Do not inhale dust. If product on skin, immediately wash area with soap and water. 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, respirator and contaminated clothing with detergent and warm water.

STORAGE: KEEP OUT OF REACH OF CHILDREN! 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, feedstuffs, seed and fertilizers. DO NOT store in or around the home. Store below 38°C. Avoid extreme heat. Keep dry – moisture can increase handling hazards.

Flammability Non flammable. However, dust / air mixtures can build up static electrical charges and fine dust may form explosive mixtures in air.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL, PROTECTION

Engineering Controls: Where engineering controls are indicated by use conditions or 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 approved 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 regard for use conditions and exposure potential. Consideration must be given both to durability as well as permeation resistance.

Respiratory Protection: When respirators are required, select approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Under normal conditions, in the absence of other airborne contaminants, the following devices should provide protection from this material up to the conditions specified by the appropriate standard(s): Air-purifying (half-mask/full-face) respirator with cartridges/canister approved for use against pesticides.

Under conditions immediately dangerous to life or health, or emergency conditions with unknown concentrations, use a full-face positive pressure air-supplied respirator equipped with an emergency escape air supply unit or use a self-contained breathing apparatus unit.

General Protection: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe

handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section

13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White Crystals
Physical State:	Solid
Odour:	Not specific
Molecular Weight:	201.2 g/mol
Molecular formula:	C ₁₂ H ₁₁ NO ₂
pH:	4 - 6.5
Vapor Pressure:	4.1 x 10 ⁻² mPa (23.5 oC)
Vapor Density (air =1):	Not available
Boiling Point:	Not available
Melting / Freezing Point:	142 oC
Density:	1.23 ± 0.03 gm/cm ³ at 20 oC
Water Solubility:	In water 120 mg/l (20 oC).

SECTION 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 and open flame and extreme humidity inducing conditions can lead to instability. Under alkaline conditions, Moisture can increase handling hazards.

Incompatibility With Other Materials: Strong acids or alkalis. .

Hazardous Decomposition Products: Hazardous decomposition products produced in a fire may include thermal oxides of nitrogen and oxides of carbon and methyl isocyanate.

Hazardous Polymerization: Not applicable

SECTION 11 - TOXICOLOGICAL INFORMATION

Carbaryl is a carbamate pesticide, and a reversible cholinesterase inhibitor.

Symptoms typical of cholinesterase inhibition (for all routes of entry): Headache, nausea, vomiting, abdominal pain, diarrhea, pinpoint pupils, blurred vision, profuse sweating and temporary paralysis. In severe cases respiratory depression and convulsions may occur.

Repeated

overexposure may cause more severe symptoms.

May aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis.

Skin contact may aggravate existing skin diseases.

ACUTE ORAL TOXICITY: Acute oral LD50 for rats 264, female rats 500, rabbits 710 mg/kg.

ACUTE DERMAL TOXICITY: LD50 for rats >4000, rabbits >2000 mg/kg.

ACUTE INHALATION TOXICITY: LC50 (4 h) for rats 3.28 mg/l air.

SKIN IRRITATION: (Rabbits) Mild skin irritant.

EYE IRRITATION: (Rabbits) Slight eye irritant.

CHRONIC DATA: Carbaryl has been shown to cause tumors in laboratory animals in life time feeding studies. Carbaryl, when administered by various routes, at doses toxic to the maternal animals, has been shown to produce developmental toxicity in a number of species.

Carbaryl produces no teratogenic effect in the absence of maternal toxicity.

ADI (JMPR): 0.003 mg/kg b.w.

SECTION 12 - ECOLOGICAL INFORMATION

Ecological Information: The following data is based on the technical grade active ingredient(s)

(TGA). Ecotoxicological Information and Interpretation:

Birds:

Acute oral LD50 for young mallard ducks >2179, young pheasants >2000, Japanese quail 2230, pigeons 1000-3000 mg/kg.

Fish: LC50 (96 h) for rainbow trout 1.3, sheepshead minnow 2.2, bluegill sunfish 10 mg/l.

Daphnia: LC50 (48 h) 0.006 mg/l.

Bees: Toxic to bees; LD50 (topical) 1 µg/bee.

Environmental Fate: Under aerobic conditions, carbaryl at 1 ppm degraded with DT50 7-14 d in a sandy loam and 14-28 d in a clay loam.

SECTION 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.

SECTION 14 - TRANSPORT INFORMATION

SHIPPING DESCRIPTION: CARBAMATE PESTICIDE, SOLID, TOXIC (contains Carbaryl)

UN NUMBER: 2757

HAZARD CLASS: 6.1

PACKING GROUP: PG II

MARINE POLLUTANT: Yes (Carbaryl is a Marine Pollutant Class "P")

SECTION 15 - REGULATORY INFORMATION

Risk phrases: R40 Xn; R22 N; R50

Xn - Harmful, N - Dangerous for the environment

R40 Possible risk of irreversible effects

R22 Harmful if swallowed

R50 Very toxic to aquatic organisms

SECTION 16 - OTHER INFORMATION

Disclaimer: Choice Chemicals Ltd.. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

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