TURCAM® INSECTICIDE
For Product Use Information: (800)331-2867 24 Hours/Day
Medic./Trans. Emergency: (DART) (800)334-7577 24 Hours/Day
(CHEMTREC) (800)424-9300 24 Hours/Day
Version Date: May 12 2000

1. CHEMICAL PRODUCT and COMPANY IDENTIFICATION
Product Name: TURCAM® INSECTICIDE
Product Code: 15552
MSDS Number: C3165
Chemical Name: C22H32 Cl3 N6 O4
Chemical Family: Carbamate
Chemical Formula: Mixture (active ingredient: C11H13NO4)

2. COMPOSITION / INFORMATION on INGREDIENTS
Component Cas number %
Bendiocarb 22781-23-3 76%
Inert ingredients, including: 24%
Amorphous silica 7631-86-9
Alkylphosphonate sulfuric acid 9084-06-4

3. HAZARDS IDENTIFICATION
NOTE: For detailed toxicological information, please refer to Section 11.
EMERGENCY OVERVIEW:
WARNING, HARMFUL OR FATAL IF SWALLOWED. HIGHLY TOXIC BY ORAL AND INHALATION ROUTES. CAUSES SYMPTOMS ASSOCIATED WITH CHOLINESTERASE INHIBITION. AVOID BREATHING DUST. MAY BE ABSORBED THROUGH THE SKIN. THE PRODUCT IS WHITE, ODORLESS POWDER.

4. FIRST AID MEASURES
After contact with skin:
Wash thoroughly with soap and water.
After contact with eyes:
Rinse thoroughly with clean water (at least 15 minutes is recommended) (see “Hints for the physician”).
After inhalation:
Remove patient to uncontaminated area. Keep patient strictly at rest and transfer to hospital immediately to get medical attention.
After ingestion:
Drink 1 or 2 glasses of water and induce vomiting by touching back of victim’s throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. Get medical attention.
Hints for the physician:
Contains anticholinesterase carbamate insecticide. In case of overexposure, 2 mg atropine sulfate (equivalent to 40 mg atropine) should be given intravenously. Reversal of the pupil of the eye) due to direct eye contact will reverse spontaneously without specific treatment.

5. FIRE FIGHTING MEASURES
FLAMMABLE PROPERTIES
Flash point: Not applicable

Advice on protection against fire and explosion:
FIRE AND EXPLOSION HAZARDS: When heated to the point of decomposition (above 140°C or 280°F), bendiocarb gives off a toxic fume which is rapidly eliminated by heat or water. Dispersion of fine dust in the air may form an explosion mixture.

FIRE FIGHTING INSTRUCTIONS: Wear protective pressure self-contained breathing apparatus. Remove product from area of fire at first opportunity. Use water to cool fire-exposed containers and personnel.

Suitable extinguishing media:
Dry chemical, foam, carbon dioxide, water.

6. ACCIDENTAL RELEASE MEASURES
GENERAL AND DISPOSAL: Use proper protective equipment to minimize exposure (see Section 8). Take all necessary action to prevent and to remove adverse effects of the spill. Notify the appropriate authorities immediately. Ensure that the disposal is in compliance with federal requirements and state/local regulations.

LAND SPILL OR LEAK: KEEP UNNECESSARY PEOPLE AWAY AND ISOLATE HAZARDOUS AREA. DO NOT BREATH THE DUST. USE PROPER PROTECTIVE EQUIPMENT (see Section 15). Sweep up, preferably vacuum while AVOIDING THE FORMATION OF A DUST CLOUD. Place material in a suitable, dry container and seal for disposal. Wash contaminated areas with water and detergent, but keep out of sewers or watercourses. Inform proper authorities if contamination occurs.

7. HANDLING and STORAGE
Handling:
Harmful or fatal if swallowed. May be absorbed through the skin. Avoid contact with the eyes, skin, and clothing. If contact occurs, wash skin and clothing immediately with soap and warm water, and wash eyes with clean water. DO NOT rub eyes or mouth with hands. If you feel sick in any way, STOP WORK and get help right away. (See Section 4 - First Aid Measures).

AVOID BREATHING AND WORKING IN SPRAY MIST OR DUST:
• Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
• Remove any clothing immediately if pesticide gets inside. Then wash and put on clean clothing.
• Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product’s concentrate.
• Do not use on or contaminate fruit, vegetables, or other feed or food crops.

FOR NON-AGRICULTURAL USES ONLY (Must refer to label):
• When applying in outdoor sites, keep all unprotected persons, children, and animals away from treated area where there is a danger from drift.
• Do not permit children or pets to contact treated surfaces until spray has dried completely.

FOR AGRICULTURAL USES ONLY (Must refer to label):
• Follow manufacturer’s instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water.
• Do not wash PPE separately from other laundry.
• Do not apply this product in a way that will contact workers or other persons, either directly or through drift.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Additional advice on system design:
ENGINEERING CONTROLS: Must maintain good ventilation to minimize exposure to bendiocarb. Local exhaust ventilation may be necessary.

Personal protective equipment:
FOR APPLICATORS AND HANDLERS (FOR AGRICULTURAL USES ONLY): The personal protective equipment (PPE) for agricultural uses are specified under the Subtitle: “Note to Applicators and Handlers of Agricultural Products.”

NOTE TO APPLICATORS AND HANDLERS (FOR AGRICULTURAL USES ONLY): For agricultural products which are within the scope of the EPA Worker Protection Standards (WPS) (40 CFR Part 170) all users must refer to the statement below or the Product Label for WPS-specified Personal Protective Equipment (PPE), Restricted Entry Interval (REI), and other Precautionary Statements.

PERSONAL PROTECTIVE EQUIPMENT (FOR AGRICULTURAL USES ONLY) FOR APPLICATORS AND HANDLERS:
Applicants and handlers must wear:
• Coveralls over short-sleeved shirts and short pants
• Waterproof gloves
• Chemical-resistant footwear plus socks
• Chemical-resistant apron when cleaning equipment, mixing, or loading

PERSONAL PROTECTIVE EQUIPMENT REQUIRED FOR EARLY ENTRY INTO TREATED AREAS: (FOR AGRICULTURAL USES ONLY): For entry into treated area during the restricted entry interval (REI) of 12 hours that involves contact with anything that has been treated such as plants, soil, or water, the PPE required is:
• Coveralls over short-sleeved shirt & short pants
• Waterproof gloves
• Chemical-resistant footwear plus socks
• Chemical-resistant headgear for overhead exposure

FOR MANUFACTURING AND PACKAGING EMPLOYEES: The personal protective equipment (PPE) in accordance with OSHA standards are recommended immediately below.

Body protection:
Impervious (neoprene, butyl rubber) gloves. Use of synthetic (PVC) apron is recommended during handling and application. Wash clothes thoroughly after each use and at the end of the work day.

Eye protection:
Safety glasses; face shield. Users of contact lenses must wear protective safety glasses for proper protection during handling and use of the product.

Respiratory protection:
ENSURE GOOD VENTILATION IN HANDLING AREA. USE A SUITABLE DUST RESPIRATOR. Use of a self-contained breathing apparatus or airline hood or mask is recommended to give complete face protection.

EXPOSURE GUIDELINES:
Bendiocarb (22781-23-3)
World Health Organization (WHO): Recommended Limit: 0.2 mg/m³
Amorphous silica (7631-86-9)

OSHA PEL
ACGIH TLV
HCC WEL

6 mg/m³
6 mg/m³
No

Alkylphenolate sulfuric acid (9008-06-4)
Manufacturer's Recommended Limit:

OSHA PEL
ACGIH TLV
HCC WEL

None
(TWA/2 mg/m³ None

Although general guidance has been provided, the degree of protection required in a particular situation depends on factors such as concentration and duration. More detailed advice on protective devices is available from Aventis.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: White powder

ODOR: Odorless

BASIC PHYSICAL PROPERTIES

PHYSICAL STATE: Solid
MELTING POINT: about 294°F (120-130°C)
VAPOR PRESSURE: 3.3 X 10⁻³ mm Hg

*VAPOUR DENSITY (Air=1): Not volatile
PACKING DENSITY: Approx. 36 lbs/cu ft

SOLUBILITY (H₂O): 0.024% (240 ppm)*

**The data above was for bendiocarb technical (the a.i.)

**The data above was for bendiocarb technical at 25 °C

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable: up to 280°F (140°C)

CONDITIONS TO AVOID: Extreme heat or moisture

INCOMPATIBILITY: None specific; avoid strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: When heated to the point of decomposition (above 140°C or 280°F), bendiocarb gives off a toxic fume which is rapidly eliminated by fire or water.

HAZARDOUS POLYMERIZATION: Will not occur

11. TOXICOLOGICAL INFORMATION

SKIN EFFECTS
Dermal LD₅₀ (rat): 1,000-2,000 mg/kg (low toxicity)

ACUTE ORAL EFFECTS
Oral LD₅₀ (rat): 141-250 mg/kg (toxic)

ACUTE INHALATION EFFECTS
Inhalation LC₅₀ (rat-4 hrs): Data from an inhalation study in rats exposed to TURCAM for 4 hours is not available. However, a relevant inhalation LC₅₀ data is available for the concentrated bendiocarb technical (97.9%); the LC₅₀ (rat-4hrs): is 0.55 mg/liter of air. This indicates that, for TURCAM (76% technical), the LC₅₀ (rat-4hrs) is likely to be: ≥ 0.55 mg/liter (highly toxic).

The studies reported below were carried out with Bendiocarb Technical (≥96%), the active ingredient.

SUBCHRONIC (TARGET ORGAN EFFECTS)
Results from 90-day animal studies suggest no target organ effects under the conditions of normal handling and use.

CHRONIC (CANCER INFORMATION)
In two year feeding studies with bendiocarb in animals, no clinical signs or mortalities related to treatment were observed in rats and dogs at dose levels up to 200 ppm and 500 ppm, respectively. The effects observed at the highest dose were reduced blood cholinesterase level in rats and lower blood and brain cholinesterase levels in dogs. Similarly, bendiocarb administered chronically to mice at dietary dose levels up to 1250 ppm showed only an effect in increased tests weight at the highest dose.

CARCINOGENICITY: NTP: No IARC: No
OSHA: No

TERATOGENICITY (BIRTH DEFECTS)
No evidence of teratogenic effects of bendiocarb was observed in mice and rabbits fed during gestation dose levels up to 4 mg/kg/day and 5 mg/kg/day, respectively.

REPRODUCTIVE EFFECTS
Bendiocarb showed no adverse effects on fertility or on reproduction in rats fed dietary levels up to 800 ppm prior to mating and during gestation.

NEUROTOXICITY
No evidence of neurological lesions or irreversible or delayed neurotoxic effects were observed when bendiocarb was administered to hens by single doses up to 797 mg/kg.

MUTAGENICITY (GENETIC EFFECTS)
Bendiocarb is not mutagenic or genotoxic when tested in Ames gene mutation assay and in four other mutageneis assays of bacteria, yeast, and rodents. In an in vitro analysis of metaphase chromosomes of bone marrow cells did not show any evidence of chromosomal damages, both in the absence or presence of metabolic activation. However, an in vivo analysis of metaphase chromosomes of bone marrow cells did not show any evidence of chromosomal damages, both in the absence or presence of metabolic activation. It is concluded from the results of these mutagenesis studies that bendiocarb does not damage chromosomes in humans and animals under conditions of normal handling and use.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION
This product is toxic to wildlife. For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the area.

ENDANGERED SPECIES RESTRICTIONS:
The use of any pesticide in a manner that may kill or otherwise harm an endangered or threatened species or adversely modify their habitat is a violation of Federal laws. The use of this product on golf courses and sod farms in San Bernardino County, California and on the islands of Hawaii and Maui is prohibited.

ENVIRONMENTAL FATE INFORMATION
The active ingredient, bendiocarb technical, breaks down readily in the natural environment, especially under alkaline conditions.

13. DISPOSAL CONSIDERATIONS

PROPER PESTICIDE DISPOSAL: Do not contaminate water, food or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Refer to the product label for other disposal instructions (e.g. CONTAINER DISPOSAL).

RCRA CLASSIFICATION: RCRA Hazardous Waste: Ingredients: None

14. TRANSPORT INFORMATION

PROPER SHIPPING NAME: Carbamate pesticide, solid, toxic, F.1, UN2757, PG III, Volume in net-oungs (USA) or kilos (international) Limited Quantity.

DOT SHIPING LABEL: Harmful, Stow Away From Foodstuffs

NOTE: For transportation purposes (49 CFR Part 173.132), the calculated LC₅₀ (rat-1 hr) is: ≥ 2.2 mg/l

15. REGULATORY INFORMATION

STATE REGULATIONS
The following chemicals associated with the product are subject to the right-to-know regulations in these states:
Bendiocarb (22781-23-3): MI, NJ
Amorphous silica (7631-86-9): FL, MA, NJ, PA

U.S. FEDERAL REGULATIONS
SARA TITLE III NOTIFICATION AND INFORMATION: Section 302 (EHS) Ingredient: Not listed

SARA TITLE III - HAZARD CLASSES
Acute Health Hazard - Yes
Chronic Health Hazard - No
Fire Hazard - No

Sudden Release of Pressure Hazard - No
Reactivity Hazard - No

TSCA inventory status
These components are not listed:
Inert ingredients, including: 24%
Bendiocarb 76% (22781-23-3)
SARA 313: Bendiocarb 76% (22781-23-3)

ENVIRONMENTAL:
CERCLA HAZARDOUS SUBSTANCE: Bendiocarb (22781-23-3)
SARA EHS 304 REPORTABLE QUANTITY: Bendiocarb 76% (22781-23-3)

INTERNATIONAL REGULATIONS
The following chemicals associated with the product are subject to the U.S. pesticide regulations (FIFRA) and is therefore exempt from WHIMIS Classifications. It is identified as “P Est” for Canadian inventory reporting purpose. For hazard communication purpose, the toxicity studies indicate a WHIMIS classification as: Inhalation hazard (Class D; Division 1/Subdivision A).

16. OTHER INFORMATION

HAZARD RATINGS

HEALTH FLAMM REACT OTHER

NFPA 3 1 0 None
HMIS 3 1 0 F*

REVISED SECTIONS:
HMIS PPE: F (minimum)
MSDS REVISION INDICATOR: New Format, Company Name and EPA Number
PREPARED BY: Dept. of Regulatory Affairs
PHONE: 800-438-5837
SUPERCEDES MSDS DATED: 04/27/98

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Prepared by:
Company Name and EPA Number.