



CLEAN CROP(R) CARBARYL 4L INSECTICIDE

MATERIAL SAFETY DATA SHEET Date Prepared: 08/25/00 Supersedes Date: 12/18/95

1. CHEMICAL PRODUCT AND COMPANY DESCRIPTION

AVENTIS CROP SCIENCE USA LP
2 T.W. Alexander Drive
Research Triangle Pk NC 27709

Emergency Phone Numbers:

FOR EMERMEDICAL/Transport:

DART 800 334-7577 24 Hours/Day
CHEMTREC 800 424-9300 24 Hours/Day

For Product Information:

(888) AVENTIS

EPA FIFRA Registration Number:

264-349

Chemical Name or Synonym:

CARBARYL

Molecular Formula:

C12H11NO2

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Reg Number	OSHA Hazard	Percentage
CARBARYL, (1-NAPHTHYL N-METHYLCARBAMATE)	63-25-2	Y	41.2
PROPYLENE GLYCOL	57-55-6	Y	
ETHANOL	64-17-5	Y	
OTHER INGREDIENTS (TRADE SECRET)	*****	N	BALANCE

3. HAZARDS IDENTIFICATION

A. EMERGENCY OVERVIEW:

Physical Appearance and Odor:

off-white to pale yellow / liquid, mild odor.

Warning Statements:

CAUTION! MAY BE HARMFUL IF SWALLOWED OR INHALED.

B. POTENTIAL HEALTH EFFECTS:

Acute Eye:

Causes redness, irritation, tearing.

Acute Skin:

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

ingestion.

Acute Inhalation:

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

Acute Ingestion:

Harmful if ingested. 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 Effects:

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

4. FIRST AID MEASURES

FIRST AID MEASURES FOR ACCIDENTAL:

Eye Exposure:

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

Skin Exposure:

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 reuse.

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.

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.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:

Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

NOTES 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 parenteral 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, 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. Call Rhone-Poulenc at 1-800-334-7577 before sending samples. Analyses will be arranged by Rhone-Poulenc Ag Company.

Persons regularly exposed in manufacturing and handling this product should have a preexposure 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.

5. FIRE FIGHTING MEASURES

FIRE HAZARD DATA:

Flash Point:

> 93 C (200 F). Flammability Class: WILL BURN.

Method Used:

Method unknown

Flammability Limits (vol/vol%):

Lower: **Upper:**

Data No Data

Extinguishing Media:

Recommended (small fires): carbon dioxide, dry chemical, Recommended (large fire): alcohol foam, polymer foam, water spray.

Special Fire Fighting Procedures:

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.

Unusual Fire and Explosion Hazards:

Product will burn under fire conditions.

Hazardous Decomposition Materials (Under Fire Conditions):

oxides of nitrogen

oxides of carbon

methyl isocyanate (trace; no adverse effects expected)

6. ACCIDENTAL RELEASE MEASURES

Evacuation Procedures and Safety:

Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Containment of Spill:

Dike spill using absorbent or impervious materials such as earth, sand or clay. Follow procedure described below under Cleanup and Disposal of Spill. Collect and contain contaminated absorbent and dike material for disposal.

Cleanup and Disposal of Spill:

Recover material, if possible. Absorb with vermiculite or other inert absorbent. Shovel up into an appropriate closed container (see Section 7: Handling and Storage). Cleanup residual material by washing area with water. Decontaminate tools and equipment following cleanup.

Environmental and Regulatory Reporting:

Runoff from fire control or dilution water may cause pollution. Prevent material from entering public sewer system or any waterways. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies. If spilled on the ground, the affected area should be removed to a depth of one or two inches and placed in an appropriate container for disposal.

7. HANDLING AND STORAGE

Minimum/Maximum Storage Temperatures:

< 38 C (100 F)

Handling:

Avoid direct or prolonged contact with skin and eyes. Do not ingest.

Storage:

Store in original container. Store in an area that is cool, dry, away from foodstuffs or animal feed, out of reach of children and animals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Introductory Remarks:

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.

Exposure Guidelines:

Exposure limits represent regulated or recommended worker breathing zone concentrations measured by validated sampling and analytical methods, meeting the regulatory requirements. The following limits apply to this material, where, if indicated, S=skin and C=ceiling limit:

CARBARYL, (1-NAPHTHYL N-METHYLCARBAMATE)

Notes	TWA	STEL
ACGIH	5 mg/cu m	
OSHA	5 mg/cu m	
MFG	1 mg/cum	

PROPYLENEGLYCOL

Notes	TWA	STEL
AIHA	10 mg/cu m	
AIHA	50 ppm	

ETHANOL

Notes	TWA	STEL
ACGIH	1880 mg/cu m	
ACGIH	1000 ppm	
OSHA	1000 ppm	
OSHA	1900 mg/cu m	

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.

Respiratory Protection:

When respirators are required, select NIOSH/MSHA 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 airbornecontaminants, the following devices should provide protection from this material up to the conditions specified by the appropriate OSHA, WHMIS or ANSI standard(s): Air-purifying (half-mask/full-face) respirator with cartridges/canister approved for use against pesticides.

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

Eye/Face Protection:

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 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.

Skin 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.

Work Practice Controls:

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:

- (1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- (2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- (3) Wash exposed skin promptly to remove accidental splashes of contact with this material.

In addition, based upon the specific hazards of this product:

- (4) Do not take clothing/objects contaminated by this material off the work site.
- (5) Shower and change into street clothes before leaving the work site.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product Information phone number in Section 1 for its exact specifications.

Physical Appearance:

off-white to pale yellow / liquid.

Odor:

mild odor.

pH:

4 to 5 at 5 wt/wt%.

Specific Gravity:

1.1 at 20 C (68 F).

Water Solubility:

miscible

Melting Point Range:

Not Available

Freezing Point Range:

-3 C (27 F)

Boiling Point Range:

98 C (208 F) at 760 mmHg

Vapor Pressure:

17.8 mmHg at 20 C (68 F)

Vapor Density:

0.62

Molecular Weight:

201.2

10. STABILITY AND REACTIVITY

Chemical Stability:

This material is stable under normal handling and storage conditions described in

Section 7.

Conditions To Be Avoided:

extreme heat
open flame

Materials/Chemicals To Be Avoided:

strong acids
bases

Decomposition Temperature Range:

40 C (104 F)

The Following Hazardous Decomposition Products Might Be Expected:

Decomposition Type: thermal
oxides of nitrogen
oxides of carbon
methyl isocyanate (trace; no adverse effects expected)

Hazardous Polymerization Will Not Occur.

Avoid The Following To Inhibit Hazardous Polymerization:
not applicable

11. TOXICOLOGICAL INFORMATION

Acute Eye Irritation:

Toxicological Information and Interpretation
eye - eye irritation, rabbit.
Slightly irritating.

Acute Skin Irritation:

Toxicological Information and Interpretation
skin - skin irritation, rabbit.
Minimally irritating.

Acute Dermal Toxicity:

Toxicological Information and Interpretation
LD50 - lethal dose 50% of test species, > 2000 mg/kg, rabbit.

Acute Respiratory Irritation:

No test data found for product.

Acute Inhalation Toxicity:

Toxicological Information and Interpretation
LC50 - lethal concentration 50% of test species, > 1.8 mg/l/4 hr, rat.

Acute Oral Toxicity:

Toxicological Information and Interpretation
LD50 - lethal dose 50% of test species, 590 mg/kg, rat.

Chronic Toxicity:

This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be probable or suspected human carcinogens.

Carbaryl has been shown to cause tumors in laboratory animals in lifetime 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.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information

The following data is based on the technical grade active ingredient(s) (TGAI).

Ecotoxicological Information and Interpretation:

LC50 - lethal concentration 50% of test species, > 5000 mg/kg/8 days, Mallard duck (*Anas platyrhynchos*).

Dietary concentrations.

LC50 - lethal concentration 50% of test species, > 5000 mg/kg/8 days, bobwhite quail (*Colinus virginianus*).

Dietary concentrations.

LC50 - lethal concentration 50% of test species, 1950 ug/l/96 hr, rainbow trout (*Oncorhynchus mykiss*).

LC50 - lethal concentration 50% of test species, 6760 ug/l/96 hr, bluegill sunfish (*Lepomis macrochirus*).

Chemical Fate Information:

For chemical fate data call the product information phone number listed in Section 1.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

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 regarding the proper disposal of this material.

EPA Hazardous Waste - YES

14. TRANSPORTATION INFORMATION

For Transportation Regulatory Information call the Product Information phone number in Section 1.

15. REGULATION INFORMATION

Inventory Status

Inventory	Status
UNITED STATES (TSCA)	Y
CANADA (DSL)	N
EUROPE (EINECS/ELINCS)	N
AUSTRALIA (AICS)	N
JAPAN (MITI)	N
SOUTH KOREA (KECL)	N

Y = All ingredients are on the inventory.

E = All ingredients are on the inventory or exempt from listing.

P = One or more ingredients fall under the polymer exemption or are on the no longer polymer list. All other ingredients are on the inventory or exempt from listing.

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

FEDERAL REGULATIONS

TSCA Inventory Status:

SARA Title III Hazard Classes:

Fire Hazard	- NO
Reactive Hazard	- NO
Release of Pressure	- NO
Acute Health Hazard	- YES
Chronic Health Hazard	- YES

SARA 313 Chemicals

CARBARYL, (1-NAPHTHYL N-METHYLCARBAMATE) (41.2%)

SARA Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances

Ingredient	CERCLA/SARA RQ	SARA EHS TPQ
CARBARYL, (1-NAPHTHYL N-METHYLCARBAMATE)	100 lbs	

STATE REGULATIONS:

This product does not contain any components that are regulated under California Proposition 65.

16. OTHER INFORMATION

National Fire Protection Association Hazard Ratings--NFPA(R):

2 Health Hazard Rating--Moderate
 1 Flammability Rating--Slight
 1 Instability Rating--Slight

National Paint & Coating Hazardous Materials Identification

2 Health Hazard Rating--Moderate
 1 Flammability Rating--Slight
 1 Reactivity Rating--Slight

Reason for Revisions:

Change of Company Name & Address.

Key Legend Information:

ACGIH - American Conference of Governmental Industrial Hygienists
 OSHA - Occupational Safety and Health Administration
 TLV - Threshold Limit Value
 PEL - Permissible Exposure Limit
 TWA - Time Weighted Average
 STEL - Short Term Exposure Limit
 NTP - National Toxicology Program
 IARC - International Agency for Research on Cancer

ND - Not determined

Disclaimer:

The information herein is given in good faith but no warranty, expressed or implied, is made.

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