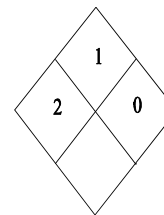


MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION



PRODUCT NAME: PCNB 75% WETTABLE POWDER Soil Fungicide; PCNB 75W
TURF & ORNAMENTAL Soil Fungicide; PCNB 75 WSP; TURFPRO™ WSP
Soil Fungicide; QUINTOZENE 75WP Soil Fungicide

GENERAL USE: Fungicide

PRODUCT DESCRIPTION: Light brown to dark brown crystalline solid

EPA Registration Number: 5481-279; 5481-419; 5481-453; 5481-457

Health Canada Reg. no.: 27416

MSDS No.: 160_15

MSDS Revision Date: 15 July 2003

MANUFACTURER:
AMVAC CHEMICAL CORPORATION
4100 E. Washington Blvd.
Los Angeles, CA 90023-4406
Ph: 323-264-3910
FAX: 323-268-1028

EMERGENCY TELEPHONE NUMBERS:
MANUFACTURER: 323-264-3910
TRANSPORTATION (24 HOURS)
CHEMTREC: 800-424-9300
OTHER (24 HOURS)
AMVAC: 323-264-3910

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	WT %	CAS No.
Pentachloronitrobenzene (PCNB)	75%	82-68-8
Other Compounds Includes Hexachlorobenzene (HCB)	25% <0.05%	118-74-1

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)

COMPONENT	HAZARD	OSHA PEL*	ACGIH TLV*
Pentachloronitrobenzene (PCNB)	Dermatitis, Methemoglobin, Carcinogen		0.5 mg/m ³
Hexachlorobenzene (HCB)	Carcinogen		0.002 mg/m ³
Respirable crystalline quartz (CAS No. 14808-60-7)	Carcinogen, irritation	0.1 mg/m ³	0.05 mg/m ³
Nuisance Dust, Total	Irritation	15 mg/m ³	10 mg/m ³ (Inhalable)

* Exposure Limits 8 hrs. TWA

TURFPRO is a trademark of AMVAC Chemical Corporation.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

CAUTION: Harmful if swallowed. Avoid inhaling dust. This product may cause eye and skin irritation. Do not contaminate feed or foodstuffs.

KEEP OUT OF REACH OF CHILDREN.

Toxic to fish and aquatic organisms.

POTENTIAL HEALTH EFFECTS

ROUTE(S) OF ENTRY: Ingestion, inhalation, eye contact, and skin contact.

SIGNS OF ACUTE OVEREXPOSURE: A person suffering from acute exposure to PCNB may exhibit vomiting, hyperirritability, convulsions, conversion of hemoglobin to methemoglobin. PCNB is a slight skin irritant and may lead to contact dermatitis. Toxicology testing in animals has shown that Technical PCNB is a sensitizer.

SIGNS OF CHRONIC OVEREXPOSURE: Possible dermatitis.

OTHER POTENTIAL HEALTH EFFECTS: Laboratory studies have shown some carcinogenic effects and some developmental effects at maternally toxic dose levels in laboratory animals treated with Technical PCNB. There is sufficient evidence that EPA has listed PCNB as a possible carcinogen (Group C) and the IARC has listed PCNB as a carcinogen (Group 3, sufficient animal evidence). The European Union (EU) has determined that no cancer classification is warranted. Laboratory testing of PCNB has shown no evidence of mutagenicity or of reproductive toxicity.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Dermatitis. Preexisting upper respiratory and lung disease such as, but not limited to, bronchitis, emphysema, and asthma.

CARE SHOULD BE EXERCISED IN HANDLING PCNB AND ITS FORMULATIONS

4. FIRST AID MEASURES

EYES: Immediately flush the eyes with copious amounts of clear, cool running water for a minimum of 15 minutes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eyes and lids with water. Contact a physician immediately. If there will be a delay in getting medical attention, rinse the eyes for at least another 15 minutes.

4. FIRST AID MEASURES, cont'd

INHALATION: Remove victim to fresh air. If breathing has ceased, clear the victim's airway and start artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Contact a physician immediately.

INGESTION: Induce vomiting immediately by giving two glasses of water and sticking a finger down throat. Never give anything by mouth to an unconscious person. Contact a physician immediately.

SKIN: Remove contaminated clothing. Wash thoroughly with soap and clean water. If a rash or any of the symptoms of acute exposure appear, contact a physician immediately.

NOTE TO PHYSICIANS: Treat symptomatically. For medical information contact your local, state or national poison control center. For other questions AMVAC Chemical Corporation is available 24 hours/day to answer questions on this product. The telephone number is 1-323-264-3910.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

Flash Point: Not applicable

Autoignition Temperature: Not applicable

Flammable Limits:

Lower flammable limit: None

Upper flammable limit: None

Flammability: This product contains a combustible solid that will support fire if it is preheated (NFPA rating = 1)

EXPLOSIVITY:

Mechanical Impact: Not available

Static Discharge: Not available

HAZARDOUS COMBUSTION PRODUCTS: This product may emit hazardous fumes of hydrogen chloride, carbon oxides, nitrogen oxides and unidentified organic compounds when it is heated excessively or burned. WEAR SELF-CONTAINED BREATHING APPARATUS.

EXTINGUISHING MEDIA: Water spray, dry chemical, foam, or carbon dioxide.

FIRE FIGHTING INSTRUCTIONS: Do not breathe fumes. Wear complete firefighting gear, including protective gloves, eye protection and self-contained breathing apparatus. Wash clothing before reuse.

6. ACCIDENTAL RELEASE MEASURES

GENERAL: Keep out of water sources.

SMALL or LARGE SPILL: Sweep up or vacuum the product into a secure container for reuse or disposal.

7. HANDLING AND STORAGE

HANDLING: Keep this product cool and dry. Keep container closed. Store away from feed, food, and drink. Keep away from children and pets. Wash thoroughly after handling this product.

STORAGE: Store product in its original container in a cool, dry, locked place out of the reach of children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Ventilation should be sufficient to keep the exposure below the TLV. Use of mechanical or local exhaust systems is recommended when dust formation is possible.

RESPIRATORY PROTECTION: For exposures outdoors that may exceed the TLV, a Dust/Mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C) is required. For exposures in enclosed areas that may exceed the TLV, a respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G) is required.

SKIN PROTECTION: Applicators and other handlers must wear long-sleeved shirt and long pants; waterproof gloves; and shoes plus socks. Follow manufacturer's instructions for cleaning/maintaining personal protection equipment (PPE). If no such instructions are available, use detergent and hot water. Keep and wash PPE separately from other laundry.

EYE PROTECTION: Safety glasses with sideshields should be used whenever hazardous chemicals are being handled.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid
Appearance:	Fine ground light yellow to dark brown powder
Odor:	Slight musty odor
Odor Threshold:	Not available
Boiling Point:	Not applicable

9. **PHYSICAL AND CHEMICAL PROPERTIES, cont'd**

Crystallization Point:	141-146°C (active ingredient)
Density:	0.81 g/cm ³ (packed)
Bulk Density:	51 lbs/ft ³ (packed)
Vapor Pressure (mm/Hg):	5.98 x 10 ⁻⁵ (a.i.)
Vapor Density:	Heavier than air
Percent Volatile by Vol:	Not applicable
Solubility in Water:	Dispersible
Solubility (Other):	PCNB is soluble in aromatic solvents, acetone, chlorinated solvents
Partition Coefficient (O/W):	The partition coefficient for PCNB is 1.0 x 10 ⁵
pH:	Not determined
Evaporation Rate:	Not applicable

10. **STABILITY AND REACTIVITY**

CHEMICAL STABILITY (Conditions to avoid): This product is stable under normal storage and use conditions.

INCOMPATIBILITY: Strong bases will very slowly cause decomposition of PCNB.

HAZARDOUS DECOMPOSITION PRODUCTS: This product may emit hazardous fumes of hydrogen chloride, carbon oxides, nitrogen oxides and unidentified organic compounds when it is heated excessively or burned. WEAR SELF-CONTAINED BREATHING APPARATUS when these conditions are present.

HAZARDOUS POLYMERIZATION: This product will not polymerize.

11. **TOXICOLOGICAL INFORMATION**

The following information is available for PCNB Technical (2) and for the formulation (1):

INGESTION(1):	Oral LD ₅₀ (rat):	> 5050 mg/kg
DERMAL(1):	Skin LD ₅₀ (rabbit):	> 5050 mg/kg
INHALATION(1):	Inhalation LC ₅₀ (rat):	> 2.29 mg/l
SENSITIZATION(1):	Skin sensitization: (guinea pig)	Sensitizer
IRRITATION(1):	Eye irritation(rabbit):	Moderate irritant (Toxic Category III)
	Skin irritation: (rabbit)	Slight Irritant (Toxic Category IV)
TERATOGENICITY(2):	Some developmental effects have been seen in the rat, but only at maternally toxic dose levels.	
MUTAGENICITY(2):	No evidence of mutagenicity has been observed in animal testing.	

11. TOXICOLOGICAL INFORMATION, cont'd

CARCINOGENICITY(2): Laboratory studies have shown some carcinogenic effects. There is sufficient evidence that EPA has listed PCNB as a possible carcinogen (Group C) and the IARC has listed PCNB as a carcinogen (Group 3, sufficient animal evidence). The European Union (EU) has determined that no cancer classification is warranted. Technical PCNB does contain small amounts (<0.05%) of HCB, a known carcinogen.

REPRODUCTIVE TOXICITY(2):No evidence of reproductive toxicity has been observed.

TOXICOLOGICALLY SYNERGISTIC PRODUCTS(2): No data are available.

12. ECOLOGICAL INFORMATION

This pesticide is toxic to fish and aquatic organisms. Do not contaminate water when disposing of equipment washwaters. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not apply directly adjacent to potable water supplies.

13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed on site (by use according to the label) or at an approved waste disposal facility. Further information can be obtained from the EPA or the equivalent national, state and local agencies.

CONTAINER DISPOSAL: Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Check with EPA, national, State, and local authorities for the current regulations applicable to your area.

14. TRANSPORTATION INFORMATION

The HAZMAT information given below is applicable to this product only when it is packaged in packages that contain more than 133 lbs (60.33 kg) per package (i.e. supersacks).

DOT Class:	9
UN Number:	3077
IMDG Class:	9
IATA Class (air):	9
Marine Pollutant:	No
Packing Group:	III
Hazard Label(s):	Class 9
ADR Class (road):	Not listed in ADR

14. TRANSPORTATION INFORMATION, cont'd

Proper Shipping Name(s): Environmentally hazardous substance, solid, n.o.s.
(Pentachloronitrobenzene)
Reportable Quantity: Yes

PACKAGING

General description: 3 lb jar packed 12/case, 1 kg container packed 6/case;
12.5 and 25 kg foil-lined kraft bag; 1200 lb
supersack

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: This product is registered under EPA/FIFRA Regulations. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

CANADIAN REGULATIONS:

This product is registered under the Pest Control Product Act of Canada. It is a violation of Canadian Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

EUROPEAN UNION REGULATIONS: This product is not currently registered in the European Union.

SARA TITLE III DATA

Section 311 & 312 Hazard Categories:

Immediate Health Hazard: Yes
Delayed Health Hazard: Yes
Fire Hazard: No
Reactive Hazard: No
Sudden Pressure Release Hazard: No

Section 302 Extremely Hazardous Substances: None

Section 313 Toxic Chemicals:

Pentachloronitrobenzene (PCNB, CAS No. 82-68-8) - 75%
Hexachlorobenzene (HCB, CAS No. 118-74-1) - < 0.05%

CERCLA/EHS Reportable Quantities (RQ):

Pentachloronitrobenzene (PCNB) - 100 lbs; Hexachlorobenzene (HCB) - 10 lb;
Product (calculated) - 133 lbs

STATE REGULATIONS:

CALIFORNIA (Proposition 65): This product may contain respirable crystalline silica and Hexachlorobenzene (HCB), known to the State of California to cause cancer or birth defects or other reproductive harm.

16. OTHER INFORMATION

MSDS Status:

Date This Revision: 15 July 2003

Date Previous Revision: 12/04/01

Person Responsible for Preparation: Gary A. Braden

Reasons for Revision: Changes have been made in sections 1, 3, 11 and 15 in order to update or clarify information in these sections.

DISCLAIMER:

This information is provided for the limited guidance to the user. While AMVAC believes that the information is, as of the date hereof, reliable, it is the user's responsibility to determine the suitability of the information for its purposes. The user is advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional, or variable conditions or circumstances exist (like combinations with other materials), or because of applicable regulations. No express or implied warranty of merchantability or fitness for a particular purpose or otherwise is made hereunder with respect to the information or the product to which the information relates.

ABBREVIATIONS:

ACGIH	-	American Conference of Governmental Industrial Hygienists
CERCLA	-	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	-	Environmental Protection Agency
FIFRA	-	Federal Insecticide, Fungicide, and Rodenticide Act
IARC	-	International Agency for Research on Cancer
NTP	-	National Toxicology Program
SARA	-	Superfund Amendments and Reauthorization Act
TSCA	-	Toxic Substances Control Act
DOT	-	Department of Transportation
IMDG	-	International Maritime Dangerous Goods
IATA	-	International Air Transport Association

This is the last page of this MSDS. There should be 8 pages.