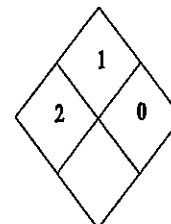


## MATERIAL SAFETY DATA SHEET

**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**



**PRODUCT NAME:** PENSTAR FLO  
**GENERAL USE:** Fungicide  
**PRODUCT DESCRIPTION:** Tan to brown viscous liquid suspension  
**EPA Registration Number:** 5481-465; 5481-472  
**MSDS No.:** 269\_6  
**Current Revision Date:** 28 July, 2005

**MANUFACTURER FOR:**  
**THE ANDERSONS, INC.**  
**P.O. BOX 119**  
**MAUMEE, OH 43537**

**EMERGENCY TELEPHONE NUMBERS:**  
**MANUFACTURER: 323-264-3910**  
**TRANSPORTATION (24 HOURS)**  
**CHEMTREC: 800-424-9300**  
**OTHER (24 HOURS)**  
**FAX: 323-268-1028 AMVAC:323-264-3910**

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

COMPONENT	WT %	CAS No.
Pentachloronitrobenzene (PCNB)	38.3%	82-68-8
Other Ingredients	61.7%	
Includes Hexachlorobenzene (HCB)	<0.025%	118-74-1

**OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)**

COMPONENT	HAZARD	OSHA PEL*	ACGIH TLV*
PCNB	Dermatitis; Methemoglobin		0.5 mg/m <sup>3</sup>
HCB	Carcinogen		0.002 mg/m <sup>3</sup>

\* Exposure Limits 8 hrs. TWA

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3. **HAZARDS IDENTIFICATION**

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**EMERGENCY OVERVIEW:**

**CAUTION! Harmful if swallowed. This product may cause skin and eye irritation. It is a skin sensitizer. Do not contaminate feed or foodstuffs.**

**KEEP OUT OF REACH OF CHILDREN!**

**Toxic to fish and aquatic organisms.**

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**POTENTIAL HEALTH EFFECTS**

**ROUTE(S) OF ENTRY:** Ingestion, inhalation, eye 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. Testing has shown this product to be a slight irritant to the skin and minimally irritating to the eye. It is a sensitizer.

**SIGNS OF CHRONIC OVEREXPOSURE:** Chronic exposure to PCNB may cause dermatitis.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Dermatitis.

**OTHER POTENTIAL HEALTH EFFECTS:** Laboratory studies have shown some carcinogenic effects in rats 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 teratogenicity, mutagenicity, or of reproductive toxicity.

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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.

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

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#### 4. **FIRST AID MEASURES, cont'd**

**INGESTION:** Immediately dilute the swallowed product by giving large quantities of water, but do not induce vomiting. If vomiting occurs, give fluids again. Have a physician determine if condition of patient will permit induction of vomiting or evacuation of stomach. Never give anything by mouth to an unconscious person. Contact a physician immediately.

**SKIN:** Immediately flush all affected areas with large amounts of clear water for at least 15 minutes. Wash with soap and water while removing contaminated clothing. Do not attempt to neutralize with chemical agents. Wash clothing before reuse. If skin irritation develops, 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.

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#### 5. **FIRE FIGHTING MEASURES**

##### **FLAMMABLE PROPERTIES**

Flash Point:	Not applicable (water based product)
Autoignition Temperature:	Not applicable
Flammable Limits:	
Lower flammable limit:	Not applicable
Upper flammable limit:	Not applicable
Flammability:	This is a non-flammable liquid that will support fire only if the solvent is evaporated off first (NFPA rating = 1)

##### **EXPLOSIVITY**

Mechanical Impact:	Not explosive
Static Discharge:	Will not occur

**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:** Use media appropriate for the surrounding material.

**FIRE FIGHTING INSTRUCTIONS:** Fire fighters should wear NIOSH/MSHA-approved pressure demand, self-contained breathing apparatus and full firefighting gear. Keep spectators removed and upwind of the fire. Wash all equipment thoroughly with soap and water after use.

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6. **ACCIDENTAL RELEASE MEASURES**

**GENERAL:** Use impervious clothing and safety goggles. Keep bystanders away from the spill. Do not walk in the spill. It may be very slippery.

**SMALL SPILL:** Cover with absorbent (clay, sawdust, straw, kitty litter, etc.), to absorb the liquid. Sweep into an open drum. Clean the area with common powdered household detergent and a stiff brush and just enough water to make a slurry. Absorb and sweep into the same open drum. Rinse with water, absorb, and add to the waste drum. Close the drum and dispose of properly.

**LARGE SPILL:** Dike the spill to prevent contamination of local water sources. Siphon the majority of the liquid into drums for use or disposal, depending on the circumstances. Clean the area as described for a small spill.

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7. **HANDLING AND STORAGE**

**HANDLING:** Avoid contact with eyes and skin. Keep from food, drink, water supplies, tobacco and cosmetics. Clean up spills immediately. Do not walk in spilled material.

**STORAGE:** Store in original container in a cool, dry area. Keep away from children and pets. Keep from food, drink, water supplies, tobacco and cosmetics.

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8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

**ENGINEERING CONTROLS:** Use local exhaust or dilution ventilation, as appropriate, to control exposures.

**RESPIRATORY PROTECTION:** Use with adequate ventilation to prevent exposure to potentially hazardous vapors. If this product is used in an area where ventilation may be a problem, a properly FIT-TESTED NIOSH/MSHA approved respirator fitted with organic vapor cartridges should be used.

**SKIN PROTECTION:** Skin contact should be avoided by using body-covering clothing, boots or shoes, and liquid resistant gloves.

**EYE PROTECTION:** Safety glasses are required for use with any chemical. Goggles are recommended. If there is a chance of splashing goggles and a faceshield should be used to prevent skin and eye contact.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid suspension
Appearance:	Tan to brown opaque suspension
Odor:	Mild chemical odor.
Odor Threshold:	Not available
Boiling Point:	215°F/102°C
Freezing/Melting Point:	Not available - Do Not Freeze
Specific Gravity:	1.25 g/mL @ 20°C/4°C(68°F/39°F)
Density:	10.4 lb/gal
Vapor Pressure (mm/Hg):	23.8 mm Hg @ 25°C
Vapor Density:	Equal to air
Percent Volatile by Vol:	Approx. 61%
Solubility (Water):	Dispersible
Solubility (Other):	This product is soluble in ketones and esters.
Partition Coefficient (O/W):	1.0 x 10 <sup>5</sup>
pH:	4 (as is)
Evaporation Rate:	Solvent will evaporate at same rate as water

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## 10. STABILITY AND REACTIVITY

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

**INCOMPATIBILITY:** Strong acids, strong bases, and oxidizers.

**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.

**HAZARDOUS POLYMERIZATION:** Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

No information is available for this product. The following information is available for a similar, more concentrated product(1) and for the active ingredient, PCNB Technical (2).

INGESTION (1):	Oral LD <sub>50</sub> (rat):	>5050 mg/kg
INHALATION (1):	Inhalation LC <sub>50</sub> (rat):	>2.25 mg/L (aerosol, 4 hr)
DERMAL (1):	Skin LD <sub>50</sub> (rabbit):	> 2020 mg/kg
IRRITATION (1):	Eye irritation (rabbit):	Minimally irritating (Toxicity Category III)
	Skin irritation (rabbit):	Slightly irritating (Toxicity Category IV)
SENSITIZATION (1):	Skin sensitization: (Guinea pig)	Sensitizer

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**11. TOXICOLOGICAL INFORMATION, cont'd**

**TERATOGENICITY(2):** No evidence of developmental effects in animal testing

**MUTAGENICITY(2):** No evidence of mutagenicity has been observed in animal testing.

**CARCINOGENICITY(2):** Laboratory studies have shown some carcinogenic effects in laboratory animals. 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:** No data are available.

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**12. ECOLOGICAL INFORMATION**

**GENERAL:** 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.

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**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 state and local agencies.

**CONTAINER DISPOSAL:** Triple rinse. Use the rinsate in the process according to the label, or dispose as a hazardous waste. Either offer the container for recycle or puncture and dispose as a hazardous waste. Check with EPA, State, and local authorities for the current regulations applicable to your area.

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**14. TRANSPORTATION INFORMATION**

The HAZMAT information given below is applicable to this product only when it is packaged in packages that contain more than 261 lbs (118.6 kg) per package.

DOT Class*:	9
UN Number:	3082
IMDG Class (sea):	9
IATA Class (air):	9
Marine Pollutant:	No

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**14. TRANSPORTATION INFORMATION, cont'd**

Packing Group:	III
Hazard Label(s):	Class 9
ADR Class (Road):	Not listed in ADR
Proper Shipping Name(s):	Environmentally hazardous substance(s), liquid, n.o.s. (Pentachloronitrobenzene)
Reportable Quantity:	Yes

**PACKAGING**

General Description:	2½ gal bottles; 4 gal, 30 gal and 55 gal poly drums; 275 gal totes
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**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.

**SARA TITLE III DATA****Section 311 & 312 Hazard Categories:**

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

**Section 302 Extremely Hazardous Substances: None**

<b>Section 313 Toxic Chemicals:</b>	Pentachloronitrobenzene (CAS No. 82-68-8) - 38.3%
	Hexachlorobenzene (CAS No. 118-74-1) - < 0.025%

**CERCLA & EHS Reportable Quantities (RQ):**

Pentachloronitrobenzene (PCNB) - 100 lbs; Hexachlorobenzene (HCB) - 10 lb;  
Product (calculated) - 261 lbs

**STATE REGULATIONS:**

**CALIFORNIA (Proposition 65):** This product contains trace amounts of Hexachlorobenzene (HCB), a chemical known to the State of California to cause cancer or birth defects or other reproductive harm.

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**16. OTHER INFORMATION****MSDS Status:****Date This Revision: 28 July, 2005****Date Previous Revision: 5 August 2003****Person Responsible for Preparation: Gary A. Braden**

**Reasons for Revision:** Information has been updated in sections 3, 11, and 14 to include current knowledge about this product or the active ingredient.

**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
IMDG	-	International Maritime Dangerous Goods
IATA	-	International Air Transport Association
NTP	-	National Toxicology Program
SARA	-	Superfund Amendments and Reauthorization Act
TSCA	-	Toxic Substances Control Act

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

AMVAC CHEMICAL CORPORATION  
4100 E. WASHINGTON BLVD  
LOS ANGELES, CA 90023-4406