



# MATERIAL SAFETY DATA SHEET

24 Hour Emergency Phone 316/524-5751

## SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

GLAZD® Penta, Block Penta

### CHEMICAL NAME

Pentachlorophenol

### SYNONYMS

Penta, PCP, Technical Grade PCP, Chlorophenols, Solid

### MANUFACTURER

Vulcan Chemicals, P O Box 385015, Birmingham, AL 35238-5015

## SECTION 2 COMPOSITION INFORMATION ON INGREDIENTS

<u>CHEMICAL NAME</u>	<u>CAS NUMBER</u>	<u>% RANGE</u>	<u>OSHA PEL</u>
* Pentachlorophenol	87-86-5	83-93	0.5 mg/m <sup>3</sup>
2, 3, 4, 6-Tetrachlorophenol	58-90-2	0.6-3.0	None
Other chlorophenols and related compounds		3.5-12.0	None
Chlorinated impurities		0-4.0	None

\* Denotes chemical subject to reporting requirements of Section 313 of Title III of the 1986 Superfund Amendments and Reauthorization Act (SARA) and 40 CFR Part 372

## SECTION 3 HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

Light brown or tan flake or solid

DANGER! May be fatal if swallowed, inhaled or absorbed through skin.

Causes skin and eye irritation. Causes delayed chemical burns.

### POTENTIAL HEALTH EFFECTS

#### INHALATION

Inhalation is a major potential route of exposure. Symptoms of overexposure include rapid heartbeat and respiration, elevated temperature and blood pressure, muscular weakness, excessive sweating, dizziness and nausea. High concentrations can cause unconsciousness, convulsions and death generally from cardiac arrest.

#### SKIN

Pentachlorophenol is readily absorbed through intact skin. Pentachlorophenol in solution can be readily absorbed through intact skin in toxic amounts, causing systemic poisoning and symptoms described in the Inhalation section above. Pentachlorophenol on the skin can cause irritation.

#### EYE

Pentachlorophenol causes irritation of the eyes at 1 mg/m<sup>3</sup>. If exposure is prolonged, slight transient corneal damage can occur.

#### INGESTION

Single dose toxicity is high. Symptoms of ingestion are those described in the Inhalation section.

**CHLORACNE**

In humans, the absorption of pentachlorophenol by any route may result in the development of the skin condition, chloracne. This usually appears as blackheads, whiteheads and yellow cysts over the temples and around the ears. In severe cases, involvement may be extensive. Mild cases may be similar in appearance to other forms of acne and to skin changes commonly seen with aging.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

Acute or chronic kidney or liver disease, asthma, bronchitis, chronic acne and other skin conditions.

**CHRONIC EFFECTS**

The finding of chronic toxic effects in laboratory animals may indicate toxicity to humans. Overexposure should be avoided, failure to do so could result in injury, illness or even death. Chronic overexposure to technical grade pentachlorophenol has caused liver and kidney toxic effects in experimental animals.

**SECTION 4 FIRST AID MEASURES****INHALATION**

Move victim to fresh air. If breathing has stopped, administer artificial respiration. Call a physician.

**SKIN**

Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water for at least 15 minutes. Wash contaminated clothing before reuse.

**EYES**

Flush eyes immediately with water for at least 15 minutes. Contact a physician.

**INGESTION**

Call a physician or Poison Control Center immediately. If possible, vomiting should be induced under medical supervision. Drink one or two glasses of water and induce vomiting by touching the back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

**NOTES TO PHYSICIAN**

This product is a metabolic stimulant. Treatment is supportive. Forced diuresis may be effective to reduce total body burden. Treat hyperthermia with physical measures. Do not administer aspirin, phenothiazines, or atropine since they may enhance toxicity.

See Section 11 for Toxicological Information

**SECTION 5 FIRE FIGHTING MEASURES****FLAMMABLE PROPERTIES****FLASH POINT**

None

**FLAMMABLE LIMITS IN AIR (PERCENT BY VOLUME)**

None

**HAZARDOUS COMBUSTION PRODUCTS**

Hydrogen chloride, chlorinated phenols, and carbon monoxide

**EXTINGUISHING MEDIA**

Use dry chemical, foam, carbon dioxide or water spray. Water may be ineffective.

**FIRE FIGHTING INSTRUCTIONS**

Extinguish fire using agent suitable for surrounding fire. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Use water spray to keep fire-exposed containers cool.

Toxic gases are formed by thermal decomposition. Firefighters should wear self-contained positive pressure breathing apparatus, and avoid skin contact.

## **SECTION 6 ACCIDENTAL RELEASE MEASURES**

Ventilate spill area and avoid breathing dust or vapors. Clean up spilled material (wear protective equipment - See Section VII) and place in closed container for normal use if possible or proper disposal. Penta is toxic to fish and wildlife; do not allow to contaminate ground or surface waters. Notify National Response Center (800/424-8802) of uncontained releases to the environment in excess of the RQ.

## **SECTION 7 HANDLING AND STORAGE**

### **HANDLING**

Avoid contact with skin and breathing dust. Do not eat, drink, or smoke in work area. Wash hands prior to eating, drinking or using restroom. Shower and change into uncontaminated clothing before leaving work premises. (Refer to Section 8).

Follow protective controls set forth in Section 8 when handling this product. Thoroughly wash potentially contaminated clothing before reuse. Do not launder work clothes with other non-contaminated clothes and/or household laundry. Contaminated clothing, boots or equipment should not be taken home.

### **STORAGE**

#### **STORAGE CONDITIONS**

Store in properly labeled containers in dry, well ventilated secure area. Do not remove or deface label. Do not reuse drums for any purpose.

#### **INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT**

## **SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION**

### **ENGINEERING CONTROLS**

#### **VENTILATION**

Do not use in closed or confined space. Open doors and/or windows. Use ventilation to maintain exposure levels below  $0.5 \text{ mg/m}^3$ .

To determine the exposure level(s), monitoring should be performed regularly.

### **PERSONAL PROTECTIVE EQUIPMENT**

#### **EYE AND FACE PROTECTION**

Wear safety glasses. Contact lenses should not be worn. When mixing penta solutions, wear chemical goggles and/or face shield.

#### **SKIN PROTECTION**

Wear PVC, neoprene, nitrile latex or equivalent gloves and tightly woven clothing including long sleeve shirt when handling flake or solid penta. When mixing penta solutions, wear protective clothing, gloves and boots or shoes, which are suitable for the solvent being used.

#### **RESPIRATORY PROTECTION**

Where concentrations of pentachlorophenol exceed or are likely to exceed  $0.5 \text{ mg/m}^3$ , a NIOSH approved organic vapor-dust filter type respirator is acceptable for concentrations up to  $2.5 \text{ mg/m}^3$ . A NIOSH approved self-contained breathing apparatus or air line respirator, with full face piece, is required for concentrations above  $2.5 \text{ mg/m}^3$ , or during emergency and spills. Follow applicable respirator use standards and regulations.

**GENERAL**

Safety shower and eye wash station should be available. Note: Protective equipment and clothing should be selected, used, and maintained according to applicable standards and regulations. For further information, contact the clothing or equipment manufacturer or the Vulcan Chemicals Technical Service Department.

**EXPOSURE GUIDELINES**

**ACGIH:** 0.5 mg/m<sup>3</sup> 8 hour TWA  
**OSHA:** 0.5 mg/m<sup>3</sup> 8 hour TWA  
(skin absorption possible)

**ACGIH Biological Exposure Indices**

(2 mg/L urine)  
(5 mg/L plasma)

**IMMEDIATELY DANGEROUS TO LIFE OR HEALTH**

2.5 mg/m<sup>3</sup>

**ODOR THRESHOLD**

Odor thresholds for PCP solution at 30° and 60 °C were 857 and 12,000 µg/l, respectively.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES****CHEMICAL FORMULA**

C<sub>6</sub>Cl<sub>5</sub>OH

**MOLECULAR WEIGHT**

266.32

**APPEARANCE AND ODOR**

Light brown or tan flake or solid

**SPECIFIC GRAVITY**

Flake bulk density = 70 lbs/ft<sup>3</sup>

**VAPOR PRESSURE**

N/A

**VOLATILES, PERCENT BY VOLUME**

0

**BOILING POINT**

310°C (Melting Point: 190°C)

**VAPOR DENSITY**

N/A

**EVAPORATION RATE**

N/A

**SOLUBILITY IN WATER**

14 ppm @ 20°C

**SECTION 10 STABILITY AND REACTIVITY****CHEMICAL STABILITY**

Stable

**CONDITIONS TO AVOID**

Avoid contact with open flame, electric arcs, or other hot surfaces which can cause thermal decomposition.

**INCOMPATIBILITY WITH OTHER MATERIALS**

Strong oxidizers and alkalis.

**HAZARDOUS DECOMPOSITION PRODUCTS**

Hydrogen chloride, chlorine, chlorinated hydrocarbons

**HAZARDOUS POLYMERIZATION**

Will not occur.

**SECTION 11 TOXICOLOGICAL INFORMATION****ACUTE TOXICITY**

NOTE: The hazards of this product are based on studies on this or similar products.

**INHALATION**

Concentrations of 0.3 mg/m<sup>3</sup> can cause nose irritation. Concentrations above 1 mg/m<sup>3</sup> can cause irritation of upper respiratory tract with sneezing and coughing. Persons acclimated to pentachlorophenol can tolerate levels above 2 mg/m<sup>3</sup>. Symptoms of overexposure include rapid heartbeat and respiration, elevated temperature and blood pressure, muscular weakness, excessive sweating, dizziness and nausea. High concentrations can cause unconsciousness, convulsions and death generally from cardiac arrest.

**ANIMAL TOXICOLOGY**

Oral LD<sub>50</sub>: > 146-210 mg/kg (rat)  
Dermal LD<sub>50</sub>: > 96 mg/kg (rat)

**CHRONIC TOXICITY****CARCINOGENICITY**

Technical Grade Pentachlorophenol (penta) has been evaluated for possible cancer causing effects in laboratory animals. The National Toxicology Program fed up to 200 ppm Technical Grade (TG) penta and up to 600 ppm "purified" penta to mice, 7 days a week for 103 weeks. A statistically significant increased incidence of benign liver tumors was observed in male mice fed both types of penta. Increased benign liver tumors were observed only in females fed purified penta, and then only at the highest dose. Vascular tumors were observed in female mice, but not male mice. Increased incidence of benign tumors of the adrenal medulla were observed in both sexes of mice.

Two other carcinogenicity studies, one in rats and one in mice failed to show increased incidence in tumors. In the rat study, rats were fed concentrations up to 30 mg/kg/day (approximately 750 ppm) for 2 years while the mouse study involved feeding of concentrations up to 46.4 mg/kg/day (approximately 600 ppm).

The International Agency for Research on Cancer (IARC) has concluded that, with respect to pentachlorophenol, there is sufficient evidence of the carcinogenicity to experimental animals, and inadequate evidence of the carcinogenicity to humans, resulting in a classification as a 2B animal carcinogen. Pentachlorophenol, 2,3,4,6-tetrachlorophenol and hydroxypolychlorodibenzo ethers are not listed on the NTP or OSHA carcinogen lists.

**REPRODUCTIVE TOXICITY**

Reproductive toxicity tests have been conducted to evaluate the potential adverse effects technical grade and purified pentachlorophenol may have on reproduction and offspring of laboratory animals. Both technical and purified pentachlorophenol have been found to be embryo and fetotoxic to rats, but not to hamsters. Neither technical grade nor purified pentachlorophenol caused teratogenic effects (birth defects), but did cause delays in normal fetal development. The EPA has expressed the opinion that pentachlorophenol can produce defects in the offspring of laboratory animals. Exposure to pentachlorophenol during pregnancy should be avoided.

NOTE: This product contains trace quantities of hexa, hepta and octachlorodibenzo-p-dioxins, hexa, hepta and octachlorodibenzofurans and hexachlorobenzene. The State of California has listed pentachlorophenol, hexachlorodibenzo dioxin and hexachlorobenzene under Proposition 65 as chemicals known to the State to cause cancer and hexachlorobenzene as a chemical known to the State to cause birth defects or other reproductive harm. If further information is desired, contact Vulcan Chemicals Technical Service Department.

**SECTION 12 ECOLOGICAL INFORMATION****ENVIRONMENTAL FATE**

Water: . If released in water, pentachlorophenol will adsorb to sediment, photodegrade (especially at higher pHs) and slowly biodegrade. Bioconcentration in fish will be moderate (bioconcentration factor range is 64-770). Biodegradation probably becomes significant after a period of acclimation (may be several weeks). Adsorption to sediments will be considerable. Hydrolysis and volatilization are not important processes in water.

Soil: Releases to soil can decrease in concentrations due to slow biodegradation and leaching into groundwater. Photolysis and hydrolysis of pentachlorophenol do not appear to be significant processes in soil. Pentachlorophenol released to soil will biodegrade with half-lives of weeks to months.

Air: Vapor phase pentachlorophenol will be lost by photolysis and to a lesser extent, reaction with photochemically produced hydroxyl radicals.

**ECOTOXICITY**

Acute LC<sub>50</sub> (96 Hours, static) for Fathead Minnow: 205 µg/L  
Acute LC<sub>50</sub> (96 Hours, static) for Bluegill: 32 µg/L  
Acute LC<sub>50</sub> (96 Hours, static) for Sheepshead Minnow: 232-329 µg/L

**SECTION 13 DISPOSAL CONSIDERATIONS**

All disposals of this material must be done in accordance with local, state and Federal regulations. Waste characterization and compliance with disposal regulations are the responsibilities of the waste generator.

**SPILL RESIDUES**

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA regional office for guidance.

**CONTAINER DISPOSAL**

Completely empty drum or liner into application equipment. Triple rinse or clean empty drums, liners and block wrappings in accordance with 40 CFR 261.7(b)(3) prior to offering for reconditioning, recycling or other disposal. For guidance, contact the nearest EPA regional office or State Agency authorized to administer the Resource Conservation and Recovery Act (RCRA).

**SECTION 14 TRANSPORT INFORMATION****DOT IDENTIFICATION NO.**

UN 3155

**DOT SHIPPING DESCRIPTION (49 CFR 172.101)**

Pentachlorophenol, 6.1, UN 3155, PG II, RQ

**PLACARD REQUIRED**

POISON, 3155, Class 6

**LABEL REQUIRED**

POISON, Class 6

Label as required by EPA and by OSHA Hazard Communication Standard, and any applicable state and local regulations.

**IMO REQUIREMENTS**

EmS No.: 6.1-02      MFAG Table No.: 711      Marine Pollutant      IMDG Code Page: 6217

**SECTION 15 REGULATORY INFORMATION****U S FEDERAL REGULATIONS****REPORTABLE QUANTITY (RQ)**

Reportable Quantity (RQ) is 10 lbs.

**TOXIC SUBSTANCES CONTROL ACT**

Listed on TSCA Inventory

**SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) TITLE III**

Components identified with an asterisk (\*) in Section 2 are subject to the reporting requirements of Section 313 of Title III of the 1986 Superfund Amendments and Reauthorization Act (SARA) and 40 CFR Part 372.

**SARA HAZARD CATEGORIES (40 CFR 370.2)**

HEALTH: Immediate Health, Delayed Health

**INTERNATIONAL REGULATIONS****CANADA****WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) CLASSIFICATION**

WHMIS Classifications applicable to this product:

D-1A (Very Toxic Material) based on assignment to TDG Class 6.1, PG II

D-2A (Very Toxic Material) based on classification as 2B carcinogen by IARC

**CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)**

All components of this product are on the Domestic Substances List (DSL).

**HAZARDOUS PRODUCTS ACT**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR).

**EUROPE**

EINECS No.: 201-778-6

**STATE REGULATIONS****CALIFORNIA PROPOSITION 65**

The State of California has listed pentachlorophenol, hexachlorodibenzodioxin and hexachlorobenzene under Proposition 65 as chemicals known to the State to cause cancer and hexachlorobenzene as a chemical known to the State to cause birth defects or other reproductive harm. If further information is desired, contact Vulcan Chemicals Technical Service Department.

**SECTION 16 OTHER INFORMATION****NFPA RATINGS**

Health 3, Flammability 0, Reactivity 0

**Medical Emergencies:**Call toll-free 24 hours a day  
for emergency toxicological  
information 888/211-9412**Other Emergency information:**

Call 316/524-5751 (24 Hours)

**For any other information contact:**Vulcan Chemicals  
Technical Service Department  
P O Box 385015  
Birmingham, AL 35238-5015  
800/873-4898  
8 AM - 5 PM, Central Time  
Monday through Friday

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