

SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 - Product Identifiers

Catalog Name: HPCB-1002N

Description: 4-Hydroxy-2-chlorobiphenyl

CAS No.: 23719-22-4

1.2 - Relevant Identified Uses of the Substance or Mixture

Laboratory Chemical Reference Material

1.3 - Supplier Details

Company: AccuStandard, Inc.
125 Market St.
New Haven, CT 06513 USA

Telephone Number: 203-786-5290

Fax: 203-786-5287

Email: edocs@accustandard.com

1.4 - Emergency Telephone Number

Emergency Phone #: AccuStandard, Inc.
1-203-502-7070 (USA)
+001-203-502-7070 (International)

24 hours / 7 days a week

SECTION 2 - HAZARDS IDENTIFICATION

2.1 - GHS Label Elements



Signal Word: Danger

Hazard Codes:

H302 - Harmful if swallowed. (Acute toxicity, oral, category 4)

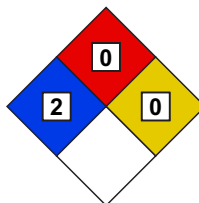
H312 - Harmful if absorbed through skin. (Acute toxicity, dermal, category 4)

H315 - Irritating to skin. (Skin corrosion/irritation, category 2)

H332 - Harmful if inhaled. (Acute toxicity, inhalation, category 4)

H350 - This product is or contains a component that is classified (ACGIH, IARC, NTP, OSHA) as a possible cancer hazard. (Carcinogenicity, category 1B)

H351 - The consistent finding in animal studies with PCB's is that they produce liver injury and are suspected of causing cancer following prolonged and repeated exposure by any route, if the exposure is of sufficient degree and duration. Liver injury is produced first, and by exposures that are less than those reported to cause cancer in rodents. Therefore, exposure by all routes should be kept sufficiently low to prevent liver injury. (Carcinogenicity, category 1B)



2	HEALTH
0	FLAMMABILITY
0	PHYSICAL HAZARD

SECTION 2 - HAZARDS IDENTIFICATION - continued**2.1 - GHS Label Elements** - continued

H360, H350 - California Proposition 65 Warning: This product contains a component (or components) that may cause cancer and genetic effects in a concentration greater than or equal to 0.1%.

H371 - May cause liver damage. (Specific target organ toxicity, single exposure, category 2)

H401 - Toxic to fish and other water organisms. (H410)

H413 - May cause long-term adverse effects in the aquatic environment.

Precautionary Codes:

P202 - This product should only be used by persons trained in the safe handling of hazardous chemicals.

P233 - Store in a tightly closed container. (P404)

P260 - Do not breathe dust.

P262 - Do not get in eyes, on skin or clothing.

P264 - Wash thoroughly after handling. Do not take internally. Eye wash and safety equipment should be readily available.

P280 - Protective gloves must be worn to prevent skin contact.

P284 - Respiratory Protection: If workplace exposure limit(s) of product or any component is exceeded (see TLV/PEL), or a risk assessment shows air-purifying respirators are appropriate, use of a NIOSH/MSHA approved air supplied respirator is advised. Use a full-face respirator with multi-purpose combination (US) or type ABEK (EN14387) respirator cartridges in absence of proper environmental control. Always use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Engineering and/or administrative controls should be implemented to reduce exposure.

P338 - Eye contact: Immediately flush with plenty of water. After initial flushing, remove and contact lenses and continue flushing for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers.

P340 - Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

P360 - Skin contact: Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

2.2 - Other Hazards**2.2.1 - Symptom of Exposure Health/Environment**

May cause liver damage. (Specific target organ toxicity, single exposure, category 2)

Overexposure may cause reproductive disorders based on tests with laboratory animals.

The consistent finding in animal studies with PCB's is that they produce liver injury and are suspected of causing cancer following prolonged and repeated exposure by any route, if the exposure is of sufficient degree and duration. Liver injury is produced first, and by exposures that are less than those reported to cause cancer in rodents.

Therefore, exposure by all routes should be kept sufficiently low to prevent liver injury. (Carcinogenicity, category 1B)

Toxic to fish and other water organisms. (H410)

May cause long-term adverse effects in the aquatic environment. (H413)

Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation or dermatitis (rash).

2.2.2 - Potential Health Effects

May be irritating to eyes.

Irritating to skin. (Skin corrosion/irritation, category 2)

Harmful if absorbed through skin. (Acute toxicity, dermal, category 4)

Irritating to mucous membrane and upper respiratory system.

Harmful if inhaled. (Acute toxicity, inhalation, category 4)

SECTION 2 - HAZARDS IDENTIFICATION - continued**2.2 - Other Hazards** - continued**2.2.2 - Potential Health Effects** - continued

Harmful if swallowed. (Acute toxicity, oral, category 4)

2.2.3 - Routes of Entry

Inhalation, ingestion or skin contact.

2.2.4 - Carcinogenicity

California Proposition 65 cancer hazard.

This product is or contains a component that is classified (ACGIH, IARC, NTP, OSHA) as a possible cancer hazard. (Carcinogenicity, category 1B)

California Proposition 65 Warning: This product contains a component (or components) that may cause cancer and genetic effects in a concentration greater than or equal to 0.1%.

SECTION 3 - COMPOSITION / ANALYTES DATA

Description: 4-Hydroxy-2-chlorobiphenyl

Synonyms: N/A

Molecular Weight: 204.65

Molecular Formula: C₁₂H₉ClO

Analyte	CAS #	% Concentration	ACGIH -TLV (mg/m ³)			OSHA -PEL (mg/m ³)		
			TWA	STEL	Skin	TWA	STEL	Skin
4-Hydroxy-2-chlorobiphenyl	23719-22-4	100.000						

SECTION 4 - FIRST AID MEASURES**4.1 - First Aid Procedures - General**

Get medical assistance for all cases of overexposure.

4.2 - Eye Contact

Eye contact: Immediately flush with plenty of water. After initial flushing, remove and contact lenses and continue flushing for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. (P338)

A petroleum-based ophthalmic ointment may be applied to the eye to relieve the irritating effects of PCBs.

4.3 - Skin Contact

Skin contact: Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse. (P360)

NOTE TO PHYSICIANS: Hot PCBs may cause thermal burns.

4.4 - Inhalation

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. (P340)

4.5 - Ingestion

Ingestion: Do NOT induce vomiting or give any oily laxatives.

NOTE TO PHYSICIANS: If large amounts are ingested, gastric lavage is suggested.

SECTION 5 - FIRE FIGHTING MEASURES**5.1 - Flammable Properties**

PCB's are very stable, fire-resistant compounds.

During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

5.2 - Extinguishing Media

Use any extinguishing media suitable for adjacent material.

5.3 - Protection of Firefighters

As in any fire, wear self-contained breathing apparatus pressure demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Fire fighting equipment should be thoroughly cleaned and decontaminated after use.

SECTION 6 - ACCIDENTAL RELEASE MEASURES**6.1 - Spill Response**

Evacuate the area of all non-essential personnel. Stop leak if you can do so without risk. Ventilate the area. Absorb on sawdust, vermiculite, dry sand, clay, dirt or other similar materials. Wear a self-contained breathing apparatus and appropriate Personal protection. All wastes and residues containing PCBs (e.g. wiping cloths, absorbent material, used disposable gloves, clothing, etc.) should be collected, placed in proper containers, marked and disposed of in the manner prescribed by EPA regulations (40 CFR Part 761) and applicable state and local regulations. Various federal, state, and local regulations may require reporting of PCB spills and may also define spill clean-up levels. Consult your attorney or appropriate regulatory officials for information relating to spill reporting and spill clean-up.

SECTION 7 - HANDLING AND STORAGE

Store in a tightly closed container. (P404)

Store at controlled room temperature.

Do not breathe dust. (P260)

Use with adequate ventilation.

Do not get in eyes, on skin or clothing. (P262)

Avoid prolonged or repeated exposure.

"Empty" containers retain product residue and can be very dangerous.

This product should only be used by persons trained in the safe handling of hazardous chemicals. (P202)

SECTION 8 - EXPOSURE CONTROLS**8.1 - Engineering Controls/PPE**

Wash thoroughly after handling. Do not take internally. Eye wash and safety equipment should be readily available. (P264)

8.2 - General Hygiene Considerations

Respiratory Protection: If workplace exposure limit(s) of product or any component is exceeded (see TLV/PEL), or a risk assessment shows air-purifying respirators are appropriate, use of a NIOSH/MSHA approved air supplied respirator is advised. Use a full-face respirator with multi-purpose combination (US) or type ABEK (EN14387) respirator cartridges in absence of proper environmental control. Always use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Engineering and/or administrative controls should be implemented to reduce exposure.

Protective gloves must be worn to prevent skin contact. (P280)

(Nitrile or equivalent)

SECTION 8 - EXPOSURE CONTROLS - continued**8.2 - General Hygiene Considerations** - continued

Use eye protection tested and approved under the appropriate government standards such as NIOSH (US) or EN 166 (EU).

Impervious protective clothing should be worn to prevent skin contact.

All recommendations are advisory only and must be evaluated by an industrial hygienist and/or safety officer familiar with the specific situation of anticipated use, such as concentration and amount of the substance in the workplace. Any recommendation should not be construed as offering an approval for any specific use of the product.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Solid

Odor: N/A

Odor Threshold: N/A

pH: N/A

Melting Point: N/A

Boiling Point: N/A

Flash Point: >210 °F / >100 °C

Evaporation Rate (Butyl Acetate=1): N/A

Flammability Class: N/A

Lower Flammability Level: N/A

Upper Flammability Level: N/A

Vapor Pressure: N/A

Vapor Density (Air = 1): N/A

Specific Gravity: N/A

Solubility in Water: Insoluble

Partition Coefficient: N/A

Autoignition Temperature: N/A

Decomposition Temperature: N/A

Viscosity: N/A

VOC Content: N/A

Percent Volatile: N/A

SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable

Materials to Avoid: None indicated

Hazardous Decomposition: Carbon oxides; Hydrogen chloride; Phenolics; Aldehydes; Polychlorinated dibenzofurans & dibenzo-p-dioxins

Hazardous Polymerization: Will not occur

Condition to Avoid: Excessive heat

SECTION 11 - TOXICOLOGICAL INFORMATION**Human Health Toxicity**

See section 2 for specific toxicological information for the ingredients of this product.

SECTION 11 - TOXICOLOGICAL INFORMATION - continued

LD50 (Oral): N/A

LD50 (Dermal) : N/A

LC50 (Inhalation): N/A

The toxicity of individual PCB compounds vary according to the degree and position of chlorination. The tetra-, penta-, and hexa-chlorinated isomer groups and the ortho-substituted exhibit greater toxicity than the other chlorinated forms.

WARNING: This product contains chemical(s) known to the state of California to cause cancer and to cause birth defects or other reproductive harm.

No other information related to the toxicological properties of this product is available at this time.

SECTION 12 - ECOLOGICAL INFORMATION**Environmental Toxicity**

By complying with sections 6 and 7 there should be no release to the environment.

LC50 (Fish): N/A

EC50 (Aquatic Invertebrate): N/A

BCF: N/A

PCBs are toxic to aquatic organisms, with 96-hour LC50 values in the range of 0.015 mg/L to 2.74 mg/L. The degradation of PCBs in the environment depends largely on the degree of chlorination of the biphenyl, with persistence increasing as the degree of chlorination increases.

No other information related to the ecological properties of this product is available at this time.

SECTION 13 - DISPOSAL CONSIDERATIONS

Recycle or incinerate at any EPA approved facility or dispose in compliance with Federal, State and local regulations. Empty containers must be triple-rinsed prior to disposal.

SECTION 14 - TRANSPORT INFORMATIONTransportation Information (DOT/IATA)

UN Number: UN3432

Class: 9

Packing Group: II

Proper Shipping Name: Polychlorinated biphenyls, solid

Poison by Inhalation: No

Marine Pollutant: Yes

SECTION 15 - REGULATORY INFORMATION

The CAS number of this product is NOT listed on the TSCA Inventory.

WARNING: This product contains chemical(s) known to the state of California to cause cancer and to cause birth defects or other reproductive harm.

This product is subject to SARA section 313 reporting requirements.

For laboratory, research and development use only. Not for manufacturing or commercial purposes.

In addition to federal and state regulations, local regulations may apply. Check with your local regulatory authorities.

SECTION 16 - OTHER INFORMATION

This document has been designed to meet the requirements of OSHA, ANSI, GHS and CHIPs regulations. Chemicals are classified using the Globally Harmonized System for Classification and Labeling of Chemicals.

The statements contained herein are offered for informational purposes only and are based on technical data that we believe to be accurate. The manufacturer will not assume any liability for the accuracy and completeness of this information. Final determination of the suitability of the material is the responsibility of the user. Although certain hazards are described herein, the user should not presume that these are the only hazards that exist. Since conditions and manner of use are outside of the manufacturers control, we make

**NO WARRANTY OF MERCHANTABILITY, EXPRESSED OR IMPLIED, AND ASSUME NO LIABILITY
RESULTING FROM ITS USE.**

Legend : N/A = Not Available ND = Not Determined NR = Not Regulated

Alteration of any information contained herein without written permission from the manufacturer is strictly prohibited.

HMIS/NFPA HAZARD INDEX

- 0 - Minimal
- 1 - Slight
- 2 - Moderate
- 3 - Serious
- 4 - Severe

* - Additional Hazard

GHS HAZARD INDEX

- Category 1 - Most Severe
- Category 5 - Least Severe

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