



From: Mallinckrodt Baker, Inc.  
222 Red School Lane  
Phillipsburg, NJ 08865



All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

24 Hour Emergency Telephone: 908-859-2151  
CHEMTREC: 1-800-424-9300  
National Response in Canada  
CANUTEC: 613-996-6666  
Outside U.S. And Canada  
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

## BIPHENYL

### 1. Product Identification

**Synonyms:** Diphenol; 1,1'-biphenyl; phenylbenzene  
**CAS No.:** 92-52-4  
**Molecular Weight:** 154.21  
**Chemical Formula:** C12H10

### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Biphenyl	92-52-4	90 - 100%	Yes

### 3. Hazards Identification

#### Emergency Overview

**WARNING! HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY AFFECT LIVER, CENTRAL AND PERIPHERAL NERVOUS SYSTEMS. MAY CAUSE ALLERGIC SKIN REACTION.**

#### Potential Health Effects

##### Inhalation:

Inhalation of dust or vapors can irritate the mucous membranes and respiratory tract. Other symptoms may parallel those from ingestion exposure.

##### Ingestion:

Exerts toxic effects on the central nervous system and liver. Symptoms may include headache, diffuse gastro-intestinal pain, nausea, numbness, body aches, and general fatigue.

##### Skin Contact:

May cause irritation. May be absorbed through the skin with symptoms paralleling those from ingestion exposure. May cause allergic reaction in sensitive individuals.

##### Eye Contact:

Vapors and dust cause eye irritation.

##### Chronic Exposure:

Chronic exposure may cause peripheral nerve damage and liver injury.

##### Aggravation of Pre-existing Conditions:

No information found.

### 4. First Aid Measures

##### Inhalation:

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

##### Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

##### Skin Contact:

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

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## 5. Fire Fighting Measures

**Fire:**

Flash point: 113C (235F) CC

Autoignition temperature: 540C (1004F)

Flammable limits in air % by volume:

lcl: 0.6; ucl: 5.8

**Explosion:**

Above the flash point, explosive vapor-air mixtures may be formed. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

**Fire Extinguishing Media:**

Water spray, dry chemical, alcohol foam, or carbon dioxide. Water or foam may cause frothing.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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## 6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

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## 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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## 8. Exposure Controls/Personal Protection

**Airborne Exposure Limits:**

-OSHA Permissible Exposure Limit (PEL):

0.2 ppm (TWA).

-ACGIH Threshold Limit Value (TLV):

0.2 ppm (TWA)

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Personal Respirators (NIOSH Approved):**

If the exposure limit is exceeded and engineering controls are not feasible, a half-face respirator with an organic vapor cartridge and particulate filter (NIOSH type N95 or better filter) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an organic vapor cartridge and particulate filter (NIOSH N 100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P particulate filter. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Eye Protection:**

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

**Appearance:**

White crystals.

**Odor:**

Pleasant, peculiar odor.

**Solubility:**  
Insoluble in water.  
**Specific Gravity:**  
1.041  
**pH:**  
No information found.  
**% Volatiles by volume @ 21C (70F):**  
0  
**Boiling Point:**  
254 - 255C (489 - 491F)  
**Melting Point:**  
69 - 70C (156 - 158F)  
**Vapor Density (Air=1):**  
5.31  
**Vapor Pressure (mm Hg):**  
0.005 @ 20.4C (68F)  
**Evaporation Rate (BuAc=1):**  
No information found.

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## 10. Stability and Reactivity

**Stability:**  
Stable under ordinary conditions of use and storage.  
**Hazardous Decomposition Products:**  
Carbon dioxide and carbon monoxide may form when heated to decomposition.  
**Hazardous Polymerization:**  
Will not occur.  
**Incompatibilities:**  
Strong oxidizers.  
**Conditions to Avoid:**  
Heat, flame, ignition sources, dusting and incompatibles.

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## 11. Toxicological Information

**Toxicological Data:**  
Oral rat LD50 2400 mg/kg; Skin rabbit LD50: > 5010 mg/kg; Irritation (std Draize) rabbit: eye = 100 mg, mild.  
Investigated as a tumorigen and mutagen.  
**Carcinogenicity:**  
EPA / IRIS classification: Group D1 - Not classifiable as a human carcinogen.

-----\Cancer Lists\-----

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Biphenyl (92-52-4)	No	No	None

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## 12. Ecological Information

**Environmental Fate:**  
No information found.  
**Environmental Toxicity:**  
No information found.

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## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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## 14. Transport Information

**International (Water, I. M. O.)**

**Proper Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N. O. S. (DIPHENYL)  
**Hazard Class:** 9  
**UN/NA:** UN3077  
**Packing Group:** III  
**Information reported for product/size:** 1KG

**International (Air, I.C.A.O.)**

**Proper Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N. O. S. (DIPHENYL)  
**Hazard Class:** 9  
**UN/NA:** UN3077  
**Packing Group:** III  
**Information reported for product/size:** 1KG

**15. Regulatory Information**

-----\Chemical Inventory Status - Part 1\-----				
Ingredient	TSCA	EC	Japan	Australia
Biphenyl (92-52-4)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----				
Ingredient	Korea	Canada DSL	NDSL	Phil.
Biphenyl (92-52-4)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----				
Ingredient	-SARA 302-		-SARA 313-	
	RQ	TPQ	List	Chemical Catg.
Biphenyl (92-52-4)	No	No	Yes	No

-----\Federal, State & International Regulations - Part 2\-----			
Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Biphenyl (92-52-4)	100	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: Yes  
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No  
Reactivity: No (Pure / Solid)

**Australian Hazchem Code:** None allocated.  
**Poison Schedule:** None allocated.

**WHMIS:**  
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

**16. Other Information**

**NFPA Ratings:** Health: 2 Flammability: 1 Reactivity: 0

**Label Hazard Warning:**  
WARNING! HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY AFFECT LIVER, CENTRAL AND PERIPHERAL NERVOUS SYSTEMS. MAY CAUSE ALLERGIC SKIN REACTION.

**Label Precautions:**  
Avoid contact with eyes, skin and clothing.  
Avoid breathing dust.  
Keep container closed.  
Use only with adequate ventilation.  
Wash thoroughly after handling.

**Label First Aid:**  
In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In all cases, get medical attention.

**Product Use:**  
Laboratory Reagent.

**Revision Information:**  
MSDS Section(s) changed since last revision of document include: 8.

**Disclaimer:**  
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