

SECTION 1: Identification**1.1. Identification**

Product form	: Substance
Substance name	: DIPHENYL
Chemical name	: biphenyl, diphenyl
CAS-No.	: 92-52-4
Product code	: AEB2039
Formula	: C12H10
Synonyms	: BIPHENYL
Other means of identification	: Biphenyl

1.2. Recommended use and restrictions on use

Use of the substance/mixture	: Laboratory chemicals
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1.3. Supplier

Alpha Resources LLC
3090 Johnson Rd.
Stevensville, Michigan 49127
USA
T (269)465-5559
info@alpharesources.com - www.alpharesources.com

1.4. Emergency telephone number

Emergency number	: CHEMTREC Emergency Phone Number: (800) 424-9300
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SECTION 2: Hazard(s) identification**2.1. Classification of the substance or mixture****GHS US classification**

Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2	H319	Causes serious eye irritation
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335	May cause respiratory irritation
Hazardous to the aquatic environment – Chronic Hazard Category 1	H410	Very toxic to aquatic life with long lasting effects
Hazardous to the aquatic environment – Acute Hazard Category 1	H400	Very toxic to aquatic life
Full text of H statements : see section 16		

2.2. GHS Label elements, including precautionary statements**GHS US labeling**

Hazard pictograms (GHS US) :



Signal word (GHS US) :

: Warning

Hazard statements (GHS US) :

: H315 - Causes skin irritation

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (GHS US) :

: P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.

P264 - Wash hands, forearms and face thoroughly after handling.

P271 - Use only outdoors or in a well-ventilated area.

P273 - Avoid release to the environment.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 - If on skin: Wash with plenty of water.

P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.

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P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 - Call a poison center or doctor if you feel unwell.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P391 - Collect spillage.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent
Name : DIPHENYL
CAS-No. : 92-52-4

Name	Product identifier	%	GHS US classification
BIPHENYL	CAS-No.: 92-52-4	100	Not classified

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell.
First-aid measures after skin contact : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : May cause respiratory irritation.
Symptoms/effects after skin contact : Irritation.
Symptoms/effects after eye contact : Eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire : Toxic fumes may be released.

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5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.
Methods for cleaning up : Mechanically recover the product.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes. Wear personal protective equipment.
Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DIPHENYL (92-52-4)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Biphenyl
ACGIH OEL TWA [ppm]	0.2 ppm
Remark (ACGIH)	TLV® Basis: Pulm func
Regulatory reference	ACGIH 2024
USA - OSHA - Occupational Exposure Limits	
Local name	Diphenyl (Biphenyl)
OSHA PEL TWA [1]	1 mg/m ³
OSHA PEL TWA [2]	0.2 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

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BIPHENYL (92-52-4)

USA - ACGIH - Occupational Exposure Limits

Local name	Biphenyl
ACGIH OEL TWA [ppm]	0.2 ppm
Remark (ACGIH)	TLV® Basis: Pulm func
Regulatory reference	ACGIH 2024

USA - OSHA - Occupational Exposure Limits

Local name	Diphenyl (Biphenyl)
OSHA PEL TWA [1]	1 mg/m ³
OSHA PEL TWA [2]	0.2 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Protective gloves
Eye protection:
Safety glasses
Skin and body protection:
Wear suitable protective clothing
Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Color	: Pale yellow
Odor	: Characteristic odour
Odor threshold	: No data available
pH	: 5.5
Melting point	: 69.45001 °C Decomposition: 'no'
Freezing point	: Not applicable
Boiling point	: 255.25 °C Atm. press.: 760 mm Hg Decomposition: 'no'
Flash point	: 235 °F Source: NIOSH
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: 0.00119 kPa Temp.: 25 °C

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Relative vapor density at 20°C	: 5.3 Source: HSDB
Relative density	: 1.18 Source: ECHA
Molecular mass	: 154.2 g/mol Source: HSDB
Solubility	: Water: 7.5 mg/l
Partition coefficient n-octanol/water (Log Pow)	: 4.1 Source: ECHA
Auto-ignition temperature	: 570 °C Source: ECHA
Decomposition temperature	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available
Explosion limits	: Not applicable
	Upper explosion limit: -5.8 – 0.6 % Source: IPCS
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

DIPHENYL (92-52-4)	
LD50 oral rat	3150 mg/kg Source: ECHA, HSDB
ATE US (oral)	3150 mg/kg body weight
ATE US (dermal)	5010 mg/kg body weight

BIPHENYL (92-52-4)	
LD50 oral rat	3150 mg/kg Source: ECHA, HSDB
ATE US (oral)	3150 mg/kg body weight

Skin corrosion/irritation	: Causes skin irritation. pH: 5.5
Serious eye damage/irritation	: Causes serious eye irritation. pH: 5.5
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified

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Carcinogenicity : Not classified
Reproductive toxicity : Not classified

DIPHENYL (92-52-4)	
NOAEL (animal/male, F0/P)	100 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 421 (Reproduction / Developmental Toxicity Screening Test)

BIPHENYL (92-52-4)	
NOAEL (animal/male, F0/P)	100 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 421 (Reproduction / Developmental Toxicity Screening Test)

STOT-single exposure : May cause respiratory irritation.
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
Viscosity, kinematic : Not applicable
Symptoms/effects after inhalation : May cause respiratory irritation.
Symptoms/effects after skin contact : Irritation.
Symptoms/effects after eye contact : Eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Very toxic to aquatic life with long lasting effects.

DIPHENYL (92-52-4)	
LC50 - Fish [1]	3 mg/l Test organisms (species): Pimephales promelas
LOEC (chronic)	0.33 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	0.17 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	0.229 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) Duration: '87 d'

BIPHENYL (92-52-4)	
LC50 - Fish [1]	3 mg/l Test organisms (species): Pimephales promelas
EC50 96h - Algae [1]	1.772 mg/l Test organisms (species): other:
LOEC (chronic)	0.33 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	0.17 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	0.229 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) Duration: '87 d'

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

DIPHENYL (92-52-4)	
Partition coefficient n-octanol/water (Log Pow)	4.1 Source: ECHA

BIPHENYL (92-52-4)	
Partition coefficient n-octanol/water (Log Pow)	4.1 Source: ECHA

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

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SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

DOT NA No : UN3077
UN-No. (TDG) : Not applicable
UN-No. (IMDG) : 3077
UN-No. (IATA) : 3077

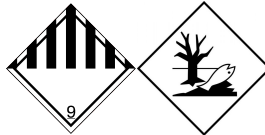
14.2. UN proper shipping name

Proper Shipping Name (DOT) : Environmentally hazardous substances, solid, n.o.s.
Proper Shipping Name (TDG) : Not applicable
Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Proper Shipping Name (IATA) : Environmentally hazardous substance, solid, n.o.s.

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : 9
Hazard labels (DOT) : 9

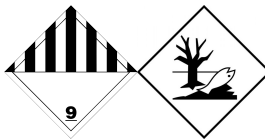


TDG

Transport hazard class(es) (TDG) : Not applicable

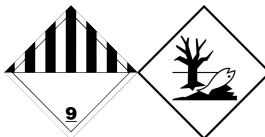
IMDG

Transport hazard class(es) (IMDG) : 9
Hazard labels (IMDG) : 9



IATA

Transport hazard class(es) (IATA) : 9
Hazard labels (IATA) : 9



14.4. Packing group

Packing group (DOT) : III
Packing group (TDG) : Not applicable
Packing group (IMDG) : III
Packing group (IATA) : III

14.5. Environmental hazards

Dangerous for the environment : Yes

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Marine pollutant : Yes



Other information : No supplementary information available.

14.6. Special precautions for user

DOT

UN-No.(DOT) : UN3077

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DOT Special Provisions (49 CFR 172.102)	: 8 - A hazardous substance that is not a hazardous waste may be shipped under the shipping description "Other regulated substances, liquid or solid, n.o.s.", as appropriate. In addition, for solid materials, special provision B54 applies. 146 - This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in 171.8 of this subchapter, or any hazard class as defined in Part 173 of this subchapter, if it is designated as environmentally hazardous by the Competent Authority of the country of origin, transit or destination. 335 - Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as "Environmentally hazardous substances, solid, n.o.s.," UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leak-proof when used as bulk packaging. 384 - For transportation by motor vehicle, substances meeting the conditions for high viscosity flammable liquids as prescribed in §173.121(b)(1)(i), (b)(1)(ii), and (b)(1)(iv) of this subchapter, may be reassigned to Packing Group III under the following conditions: A112 - Notwithstanding the quantity limits shown in Column (9A) and (9B) for this entry, the following IBCs are authorized for transportation aboard passenger and cargo-only aircraft. Each IBC may not exceed a maximum net quantity of 1,000 kg: a. Metal: 11A, 11B, 11N, 21A, 21B and 21N b. Rigid plastics: 11H1, 11H2, 21H1 and 21H2 c. Composite with plastic inner receptacle: 11HZ1, 11HZ2, 21HZ1 and 21HZ2 d. Fiberboard: 11G e. Wooden: 11C, 11D and 11F (with inner liners) f. Flexible: 13H2, 13H3, 13H4, 13H5, 13L2, 13L3, 13L4, 13M1 and 13M2 (flexible IBCs must be sift-proof and water resistant or must be fitted with a sift-proof and water resistant liner). B54 - Open-top, sift-proof rail cars are also authorized. B120 - The use of flexible bulk containers conforming to the requirements in subpart R and subpart S of part 178 of this subchapter is permitted. IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2). IP3 - Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner. N20 - A 5M1 multi-wall paper bag is authorized if transported in a closed transport vehicle. N91 - The use of a non specification sift-proof, non-bulk, metal can with or without lid, or a non specification sift-proof, non-bulk fiber drum, with or without lid is authorized when transporting coal tar pitch compounds by motor vehicle or rail freight. The fiber drum must be fabricated with a three ply wall, as a minimum. The coal tar pitch compound must be in a solid mass during transportation. T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2) TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 155
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 213
DOT Packaging Bulk (49 CFR 173.xxx)	: 240
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: No Limit
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: No Limit
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

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TDG

Emergency Response Guide (ERG) Number : 171

IMDG

Special provision (IMDG) : 274, 335, 966, 967, 969
Limited quantities (IMDG) : 5 kg
Excepted quantities (IMDG) : E1
Packing instructions (IMDG) : LP02, P002
Packing provisions (IMDG) : PP12
IBC packing instructions (IMDG) : IBC08
IBC special provisions (IMDG) : B3
Tank instructions (IMDG) : BK1, BK2, BK3, T1
Tank special provisions (IMDG) : TP33
EmS-No. (Fire) : F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE
EmS-No. (Spillage) : S-F - SPILLAGE SCHEDULE Foxtrot - WATER-SOLUBLE MARINE POLLUTANTS
Stowage category (IMDG) : A
Stowage and handling (IMDG) : SW23

IATA

PCA Excepted quantities (IATA) : E1
PCA Limited quantities (IATA) : Y956
PCA limited quantity max net quantity (IATA) : 30kgG
PCA packing instructions (IATA) : 956
PCA max net quantity (IATA) : 400kg
CAO packing instructions (IATA) : 956
CAO max net quantity (IATA) : 400kg
Special provision (IATA) : A97, A158, A179, A197, A215
ERG code (IATA) : 9L

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

DIPHENYL (92-52-4)

Subject to reporting requirements of United States SARA Section 313
Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ	100 lb
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Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
BIPHENYL	92-52-4	Present	Active	

BIPHENYL (92-52-4)

Subject to reporting requirements of United States SARA Section 313
Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ	100 lb
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15.2. International regulations

CANADA

DIPHENYL (92-52-4)

Listed on the Canadian DSL (Domestic Substances List)

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BIPHENYL (92-52-4)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

DIPHENYL (92-52-4)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

DIPHENYL (92-52-4)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

No additional information available

SECTION 16: Other information

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Revision date : 9/26/2024

Full text of H-phrases

H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.