

# SAFETY DATA SHEETS

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Sixth revised edition

Version: 1.0

Creation Date: Aug 12, 2017

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## 1. Identification

### 1.1 GHS Product identifier

Product name	biphenyl-2-ol
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### 1.2 Other means of identification

Product number	–
Other names	ORTHO-PHENYLPHENOL, SODIUMSALT

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses	For industry use only. Food Additives: PRESERVATIVE
Uses advised against	no data available

## 2. Hazard identification

### 2.1 Classification of the substance or mixture

Skin irritation, Category 2

Eye irritation, Category 2

Specific target organ toxicity – single exposure, Category 3

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

### 2.2 GHS label elements, including precautionary statements

Pictogram(s)	
Signal word	Warning

<b>Hazard statement(s)</b>	<p>H315 Causes skin irritation</p> <p>H319 Causes serious eye irritation</p> <p>H335 May cause respiratory irritation</p> <p>H400 Very toxic to aquatic life</p>
<b>Precautionary statement(s)</b>	
<b>Prevention</b>	<p>P264 Wash ... thoroughly after handling.</p> <p>P280 Wear protective gloves/protective clothing/eye protection/face protection.</p> <p>P261 Avoid breathing dust/fume/gas/mist/vapours/spray.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P273 Avoid release to the environment.</p>
<b>Response</b>	<p>P302+P352 IF ON SKIN: Wash with plenty of water/...</p> <p>P321 Specific treatment (see ... on this label).</p> <p>P332+P313 If skin irritation occurs: Get medical advice/attention.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P337+P313 If eye irritation persists: Get medical advice/attention.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P312 Call a POISON CENTER/doctor/...if you feel unwell.</p> <p>P391 Collect spillage.</p>
<b>Storage</b>	<p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P405 Store locked up.</p>
<b>Disposal</b>	<p>P501 Dispose of contents/container to ...</p>

## 2.3 Other hazards which do not result in classification

none

## 3. Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
biphenyl-2-ol	biphenyl-2-ol	90-43-7	none	100%

### 4. First-aid measures

#### 4.1 Description of necessary first-aid measures

##### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

##### If inhaled

Fresh air, rest. Seek medical attention if you feel unwell.

##### In case of skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Seek medical attention if you feel unwell.

##### In case of eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

##### If swallowed

Rinse mouth. Give one or two glasses of water to drink. Seek medical attention if you feel unwell.

#### 4.2 Most important symptoms/effects, acute and delayed

SYMPTOMS: Symptoms of exposure to this compound include eye irritation with possible corneal injury (necrosis); paleness, cyanosis, weakness, sweating, headache, diarrhea, nausea, vomiting, dizziness, fainting, dark urine, central nervous system depression, and deoxyribonuclease inhibition. Chronic exposure may include irritation and lesions of the respiratory system. ACUTE/CHRONIC HAZARDS: This chemical is a skin and eye irritant. Corneal damage is possible upon eye contact. First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

#### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. /Phenols and related compounds/

### 5. Fire-fighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing media

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance. / DOWICIDE\* 1 ANTIMICROBIAL/

## 5.2 Specific hazards arising from the chemical

This chemical is combustible.

## 5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

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## 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

### 6.2 Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

### 6.3 Methods and materials for containment and cleaning up

SRP: Wastewater from contaminant suppression, cleaning of protective clothing/equipment, or contaminated sites should be contained and evaluated for subject chemical or decomposition product concentrations. Concentrations shall be lower than applicable environmental discharge or disposal criteria. Alternatively, pretreatment and/or discharge to a permitted wastewater treatment facility is acceptable only after review by the governing authority and assurance that "pass through" violations will not occur. Due consideration shall be given to remediation worker exposure (inhalation, dermal and ingestion) as well as fate during treatment, transfer and disposal. If it is not practicable to manage the chemical in this fashion, it must be evaluated in accordance with EPA 40 CFR Part 261, specifically Subpart B, in order to determine the appropriate local, state and federal requirements for disposal.

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## 7. Handling and storage

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Separated from strong oxidants, strong bases and food and feedstuffs. Store only in original container. Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access. Store in tightly closed containers in a cool, well-ventilated area away from water. Sources of ignition, such as smoking and open flames, are prohibited where o-phenylphenol is used, handled, or stored in a manner that could create a potential fire or explosion hazard.

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## 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure limit values

Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 0.5 mg/cu m. Skin Designation.

#### Biological limit values

no data available

### 8.2 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### Respiratory protection

Wear dust mask when handling large quantities.

#### Thermal hazards

no data available

### 9. Physical and chemical properties

Physical state	off-white powder
Colour	Needles from petroleum ether
Odour	Mild characteristic odor
Melting point/ freezing point	-10° C(lit.)
Boiling point or initial boiling point and boiling range	282° C(lit.)
Flammability	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit / flammability limit	no data available
Flash point	124° C

Auto-ignition temperature	Ignition temperature: >=520 degree C
Decomposition temperature	no data available
pH	pH = 6.1 in aqueous solution at 22.7° C
Kinematic viscosity	no data available
Solubility	In water:0.7 g/L (20 °C)
Partition coefficient n-octanol/water (log value)	log Kow = 3.09
Vapour pressure	7 mm Hg ( 140 ° C)
Density and/or relative density	1.213
Relative vapour density	no data available
Particle characteristics	no data available

## 10.Stability and reactivity

### 10.1Reactivity

no data available

### 10.2Chemical stability

Stable at normal conditions.

### 10.3Possibility of hazardous reactions

This chemical is a combustible solid.Dust explosion possible if in powder or granular form, mixed with air.2-PHENYLPHENOL react as a weak organic acid. Exothermically neutralizes bases. May react with strong reducing substances such as hydrides, nitrides, alkali metals, and sulfides to generate flammable gas (H2) and the heat of the reaction may ignite the gas. Is sulfonated very readily (for example, by concentrated sulfuric acid at room temperature) in exothermic reactions. May be nitrated very rapidly. Nitrated phenols often explode when heated and also form metal salts that tend toward detonation by rather mild shock. Can react with oxidizing agents .

### 10.4Conditions to avoid

no data available

## 10.5 Incompatible materials

Strong oxidizers, acids, alkalis.

## 10.6 Hazardous decomposition products

When heated to decomposition it emits acrid smoke and irritating fumes.

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## 11. Toxicological information

### Acute toxicity

- Oral: LD50 Cat oral 500 mg/kg
- Inhalation: no data available
- Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

Cancer Classification: Not Likely to be Carcinogenic to Humans

### Reproductive toxicity

no data available

### STOT-single exposure

no data available

### STOT-repeated exposure

no data available

### Aspiration hazard

no data available

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## 12. Ecological information

### 12.1 Toxicity

- Toxicity to fish: LC50; Species: Lepomis macrochirus (Bluegill sunfish); Concentration: 4.6 mg/L for 96 hr (95% confidence interval: 4.4-4.9 mg/L) /99.25% a.i./ /Conditions of bioassay not specified in source examined; from table
- Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water flea, 6-24 hr old); Concentration: 2.1 mg/L for 24 hr; Effect: immobilization /Conditions of bioassay not specified in source examined
- Toxicity to algae: no data available

- Toxicity to microorganisms: no data available

## 12.2 Persistence and degradability

Persistence of 50 ppm o-phenylphenol in an activated sludge screening test was less than 9 days(1); an initial concn of 50 ppm was reduced 30% in 7 days in an anaerobic digestion test(1); an initial concn of 100 ppm was reduced 43% in 54 hr in an aerated lagoon simulation(1); an initial concn of 100 ppm was reduced 20% in 168 hr in retention pond simulation(1). Acclimated treatment plant cultures completely degraded 50 ppm o-phenylphenol within 30 hr in a BOD study(2). In an aerobic BOD dilution study using an activated sludge inocula, 100-150 ppm were completely degraded in 8-16 days, although lag periods of 5-13 days were observed(3). Five-day theoretical BODs of 1.2-29.7% were measured using 1-50 ppm o-phenylphenol with the theoretical BOD generally decreasing with an increase in concn(4). In Sapromat respirometer studies using industrial activated sludge, inoculum from a communal clarification plant, or a sewage inocula, 5-day theoretical BODs ranged from 50-100%(5).

## 12.3 Bioaccumulative potential

An estimated BCF of 51 was calculated for o-phenylphenol(SRC), using a log Kow of 3.09(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is moderate. However, bioconcentration studies on compounds which are structurally similar suggest that bioconcentration may be lower than that indicated by the regression-derived equations due to the ability of aquatic organisms to readily metabolize this class of compounds. Animals excrete o-phenylphenol as the parent compound and as the glucuronide and sulfate conjugates(4).

## 12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc for o-phenylphenol can be estimated to be 6,700(SRC). According to a classification scheme(2), this estimated Koc value suggests that o-phenylphenol is expected to be immobile in soil. In laboratory aqueous sorption studies using two types of bentonite clay, between 47 and 96.4 percent of added o-phenylphenol was sorbed after 24 hr(3).

## 12.5 Other adverse effects

no data available

## 13. Disposal considerations

### 13.1 Disposal methods

#### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

## 14. Transport information

### 14.1 UN Number

ADR/RID: UN3077	IMDG: UN3077	IATA: UN3077
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### 14.2 UN Proper Shipping Name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N. O. S.



IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N. O. S.

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N. O. S.

#### 14.3Transport hazard class(es)

ADR/RID: 9

IMDG: 9

IATA: 9

#### 14.4Packing group, if applicable

ADR/RID: III

IMDG: III

IATA: III

#### 14.5Environmental hazards

ADR/RID: yes

IMDG: yes

IATA: yes

#### 14.6Special precautions for user

no data available

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

no data available

### 15.Regulatory information

#### 15.1Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
biphenyl-2-ol	biphenyl-2-ol	90-43-7	none
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.

Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Listed.
Vietnam National Chemical Inventory	Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Listed.

## 16. Other information

### Information on revision

Creation Date	Aug 12, 2017
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### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

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