

## Material Safety Data Sheet

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Version 1.3

According to 91/155/EEC

## 1 - Product and Company Information

Product Name	BISPHENOL A, 99+%
Product Number	239658
Company	Sigma-Aldrich Pte Ltd #08-01 Citilink Warehouse Singapore 118529 Singapore
Technical Phone #	65 271 1089
Fax	65 271 1571

## 2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
4,4'-ISOPROPYLLIDENEDIPHENOL	80-05-7	201-245-8	604-030-00-0

Formula	C15H16O2
Molecular Weight	228.29 AMU
Synonyms	Bisferol A (Czech) * 2,2-Bis-4'-hydroxyphenylpropan (Czech) * Bis(4-hydroxyphenyl) dimethylmethane * Bis(4-hydroxyphenyl)propane * 2,2-Bis(p-hydroxyphenyl)propane * 2,2-Bis(4-hydroxyphenyl)propane * Bisphenol * Bisphenol A (OSHA) * 4,4'-Bisphenol A * DIAN * p,p'-Dihydroxydiphenyldimethylmethane * 4,4'-Dihydroxydiphenyldimethylmethane * p,p'-Dihydroxydiphenylpropane * 2,2-(4,4'-Dihydroxydiphenyl)propane * 4,4'-Dihydroxydiphenylpropane * 4,4'-Dihydroxydiphenyl-2,2-propane * 4,4'-Dihydroxy-2,2-diphenylpropane * Dimethylmethylene-p,p'-diphenol * beta-Di-p-hydroxyphenylpropane * 2,2-Di(4-hydroxyphenyl)propane * Dimethyl bis(p-hydroxyphenyl)methane * Diphenylolpropane * 2,2-Di(4-phenylol)propane * p,p'-Isopropylidenebisphenol * 4,4'-Isopropylidenebisphenol * p,p'-Isopropylidenediphenol * NCI-C50635 * Phenol, 4,4'-dimethylmethylenedi- * Propane,

## 3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT  
 Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact.

## 4 - First Aid Measures

#### AFTER INHALATION

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

#### AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

#### AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

#### AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

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### 5 - Fire Fighting Measures

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#### EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

#### SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

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### 6 - Accidental Release Measures

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#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

#### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

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### 7 - Handling and Storage

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#### HANDLING

Directions for Safe Handling: Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

#### STORAGE

Conditions of Storage: Keep tightly closed.

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### 8 - Exposure Controls / Personal Protection

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#### ENGINEERING CONTROLS

Mechanical exhaust required.

#### GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

#### EXPOSURE LIMITS - GERMANY

Source	Type	Value
TRGS 900	OEL	5 mg/m3, E

Remarks: =1=  
Remarks: Y

#### EXPOSURE LIMITS - SWITZERLAND

Source	Type	Value
OEL	OEL	5 mg/m3

Remarks: E C S

#### PERSONAL PROTECTIVE EQUIPMENT

Special Protective Measures: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

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### 9 - Physical and Chemical Properties

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Appearance	Physical State: Solid Color: Very faintly beige Form: Crystalline
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Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	220 °C	4 mmHg
MP/MP Range	153 °C	
Flash Point	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	N/A	
SG/Density	N/A	
Partition Coefficient	Log Kow: 3.32	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

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### 10 - Stability and Reactivity

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#### STABILITY

Stable: Stable.  
Materials to Avoid: Strong bases, Strong oxidizing agents.

#### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

#### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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### 11 - Toxicological Information

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ACUTE TOXICITY

LD50  
Oral  
Rat  
3250 mg/kg

LD50  
Oral  
Mouse  
2400 mg/kg  
Remarks: Autonomic Nervous System:Other (direct)  
parasympathomimetic. Behavioral:Convulsions or effect on seizure  
threshold. Behavioral:Ataxia.

LD50  
Intraperitoneal  
Mouse  
150 MG/KG

LD50  
Oral  
Rabbit  
2230 mg/kg

LD50  
Skin  
Rabbit  
3 ML/KG

LD50  
Oral  
Guinea pig  
4000 mg/kg  
Remarks: Autonomic Nervous System:Other (direct)  
parasympathomimetic. Behavioral:Convulsions or effect on seizure  
threshold. Behavioral:Ataxia.

LD50  
Oral  
Mammal  
6500 mg/kg

IRRITATION DATA

Skin  
Rabbit  
250 mg  
Remarks: Open irritation test

Skin  
Rabbit  
500 mg  
24H  
Remarks: Mild irritation effect

Eyes  
Rabbit  
0.25 mg  
24H

Remarks: Severe irritation effect

#### SENSITIZATION

Skin: May cause allergic skin reaction.

#### SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

#### TARGET ORGAN INFORMATION

Liver. Bone marrow.

#### CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that is probably not carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

#### CHRONIC EXPOSURE - MUTAGEN

Rat

200 UMOL/L

Cell Type: liver

DNA damage

Rat

200 MG/KG

Intraperitoneal

DNA

Rat

800 MG/KG

Oral

4D

DNA

Hamster

200 UMOL/L

Cell Type: lung

Micronucleus test

Hamster

400 UMOL/L

Cell Type: ovary

DNA inhibition

Hamster

400 UMOL/L

Cell Type: ovary

Cytogenetic analysis

#### CHRONIC EXPOSURE - TERATOGEN

Species: Rat

Dose: 10 GM/KG

Route of Application: Oral  
Exposure Time: (6-15D PREG)  
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Rat  
Dose: 1275 MG/KG  
Route of Application: Intraperitoneal  
Exposure Time: (1-15D PREG)  
Result: Specific Developmental Abnormalities: Musculoskeletal system.

Species: Rat  
Dose: 1275 MG/KG  
Route of Application: Intraperitoneal  
Exposure Time: (1-15D PREG)  
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse  
Dose: 900 MG/KG  
Route of Application: Subcutaneous  
Exposure Time: (11-19D PREG)  
Result: Specific Developmental Abnormalities: Urogenital system.

#### CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat  
Dose: 15 GM/KG  
Route of Application: Oral  
Exposure Time: (6-15D PREG)  
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Rat  
Dose: 2120 UG/KG  
Route of Application: Oral  
Exposure Time: (10D PRE-21D POST)  
Result: Effects on Newborn: Behavioral.

Species: Rat  
Dose: 6400 UG/KG  
Route of Application: Oral  
Exposure Time: (13-22D PREG/1-6D POST)  
Result: Effects on Newborn: Behavioral.

Species: Rat  
Dose: 1875 MG/KG  
Route of Application: Intraperitoneal  
Exposure Time: (1-15D PREG)  
Result: Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth). Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Species: Rat  
Dose: 1275 MG/KG  
Route of Application: Intraperitoneal  
Exposure Time: (1-15D PREG)  
Result: Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific

Developmental Abnormalities: Central nervous system.

Species: Rat

Dose: 1875 MG/KG

Route of Application: Intraperitoneal

Exposure Time: (1-15D PREG)

Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Specific Developmental Abnormalities: Gastrointestinal system.

Species: Mouse

Dose: 12500 MG/KG

Route of Application: Oral

Exposure Time: (6-15D PREG)

Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.

Species: Mouse

Dose: 7500 MG/KG

Route of Application: Oral

Exposure Time: (6-15D PREG)

Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Species: Mouse

Dose: 12500 MG/KG

Route of Application: Oral

Exposure Time: (6-15D PREG)

Result: Maternal Effects: Uterus, cervix, vagina.

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## 12 - Ecological Information

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BIOACCUMULATION POTENTIAL: Indication of bioaccumulation.

### ECOTOXICOLOGICAL EFFECTS

Test Type: LC50 Fish

Species: Pimephales promelas (Fathead minnow)

Time: 96 h

Value: 4.6 mg/l

Test Type: EC50 Daphnia

Species: Daphnia magna

Time: 48 h

Value: 3.9 mg/l

Test Type: IC50 Algae

Species: Selenastrum capricornutum resp.

Time: 96 h

Value: 2.73 mg/l

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## 13 - Disposal Considerations

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### SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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## 14 - Transport Information

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### RID/ADR

Non-hazardous for road transport.

### IMDG

Non-hazardous for sea transport.

### IATA

Non-hazardous for air transport.

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## 15 - Regulatory Information

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### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 604-030-00-0

INDICATION OF DANGER: Xi

Irritant.

R-PHRASES: 36/37/38 43

Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact.

S-PHRASES: 24 26 37

Avoid contact with skin. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable gloves.

### COUNTRY SPECIFIC INFORMATION

#### Germany

WGK: 2

#### SWITZERLAND

SWISS POISON CLASS: 4

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## 16 - Other Information

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### WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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