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SIGMA-ALDRICH

MATERIAL SAFETY DATA SHEET

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Version 1.3

Section 1 - Product and Company Information

Product Name	BISPHENOL A, 99+%
Product Number	239658
Brand	ALDRICH
Company	Sigma-Aldrich
Street Address	3050 Spruce Street
City, State, Zip, Country	SAINT LOUIS MO 63103 US
Technical Phone:	314 771 5765
Emergency Phone:	414 273 3850 Ext. 5996
Fax:	800 325 5052

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
4,4'-ISOPROPYLLIDENEDIPHENOL	80-05-7	Yes

Formula	C15H16O2
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, 2,2-bis(p-hydroxyphenyl)- * Ucar bisphenol A

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Irritant.

Irritating to respiratory system and skin. Risk of serious damage to eyes. May cause sensitization by skin contact.

Target organ(s): Liver. Bone marrow.

HMIS RATING

HEALTH: 3*
FLAMMABILITY: 0
REACTIVITY: 0

NFPA RATING

HEALTH: 3
FLAMMABILITY: 0
REACTIVITY: 0

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

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

INHALATION EXPOSURE

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

DERMAL EXPOSURE

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

EYE EXPOSURE

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.

Section 5 - Fire Fighting Measures

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

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

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

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.

Section 7 - Handling and Storage

HANDLING

User Exposure: Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT

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

GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Solid Color: Very faintly beige Form: Crystalline	
Property	Value	At Temperature or Pressure
Molecular Weight	228.29 AMU	
pH	N/A	
BP/BP Range	220 °C	4 mmHg
MP/MP Range	153 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	Log Kow: 3.32	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

N/A = not available

Section 10 - Stability and Reactivity

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

Section 11 - Toxicological Information

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.

SENSITIZATION

Skin: May cause allergic skin reaction.

TARGET ORGAN(S) OR SYSTEM(S)

Liver. Bone marrow.

SIGNS AND SYMPTOMS OF EXPOSURE

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

TOXICITY DATA

Oral
Rat
3250 mg/kg
LD50

Oral
Mouse
2400 mg/kg
LD50

Remarks: Autonomic Nervous System:Other (direct) parasympathomimetic. Behavioral:Convulsions or effect on seizure threshold. Behavioral:Ataxia.

Intraperitoneal
Mouse
150 MG/KG
LD50

Oral
Rabbit
2230 mg/kg
LD50

Skin
Rabbit
3 ML/KG

LD50

Oral

Guinea pig

4000 mg/kg

LD50

Remarks: Autonomic Nervous System:Other (direct) parasympathomimetic. Behavioral:Convulsions or effect on seizure threshold. Behavioral:Ataxia.

Oral

Mammal

6500 mg/kg

LD50

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

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.

NTP CARCINOGEN LIST

Rating: Inadequate studies

Species: Mouse/rat

Route: Feed

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 - MUTAGEN

Species: Rat
Dose: 200 UMOL/L
Cell Type: liver
Mutation test: DNA damage

Species: Rat
Route: Intraperitoneal
Dose: 200 MG/KG
Mutation test: DNA

Species: Rat
Route: Oral
Dose: 800 MG/KG
Exposure Time: 4D
Mutation test: DNA

Species: Hamster
Dose: 200 UMOL/L
Cell Type: lung
Mutation test: Micronucleus test

Species: Hamster
Dose: 400 UMOL/L
Cell Type: ovary
Mutation test: DNA inhibition

Species: Hamster
Dose: 400 UMOL/L
Cell Type: ovary
Mutation test: Cytogenetic analysis

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.

Section 12 - Ecological Information

ACCUMULATION

Bioaccumulation Potential: Indication of bioaccumulation.

ACUTE ECOTOXICITY TESTS

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

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

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.

Section 14 - Transport Information

DOT

Proper Shipping Name: None
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: Xi
Indication of Danger: Irritant.
R: 36/37/38 43
Risk Statements: Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact.
S: 24 26 37
Safety Statements: Avoid contact with skin. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable gloves.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Irritant.
Risk Statements: Irritating to respiratory system and skin. Risk of serious damage to eyes. May cause sensitization by skin contact.
Safety Statements: Avoid contact with skin. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable gloves.
US Statements: Target organ(s): Liver. Bone marrow.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes
DEMINIMIS: 1 %
NOTES: This product is subject to SARA section 313 reporting requirements.

TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

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.