

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	Bisphenol A (4,4'-isopropylidenediphenol)
Advisable use and Restriction	
Advisable use	Chemical intermediates of epoxy, phenoxy and polysulfone resins, Intermediates of epoxy, polycarbonate, phenoxy, polysulfone and specific polyester resins, flame inhibitor, rubber chemical product manufacture Fungus remover, monomer of polycarbonate and epoxy resins
Restriction of product using	Not available
Company Address	Samyang Innochem Corporation 133, Jayumyeok 1-gil, Gunsan, Jeollabuk-do, 54001, KOREA +82-63-440-7114

2. HAZARDS IDENTIFICATION

GHS classification of the substance	Serious eye damage/irritation : Category1 Skin sensitization : Category1 Reproductive toxicity : Category2 Specific target organ toxicity(Single exposure) : Category3(Narcotic effects) Specific target organ toxicity(Repeated exposure) : Category2
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GHS label elements, Including precautionary statements

Pictogram and symbol



Signal word	Danger
Hazard statements	H317 May cause an allergic skin reaction H318 Causes serious eye damage H336 May cause drowsiness and dizziness. H361 Suspected of damaging fertility or the unborn child H370 Causes damage to organs(Refer Section SDS 11) H373 May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
Precautionary statements	
Prevention	P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and under-stood. P260 Do not breathe dust/fume/gas/mist/vapours/spray. P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P264 Wash hands thoroughly after handling. P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.
 P272 Contaminated work clothing should not be allowed out of the work-place.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P281 Use personal protective equipment as required.

Response

P302+P352 IF ON SKIN: Wash with plenty of soap and water.
 P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P307+P311 If exposed: Call a POISON CENTER or doctor/physician
 P308+P313 If exposed or concerned: Get medical advice/attention.
 P310 Immediately call a POISON CENTER or doctor/physician.
 P312 Call a POISON CENTER or doctor/physician if you feel unwell.
 P314 Get medical advice/attention if you feel unwell.
 P321 Specific treatment
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P363 Wash contaminated clothing before reuse.

Storage

P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulation

Other hazard information not included in hazard classification

NFPA Health: 2, Flammability : 1, Reactivity : 0

3. Composition/information on ingredients

Chemical Name	4,4'-(1-Methylethylidene)bisphenol ; 4,4'-Dihydroxydiphenylpropane, Bisphenol A
Trade names and Synonyms	4,4'-DIHYDROXYDIPHENYLPROPANE
CAS-No.	80-05-7
KE No.	KE-23982
EU No.	201-245-8
Content (%)	99.85

4. First Aid Measures

Eye contact

Do not rub your eyes.
 Immediately flush eyes with plenty of water for at least 15minutes and call a doctor/physician.
 Get medical attention immediately.

	Remove contact lenses if worn.
Skin Contact	<p>Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.</p> <p>Laundering enough contaminated clothing before reuse.</p> <p>Get medical attention immediately.</p> <p>Go to the hospital immediately if symptoms (flare, irritate) occur.</p> <p>Wash thoroughly after handling.</p>
Inhalation Contact	<p>When exposed to large amounts of steam and mist, move to fresh air.</p> <p>Take specific treatment if needed.</p> <p>Get medical attention immediately.</p> <p>If breathing is stopped or irregular, give artificial respiration and supply oxygen.</p>
Ingestion Contact	<p>About whether I should induce vomiting Take the advice of a doctor.</p> <p>Rinse your mouth with water immediately.</p> <p>Get medical attention immediately.</p>
Delayed and immediate effects and also chronic effects from short and long term exposure	Not available
Notes to physician	<p>Notify medical personnel of contaminated situations and have them take appropriate protective measures.</p> <p>If exposed or concerned, get medical attention/advice.</p>

5. Fire Fighting Measures

Suitable (and unsuitable) extinguishing media	<p>Dry chemical, carbon dioxide, regular foam extinguishing agent, spray</p> <p>Avoid use of water jet for extinguishing</p>
Specific hazards arising from the chemical	Not available
Special protective equipment and precautions for fire-fighters	<p>Move containers from fire area, if you can do without the risk.</p> <p>Keep unauthorized personnel out.</p> <p>Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.</p> <p>Notify your local firestation and inform the location of the fire and characteristics hazard.</p> <p>Keep containers cool with water spray.</p>

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	<p>Ventilate closed spaces before entering.</p> <p>Must work against the wind, let the upwind people to evacuate.</p> <p>Do not touch spilled material. Stop leak if you can do it without risk.</p> <p>Handling the damaged containers or spilled material after wearing protective equipment.</p> <p>Avoid skin contact and inhalation.</p> <p>Keep unauthorized people away, isolate hazard area and deny entry.</p>
Environmental precautions	<p>Prevent runoff and contact with waterways, drains or sewers.</p> <p>If large amounts have been spilled, inform the relevant authorities.</p>

Methods and materials for containment and cleaning up

Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
 Notification to central government, local government. When emissions at least of the standard amount
 Dispose of waste in accordance with local regulation.
 Appropriate container for disposal of spilled material collected.
 Small liquid state spills: Appropriate container for disposal of spilled material collected.
 For disposal of spilled material in appropriate containers collected and clear surface.

7. Handling and storage

Precautions for safe handling

Avoid direct physical contact.
 Since emptied containers retain product residue (vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
 Refer to Engineering controls and personal protective equipment.
 Do not handle until all safety precautions have been read and understood.
 Contaminated work clothing should not be allowed out of the workplace.

Conditions for safe storage, including any incompatibilities

Check regularly for leaks.
 Do not apply any physical shock to container.
 Keep sealed when not in use.
 No open fire.
 Prevent static electricity and keep away from combustible materials or heat sources.
 Collected them in sealed containers.

8. Exposure controls/personal protection

Exposure limits

ACGIH TLV Not available

OSHA PEL Not available

Engineering controls

A system of local and/or general exhaust is recommended to keep employee exposures above the 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. The use of local exhaust ventilation is recommended to control emissions near the source.

Individual protection measures, such as personal protective equipment

Respiratory protection

Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
 Respiratory protection is ranked in order from minimum to maximum.
 Consider warning properties before use.
 Dust, mist, fume-purifying respiratory protection
 Any air-purifying respirator with a corpuscle filter of high efficiency
 Any respiratory protection with a electromotion fan(for dust, mist, fume-purifying)
 Self-contained breathing apparatus with a corpuscle filter of high efficiency
 For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure

mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

Eye protection	Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield. Provide an emergency eye wash station and quick drench shower in the immediate work area.
Hand protection	Wear appropriate glove.
Skin protection	Wear appropriate clothing.
Others	Not available

9. Physical and chemical properties

Appearance	Physical state : Solid, a crystal flask, powder Color : White
Odor	A mild phenolic odor.
Threshold of odor	Not available
Melting point/Freezing Point	314.6°F (157°C)
Initial Boiling Point/Boiling Ranges	428°F (220°C) at 4mmHg
Flash Point	404.6°F (207°C, Cleveland Open Cup)
Evaporation rate	Not available
Flammability (solid, gas)	Not available
Upper/Lower Flammability or explosive limits	Explosion low range 12g/m ³ (Dust Cloud)
Vapor pressure	170.6°F (77°C) at 0.03mmHg
Solubility (in water)	1kg/m ³
vapor density	8.1 (Air=1)
Specific gravity	Relative density: 1.195
Partition coefficient of n-octanol/water	3.3 log Pow (n-Octanol/Water)
Auto ignition temperature	1,112°F (600°C)
Decomposition temperature	Not available
Viscosity	Not available
Molecular weight	228.29 g/mole

10. Stability and Reactivity

Chemical stability	This material is stable under recommended storage and handling conditions.
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Possibility of hazardous reactions	Hazardous Polymerization will not occur.
Conditions to avoid	Avoid contact with incompatible materials and condition. Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
Incompatible materials	Not available
Hazardous decomposition product	May emit flammable vapour if involved in fire.

11. Toxicological Information

Information on the likely routes of exposure

Respiratory tracts	Not available
Oral	Not available
Eye-Skin	Causes serious eye damage May cause an allergic skin reaction

Delayed and immediate effects and also chronic effects from short and long term exposure

Acute toxicity	
Oral	[4,4'-(1-Methylethylidene)bisphenol ; 4,4'-Dihydroxydiphenylpropane, Bisphenol A] : LD50 = 3250 mg/kg Rat
Dermal	[4,4'-(1-Methylethylidene)bisphenol ; 4,4'-Dihydroxydiphenylpropane, Bisphenol A] : LD50 = 3000 mg/kg rabbit
Inhalation	Not available
Skin corrosion/irritation	Not available
Serious eye damage/irritation	Causes serious eye damage
Respiratory sensitization	Not available
Skin sensitization	May cause an allergic skin reaction
Carcinogenicity	
IARC	Not available
OSHA	Not available
ACGIH	Not available
NTP	Not available
EU CLP	Not available
Germ cell mutagenicity	Not available
Reproductive toxicity	Suspected of damaging fertility or the unborn child
STOT-single exposure	Causes damage to organs(Refer Section SDS 11) May cause drowsiness and dizziness
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
Aspiration hazard	Not available

12. Ecological Information

Ecotoxicity

Fish	[4,4'-(1-Methylethylidene)bisphenol ; 4,4'-Dihydroxydiphenylpropane, Bisphenol A] : LC50 = 9.4 mg/l 96 hr
Crustaceans	[4,4'-(1-Methylethylidene)bisphenol ; 4,4'-Dihydroxydiphenylpropane, Bisphenol A] : LC50 = 1.1 mg/l 96 hr
Algae	Not available

Persistence and Degradability

Persistence	Not available
Degradability	[4,4'-(1-Methylethylidene)bisphenol ; 4,4'-Dihydroxydiphenylpropane, Bisphenol A] : BOD5/COD = 0.286

Bioaccumulative potential

Bioaccumulative potential	[4,4'-(1-Methylethylidene)bisphenol ; 4,4'-Dihydroxydiphenylpropane, Bisphenol A] : BCF = 67.7
Biodegradation	[4,4'-(1-Methylethylidene)bisphenol ; 4,4'-Dihydroxydiphenylpropane, Bisphenol A] : Biodegradability = 76 (%) 18 day

Mobility in soil Not available

Other adverse effects Not available

13. Disposal Considerations

Disposal methods Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
If water separation is possible, pre-process with Water separation process.
Dispose by incineration.

Special precautions for disposal The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
Dispose of waste in accordance with all applicable laws and regulations.

14. Transport Information

UN Number (IMDG)	Not regulated for transport
Proper shipping name	Not available
Hazard Class	Not available
IMDG Packing group	Not available
Marine pollutant	Not applicable
Special safety response for transportation or transportation measure	Local transport follows in accordance with Dangerous goods Safety Management Law. Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.

EmS FIRE SCHEDULE : Not available

EmS SPILLAGE SCHEDULE : Not available

15. Regulatory Information

National and/or international regulatory information

POPs Management Law	Not applicable
Information of EU Classification	
Classification	[4,4'-(1-Methylethylidene)bisphenol ; 4,4'-Dihydroxydiphenylpropane, Bisphenol A] : Repr. Cat. 3; R62 Xi; R37-41 R43 R52
Risk Phrases	[4,4'-(1-Methylethylidene)bisphenol ; 4,4'-Dihydroxydiphenylpropane, Bisphenol A] : R37, R41, R43, R62, R52
Safety Phrase	[4,4'-(1-Methylethylidene)bisphenol ; 4,4'-Dihydroxydiphenylpropane, Bisphenol A] : S2, S26, S36/37, S39, S46, S61
U.S. Federal regulations	
OSHA PROCESS SAFETY (29CFR1910.119)	Not applicable
CERCLA Section 103 (40CFR302.4)	Not applicable
EPCRA Section 302 (40CFR355.30)	Not applicable
EPCRA Section 304 (40CFR355.40)	Not applicable
EPCRA Section 313 (40CFR372.65)	[4,4'-(1-Methylethylidene)bisphenol ; 4,4'-Dihydroxydiphenylpropane, Bisphenol A] : Applicable
Rotterdam Convention listed ingredients	Not applicable
Stockholm Convention listed ingredients	Not applicable
Montreal Protocol listed ingredients	Not applicable

16. Other Information

References

The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.

This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

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Revision number and Last date revised	3 times 2016-04-21
Other	This SDS is prepared according to the Globally Harmonized System (GHS).

Notice to Reader

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