

### 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

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### 2. HAZARDS IDENTIFICATION

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

#### 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  
H335 May cause respiratory irritation  
H361 Suspected of damaging fertility or the unborn child  
H411 Toxic to aquatic life with long lasting effects

#### Precautionary statements

**Prevention** P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and under-stood.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing should not be allowed out of the work-place.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

P281 Use personal protective equipment as required.

Response	<p>P302+P352 IF ON SKIN: Wash with plenty of soap and water.</p> <p>P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.</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>P308+P313 If exposed or concerned: Get medical advice/attention.</p> <p>P310 Immediately call a POISON CENTER or doctor/physician.</p> <p>P312 Call a POISON CENTER or doctor/physician if you feel unwell.</p> <p>P314+P333+P313 If skin irritation or rash occurs: Get medical advice/attention.</p> <p>P321 Specific treatment</p> <p>P363 Wash contaminated clothing before reuse.</p> <p>P391 Collect spillage.</p>
Storage	<p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P405 Store locked up.</p>
Disposal	<p>P501 Dispose of contents/container in accordance with local/regional/national/international regulation</p>

**Other hazard information not included in hazard classification**

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

### 3. Composition/information on ingredients

<b>Chemical Name</b>	4,4-Bisphenol A
<b>Trade names and Synonyms</b>	4,4'-Dihydroxydiphenylpropane 2,2-Bis(4-hydroxyphenyl)propane
<b>CAS-No.</b>	80-05-7
<b>KE No.</b>	KE-23982
<b>EU No.</b>	201-245-8
<b>Content (%)</b>	99.85

### 4. First Aid Measures

<b>Eye contact</b>	<p>Do not rub your eyes.</p> <p>Immediately flush eyes with plenty of water for at least 20 minutes and call a doctor/physician.</p> <p>Get medical attention immediately.</p> <p>Remove contact lenses if worn.</p>
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<b>Skin Contact</b>	Removing contaminated clothing and shoes, Isolate the contaminated area Laundering enough contaminated clothing before reuse. Get medical attention immediately if symptoms (flare, irritate) occur. Wash thoroughly after handling.
<b>Inhalation Contact</b>	When exposed to large amounts of steam and mist, move to fresh air. Take specific treatment if needed. Get medical attention immediately. If breathing is stopped or irregular, give artificial respiration and supply oxygen.
<b>Ingestion Contact</b>	In case of ingestion or inhalation of material, Do not use artificial respiration by mouth to mouth method. Use appropriate respiratory medical equipment. About whether I should induce vomiting Take the advice of a doctor. Rinse your mouth with water immediately. Get medical attention immediately.
<b>Others Precautions for Physician</b>	Notify medical personnel of contaminated situations and have them take appropriate protective measures IF exposed or concerned, Get medical advice/attention.

### 5. Fire Fighting Measures

<b>Suitable (and unsuitable) extinguishing Agent</b>	Using Dry chemical, carbon dioxide, regular foam extinguishing agent, Water spray Avoid use of water jet for extinguishing
<b>Specific hazards arising from the chemical</b>	During pyrolysis or combustion, Irritating and very toxic gases may be produced. Vapours may explode when mixed with air. Non-flammable, the material itself does not burn, but may decompose on heating to produce corrosive / toxic fumes. Some can burn but not easily ignite Containers may explode when heated.
<b>Special protective equipment and precautions for fire-fighters</b>	Move containers from fire area, if you can do without the risk. Stay away from flame-filled tanks in case of tank fire In case of fire in tank, extinguish at maximum distance or use unmanned fire extinguishing equipment. For large fires, use unmanned fire extinguishing equipment and, if not possible, back off. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Rescuers should wear appropriate protective equipment Notify your local fire-station and inform the location of the fire and characteristics hazard. Keep containers cool with water spray. Stay away from the area and keep a safe distance to extinguish.

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### 6. Accidental Release Measures

**Personal precautions,  
protective equipment and  
emergency procedures**

Wipe up spilled material immediately, wear protective equipment and take precautions  
Remove all sources of ignition  
Stop leak if you can do it without risk.  
Handling the damaged containers or spilled material after wearing protective equipment.  
Cover with plastic sheet to prevent spreading  
Avoid inhalation of dust, fumes, gases, mist, vapors and sprays  
Pay attention to the materials and conditions to avoid

**Environmental precautions**

Prevent runoff and contact with waterways, drains or sewers.  
If large amounts have been spilled, inform the relevant authorities.

**Methods and materials for  
containment and cleaning up**

Keep spills away from sewage and water systems.  
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.  
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 Long-Term and continuous skin contact.  
Since emptied containers retain product residue (vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.  
Use with care in storage and storage.  
Open the cap carefully.  
Do not enter storage area without proper ventilation.  
Do not handle until all safety precautions have been read and understood.  
Contaminated work clothing should not be allowed out of the workplace.  
Pay attention to the materials and conditions to avoid.  
Wash Hands thoroughly after handling.

**Conditions for safe storage,  
including any incompatibilities**

Do not apply direct heat.  
Do not apply any physical shock to container.  
Store locked up.  
Prevent static electricity and keep away from combustible materials or heat sources.  
Collected them in sealed containers.

### 8. Exposure controls/personal protection

**Occupational Exposure limits**

Regulation in Korea	Not available
ACGIH TLV	Not available

Biological Exposure Criteria      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.

Provide an emergency eye wash station and quick drench shower in the immediate work area.

**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.

Body protection

Wear appropriate protective chemical-resistant clothing.

Others

Not available

### 9. Physical and chemical properties

**Appearance**

Physical state : Solid, a crystal    flask, powder

Color : White to brown (20°C, 1013 hPa)

**Odor**

Specific odor.(a mild phenolic odor)

**Threshold of odor**

Not available

**Melting point/Freezing Point**

155°C

**Initial Boiling Point/Boiling Ranges**

360°C (1013 hPa, with decomposition)

<b>Flash Point</b>	227°C (1013 hPa)
<b>Evaporation rate</b>	Not available
<b>Flammability (solid, gas)</b>	Not available
<b>Upper/Lower Flammability or explosive limits</b>	Explosion low range 12g/m <sup>3</sup> (Dust Cloud)
<b>Vapor pressure</b>	4.12E-09 h Pa (25°C)
<b>Solubility (in water)</b>	300mg/L (25°C)
<b>vapor density</b>	1.2g/cm <sup>3</sup> (25°C) (공기 =1)
<b>Specific gravity</b>	Relative density: 1.2g/cm <sup>3</sup>
<b>Partition coefficient of n-octanol/water</b>	log Pow = 3.4 (21.5°C, pH 6.4)
<b>Auto ignition temperature</b>	600°C
<b>Decomposition temperature</b>	Not available
<b>Viscosity</b>	Not available
<b>Molecular weight</b>	228.29 g/mole
<b>Dissociation constant</b>	11.3
<b>Bioconcentration factor</b>	20~67

### 10. Stability and Reactivity

<b>Chemical stability</b>	This material is stable under recommended storage and handling conditions.
<b>Possibility of hazardous reactions</b>	Hazardous Polymerization will not occur. Contact with metals may evolve flammable hydrogen gas.
<b>Conditions to avoid</b>	Avoid contact with incompatible materials and condition. Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
<b>Incompatible materials</b>	Combustible materials, strong acid, base, and oxidants.
<b>Hazardous decomposition product</b>	During pyrolysis or combustion, Irritating and very toxic gases may be produced like Corrosive / Fume

### 11. Toxicological Information

#### Information on the likely routes of exposure

Inhalation	May cause degenerative disease of myocardium, liver and kidney.
Oral	May cause degenerative disease of liver and kidney, contraction, necrosis and anemia of spleen/thymus.

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	LD50 > 2000 mg/kg Rat
Dermal	LD50 = 3000 mg/kg rabbit
Inhalation	LC50 > 170mg/m <sup>3</sup> air
Skin corrosion/irritation	Not available
Serious eye damage/irritation	Causes serious eye damage
Respiratory sensitization	May cause an allergic skin reaction
Skin sensitization	
Carcinogenicity	Not available
IARC	Not available
OSHA	Not available
ACGIH	Not available
NTP	Not available
EU CLP	Not available

Germ cell mutagenicity	Negative test results using mouse
Reproductive toxicity	Not available
STOT-single exposure	May cause drowsiness and dizziness, marasmus, Redness of nasal epithelial cells
Aspiration hazard	Not available

## 12. Ecological Information

### Ecotoxicity

Fish	LC50 4.6 mg/l 96 hr
Crustaceans	EC50 1.1 mg/l 48 hr
Algae	EC50 2.73 mg/l 96 hr

### Persistence and Degradability

Persistence	Not available
Degradability	BOD5/COD = 0.286

### Bioaccumulative potential

Bioaccumulative potential	BCF = 67.7
Biodegradation	Biodegradability = 76 (%) 18 day

**Mobility in soil** Not available

**Other adverse effects** Not available

### 13. Disposal Considerations

<b>Disposal methods</b>	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.
<b>Special precautions for disposal</b>	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

<b>UN Number (IMDG)</b>	Not regulated for transport
<b>Proper shipping name</b>	Not available
<b>Hazard Class</b>	Not available
<b>IMDG Packing group</b>	Not available
<b>Marine pollutant</b>	Not applicable
<b>Special safety response for transportation or transportation measure</b>	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

<b>Occupational safety and health act</b>	Not applicable
<b>Chemical substance control act</b>	Toxic substance
<b>Act on the safety control of hazardous substance</b>	Not applicable
<b>Enforcement decree of the wastes control act</b>	Not applicable

#### National and/or international regulatory information

POPs Management Law	Not applicable
Information of EU Classification Classification	Repr. Cat. 3; R62 Xi; R37-41 R43 R52



Risk Phrases	R37, R41, R43, R62, R52
Safety Phrase	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)	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 , Mitsubishi Chemical Safety Data Sheet

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2019-08-01

**Other** This MSDS is prepared according to the Globally Harmonized System (GHS).

#### Notice to Reader

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