

GHS Classification

ID353

CAS 80-05-7

Physical Hazards

4,4'-Isopropylidenediphenol; Bisphenol A

Date Classified: Apr. 20, 2006 (Environmental Hazards: May 24, 2006)

Reference Manual: GHS Classification Manual (Feb. 10, 2006)

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Explosives	Not applicable	-	-	-	Containing no chemical groups with explosive properties
2 Flammable gases	Not applicable	-	-	-	Classified as "solid" according to GHS definition
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Classified as "solid" according to GHS definition
5 Gases under pressure	Not applicable	-	-	-	Classified as "solid" according to GHS definition
6 Flammable liquids	Not applicable	-	-	-	Classified as "solid" according to GHS definition
7 Flammable solids	Classification not possible	-	-	-	No data available
8 Self-reactive substances and mixtures	Not applicable	-	-	-	Containing no chemical groups with explosive or self-reactive properties
9 Pyrophoric liquids	Not applicable	-	-	-	Classified as "solid" according to GHS definition
10 Pyrophoric solids	Not classified	-	-	-	Not pyrophoric when in contact with air at ordinary temperatures: the auto-ignition temperature is 600degC (ICSC, 1999)
11 Self-heating substances and mixtures	Classification not possible	-	-	-	No data available
12 Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	-	-	-	Containing no metals or metalloids (B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At)
13 Oxidizing liquids	Not applicable	-	-	-	Classified as "solid" according to GHS definition
14 Oxidizing solids	Not applicable	-	-	-	Organic compounds containing oxygen (but not fluorine and chlorine), with the oxygen bound to carbon and hydrogen (but not to other elements)
15 Organic peroxides	Not applicable	-	-	-	Organic compounds containing no "-O-O-" structure
16 Corrosive to metals	Classification not possible	-	-	-	Test methods applicable to solid substances are not available

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 5	-	Warning	May be harmful if swallowed	Based on the testing data of rat LD50 (oral route) of 3,300mg/kg representing the lowest fixed value of the testing data, 3,300mg/kg, 4,100mg/kg and approximately 5,000mg/kg (EU-RAR No.37 (2003)).
1 Acute toxicity (dermal)	Category 5	-	Warning	May be harmful in contact with skin	Based on the testing data of rabbit LD50 (dermal route) of >2,000mg/kg, >6,400mg/kg (EU-RAR No.37 (2003)); while definite classification is not possible because of the absence of a fixed value, an administration of 2,000mg/kg resulted in the death of 3/15 specimens.
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Due to the fact that the substance is "solid" according to the GHS definition and inhalation of its gas is not expected.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	Based on the results of rat inhalation exposure: LC50 (6 hours)=>0.17mg/L (EU-RAR No.37 (2003)). While an LC50 value (4 hours) calculated at >0.26mg/L suggests the classification into Category 2, "Classification Not Possible" seems appropriate because of the absence of a fixed value.
2 Skin corrosion / irritation	Not classified	-	-	-	Based on the description in the report on rabbit primary skin irritation tests (4 hour dermal application) (EU-RAR No.37 (2003): Bisphenol A does not cause skin irritation, given the absence of skin reactions such as erythema and edema.
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Based on the description in the report on rabbit eye irritation tests EU-RAR No.37 (2003): Corneal opacity and iritis are observed for 28 consecutive days in one out of three specimens; the substance, though not corrosive, causes severe eye irritation.
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible Skin sensitization: Category 1	Exclamation mark	Warning	May cause allergic skin reaction	Respiratory sensitization: No data available Skin sensitization: based on the description in EU-RAR No.37 (2003) (guinea pig skin sensitization tests and reports on human cases suggest that bisphenol A may cause skin sensitization) and the classification by the Japanese Society of Contact Dermatitis (skin sensitization, positive).
5 Germ cell mutagenicity	Not classified	-	-	-	Based on the absence of data on germ cell multi-generation mutagenicity tests in vivo/mutagenicity tests (dominant lethal tests show negative, which according to EU-RAR is unreliable, and hence cannot serve as a basis for classification.) and negative data on somatic cell mutagenicity tests in vivo (micronucleus tests), described in EU-RAR No.37 (2003), CERi-NITE Hazard Assessment No.4 (2005).
6 Carcinogenicity	Classification not possible	-	-	-	Based on expert judgment, given the absence of existing classification and the testing data on NTP toxicity tests.
7 Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	A decrease in the number of newborns was observed in both rat three-generation study and mouse two-generation study, as well as a decrease in the weights of seminal vesicle and epididymis, and effect on the sperm in mice. These effects were seen in the presence of maternal toxicity or general parental toxicity, otherwise no data is available on the parental toxicity. Therefore the substance has been classified as Category 2.
8 Specific target organs/systemic toxicity following single exposure	Category 1 (respiratory organs). Category 3 (narcotic effects)	Health hazard and Exclamation mark	Danger Warning	Causes damage to organs (respiratory organs) (Narcotic effects) May cause drowsiness or dizziness	Based on the evidence from animal studies including "somnolency, debility, slight reddening in the nasal epithelial tissue, formation of a small ulcer in the nasal tract" (EU-RAR No.37 (2003)). Although there is the description "a small ulcer" in the text, the substance is not considered to cause respiratory irritation because of the formation of an ulcer. The effects were observed at dosing levels within the guidance value ranges for Category 1.

9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (respiratory organs, liver, kidneys)	Health hazard	Warning	May cause damage to organs through prolonged or repeated exposure (respiratory organs, liver, kidneys)	Based on the evidence from animal studies including reddening in the nasal epithelial tissue, formation of an ulcer in the nasal tract, morphologic lesions in the liver, kidneys and lungs (EU-RAR No.37 (2003)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 2.
10	Aspiration hazard	Classification not possible	-	-	-	No data available

Environmental Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
11 Hazardous to the aquatic environment (acute)	Category 2	-	-	Toxic to aquatic life	It was classified into Category 2 from 96 hours LC50=1100microg/L of the crustacea (Mysid Shrimp)) (MOE Risk Assessment vol. 3 (2004) and others.).
11 Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since it had potential to rapidly degrade (biodegradation of bisphenol-A begins after 2-4 days in the water and the decomposition by TOC: 76% (average of 18 days after) (CERL/NITE Hazard Assessment Report (2005))), and bioaccumulation was low (BCF=67.7 (Existing Chemical Safety Inspections Data)), it was classified into Not classified.