

GHS Classification

ID784

2,6-Di-tert-butyl-p-cresol

CAS 128-37-0

Date Classified: Jul. 24, 2006 (Environmental Hazards: Mar. 31, 2006)

Physical Hazards

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

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Explosives	Not applicable	-	-	-	There are no chemical groups associated with explosive properties present in the molecules.
2 Flammable gases	Not applicable	-	-	-	Solid (GHS definition)
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Solid (GHS definition)
5 Gases under pressure	Not applicable	-	-	-	Solid (GHS definition)
6 Flammable liquids	Not applicable	-	-	-	Solid (GHS definition)
7 Flammable solids	Classification not possible	-	-	-	Although there is a report of 127 degC of flash point (ICSC (1999)), since there is no data from tests of United Nations, it cannot be classified.
8 Self-reactive substances and mixtures	Not applicable	-	-	-	There are no chemical groups associated with explosive or self-reactive properties present in the molecule.
9 Pyrophoric liquids	Not applicable	-	-	-	Solid (GHS definition)
10 Pyrophoric solids	Not classified	-	-	-	Flash point: 345degC (GESTIS, 2006) and non-pyrophoric at a room temperature.
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	-	-	-	The chemical structure of the substance does not contain metals or metalloids(B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At).
13 Oxidizing liquids	Not applicable	-	-	-	Solid (GHS definition)
14 Oxidizing solids	Not applicable	-	-	-	Organic compounds containing oxygen (but not halogen) and the oxygen is chemically bonded only 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 4	Exclamation mark	Warning	Harmful if swallowed	There are many reports and rat LD50: 1559 mg/kg calculated by statistical calculations. From this value, it was set as Category 4.
1 Acute toxicity (dermal)	Category 5	-	Warning	May be harmful in contact with skin	It was set as Category 5 from rat LD50 >2000mg/kg (SIDS (2002)).
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Solid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Category 3	-	Warning	Causes mild skin irritation	A blockade application is done on rabbits and of slight irritation (CERI Hazard Data (1997)), and there are statements of slight irritation (SIDS (200)), and of slight irritation to humans (SIDS (2002)), therefore it was classified as Category 3.
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	By the statement of that in the rabbit test mild inflammations in the conjunctival were seen, and recovered 72 hours afterward (CERI Hazard Data), it was set as Category 2B.
4 Respiratory/skin sensitization	Respiratory sensitization: Not classified; Skin sensitization: Category 1	(Respiratory sensitization)-; (Skin sensitization)Exclamation mark	(Respiratory sensitization)-; (Skin sensitization)Warning	(Respiratory sensitization)-; (Skin sensitization)May cause allergic skin reaction	Respiratory sensitization: We categorized it to be out of Category taking the enrolment of (IUCLID (2000)) as the basis, in which no anaphylaxis was found for the allergic shocking examination of the guinea pig. Skin sensitization :We categorized it as Category 1 since we found an enrollment that sensitizing property was acknowledged by humans (CERI Hazard Data (1997), SIDS (2002), ACGIH (2001)),although there are negative reports (CERI Hazard Data (1997), SIDS (2002), IUCLID (2000)) in test with guinea pigs.
5 Germ cell mutagenicity	Not classified	-	-	-	Based on the statement that it gave negative for all of the in vivo reciprocal translocation examination of the mouse, the dominant lethality examination of the mouse, the specific locus examination of the mouse, the micronucleus examination of the mouse, and the chromosomal aberration test of mouse and rats (SIDS (2002)), we classified it as Out Of Category.
6 Carcinogenicity	Not classified	-	-	-	Since the classification of ACGIH set to A4 and AIRC considered it as group 3, it was set the outside of category.

7	Toxic to reproduction	Not classified	-	-	-	In the two-generation feeding administration test, weight gains and effects on kidney in the high-dose group(F0) and suppression of weight gains in (F1) group were observed (Collection of CERH Hazard Data(1997)). Reproductive and developmental toxicity was not observed in the three-generation feeding administration test (SIDS (2002)). There are two reports (SIDS (2002) and another report (IARC (1986)), both stating that administration to pregnant rats did not show any reproductive toxicity. Moreover, there is a report of anophthalmia in one offspring (IARC (1986)) and microphthalmia in three offsprings /30 mothers (IARC (1986)) were observed in long-term administration test. However, since there is a report that no anophthalmia was observed (IARC (1986)) and the distribution of the three examples of microphthalmia is not clear, any of those reports is not employed by IARC for its inadequacy. Suppression of weight gain was observed in the high dose group, and suggests that it was caused by general toxicity. Based on the above-mentioned, it was judged to be out of classification.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system)	Health hazard	Danger	Cause damage to organs (nervous system)	By the woman who ingested 4g, stomach cramps, a feeling of worthlessness, vomiting, a feeling of fatigue, mental disorder, and a short term of unconsciousness was seen. Moreover, it is classified into Category 1 (nervous systems) according to the the statement as which nervous symptoms are regarded in woman who took in 80g lysed in safflower oil (CERH Hazard Data (1997), ACGIH (2001), SIDS (2002)).
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (lung, liver, thyroid gland)	Health hazard	Warning	May cause damage to organs (lung, liver, thyroid gland) through prolonged or repeated exposure	There was no report about humans. In the study of feeding administration to a mouse, with the given dose within the guidance value of Category 2, the congestion and enlargement of lungs, and a necrosis and degeneration of alveolar epithelial cell were acknowledged (SIDS (2002)), in the oral administration study of a rat with the given dose within the guidance value of Category 2, increase in relative weights of liver, hepatic periportal necrosis and enlarged hepatic cell were observed (collection of CERH hazard data (1997)), in the feeding administration study of a rat, within the guidance value of Category 2, the enlargement of the liver, necrosis of centrilobular hepatocyte, depletion of glutathione, the increase in transaminase activities, enzyme induction, increase in phospholipid and cholesterol, and the enlargement of the thyroid glant accompanying increased iodine uptake were observed (collection of CERH hazard data (1997)). It classified into Category 2 (lungs, liver, thyroid gland) since the above result.
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 1	Environment	Warning	Very toxic to aquatic life	It was classified into Category 1 from 48-hour EC50=0.84mg/L of Crustacea (Daphnia magna) (MOE eco-toxicity tests of chemicals, 1999).
11 Hazardous to the aquatic environment (chronic)	Category 1	Environment	Warning	Very toxic to aquatic life with long lasting effects	Classified into Category 1, since acute toxicity is Category 1,not rapidly degrading (BOD: 4.5% (existing chemical substances safety inspections data)), and bioaccumulative ((BCF=2800 (existing chemical substances safety inspections data)).