

GHS Classification

ID183

CAS 117-81-7

Physical Hazards

Bis(2-ethylhexyl) phthalate

Date Classified: Apr. 20, 2006 (Environmental Hazards: Jun. 20, 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 "liquid" according to GHS definition
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
5 Gases under pressure	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
6 Flammable liquids	Not classified	-	-	-	The flash point is 215degC (open cup flash test) (ICSC, 2002)
7 Flammable solids	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
8 Self-reactive substances and mixtures	Not applicable	-	-	-	Containing no chemical groups with explosive or self-reactive properties
9 Pyrophoric liquids	Not classified	-	-	-	Not pyrophoric when in contact with air at ordinary temperatures; the auto-ignition temperature is 350degC (ICSC, 2002)
10 Pyrophoric solids	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
11 Self-heating substances and mixtures	Classification not possible	-	-	-	Test methods applicable to liquid substances are not 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	-	-	-	Organic compounds containing oxygen (but not fluorine and chlorine), with the oxygen bound to carbon and hydrogen (but not to other elements)
14 Oxidizing solids	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
15 Organic peroxides	Not applicable	-	-	-	Organic compounds containing no "-O-O-" structure
16 Corrosive to metals	Classification not possible	-	-	-	No data available

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Not classified	-	-	-	Based on the testing data of rat LD50 (oral route) of over 20,000; over 40,000mg/kg (EU-RAR No.42 (2003)); 30,600mg/kg (ATSDR (2002)); 33,800 mg/kg (ACGIH (7th, 2001)).
1 Acute toxicity (dermal)	Not classified	-	-	-	Classified using the data on rabbits, because no data on rats were available. Based on the LD50 value of 24,700mg/kg calculated from the testing data of rat LD50 (dermal route) of 24,500mg/kg (EU-RAR No.42 (2003)); 25,000mg/kg (EHC131 (1992)), and 24,750mg/kg. (ACGIH (7th, 2001).
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Due to the fact that the substance is "liquid" 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)	Not classified	-	-	-	Based on the rat LC50 (mist) of over 10.62 mg/L (EU-RAR No.42 (2003)).
2 Skin corrosion / irritation	Category 3	-	Warning	Causes mild skin irritation	Based on the description in ATSDR (2002) and EU-RAR No.42 (2003): Phthalic acid, bis (2-ethylhexyl) causes mild irritation, if any, to the skin; Four-hour application causes mild skin irritation.
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	Based on the description in ACGIH (7th, 2001), ATSDR (2002), EHC 131 (1992) and EU-RAR No.42 (2003): Phthalic acid, bis (2-ethylhexyl) is considered "non-irritating" or "mildly irritating" to the eyes, with the latter adopted for classification.
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible Skin sensitization: Not classified	(Respiratory sensitization) - (Skin sensitization) -	(Respiratory sensitization) - (Skin sensitization)	(Respiratory sensitization) - (Skin sensitization) -	Respiratory sensitization: No data available Skin sensitization: based on the description in EU-RAR No.42 (2003) - Phthalic acid, bis (2-ethylhexyl) does not cause skin sensitization, according to the results of guinea pig skin sensitization tests (performed based on the Maximization and Buehler Methods).
5 Germ cell mutagenicity	Not classified	-	-	-	Due to the fact that administration route was not proper in the tests where positive results were observed, and based on the negative data on other dominant lethal tests and micronucleus tests, though positive results were observed in multi-generation mutagenicity tests (dominant lethal tests), described in CERI-NITE Hazard Assessment No.7 (2004), ATSDR (2002).
6 Carcinogenicity	Category 2	Health hazard	Warning	Suspected of causing cancer	Due to the fact that the substance is classified as Category R by NTP (2005), Group B2 by EPA (2002), Category A3 by ACGIH (2001) and Category 2B by the Japan Society for Occupational Health, although classified as Group 3 by IARC.
7 Toxic to reproduction	Category 1B	Health hazard	Danger	May damage fertility or the unborn child	Based on the evidence of effects on offspring at dosing levels not toxic to parent animals, described in U.S. NTP-CERHR, CERI-NITE Hazard Assessment No.7 (2004).
8 Specific target organs/systemic toxicity following single exposure	Classification not possible	-	-	-	Insufficient data available
9 Specific target organs/systemic toxicity following repeated exposure	Category 2 (testes, liver)	Health hazard	Warning	May cause damage to organs through prolonged or repeated exposure (testes, liver)	Based on the evidence from animal studies including "vacuolation of Sertoli cells in the testes" (CERI-NITE Hazard Assessment No.7 (2004)), "hepatocyte enlargement, periportal fat deposition, lipid replete lysosome, glycogen depletion, changes in the bile duct structure, induction of peroxisomal enzyme and cytochrome P450 activities" (CER Hazard Data 96-17 (1997)). 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)	Not classified	-	-	-	Since acute toxicity is not reported within the aqueous solubility concentrations (0.003mg/L (EU-RAR (2001))), it was classified into Not classified.
11 Hazardous to the aquatic environment (chronic)	Category 4	-	-	May cause long lasting harmful effects to aquatic life	Although it is water-insolubility and acute toxicity was not reported within the aqueous solubility concentrations,since the decomposition rate was not high (the half life is 50 days by bio-decomposition in the water (EU-RAR (2001))and there was the bio-accumulation (BCF=840 (EU-RAR (2001))), it was classified into Category 4.