GHS Classification

ID182 Di-n-butyl phthalate

CAS 84-74-2 Date Classified: Apr. 20, 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	-	-	-	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 157degC (c.c.) (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 402degC (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)	Category 5	-	Warning	May be harmful if swallowed	Based on the LD50 value of 6,300 mg/kg representing the lowest testing data of rat LD50 (oral route) of 6,300mg/kg and 8,000mg/kg, (EU-RAR No.29 (2003)), and over 20,000mg/kg (EHC 189, 1997). However acute toxicity was observed from a human case where a 23-year old male worker accidentally swallowed about 10g of the substance and suffered acute toxicity (EU-RAR No.29, 2003).
1	Acute toxicity (dermal)	Not classified	-	-	-	Based on the rabbit LD50 (dermal route) of over 20,000 mg/kg (EU-RAR No.29 (2003)).
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:	Classification not possible	-	-	-	No data available
1	Acute toxicity (inhalation: dust, mist)	Not classified	-	-	-	Based on the rat LD50 (mist) of over 15.68 mg/L (EU-RAR No.29 (2003)).
2	Skin corrosion / irritation	Category 3	-	Warning	Causes mild skin irritation	Based on the description in CERI-NITE Hazard Assessment No.11 (2004) and EU-RAR No.29 (2003): The substance is "slightly to moderately irritating."
3	Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	Based on the description in CERI-NITE Hazard Assessment No.11 (2004) and EU-RAR No.29 (2003): The substance has irritation to eyes but recovery observed 48 or 72 hours later.
4	Respiratory/skin sensitization	Respiratory sensitization: Classification not possible 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: No data available Skin sensitization: phthalic acid di-n-butyl does not cause skin sensitization in experimental animals (EU-RAR No.29 (2003), EHC 189 (1997)); some human cases suggest positive results; classified into "Skin Sensitization Group 2" by the Japan Society for Occupational Health (2005), and into "Skin Sensitization: Positive" by the Japanese Society of Occupational Allergy.
5	Germ cell mutagenicity	Not classified	-	-	-	Based on the absence of positive data on multi-generation mutagenicity tests and germ cell mutagenicity tests in vivo, and negative data on somatic cell mutagenicity tests in vivo, described in CERI-NITE Hazard Assessment No.11 (2004).
6	Carcinogenicity	Not classified	-	-	-	Due to the fact that the substance is classified as Category D by EPA (1993).
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Based on the description in CERI-NITE Hazard Assessment No.11 (2004): Rat and mouse reproductive toxicity tests suggest a decrease in F0 reproductive potential, testis atrophy, a decrease in sperm production potential, abortion during the middle stages of pregnancy, a decrease in litter size; Rat and mouse teratogenicity tests suggest malformations in offspring (external/skeletal malformations), and developmental abnormalities in the testes and accessory reproductive gland of next-generation rats; General toxicity to parental animals is observed; No description is available for the effects on parental animals.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (kidneys, nervous system) Category 3 (respiratory tract irritation)	Health hazard and Exclamation mark	Danger Warning	Causes damage to organs (kidneys, nervous system) (Respiratory tract irritation) May cause respiratory irritation	Based on the human evidence including "large amounts of red/white blood cells in urinary sediments" (CERI-NITE Hazard Assessment No.11 (2004)), and the evidence from animal studies including "constrained respiration, ataxia, local paralysis, convulsions, coma, fatal cases in some animals due to respiratory paralysis" (CERI-NITE Hazard Assessment No.11 (2004)), "obvious irritation to the upper respiratory tract mucous membrane" (EU-RAR No.29 (2004)). The effects on nervous system of experimental animals were observed at dosing levels within the guidance value ranges for Category 1.

9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (respiratory organs) Category 2 (testes, liver)	Health hazard	Danger Warning	Causes damage to organs through prolonged or repeated exposure (respiratory organs) May cause damage to organs through prolonged or repeated exposure (testes, liver)	Based on the evidence from animal studies including "seminiferous tubule degeneration, interstitial edema" (CERI-NITE Hazard Assessment No.11 (2004)), "hepatic atrophy and zonal necrosis" (EHC 189 (1997)), "dose-dependent acanthosis of the nasal mucous membrane" (EU-RAR No.29 (2004)). The effects on the respiratory organs and on the testes and liver of experimental animals were observed at dosing levels within the guidance value ranges for Category 1 and Category 2, respectively.
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 96 hours LC50=0.46mg/L of the fish (American Catfish) (EU-RAR (2004) and others.).
11	Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since there was rapidly degrading (the decomposition by BOD: 69% (Existing Chemical Safety Inspections Data)) and the bio-accumulation was low (BCF=176 (Existing Chemical Safety Inspections Data)), it was claasified into Not classified.