

GHS Classification

ID164

Benzene, 2-methyl-1,3,5-trinitro-

CAS 118-96-7

Date Classified: Mar. 23, 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	Division 1.1	Exploding bomb	Danger	Explosive; mass explosion hazard	UNRTDG Class: 1.1D
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	Not classified	-	-	-	UNRTDG Class: 1.1D
8 Self-reactive substances and mixtures	Not applicable	-	-	-	Classified in explosives
9 Pyrophoric liquids	Not applicable	-	-	-	Solid (GHS definition)
10 Pyrophoric solids	Not classified	-	-	-	UNRTDG Class: 1.1D
11 Self-heating substances and mixtures	Not classified	-	-	-	UNRTDG Class: 1.1D
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 classified	-	-	-	UNRTDG Class: 1.1D
15 Organic peroxides	Not applicable	-	-	-	Containing no -O-O- structure
16 Corrosive to metals	Not classified	-	-	-	UNRTDG Class: 1.1D

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	Calculated based on 795 to 3140 mg/kg (CERI Hazard Data (2001)), 795mg/kg (ACGIH (7th, 2001), DFGOT (1991), IARC 65 (1996), 1663.8 mg/kg (DFGOT (1991)), and 820mg/kg (DFGOT (1991)). Since the calculation values were lower than the lowest values of these data, it was set as Category 4 using 795mg/kg of the lowest value. LD50=795mg/kg.
1 Acute toxicity (dermal)	Classification not possible	-	-	-	No data available
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 2	Exclamation mark	Warning	Causes skin irritation	Based on the descriptions that dermatitis was found in human exposure case (ACGIH (2001), DFGOT (1991), and IARC (1996)), and that it has irritation to the skin (CERI Hazard Data (2001) and industrial hygiene society advice (1993)), it was classified as Category 2.
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	It was set as Category 2A from description that it had irritant to human eye in CERI Hazard Data(2001).
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Category 1	Exclamation mark	Warning	(Respiratory sensitization)-; (Skin sensitization)May cause allergic skin reaction	Respirator: No data. Skin: Classified as Category 1 because IARC (1996) describes that there is a report of allergic contact dermatitis in humans.
5 Germ cell mutagenicity	Not classified	-	-	-	The substance was regarded as outside the categories based on the records of negative results of the micronucleus tests using mammalian erythrocytes (CERI Hazard Data (2001), IARC (1996), IRIS (2005)).
6 Carcinogenicity	Not classified	-	-	-	It is classified into a group 3 according to IARC (1996) and is classified into C according to EPA (1986). So it was set as the outside of Category.

7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	There is description which suggests the influence on the reproductive function in the occupational exposure study on male (PATTY (4th, 1994)) and there is a description about the result of the case-control study which indicates the decrease of amount of seminal fluid and sperm motility, and increases of abnormal spermatozoa (ATSDR (1995)), however, it is indicated that they are insufficient as an evidence of being the effect by exposure. On the other hand, there is description that testicular atrophy was observed with the dose occurring other toxic effects in repeated exposure to the rat (ACGIH (2001), DFGOT (1991), IARC (1996), and Industrial Hygiene Academic Society Advice (1993)). Therefore, it was classified into Category 2.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (blood system, liver); Category 3 (respiratory tract irritation)	Health hazard	Danger	Cause damage to organs (blood system, liver); May cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract irritation)	Due to the descriptions that the toxicity is the effect on the hematopoietic system and liver damage in CERH Hazard Data (2001), that methemoglobinemia was observed in human exposure examples in ACGIH (2001), and that liver damage was observed in human exposure example in DFGOT (1991), it is considered that target organs are blood and liver. So it was classified into Category 1. Moreover, due to descriptions that it may be irritated to the human nose and the human throat in ACGIH (2001) and PATTY (4th, 1994), and that there is much onset of respiratory symptoms in IARC(1996). So it is considered that it has respiratory irritation, therefore, it was classified into Category 3.
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (blood, liver, eye, heart, peripheral nervous system)	Health hazard	Danger	Causes damage to organs (blood, liver, eye, heart, peripheral nervous system) through prolonged or repeated exposure	Due to the descriptions that in CERH Hazard Data (2001) the a chronic effects were hepatic dysfunction, anemia, and cataract, that in the humans exposure examples in ACGIH (2001), DFGOT (1991), IARC (1996), PATTY (1994), and industrial hygiene academic society advice (1993), anemic, hepatic dysfunction, and cataract were observed, that in the occupational exposure examples in DFGOT (1991) and PATTY (1994), arrhythmia and peripheral neuritis were observed, it is considered that the target organs were blood, liver, eyes, the heart, and the peripheral nervous system, and they were classified into Category 1.
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-hour EC50=0.62mg/L of algae (Selenastrum) (CERH Hazard Data, 2002).
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 was Category 1, supposed not rapidly degrading (BIOWIN), though supposed less bioaccumulative (log Kow=1.6(PHYSPROP Database, 2005)).