

GHS Classification

ID841

tetranitromethane

CAS 509-14-8

Date Classified: Feb. 20, 2007 (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 classified	-	-	-	UNRTDG Class: 5.1
2 Flammable gases	Not applicable	-	-	-	Liquid (GHS definition)
3 Flammable aerosols	Not applicable	-	-	-	Liquid (GHS definition)
4 Oxidizing gases	Not applicable	-	-	-	Liquid (GHS definition)
5 Gases under pressure	Not applicable	-	-	-	Liquid (GHS definition)
6 Flammable liquids	Not classified	-	-	-	Flash point: >93degC
7 Flammable solids	Not applicable	-	-	-	Liquid (GHS definition)
8 Self-reactive substances and mixtures	Not applicable	-	-	-	Classified in oxidizing liquids
9 Pyrophoric liquids	Not classified	-	-	-	It is classified into the UNRTDG class 5.1.
10 Pyrophoric solids	Not applicable	-	-	-	Liquid (GHS definition)
11 Self-heating substances and mixtures	Not classified	-	-	-	UNRTDG class 5.1
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	Category 1	Flame over circle	Danger	May cause fire or explosion; strong oxidizer	UNRTDG Class: 5.1; PG 1
14 Oxidizing solids	Not applicable	-	-	-	Liquid (GHS definition)
15 Organic peroxides	Not applicable	-	-	-	Containing no -O-O- structure
16 Corrosive to metals	Not classified	-	-	-	UNRTDG Class: 5.1

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 3	Skull and crossbones	Danger	Toxic if swallowed	SPECIES: Rat ROUTE ADMIN: ORAL ENDPOINT: LD50 VALUE: 130 mg/kg REFERENCE SOURCE: ACGIH, DFGOT, PATTY, NTP
1 Acute toxicity (dermal)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Category 1	Skull and crossbones	Danger	Fatal if inhaled	Based on rat inhalation LC50 (4 hours): 0.14mg/L (level equivalent: 17.5ppm) (ACGIH and (7th, 2001), DFGOTvol.4 (1992), PATTY (4th, 1994), and NTP TR386 (1990)), it was classified as Category 1. In addition, above-mentioned LC50 value is significantly lower than the saturated vapor concentration of this substance of 11100ppm(equivalent: 88.11mg/m3), the inhalation exposure test was judged to have been conducted with steam which does not include mist.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Not classified	-	-	-	Based on description that "the skin is not also stimulated in repeated exposure in humans" of DFGOTvol.4 (1992) or PATTY (4th, 1994) which are the source of Priority 1, it was considered as the outside of Category. In addition, "The skin is stimulated" is described by ICSC (J)(2004), SITIG (47th, 2002), HSDB (2005) and HSFS (2000) which are sources of Priority 2. It was judged that all were insufficient for considering as basis of the categories since former references were not indicated.
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	Based on the description that irritation was acknowledged in the eyes in the cases of occupational exposure (ACGIH, DFGOT, and PATTY), it was set as Category 2A.
4 Respiratory/skin sensitization	respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	No data available

5	Germ cell mutagenicity	Classification not possible	-	-	-	Although multiple indices with in vitro mutagenicity test, such as reverse mutation test which uses bacteria, sister chromatid exchange test (-S9), chromosome aberration test (+S9), using a mammals cultured cell, show positive results (ACGIH (7th, 2001), DFGOTvol.4 (1992), IARC 65 (1996)), the degree of response is unknown. On the other hand, since there is no data of in vivo, and there are not known germ-cell mutagenicities substance which chemical structure similar to this substance, it was judged that there was no finding which suggests potential of having germ-cell mutagenicities in this product. And it was presupposed that it cannot be classified due to data insufficiency.
6	Carcinogenicity	Category 2	Health hazard	Warning	Suspected of causing cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	It was classified into 2B in IARC 65 (1996), A3 in ACGIH (7th, 2001), 2B in industrial hygiene academic society recommendation (2005) and R in NTP RoC (11th, 2005). So it was considered as Category 2.
7	Toxic to reproduction	Classification not possible	-	-	-	No data available
8	Specific target organs/systemic toxicity following single exposure	Category 3 (respiratory tract irritation)	Exclamation mark	Warning	may cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract irritation)	From description that the nose and the tracheal gill were stimulated of exposure in human (ACGIH (7th, 2001), DFGOTvol.4 (1992), PATTY (4th, 1994)), it was thought that there was respiratory irritant and it was set as Category 3.
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (respiratory organs, blood)	Health hazard	Danger	Causes damage to organs (respiratory organs, blood) through prolonged or repeated	Based on in the case of occupational exposure it was observed pulmonary edema and methemoglobinemia (ACGIH (7th, 2001) and DFGOTvol.4 (1992)), and in 13 weeks of rat repetition inhalation test, with 10 ppm exposure (equivalent to 0.08 mg/L, which can be judged to be steam from steam pressure), target organs were considered to be respiratory tracts and blood (ACGIH (7th, 2001), IARC 65 (1996), DFGOTvol.4 (1992), PATTY (4th, 1994), NTP TR386 (1990)), and 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)	Classification not possible	-	-	-	No data available
11 Hazardous to the aquatic environment (chronic)	Classification not possible	-	-	-	No data available.