

GHS Classification

ID46

CAS 75-74-1

Tetramethyllead

Date Classified: Mar. 23, 2006 (Environmental Hazards: Feb. 10, 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	Category 3	Flame	Warning	Flammable liquid and vapour	The flash point is 37.8degC (c.c.) (ICSC, 2003) which is classified into Category 3. The list of the UN Recommendations on the Transport of Dangerous Goods does not contain "tetramethyl lead"; it only refers to "UN#1649 (Motor Fuel Anti-Knock Mixture)," the classes of which are all "toxic substances." A special provision, however, set forth that "substances with a flash point of less than 60degC should be labeled as "flammable liquid."
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 254degC (ICSC, 2004)
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 classified	-	-	-	Stable to water; insoluble (ICSC, 2004)
13 Oxidizing liquids	Not applicable	-	-	-	Organic compounds containing no oxygen, fluorine and chlorine
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. The list of the UN Recommendations on the Transport of Dangerous Goods does not contain "tetramethyl lead"; it only refers to "UN#1649 (Motor Fuel Anti-Knock Mixture)," the classes of which are all "toxic substances." A special provision set forth that "substances with a flash point of less than 60degC should be labeled as "flammable liquid."

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	Based on the rat LD50 (oral route) value of 105mg/kg representing the lower of the two testing data, 109mg/kg (DFGOT vol.15 (2001)) and 105mg/kg (DFGOT vol.15 (2001)).
1 Acute toxicity (dermal)	Classification not possible	-	-	-	No data available
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: vapour)	Category 2	Skull and crossbones	Danger	Fatal if inhaled	Based on the rat LC50 (4 hours) value of 406ppm, calculated from the testing data of rat LC50 (inhalation of vapour) of 8.87ppm (1 hour) (ACGIH (7th, 2001)), was lower than 90% of the saturated vapor concentration (34,000ppm) under a saturated vapour pressure of 26mmHg (20degC) (equivalent to 3,500Pa at 20degC) (HSDB (2005)), the substance was considered as "vapour containing substantially no mist" and was classified based on standard values expressed in ppm.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Classification not possible	-	-	-	No data available. Refer to other data on lead and its compounds (primarily organic lead)
3 Serious eye damage / eye irritation	Classification not possible	-	-	-	No data available Refer to other data on lead and its compounds (primarily organic lead)
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) -	Respiratory sensitization: No data available Refer to other data on lead and its compounds (primarily organic lead) Skin sensitization: No data available Refer to other data on lead and its compounds (primarily organic lead)
5 Germ cell mutagenicity	Classification not possible	-	-	-	Insufficient data available
6 Carcinogenicity	Not classified	-	-	-	Due to the fact that the substance is classified as Group 3 by IARC (2004).
7 Toxic to reproduction	Classification not possible	-	-	-	Insufficient data available (no data available on reproductive effects)
8 Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system)	Health hazard	Danger	Causes damage to organs (nervous system)	Based on the human evidence including "anorexia, nausea, vomiting, insomnia, tremor, debility, headache, aggression, melancholy, irritation, excitement, confusion, hallucination, acute psychosis (a few hours or a few days after the exposure), spasm, distraction, elevated temperature, coma" (DFGOT vol.15 (2001)).

9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (nervous system, liver)	Health hazard	Danger	Causes damage to organs through prolonged or repeated exposure (nervous system, liver)	Based on the human evidence including "hallucination, tremor, distraction, insomnia, delusion, headache, manic depression" (EHC 3 (1977)), and the evidence from animal studies including "tremor, chorea, excitement, an increase in mobility, histopathological changes in the central nervous system and liver" (DFGOT vol.15 (2001)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for 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 hours LC50=0.11mg/L(Lead Tetramethyl Equivalent: 0.14mg/L) of the crustacea (Brown Shrimp) (EHC85, 1989).
11 Hazardous to the aquatic environment (chronic)	Category 1	Environment	Warning	Very toxic to aquatic life with long lasting	Since acute toxicity was Category 1 and it was a metallic compound, and since an underwater action and bio-accumulation were unknown, it was classified into Category 1.