

GHS Classification

ID830

decaborane(14)

CAS 17702-41-9

Date Classified: Jul. 24, 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	-	-	-	There are no chemical groups associated with explosive properties present in the molecules.
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	Category 1	Flame	Danger	Flammable solid	UNRTDG Class: 4.1; PG II
8 Self-reactive substances and mixtures	Not applicable	-	-	-	There are no chemical groups associated with explosive or self-reactive properties present in the molecule.
9 Pyrophoric liquids	Not applicable	-	-	-	Solid (GHS definition)
10 Pyrophoric solids	Not classified	-	-	-	Flash point: 149degC (ICSC, 1997; Weiss, 2nd, 1985)
11 Self-heating substances and mixtures	Not classified	-	-	-	Not classified because of UNRTDG Class: 4.1 PG:II
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	-	-	-	Although it reacts with water and generates combustible gases (hydrogen) (Weiss (2nd, 1985), Hommel (1991)), it carried out the outside of category based on UNRTDG class 4.1 PG: II.
13 Oxidizing liquids	Not applicable	-	-	-	Solid (GHS definition)
14 Oxidizing solids	Not applicable	-	-	-	Inorganic compounds containing no oxygen and halogen. It is used as a reducing agent (HSDB, 2005; etc.)
15 Organic peroxides	Not applicable	-	-	-	Inorganic substance
16 Corrosive to metals	Classification not possible	-	-	-	Test methods applicable to solid substances are not available. Melting point: >55degC

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	Category 3 based on SPECIES: Rat; ENDPOINT: LD50; VALUE: (64mg/kg;) REFERENCE SOURCE: ACGIH, 7th (2001)
1 Acute toxicity (dermal)	Category 2	Skull and crossbones	Danger	Fatal in contact with skin	The lower value (high toxicity: 71mg/kg) was adopted among the rat or rabbit dermal LD50 values (740 or 71mg/kg, respectively) (ACGIH, 7th, 2001; RTECS, 2004), and it was set as Category 2.
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Solid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Category 1	Skull and crossbones	Danger	Fatal if inhaled	It was classified as Category 1 from rat LC50 value for 4 hours (46ppm = 0.23mg/L) (ACGIH, 7th, 2001). In addition, the saturated vapor pressure of decaborane was calculated to be 65.6ppm, and it was considered to be steam with the concentration of LC50 value.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Category 3	-	Warning	Causes mild skin irritation	It was set as Category 3 from description that the human skin was stimulated (ICSC, 1997; HSDB, 2005; SITTG, 4th, 2002).
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	Based on the description that a man's eye is stimulated (ICSC, 1997; HSDB, 2005; SITTG, 4th, 2002), it was set as Category 2B.
4 Respiratory/skin 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	-	-	-	No data available
6 Carcinogenicity	Classification not possible	-	-	-	No data available
7 Toxic to reproduction	Classification not possible	-	-	-	No data available

8	Specific target organs/systemic toxicity following single exposure	Category 1 (central nervous system); Category 3 (respiratory tract irritation, narcotic effects)	Health hazard; Exclamation mark	Danger; Warning	Cause damage to organs (central nervous system); May cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract irritation, narcotic effects)	It was set as Category 1 (central nervous systems) and Category 3 (respiratory irritation, anesthesia action). Based on that a spasm, exhaustion, adrenaline rush, and an anesthesia state are seen (ACGIH, 7th, 2001) in 4 hours inhalation administration and the concentration (0.23mg/L) of Category 1 (= <10mg/L) for rat. And an airway is stimulated by inhalation (ICSC, 1997; HSFS, 1999), the central nervous systems might be affected and fatigue, hyperexcitability, and stupor might be generated (ICSC, 1997) in humans.
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (central nervous system)	Health hazard	Danger	Causes damage to organs (central nervous system) through prolonged or repeated	Based on description (ACGIH, 7th, 2001; ACGIH-TLV, 2005; ICSC, 1997) that a central nervous systems may be affected in humans, and fatigue, poor concentration, and incoordination may be occurred, it was classified into Category 1 (central nervous system).
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.