

## GHS Classification

**ID577**

**germanium tetrahydride**

**CAS 7782-65-2**

Date Classified: Jun. 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	-	-	-	Gas (GHS definition)
2 Flammable gases	Category 1	-	Danger	Extremely flammable gas	Category 1 because "the flammable range with air is 95.2-97.2%" (Hazardous Materials DB, 2nd, 1993) and the lower flammable limit is 0.8-2.8 vol%. (It is ignitable when in a mixture of 13% or less by volume in air.)
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not classified	-	-	-	UNRTDG Class: 2.3. Subsidiary risks Class: 2.1
5 Gases under pressure	High pressure liquefied gas	Gas cylinder	Warning	Contains gas under pressure; may explode if heated	Critical temp: 34.85degC (Hommel, 1991)
6 Flammable liquids	Not applicable	-	-	-	Gas (GHS definition)
7 Flammable solids	Not applicable	-	-	-	Gas (GHS definition)
8 Self-reactive substances and mixtures	Not applicable	-	-	-	Gas (GHS definition)
9 Pyrophoric liquids	Not applicable	-	-	-	Gas (GHS definition)
10 Pyrophoric solids	Not applicable	-	-	-	Gas (GHS definition)
11 Self-heating substances and mixtures	Not applicable	-	-	-	Gas (GHS definition)
12 Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	-	-	-	Gas (GHS definition)
13 Oxidizing liquids	Not applicable	-	-	-	Gas (GHS definition)
14 Oxidizing solids	Not applicable	-	-	-	Gas (GHS definition)
15 Organic peroxides	Not applicable	-	-	-	Gas (GHS definition)
16 Corrosive to metals	Classification not possible	-	-	-	Test methods applicable to gas substances are not available

**Health Hazards**

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Classification not possible	-	-	-	No data available
1 Acute toxicity (dermal)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: gas)	Category 1	Skin and crossbones	Danger	Fatal if inhaled	It was considered as Category 1 based on guinea pigs LC50 value = 260mg/m3 (equivalent: 83ppm) (RTECS (2004)) in the 4-hour inhalation experiments.
1 Acute toxicity (inhalation: dust, mist)	Not applicable	-	-	-	Gas (GHS definition)
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	Since there was a description of redness and pains as danger information on human health (ICSC (J), (1995)), it was classified as Category 2.
3 Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	Since there is a statement that the eye had redness and pain (ICSC (J), (1995)) as danger information on human health, it was set as Category 2A-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 (liver, kidneys); Category 2 (blood system); Category 3 (narcotic effects, respiratory tract irritation)	Health hazard and Exclamation mark	Danger; Warning	Cause damage to organs (liver, kidneys); May cause damage to organs (blood system); May cause respiratory irritation or may cause drowsiness and dizziness (narcotic effects, respiratory tract irritation)	The denaturation of liver and kidney tissue and the effects on central nervous system are observed in the dosage range of the guidance value of Category 1 in animal studies (ACGIH (2001), RTECS (2004)). There is the description that an it irritates to airway as effect of short-term exposure to human and affectes to blood (ICSC (J) (1995)). Moreover, there are the descriptions that in human, it may cause the symptoms, such as headache, giddiness, syncope, and vomiting, and it causes the kidney disorders by the cythemolytic gas, and there is the description that the targets of toxic effects are central nervous systems, kidney and blood (SITTIG (4th, 2002)). From these results, they were classified into Category 1 (liver, kidney), Cateogry 2 (blood), and Category 3 (anesthetic actions, respiratory irritant).
9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	-	-	-	It cannot be classified because of lack of information. In addition, there is the statement in SITTIG (4th, 2002) that prolonged exposure may cause kidney disorders and a haemolytic activity in humans.
10	Aspiration hazard	Not applicable	-	-	-	Gas (GHS definition)

### 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.