

GHS Classification

ID226

Tetramethyl silicate

CAS 681-84-5

Date Classified: Sep. 1, 2005 (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 | - | - | - | Liquid (GHS definition) |
| 3 Flammable aerosols | Not applicable | - | - | - | Not aerosol products |
| 4 Oxidizing gases | Not applicable | - | - | - | Liquid (GHS definition) |
| 5 Gases under pressure | Not applicable | - | - | - | Liquid (GHS definition) |
| 6 Flammable liquids | Classification not possible (Category 2 or Category 3) | Flame | Danger | Highly flammable liquid and vapour | There are deviations in the flash point data, and the assays is also not known. Therefore, if the flash point is not measured with a real sample, it cannot be judged. The acceptance criteria are as follows: Category 2: flash point <23 degC; Category 3: 23 degC<= flash point <=60 degC |
| 7 Flammable solids | Not applicable | - | - | - | Liquid (GHS definition) |
| 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 classified | - | - | - | UNRTDG Class: 6.1 Subsidiary risks Class: 3 |
| 10 Pyrophoric solids | Not applicable | - | - | - | Liquid (GHS definition) |
| 11 Self-heating substances and mixtures | Not classified | - | - | - | UNRTDG Class: 6.1, Subsidiary risks Class: 3 |
| 12 Substances and mixtures, which in contact with water, emit flammable gases | Not classified | - | - | - | UNRTDG Class: 6.1; Subsidiary risks Class: 3 |
| 13 Oxidizing liquids | Not classified | - | - | - | UNRTDG Class: 6.1; Subsidiary risks Class: 3 |
| 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: 6.1, Subsidiary risks Class: 3 |

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) | Not classified | - | - | - | Based on rabbit LD50 value: 17394mg/kg (RTECS, Access on Sep 2005), it was set as the outside of Category. |
| 1 Acute toxicity (inhalation: gas) | Classification not possible | - | - | - | No data available |
| 1 Acute toxicity (inhalation: vapour) | Category 1 | Skull and crossbones | Danger | Fatal if inhaled | Based on guinea pig LC50 (1 hour): 300ppm (4 hour equivalent: 0.932mg/L) and guinea pig LC50 (4 hours): 95ppm (equivalent: 0.59mg/L) (ACGIH 7th, 2001 and Industrial Hygiene Society advice, 1993), the lower value was adopted. 95ppm (0.59mg/L) could be judged as the steam with almost no mist from vapor pressure, and classified as Category 1 according to the ppm concentration standard. |
| 1 Acute toxicity (inhalation: dust, mist) | Classification not possible | - | - | - | No data available |
| 2 Skin corrosion / irritation | Category 2 | Exclamation mark | Warning | Causes skin irritation | It was classified as Category 2 from description that the skin is stimulated seriously (ICSC (J) (1997), HSFS (1999), and SITTIG (4th, 2002)). |
| 3 Serious eye damage / eye irritation | Category 1 | Corrosion | Danger | Causes serious eye damage | It was set as Category 1 from description that severe eye damage was acknowledged in human occupation evidence of exposure of ACGIH (7th, 2001). |
| 4 Respiratory/skin sensitization | Respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible | - | - | - | 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 2 (respiratory organs, kidneys) | Health hazard | Warning | May cause damage to organs (respiratory organs, kidneys) | Due to the description that pulmonary edemas may be caused by inhalation in ICSC (J) (1997), HSFS (1999), and SITTI (4th, 2002), it was classified into Category 2 (respiratory tracts). Moreover, due to the description that the renal effect was observed within the guidance value of Category 2 by oral administration in the rat in RTECS (2005). So it was classified into Category 2 (kidney). |
| 9 | Specific target organs/systemic toxicity following repeated exposure | Category 1 (respiratory organs, eye) | Health hazard | Danger | Causes damage to organs (respiratory organs, eye) through prolonged or repeated exposure | Due to the description in ACGIH (7th, 2001) and Japan Society for Occupational Health Recommendation of Occupational Exposure Limits (1993) that the effects on the respiratory and on the eyes tract was seen with the concentration of the guidance value range of Category 1 in the four-week inhalation exposure test using the rat, respiratory systems and eyes were considered as target organ and it was classified in Category 1. However, as for the change of kidney, liver, a spleen, and a thymus indicated in Japan Society for Occupational Health Recommendation of Occupational Exposure Limits (1993), since there was no statement in ACGIH (7th, 2001) though it was the same examination, they were not taken as target organ. |
| 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. |