

GHS Classification

ID396

cis-1,2-Dichloroethylene

CAS 156-59-2

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 | — | — | — | 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 2 | Flame | Danger | Highly flammable liquid and vapour | The flash point is 6degC (c.c.) and the boiling point is 60degC (ICSC (2003)), which is classified into Category 2. Classified as Class 3 and Packing Group II (UN#1150: 1,2-dichloroethylene) (UN Recommendations on the Transport of Dangerous Goods). |
| 7 Flammable solids | Not applicable | — | — | — | Classified as "liquid" according to GHS definition |
| 8 Self-reactive substances and mixtures | Not classified | — | — | — | No data available, though containing unsaturated bonds. Classified as Class 3 (UN#1150: 1,2-dichloroethylene) (UN Recommendations on the Transport of Dangerous Goods). |
| 9 Pyrophoric liquids | Not classified | — | — | — | Not pyrophoric when in contact with air at ordinary temperatures: the auto-ignition temperature is 460degC (1,2-dichloroethylene (ICSC, 2003)). |
| 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 applicable | — | — | — | Containing no metals or metalloids (B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At) |
| 13 Oxidizing liquids | Not applicable | — | — | — | Organic compounds containing chlorine (but not oxygen and fluorine), with the chlorine bound to carbon and hydrogen (but not to other elements). |
| 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 | Not classified | — | — | — | Classified into Class 3 (UN#1150: 1,2-dichloroethylene) (UN Recommendations on the Transport of Dangerous Goods). |

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) | 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) | Not classified | — | — | — | Based on the rat LC50 (4 hour-inhalation of vapour) value of 13,700ppm (MOE Risk Assessment vol. 2 (2003)) was lower than 90% of the saturated vapour concentration (264,000ppm) under a saturated vapour pressure of 26.7kPa (25degC), the substance 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 | — | — | — | Classification not possible due to the insufficiency of data, though human epidemiological studies provide evidence of "irritation of the eye and skin following application of aqueous solutions" (MOE Risk Assessment vol. 2 (2003)). |
| 3 Serious eye damage / eye irritation | Classification not possible | — | — | — | Classification not possible due to the insufficiency of data, though human epidemiological studies provide evidence of "irritation of the eye and skin following application of aqueous solutions" (MOE Risk Assessment vol. 2 (2003)). |
| 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 Skin sensitization: No data available |
| 5 Germ cell mutagenicity | Category 2 | Health hazard | Warning | Suspected of causing genetic defects | Based on the absence of data on multi-generation mutagenicity tests, germ cell mutagenicity tests in vivo and germ cell genotoxicity tests in vivo, and positive data on somatic cell mutagenicity tests in vivo (chromosome aberration tests), described in NTP TR55 (2002), ATSDR (1996) and CERH Hazard Data 2000-46 (2001). |
| 6 Carcinogenicity | Not classified | — | — | — | Due to the fact that the substance is classified as Category D by EPA (1995). |
| 7 Toxic to reproduction | Classification not possible | — | — | — | Insufficient data available |
| 8 Specific target organs/systemic toxicity following single exposure | Category 3 (narcotic effects) | Exclamation mark | Warning | (Narcotic effects) May cause drowsiness or dizziness | Based on the evidence from animal studies "In the 8,000ppm dose group, narcotic effects and some death were observed at 4 hours. In the 16,000ppm dose group, narcotic effects occurred within 8 minutes; deaths were observed at 4 hours" (PATTY (4th, 2000)). |
| 9 Specific target organs/systemic toxicity following repeated exposure | Category 2 (blood system) | Health hazard | Warning | Causes damage to organs through prolonged or repeated exposure (blood system) | Based on the evidence from animal studies including "decreased hematocrit levels/RBC" (ATSDR 1996). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 2. |
| 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) | Not classified | - | - | - | It was classified into Not classified from 96 hours LC50=135mg/L of the fish (Bluegill) (CERI Hazard Data, 2002). |
| 11 Hazardous to the aquatic environment (chronic) | Not classified | - | - | - | Since it was not water-insolubility (the water-solubility =6410mg/L (PHYSPROP Database, 2005)), and acute toxicity was low, it was classified into Not classified. |