

GHS Classification

ID82

Acetaldehyde

CAS 75-07-0

Date Classified: Mar. 23, 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 1 | Flame | Danger | Extremely flammable liquid and vapour | The flash point is -38degC (c.c.) (ICSC, 2004) and the boiling point is 20.2degC, which is classified into Category 1. Classified into Class 3 and Packing Group I (UN#1089) (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 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 185degC (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 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 oxygen (but not fluorine and chlorine), with the oxygen 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 Recommendations on the Transport of Dangerous Goods, UN#1089) |

Health Hazards

| Hazard class | Classification | symbol | signal word | hazard statement | Rational for the classification |
|---|---|------------------|-------------|--------------------------------------|--|
| 1 Acute toxicity (oral) | Category 4 | Exclamation mark | Warning | Harmful if swallowed | Based on the testing data of rat LD50 (oral route) of 660mg/kg (EHC 167 (1995)). |
| 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 24 mg/L (13,000 ppm) (EHC 167, 1995) was lower than 90% of the saturated vapor concentration (993,000 ppm) under a saturated vapour pressure of 100.6 kPa (20degC) (IUCLID, 2000), 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 | Category 2 | Exclamation mark | Warning | Causes skin irritation | Based on the description in the report on the rabbit skin irritation test (ACGIH (7th 2001)): "moderate irritant". |
| 3 Serious eye damage / eye irritation | Category 2 | Exclamation mark | Warning | Causes serious eye irritation | Based on the results of rabbit eye irritation tests (ACGIH 7th (2001)): Extremely irritating but no irreversible effects observed. |
| 4 Respiratory/skin sensitization | Respiratory sensitization: Classification not possible Skin sensitization: Classification not possible | - | - | - | Respiratory sensitization: No data available Skin sensitization: Insufficient data available |
| 5 Germ cell mutagenicity | Category 2 | Health hazard | Warning | Suspected of causing genetic defects | Based on the absence of data on germ cell multi-generation mutagenicity tests in vivo, negative data on germ cell mutagenicity tests in vivo (micronucleus tests in the spermatocytes of mice), positive data on somatic cell mutagenicity tests in vivo (micronucleus and chromosome aberration tests), and absence of data on germ cell genotoxicity tests in vivo, described in CER1-NITE Hazard Assessment No.61 (2004) |
| 6 Carcinogenicity | Category 2 | Health hazard | Warning | Suspected of causing cancer | Due to the fact that the substance is classified as Category R by NTP (2005), Group 2B by IARC (1999), and Category B2 by IRIS (2005). |
| 7 Toxic to reproduction | Classification not possible | - | - | - | Insufficient data available. The results of intraperitoneal administration to female CF rats (single exposure on the 10th, 11th and 12th days of pregnancy, or multiple exposure to 0, 50, 75 and 100 mg/kg on the 10th, 11th and 12th days of pregnancy, respectively) suggest absorbed embryo and malformation (edema, symphysiodactylia, microcephalia, micrognathia, exencephalia, hydrocephalus, growth retardation, cataract, body/placenta weight reduction) at dose levels of 50 mg/kg or more (no adverse effects are observed in parent animals at all the dose levels), described in CER1-NITE Hazard Assessment No.61 (2004). Likewise, the results of oral administration to female SD rats (multiple exposure to 200mg/kg (3% solution) on the 6th-18th days of pregnancy) suggest adverse effects on the formation of the fetal skeleton (No details and data on the impact on parent animals are available). However, the former are based on intraperitoneal administration and the latter provide no description of the impact on parent animals, etc. - both of which are not worth being taken into account. |

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| 8 | Specific target organs/systemic toxicity following single exposure | Category 1 (respiratory organs, nervous system), Category 3 (narcotic effects) | Health hazard | Danger | Causes damage to organs (respiratory organs, nervous system) May cause drowsiness or dizziness | Based on human evidence including "cough, a burning pain in the nose, throat and eye," "headache, coma, irritation to the eye, skin, respiratory organs and throat, bronchitis, pulmonary edema, motor paralysis, deace" (CERI-NITE Hazard Assessment No.61 (2004)), "general narcotic effects, clouding of consciousness, bronchitis, pulmonary edema" (MOE Risk Assessment vol. 1 (2002)). |
| 9 | Specific target organs/systemic toxicity following repeated exposure | Category 1 (respiratory organs, nervous system) | Health hazard | Danger | Causes damage to organs through prolonged or repeated exposure (respiratory organs, nervous system) | Based on the human evidence including "erythema, cough, pulmonary edema, narcotic effects" (ACGIH 7th (2001)), "headache, narcotic effects, paralysis, a decrease in respiration rate, irritation to the respiratory organs, bronchitis, pulmonary edema" (CaPSAR (2000)). |
| 10 | Aspiration hazard | Classification not possible | - | - | - | Although kinematic viscosity stands at 0.314mm ² /S (1degC), the kinematic viscosity is non-existent at 40degC, with the boiling point being 20.2degC. (ICSC (2004)). |

Environmental Hazards

| Hazard class | Classification | symbol | signal word | hazard statement | Rational for the classification |
|---|----------------|--------|-------------|-----------------------|--|
| 11 Hazardous to the aquatic environment (acute) | Category 2 | - | - | Toxic to aquatic life | It was classified into Category 2 from 96 hours LC50=2.1mg/L of the fish (Bluegill) (CERI/NITE Hazard Assessment Report, 2004). |
| 11 Hazardous to the aquatic environment (chronic) | Not classified | - | - | - | Since there was rapidly degrading (the decomposition by BOD: 80% (Existing Chemical Safety Inspections Data)) and the bio-accumulation was low (log Kow=-0.34 (PHYSPROP Database, 2005)), it was classified into Not classified. |