

GHS Classification

ID6

Acetonitrile

CAS 75-05-8

Date Classified: Apr. 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 12.8degC (c.c.) and the boiling point is 82degC (ICSC, 2002), which is classified into Category 2. Classified into Class 3 and Packing Group II (UN#1648) (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 524degC (ICSC, 2002)
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 no oxygen, fluorine and chlorine
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#1648)

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 5	-	Warning	May be harmful if swallowed	Based on the LD50 value of 2,080 mg/kg calculated from the testing data of rat LD50 (oral route) of 3,800mg/kg, 1,320mg/kg, 2,460mg/kg, 2,230mg/kg, 1,730mg/kg, 6,740mg/kg, 3,200mg/kg, 160mg/kg, 3,070mg/kg, 3,470mg/kg and 4,050 mg/kg (EHC 154 (1993)).
1 Acute toxicity (dermal)	Category 3	Skull and crossbones	Danger	Toxic in contact with skin	Based on the LD50 value of 390 mg/kg calculated from the testing data of rabbit LD50 (dermal route) of 3,940mg/kg, 980mg/kg, 390mg/kg (EHC 154 (1993)).
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 LC50 value (4 hours) of 16,000ppm, calculated from the testing data of rat LC50 (4 hour inhalation of mist) of 26.8mg/L (4 hours) (EHC 154 (1993)), was lower than 90% of the saturated vapor concentration (117,000ppm) under a saturated vapour pressure of 88.8mmHg (25degC) (equivalent to 11,800Pa at 25degC) (HSDB (2005)), 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	Not classified	-	-	-	Based on the description in the report of rabbit skin irritation tests conducted in line with the EPA/OECD Guidelines (EU-RAR No.18 (2002)); Draize scores are all "0" for all subjects throughout the observation period: no skin irritation is observed.
3 Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	Because no information is available to separate 2A and 2B, although the substance should be placed in Category 2A from the viewpoint of safety. According to the rabbit eye irritation tests, the average scores of corneal opacity and conjunctival injection stand at 1.45 and 3, respectively (Category 2) (EU-RAR No.18 (2002)).
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: insufficient data available. The literature on Priority 1 has no description of cases in humans, though the report of guinea pig skin sensitization test (GLP test conducted in line with the OECD Test Guidelines), which has been conducted only once, are reliably "negative."
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 and germ cell mutagenicity tests in vivo, positive data on somatic cell mutagenicity tests in vivo (micronucleus tests) and the absence of data on germ cell genotoxicity tests in vivo, described in EU-RAR No.18 (2002) and DFGOT vol.19 (2003).
6 Carcinogenicity	Not classified	-	-	-	Due to the fact that the substance is classified as Category A4 by ACGIH (2002) and Group D by EPA (1999).
7 Toxic to reproduction	Classification not possible	-	-	-	Insufficient data available (no data available on the reproductive function and fertility potential of parent animals)

8	Specific target organs/systemic toxicity following single exposure	Category 1 (central nervous system, respiratory organs)	Health hazard	Danger	Causes damage to organs (central nervous system, respiratory organs)	Based on the human evidence including "pectoralgia, tightness of the chest, nausea, vomiting, tachycardia, hypotension, tachypnea, headache, insomnia, clouding of consciousness, spasm" (CERI Hazard Data 96-17 (1997)), "flushing, tightness of the chest, pulmonary edema, convulsions, loss of consciousness" (MOE Risk Assessment Vol. 2 (2003)).
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (central nervous system, respiratory organs, kidneys, blood system, liver)	Health hazard	Warning	May cause damage to organs through prolonged or repeated exposure (central nervous system, respiratory organs, kidneys, blood system, liver)	Based on the evidence from animal studies including "hyperextensive reflex, excitement, asynergia, chronic pneumonia, pulmonary emphysema, atelectasis, pleural effusion, coagulation of alveolar histiocytes, cellular infiltration of alveolar septa, bronchitis, localized cloudy swelling of proximal convoluted renal tubules and convoluted renal tubules, localized extradural/subdural hemorrhage" (EU-RAR No.18 (2002)) and "a significant decrease in red blood cell count, hematocrit levels and hemoglobin concentrations, hepatocyte vacuolation/hypertrophy, bronchitis" (MOE Risk Assessment Vol. 2 (2003)). 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>100mg/L of the fish (<i>Oryzias latipes</i>) (MOE eco-toxicity tests of chemicals (1995) and others.).
11 Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since it was not water-insolubility (the water-solubility =1.00*10 ⁶ mg/L (PHYSROP Database, 2005)), and acute toxicity was low, it was classified into Not classified.