

GHS Classification

ID178

Pyridine

CAS 110-86-1

Date Classified: Jul. 24, 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 20degC (c.c.) and the boiling point is 115degC (ICSC (2000)), which is classified into Category 2. Classified into Class 3, Packing Group II (UN#1282) (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 482degC (ICSC, 2000)
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#1282) (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)	Category 4	Exclamation mark	Warning	Harmful if swallowed	Based on the LD50 value of 895mg/kg calculated from the testing data of rat LD50 (oral route) of 891mg/kg, 1,580mg/kg (CERI Hazard Data 2001-70 (2002)), 1,500mg/kg (ACGIH (7th, 2004)) and 866mg/kg (IARC 77 (2000)).
1 Acute toxicity (dermal)	Category 3	Skull and crossbones	Danger	Toxic in contact with skin	Based on the guinea pig LD50 (dermal route) value of 1,000mg/kg representing the lower of the two testing data, 1,000mg/kg (MOE Risk Assessment vol. 3 (2004)) and 2,000mg/kg (ACGIH (7th, 2004)).
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)	Category 4	Exclamation mark	Warning	Harmful if inhaled	Based on the rat LC50 value of 4,450ppm (4 hours), calculated from the testing data of rat LC50 (4 hour-inhalation of vapour) of 12,898mg/L and 15.8mg/L (ACGIH (7th, 2004)), was lower than 90% of the saturated vapour concentration (27,400ppm) under a saturated vapour pressure of 2.77kPa (25degC) (CERI Hazard Data 2001-70 (2002)), 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 1A-1C	Corrosion	Danger	Causes severe skin burns and eye damage	Based on the description in the report on rabbit skin irritation tests (CERI Hazard Data 2001-70 (2002) and ACGIH (7th, 2004)): "severe damage" and "corrosion" (though no data are available on 4-hour application). The substance should be placed in Category 1A from the viewpoint of safety, if further subclassification is needed.
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Based on the description in the report on eye irritation tests in rabbits and guinea pigs (CERI Hazard Data 2001-70 (2002), ATSDR (2000), PATTY (4th, 2000) and ACGIH (7th, 2004)): "severe damage," "corneal damage" and "severe injury." The substance is thus considered "corrosive."
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: Local Lymph Node Assay in guinea pigs show "positive" (CERI Hazard Data 2001-70 (2002)), while skin sensitization tests in guinea pigs are "negative" (ACGIH (7th, 2004)). These equivocal data do not allow the presence or absence of skin sensitization to be determined, and hence classification is not possible.
5 Germ cell mutagenicity	Not classified	—	—	—	Based on the absence of data on multi-generation mutagenicity tests and germ cell mutagenicity tests in vivo, and negative data on somatic cell mutagenicity tests in vivo (chromosome aberration tests and micronucleus tests), described in CERI Hazard Data 2001-70 (2002), NTP DB (Access on March 2006) and IARC 77 (2000).
6 Carcinogenicity	Category 2	Health hazard	Warning	Suspected of causing cancer	Due to the fact that the substance is classified as Category A3 by ACGIH (2001).
7 Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Based on the evidence of atrophy of the testes/epididymis and prolonged estrus cycles, described in MOE Risk Assessment vol. 2 (2003) (though no data are available on parental toxicity).

8	Specific target organs/systemic toxicity following single exposure	Category 1 (respiratory organs, nervous system), Category 3 (narcotic effects)	Health hazard and Exclamation mark	Danger Warning	Causes damage to organs (respiratory organs, nervous system) (Narcotic effects) May cause drowsiness or dizziness	Based on the human evidence including "pulmonary congestion and bronchitis," "effects on nervous system with speech disorder" (CERI Hazard Data 2001-70 (2002)), and the evidence from animal studies including "narcotic effects" (ACGIH (7th, 2001)). Evidence of respiratory toxicity was found following oral ingestion.
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (liver, kidneys, nervous system) Category 2 (blood system)	Health hazard	Danger Warning	Causes damage to organs through prolonged or repeated exposure (liver, kidneys, nervous system) May cause damage to organs through prolonged or repeated exposure (blood system)	Based on the human evidence including "severe damage to the liver and kidney," "headache, dizziness, oversensitiveness, insomnia, nausea, vomiting, hepatopathy, cirrhosis, collapse of the nervous system with speech disorder" (CERI Hazard Data 2001-70 (2002)), and the evidence from animal studies including "inflammation of the liver" (CERI Hazard Data 2001-70 (2002)) and "anemia" (NTP TR470 (2000)). 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)	Category 1	Environment	Warning	Very toxic to aquatic life	It was classified into Category 1 from 24-72 hours ErC50=0.069mg/L of the algae (Selenastrum) (CERI/NITE Hazard Assessment Report (preliminary version), 2006).
11 Hazardous to the aquatic environment (chronic)	Not classified	—	—	—	Since there was rapidly degrading (the decomposition by BOD: 62% (Existing Chemical Safety Inspections Data)) and the bio-accumulation was low (log Kow=0.65 (PHYSPROP Database, 2005)), it was classified into Not classified.