

GHS Classification

ID93

Aziridine

CAS 151-56-4

Date Classified: Mar. 23, 2006 (Environmental Hazards: Feb. 10, 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	Category 2	Flame	Danger	Highly flammable liquid and vapour	Flash point: -11degC. Initial boiling point: 55degC (Hommel, 1991)
7 Flammable solids	Not applicable	-	-	-	Liquid (GHS definition)
8 Self-reactive substances and mixtures	Not classified	-	-	-	It is classified into UN class (UN No.1185; class 6.1, secondary class 3 PGI) under the condition of stabilization. The general traffic products to which stabilizer was added are outside Category.
9 Pyrophoric liquids	Not classified	-	-	-	Flash point: 322degC (ICSC, 2002)
10 Pyrophoric solids	Not applicable	-	-	-	Liquid (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	-	-	-	The chemical structure of the substance does not contain 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	-	-	-	Liquid (GHS definition)
15 Organic peroxides	Not applicable	-	-	-	There are no chemical groups associated with peroxide present in the molecule.
16 Corrosive to metals	Not classified	-	-	-	UNRTDG No.1185, Class: 6.1, Subsidiary risks Class: 3, PGI

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 2	Skull and crossbones	Danger	Fatal if swallowed	SPECIES: Rat ENDPOINT: LD50 VALUE: 15 mg/kg REFERENCE SOURCE: CERH Hazard Data (2002), PATTY(5th, 2001)
1 Acute toxicity (dermal)	Category 1	Skull and crossbones	Danger	Fatal in contact with skin	It was set as Category 1 based on rabbit LD50= 13mg/kg (PATTY (5th, 2001)).
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Category 1	Skull and crossbones	Danger	Fatal if inhaled	Based on the value LC50 (4hr) = 39ppm which was acquired by having converted Rat LC50 value (56ppm) (CERH Hazard Data (2002) and PATTY (5th, 2001)) into the value for 4 hours, it was classified as Category 1.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	Classification not possible due to lack of data
2 Skin corrosion / irritation	Category 1A-1C	Corrosion	Danger	Causes severe skin burns and eye damage	It is known that this product produces a burn on human skin. Since the case where it caused refractory dermatitis has been reported (CERH Hazard Data, 2002), it was classified as Category 1. But detailed classifications cannot be performed because of insufficient data.
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Based on description with severe irritation (CERH Hazard Data, 2002), and with the injury of a cornea (CERH Hazard Data, 2002), and skin corrosiveness / irritation was categorized into 1, it was set to Category 1.
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Category 1	(Respiratory sensitization)-; (Skin sensitization)Exclamation mark	(Respiratory sensitization)-; (Skin sensitization)Warning	(Respiratory sensitization)-; (Skin sensitization)May cause allergic skin reaction	Classified as Category 1 because two cases of skin sensitization is reported in humans (ACGIH (2001)). Respiratory sensitization is uncategorizable because of no data.
5 Germ cell mutagenicity	Category 1B	Health hazard	Danger	May cause genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	The substance was classified as Category 1B because the result of the in vivo dominant lethal test is positive (CERH Hazard Data (2002)).

6	Carcinogenicity	Category 2	Health hazard	Warning	Suspected of causing cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	Based on the existing classifications, it was set as Category 2 according to the guideline.
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	It is reported in ACGIH (2001) about "the effect to rat fetus and the decrease of pregnancy rate of dam animals under the condition that there were the reduced weight of the dam animals, and the effect to generative organ of father." And they are considered as in the Category 2.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (central nervous system, kidneys, liver, lung); Category 3 (respiratory tract irritation)	Health hazard	Danger	Causes damage to organs (central nervous system, kidneys, liver, lung); May cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract irritation)	The substance was classified as Category 1. Based on the reports of the serious effects on the central nervous system, kidneys and liver among the people who handle it (ACGIH, 2001), and of the development of pulmonary edema after exposure by inhalation (ACGIH (2001), ICSCJ (2002)). The substance was classified as Category 3 for its airway irritant property, based on the report: "the substance has an irritant property to the human respiratory system" (CERI Hazard Data, 2002).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (kidneys, liver, respiratory organs)	Health hazard	Danger	Causes damage to organs (kidneys, liver, respiratory organs) through prolonged or repeated exposure	In rat inhalation exposure study, based on the reports of effects in respiratory system, the kidney, and liver at the value less than the guidance value of Category 1 (CERI Hazard Data (2002)) (ACGIH (2001))(PATTY (5th, 2001)), they were classified into Category 1 in each target organs.
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 3	-	-	Harmful to aquatic life	It was classified into Category 3 from 24-hour EC50=14mg/L of Crustacea (Daphnia magna) (CERI Hazard Data, 2002).
11 Hazardous to the aquatic environment (chronic)	Category 3	-	-	Harmful to aquatic life with long lasting effects	Classified into Category 3, since acute toxicity was Category 3 and not rapidly degrading (BOD<=20%(CERI Hazard Data (2002)), though supposed less bio-accumulative (log Kow=-0.28(PHYSPROP Database, 2005)).