

GHS Classification

ID467

2-Vinylpyridine

CAS 100-69-6

Date Classified: Aug. 22, 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 3	Flame	Warning	Flammable liquid and vapour	The flash point is 42degC (ICSC (2000)), which is classified into Category 3. Those containing stabilizers are classified into Class 3, Division 6.1 and Class 8 (UN#3073) (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	Classification not possible	—	—	—	Classification not possible due to lack of data, though containing unsaturated bonds. Those containing stabilizers are classified into Class 3, Division 6.1 and Class 8 (UN#3073) (UN Recommendations on the Transport of Dangerous Goods).
9 Pyrophoric liquids	Classification not possible	—	—	—	No data available. Those containing stabilizers are classified into Class 3, Division 6.1 and Class 8 (UN#3073) (UN Recommendations on the Transport of Dangerous Goods).
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	Classification not possible	—	—	—	No data available. Those containing stabilizers are classified into Class 3, Division 6.1 and Class 8 (UN#3073) (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 3	Skull and crossbones	Danger	Toxic if swallowed	Based on the LD50 value of 100mg/kg calculated from the testing data of rat LD50 (oral route) of 336mg/kg (CERI-NITE Hazard Assessment No.18 (2005)), 951mg/kg (CERI-NITE Hazard Assessment No.18 (2005)), 100mg/kg (MOE Risk Assessment vol. 4 (2005)) and 200mg/kg (PATTY (4th, 2000)).
1 Acute toxicity (dermal)	Category 2	Skull and crossbones	Danger	Fatal in contact with skin	Based on the guinea pig LD50 (dermal route) value of 160mg/kg representing the lower of the two testing data, 160mg/kg (CERI-NITE Hazard Assessment No.18 (2005)) and 300mg/kg (PATTY (4th, 2000)).
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: dust, mist)	Classification not possible	—	—	—	Insufficient data available
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	—	—	—	Insufficient data available
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	Based on the evidence of "severe irritation" from guinea pig skin irritation test (24 hour application) (CERI-NITE Hazard Assessment No.18 (2005)). Also based on the description in the report on human health effects (CERI Hazard Data 2000 - 40 (2001), CERI-NITE Hazard Assessment No.18 (2005) and PATTY (4th, 2000)): "Accidental skin contact causes burning pain, and even if the skin is immediately washed, quite severe dermatitis occurs. At the site of inflammation, reddish brown coloration subsequently develops, which takes about a month to disappear."
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	Based on the description in the report on eye irritation tests in rabbits and guinea pigs (CERI-NITE Hazard Assessment No.18 (2005) and PATTY (4th, 2000)): "severely irritating."
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 an allergic skin reaction	Respiratory sensitization: No data available Skin sensitization: Based on the positive results in guinea pig skin sensitization tests (CERI-NITE Hazard Assessment No.18 (2005) and PATTY (4th, 2000)) and the evidence of sensitization in humans reported in CERI Hazard Data 2000-40 (2001), CERI-NITE Hazard Assessment No.18 (2005), MOE Risk Assessment vol. 4 (2005) and PATTY (4th, 2000).
5 Germ cell mutagenicity	Classification not possible	—	—	—	Based on the absence of data on multi-generation mutagenicity tests, germ/somatic cell mutagenicity tests in vivo and germ/somatic cell genotoxicity tests in vivo, and no positive data on mutagenicity tests in vitro (several indices), described in CERI-NITE Hazard Assessment No.18 (2005), NITE Initial Risk Assessment No.18 (2005) and NTP DB (Access on March 2006).
6 Carcinogenicity	Classification not possible	—	—	—	No data available
7 Toxic to reproduction	Classification not possible	—	—	—	The results of repeated dose toxicity studies in rats suggest changes in reproductive organ weight (MOE Risk Assessment vol. 3 (2004)). However, these findings are toxicologically insignificant and no data on reproductive toxicity are available as a reliable basis for classification.

8	Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system), Category 3 (respiratory tract irritation)	Health hazard	Danger	Causes damage to organs (nervous system) (Respiratory tract irritation) May cause respiratory irritation	Based on the human evidence including "temporary mild irritation of the eye, nose and pharynx, headaches, vomiting, hypersensitivity and loss of appetite" (CERI Hazard Data 2000-40 (2001)), and the evidence from animal studies including "aggressiveness, reduced locomotor activity, labored respiration, spasm and lethargy" (NITE Initial Risk Assessment No.18 (2005)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Categories 1 and 2.
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (nervous system, respiratory organs)	Health hazard	Warning	May cause damage to organs through prolonged or repeated exposure (nervous system, respiratory organs)	Based on the evidence from animal studies including "salivation, debility, reduced activity, tremor and spasm" (MOE Risk Assessment vol. 4 (2005)), "salivation and pulmonary congestion" (HSDB (2002)). 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 2	—	—	Toxic to aquatic life	It was classified into Category 2 from 96 hours LC50=6.5mg/L of the fish (Oryzias Latipest) (MOE eco-toxicity tests of chemicals (2001) and others.).
11 Hazardous to the aquatic environment (chronic)	Category 2	Environment	—	Toxic to aquatic life with long lasting effects	Although acute toxicity was Category 2 and the bio-accumulation potential was low (log Kow=1.54(PHYSROP Database, 2005)), since there was no rapidly degrading (the decomposition by BOD: 0%(Existing Chemical Safety Inspections Data)), it was classified into Category 2.