GHS Classification

ID9 Allyl alcohol

CAS 107-18-6 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 21degC (c.c.) (ICSC, 2000) and the boiling point is 97degC, which is classified into Category 2. Classified into Class 3 and Division 6.1 (UN#1098) (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 classified	-	-	-	Classified into Class 3 and Division 6.1 (UN#2023) (UN Recommendations on the Transport of Dangerous Goods).
9	Pyrophoric liquids	Not classified	-	-	-	Not pyrophoric when in contact with air at ordinary temperatures: the auto-ignition temperature is 378degC (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 oxygen (but not fluorine and chlorine), with the oxygen bound to carbon and hydrogen (but not to other
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 and Division 6.1 (UN#1098) (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 68mg/kg calculated from the testing data of rat LD50 (oral route) of 64mg/kg (ACGIH (7th, 2001)), 70mg/kg, 99mg/kg and 105mg/kg (PATTY (4th, 2000)).
1	Acute toxicity (dermal)	Category 1	Skull and crossbones	Danger	Fatal in contact with skin	Based on the rabbit LD50 (dermal route) value of 45mg/kg representing the lower of the two testing data, 45mg/kg (DFGOT vol.15 (2001)) and 89mg/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: vapour)	Category 2	Skull and crossbones	Danger	Fatal if inhaled	Based on the LC50 value (4 hours) of 165ppm, calculated from the testing data of rat LC50 (4 hour inhalation of vapor) of 0.391mg/L (DFGOT vol.15 (2001)), was lower than 90% of the saturated vapor concentration (25,000ppm) under a saturated vapour pressure of 2.5kPa (20degC) (ICSC (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 1A-1C	Corrosion	Danger	Causes severe skin burns and eye damage	Based on the description of the data on human health effects (DFGOT vol. 15 (2001)): "Corrosive and irritating to the tissues underlying the muscle, when applied to the skin," although the substance should be placed in Category 1A from the viewpoint of safety.
3	Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Based on the description in the report on the rabbit eye irritation tests (PATTY (4th, 2000)): "Causes corneal necrosis and severe effects." The substance is thus considered to have "irreversible effects on the eye."
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: No data available
5	Germ cell mutagenicity	Not classified	-	-	-	Based on the absence of data on multi-generation mutagenicity and germ cell mutagenicity tests in vivo, and negative data on somatic cell mutagenicity tests in vivo (micronucleus tests), described in NTP DB (2005) and CERI Hazard Data 99-24 (2000).
6	Carcinogenicity	Not classified	-	-	-	Due to the fact that the substance is classified as Category A4 by ACGIH-TLV (2005).
7	Toxic to reproduction	Not classified	-	-	-	Based on the description in MOE Risk Assessment vol. 3 (2004): The results of rat reproductive toxicity tests suggest no adverse effects; the results of rat developmental toxicity tests provide no description of adverse effects on parental animals, while malformations are observed in offspring (intra-amniotic administration).

8	Specific target organs/systemic toxicity following single exposure	Category 1 (central nervous system, liver, respiratory organs, gastrointestinal tract)	Health hazard	Danger	Causes damage to organs (central nervous system, liver, respiratory organs, gastrointestinal tract)	Based on human evidence including "nausea, vomiting, bloody phlegm" (ACGIH (7th, 2001)), "lacrimation, pain in the back of the eyeball, photophobia., spasmolysis" (MOE Risk Assessment Vol. 3 (2004)) and "corneal burning" caused by airborne droplets (MOE), and the evidence from animal studies including "tremor, convulsions, spasm, diarrhea, coma, hepatopathy" (ACGIH (7th, 2001)), "hepatocellular necrosis associated with lipoperoxidation" and "periportal necrosis" (CERI Hazard Data 99-24 (2002)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1.
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (kidneys, liver)	Health hazard	Danger	Causes damage to organs through prolonged or repeated exposure (kidneys, liver)	Based on the evidence from animal studies including "deterioration of renal function (above 100ppm for the male and above 200ppm for the female)" (IRIS (2002)), "a significant increase in the relative weight of the kidneys, severe adverse effects on body weight gain, hepatocellular necrosis associated with their reproduction" ((MOE Risk Assessment Vol. 3 (2004)) and "expansion of the sinus venosus in the liver, cloudy swelling, focal necrosis, an increase in renal interstitial tissues; renal tubular epithelial necrosis, changes suggestive of glomerulonephritis" (MOE Risk Assessment Vol. 3 (2004)). The effects on experimental animals were observed at dosing levels within the
10	Aspiration hazard	Category 2	Health hazard	Warning	May be harmful if swallowed and enters airways	Based on its kinematic viscosity and being a primary alcohol containing 3-13 carbon atoms.

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 96 hours LC50=320microg/L of the fish (Fathead Minnows) (MOE Risk Assessment vol. 2 (2003) and others.).
11	Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since there was rapidly degrading (the decomposition by BOD: 86% (Existing Chemical Safety Inspections Data)) and the bio-accumulation was low (log Kow=0.17 (PHYSPROP Database, 2005)), it was claasified into Not classified.