

GHS Classification

ID177

CAS 100-40-3

Physical Hazards

4-Vinyl-1-cyclohexene

Date Classified: Jul. 24, 2006 (Environmental Hazards: Mar. 31, 2006)

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 16degC (c.c.) and the boiling point is 130degC (ICSC (2004)), which is classified as Category 2.
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.
9 Pyrophoric liquids	Not classified	-	-	-	Not pyrophoric when in contact with air at ordinary temperatures: the auto-ignition temperature is 269degC (ICSC, 2004).
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

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 rat LD50 (oral route) value of 2,600mg/kg representing the lower of the two testing data, 2,600mg/kg (CERI Hazard Data 2000-15 (2001)) and 3,080mg/kg (PATTY (4th, 1999)).
1 Acute toxicity (dermal)	Not classified	-	-	-	Based on the rabbit LD50 (dermal route) value of 17,000mg/kg (CERI Hazard Data 2000-15 (2001)).
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	-	-	-	No data available
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	Based on a report on rabbit skin irritation test results (ACGIH (7th, 2001)): "moderately irritating."
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Based on a report on rabbit eye irritation test results (ACGIH (7th, 2001)): "focal corneal necrosis was observed."
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	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 Hazard Data 2000-15 (2001) and NTP DB (Access on March 2006).
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), Group 2B by IARC (1994), Category 2B by Japan Society for Occupational Health.
7 Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Based on the description in MOE Risk Assessment vol. 3 (2004), DFGOT vol.14 (2000) and ACGIH (7th, 2001): reduction in sperm count/mature follicle count was observed, though no descriptions are available regarding parental toxicity.
8 Specific target organs/systemic toxicity following single exposure	Classification not possible	-	-	-	No data available

9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (blood system) Category 2 (kidneys)	Health hazard	Danger Warning	Causes damage to organs through prolonged or repeated exposure (blood system) May causes damage to organs through prolonged or repeated exposure (kidneys)	Based on the human evidence including "change in WBC and decrease in hemoglobin levels," and the evidence from animal studies including "hyaline droplet degeneration of proximal renal tubules." The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 2.
10	Aspiration hazard	Classification not possible	-	-	-	Classification not possible due to lack of data on dynamic viscosity, though the substance is a hydrocarbon.

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 48 hours EC50=1.87mg/L of the crustacea (Daphnia magna) (CERI/NITE Hazard Assessment Report (preliminary version), 2006).
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 (BCF=211(Existing Chemical Safety Inspections Data)), since there was no rapidly degrading (the decomposition by BOD: 0%(Existing Chemical Safety Inspections Data)), it was classified into Category 2.