GHS Classification

ID193 Benzyl chloride

CAS 100-44-7 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 4	—	Warning	Combustible liquid	The flash point is 67degC (c.c.) (ICSC, 2004), which is classified into Category 4.
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 585degC (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 chlorine (but not oxygen and fluorine), with the chlorine bound to carbon and hydrogen (but not to other elements)
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	—	—	—	Cannot be classified due to lack of data, though the substance acts on many metals in the presence of water according to ICSC (2004). Classified into "Corrosive Substances" by the UN Recommendations on the Transport of Dangerous Goods. However, the category includes skin corrosivity, and it is unclear whether the substance is classified as "metal" corrosive (UN#1738).

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 679mg/kg calculated from the testing data of rat LD50 (oral route) of 625mg/kg (CERI Hazard Data 97-4 (1998)), 1,660mg/kg (CERI Hazard Data 97-4 (1998)) and 1,231mg/kg (MOE Risk Assessment vol. 4 (2005)).
1	Acute toxicity (dermal)	Classification not possible	—	—	—	No data available
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 1	Skull and crossbones	Danger	Fatal if inhaled	Based on the rat LC50 (4 hours) value of 100ppm (0.52mg/L), calculated from the testing data of rat LC50 (inhalation of vapour) of 0.74mg/L (2 hours) (MOE Risk Assessment vol. 4 (2005)), 0.78mg/L (2 hours) (MOE Risk Assessment vol. 4 (2005)) and 0.77mg/L (ACGIH (7th, 2001)), was lower than 90% of the saturated vapour concentration (1,320ppm) under a saturated vapour pressure of 0.133kPa (22degC) (CERI Hazard Data 97-4 (1998)), 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 24-hour skin irritation tests in rabbits (SIDS (2002)): "severe flare followed by swelling and necrosis." Also based on the description of the human health effects (CERI Hazard Data 97-4 (1998)): "very strong irritation of the skin, eye and mucous membranes." 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 of the human health effects (MOE Risk Assessment vol. 4 (2005)): "The substance is corrosive to the eye. In the form of vapour, it causes irritation of the eye, skin and respiratory tract."
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 description in the report on guinea pig skin sensitization tests (CERI Hazard Data 97-4 (1998) and SIDS (2002)): "Skin sensitization: positive."
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 (micronucleus tests), described in IARC 71 (1999) 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) and Category B2 by EPA (1994).

7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Based on the evidence of body length reduction of the embryo, described in MOE Risk Assessment vol. 3 (2004), MOE Risk Assessment vol. 4 (2005), CERI Hazard Data 97-4 (1998) and SIDS (2002) (no data presented on maternal toxicity).
8	Specific target organs/systemic toxicity following single exposure	Category 1 (respiratory organs, nervous system)	Health hazard	Danger	Causes damage to organs (respiratory organs, nervous system)	Based on the human evidence: "strong irritation of the upper respiratory organs accompanied by coughing and dizziness; inhalation of high concentrations causes pulmonary edema, tetraplegia and loss of consciousness" (MOE Risk Assessment vol. 4 (2005)).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (nervous system, respiratory organs) Category 2 (heart, liver, thyroid gland)	Health hazard	Danger Warning	Causes damage to organs through prolonged or repeated exposure (nervous system, respiratory organs) May cause damage to organs through prolonged or repeated	Based on the human evidence: "workers occupationally exposed to the substance exhibited debility, fatigue, persistent headache and increased excitability" (MOE Risk Assessment vol. 4 (2005)), and the evidence from animal studies including "necrosis of the cardiac muscle, severe hyperplasia, severe congestion and edema in the heart/lung/liver, a significant increase in the incidence of hyperplasia/focal necrosis of the cardiac muscle, degeneration of the thyroid gland, severe injury in the respiratory/olfactory epithelium, diffuse pulmonary edema" (MOE Risk Assessment vol. 4 (2005)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1 (respiratory organs) and Category 2 (heart, liver, thyroid gland).
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 96 hours LC50=140microg/L of the crustacea (Marsupenaeus Japonicus) (MOE Risk Assessment vol. 3 (2004) and others.).
11	Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since there was rapidly degrading (the decomposition by BOD: 70.9% (Existing Chemical Safety Inspections Data)) and the bio-accumulation was low (log Kow=2.3 (PHYSPROP Database, 2005)), it was claasified into Not classified.