GHS Classification

ID100 2,3-Epoxypropyl phenyl ether

CAS 122-60-1

Date Classified: Apr. 20, 2006 (Environmental Hazards: Mar. 31, 2006)

Reference Manual: GHS Classification Manual (Feb. 10, 2006)

Physical Hazards

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	Not classified	-	-	-	The flash point is 110degC (c.c.) (gangolli (2nd, 1999)
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 a distorted ring structure.
9	Pyrophoric liquids	Classification not possible	-	-	-	No data available
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 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	-	-	-	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 LD50 value of 2,751mg/kg calculated from the testing data of rat LD50 (oral route) of 2,600mg/kg, 3,850mg/kg, and 4,260mg/kg (DFGOT vol. 4 (1992)).
1	Acute toxicity (dermal)	Category 4	Exclamation mark	Warning	Harmful in contact with skin	Based on the rabbit LD50 (dermal route) of 1,500mg/kg (DFGOT vol. 4 (1992)).
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:	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 description in the report on human health effects (CERI Hazard Data 2000-14 (2001), MOE Risk Assessment vol. 2 (2003), ACGIH (7th, 2002)): "The substance is irritating to the eyes, skin and respiratory tract," "an accidental exposure to a droplet of the substance, which was painless at first and hence left unwashed, caused reddening of the skin associated with pain after few hours of exposure, followed immediately by washing - the affected area resulted in a second-degree burn, with pigmentation remaining for about three years." The substance is thus considered to cause reversible irritation to the skin.
3	Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	Based on the description of epidemiological cases (CERI Hazard Data 2000-14 (2001), MOE Risk Assessment vol. 2 (2003), ACGIH (7th, 2002)): The substance is irritating to the eyes, skin and respiratory tract, though its degree is unknown. The substance should be placed in Category 2A from the viewpoint of safety.
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	Respiratory sensitization: No data available Skin sensitization: based on data on human health effects (CERI-NITE Hazard Data 2000-14 (2001), MOE Risk Assessment vol. 2 (2003), ACGIH (7th, 2002), and DFGOT vol. 4 (1992)), the substance is considered to cause "skin sensitization."
5	Germ cell mutagenicity	Not classified	-	-	-	Based on the negative data on germ cell multi-generation tests (dominant lethal tests), absence of data on germ cell mutagenicity tests in vivo, and the negative data on somatic cell mutagenicity tests in vivo (chromosome aberration tests, micronucleus tests), described in IARC 47 (1989).
6	Carcinogenicity	Category 2	Health hazard	Warning	Suspected of causing cancer	Due to the fact that the substance is classified as Group 2B by IARC (1999) and Category A3 by ACGIH (2002).
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Based on the description in IARC 47 (1989), ACGIH (7th, 2002) and CERI Hazard Data 2000-14 (2001): a decrease in pregnancy rates and seminiferous tubule degeneration are observed, though no description is available for the general toxicity to patent animals.

8	Specific target organs/systemic toxicity following single exposure	Category 3 (respiratory tract irritation, narcotic effects)	Exclamation mark	Warning	(Respiratory tract irritation) May cause respiratory irritation (Narcotic effects) May cause drowsiness or dizziness	Based on the human evidence including "eye/nasal/respiratory/skin irritation (CERI Hazard Data 2000-14 (2001)); eye/skin/respiratory irritation, lowering of consciousness (MOE Risk Assessment vol. 3 (2004)).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (respiratory organs, liver)	Health hazard	Danger	Causes damage to organs through prolonged or repeated exposure (respiratory organs, liver)	Based on the evidence from animal studies including "respiratory inflammation, hepatocyte necrosis" (ACGIH (7th, 2001)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1.
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 96 hours LC50=43mg/L of the fish (Goldfish) (ECETOC TR91 (2003) and others.).
11	Hazardous to the aquatic environment (chronic)	Category 3	-	-	Harmful to aquatic life with long lasting effects	Although acute toxicity was Category 3 and the bio-accumulation potential was low (log Kow=1.61(PHYSPROP Database, 2005)), since there was no rapidly degrading (the decomposition by BOD: 51%(Existing Chemical Safety Inspections Data)), it was classified into Category 3.