

GHS Classification

ID214

Mercaptoacetic acid

CAS 68-11-1

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	Not classified	—	—	—	The flash point is 126degC (open cup flash test) (ICSC (1999))
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 350degC (ICSC, 1999)
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	—	—	—	Cannot be classified due to lack of data, though the substance acts on steel, stainless steel and aluminum according to ICSC (1999). 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#1940).

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 rat LD50 (oral route) value of 73mg/kg representing the lower of the two testing data, 73mg/kg and 261mg/kg (CERI Hazard Data 2001-10 (2001)).
1 Acute toxicity (dermal)	Category 3	Skull and crossbones	Danger	Toxic in contact with skin	Based on the rabbit LD50 (dermal route) value of 848mg/kg (CERI Hazard Data 2001-10 (2002)).
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 testing data of rat LC50 (4 hour-inhalation of vapour) value of 56.7ppm was lower than 90% of the saturated vapour concentration (115ppm) under a saturated vapour pressure of 11.6Pa (25degC), the substance was considered as "vapour containing substantially no mist" and was classified based on standard values of gas.
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 guinea pig skin irritation tests (CERI Hazard Data 2001-10 (2002)): "severely irritating." Although it is unclear whether the effects are reversible or not, the substance is classified into Category 1A-1C, given the pH value of a 10% aqueous solution is 1.6. It should be placed in Category 1A from the viewpoint of safety if further classification is needed.
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Based on the description in the report on rabbit eye irritation tests (CERI Hazard Data 2001-10 (2002)): "The pH value of a 10% aqueous solution is 1.6." The substance is thus considered "corrosive."
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 human epidemiological evidence of skin sensitization (CERI Hazard Data 2001-10 (2002)).
5 Germ cell mutagenicity	Classification not possible	—	—	—	Based on the absence of data on in vivo mutagenicity/genotoxicity tests and negative data on mutagenicity tests in vitro (reverse mutation tests and chromosome aberration tests), described in NTP DB (Access on Mar. 2006), CERI Hazard Data 2001-10 (2002) and IUCLID (2000).
6 Carcinogenicity	Classification not possible	—	—	—	Insufficient data available
7 Toxic to reproduction	Classification not possible	—	—	—	No data available
8 Specific target organs/systemic toxicity following single exposure	Category 1 (respiratory organs, cardiovascular, central nervous system, liver)	Health hazard	Danger	Causes damage to organs (respiratory organs, cardiovascular, central nervous system, liver)	Based on the human evidence: "percutaneous absorption induced tachycardia, shallow respiration and oliguresis; deaths from cardiovascular collapse have also been reported" (CERI Hazard Data 2001-10 (2002)), and the evidence from animal studies including "tremor and spasm", "effects on the liver and irritation of the gastrointestinal tract were found at necropsy" (CERI Hazard Data 2001-10 (2002)) and "dyspnea" (RTECS (2004)). 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	Classification not possible	-	-	-	Insufficient data available
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=30mg/L of the fish (Fathead Minnows) (CERI Hazard Data, 2002).
11 Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since there was rapidly degrading (the decomposition by BOD; 100% (Existing Chemical Safety Inspections Data)) and the bio-accumulation was low (log Kow=0.09 (PHYSPROP Database, 2005)), it was classified into Not classified.