GHS Classification

ID681 cyanogen chloride

CAS 506-77-4 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	–	–	–	Gas (GHS definition)
2	Flammable gases	Not classified	–	–	–	Non-combustible (ICSC, 2002) and non-flammable gas (Hommel, 1991)
3	Flammable aerosols	Not applicable	–	–	–	Not aerosol products
4	Oxidizing gases	Not classified	–	–	–	UNRTDG No. 1589, Class: 2.3, Subsidiary risks Class: 8
5	Gases under pressure	Liquefied gas	Gas cylinder	Warning	Contains gas under pressure; may explode if heated	Critical temp: 215degC (AIR LIQUIDE, Safety Data Sheet, 31/07/2002)
6	Flammable liquids	Not applicable	–	–	–	Gas (GHS definition)
7	Flammable solids	Not applicable	–	–	–	Gas (GHS definition)
8	Self-reactive substances and mixtures	Not applicable	–	–	–	Gas (GHS definition)
9	Pyrophoric liquids	Not applicable	–	–	–	Gas (GHS definition)
10	Pyrophoric solids	Not applicable	–	–	–	Gas (GHS definition)
11	Self-heating substances and mixtures	Not applicable	–	–	–	Gas (GHS definition)
12	Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	–	–	–	Gas (GHS definition)
13	Oxidizing liquids	Not applicable	–	–	–	Gas (GHS definition)
14	Oxidizing solids	Not applicable	–	–	–	Gas (GHS definition)
15	Organic peroxides	Not applicable	–	–	–	Gas (GHS definition)
16	Corrosive to metals	Classification not possible	–	–	–	Test methods applicable to gas substances are not available

Health Hazards

	Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1	Acute toxicity (oral)	Classification not possible	–	–	–	It cannot classify without the rodent data including a rat.
1	Acute toxicity (dermal)	Classification not possible	–	–	–	No data available
1	Acute toxicity (inhalation: gas)	Category 1	Skull and crossbones	Danger	Falat if inhaled	Mouse lethal concentration (3-minute exposure) = 500ppm (ACGIH (2001)). (If it converts, it will be <100ppm as 4 hours exposure.) There is also a descriptions of death (ACGIH (2001)) by 48ppm and exposure for 30 minute for humans. It was considered as Category 1 based on these knowledge.
1	Acute toxicity (inhalation:	Not applicable	–	–	–	Gas (GHS definition)
1	Acute toxicity (inhalation: dust, mist)	Not applicable	–	–	–	Gas (GHS definition)
2	Skin corrosion / irritation	Category 1A-1C	Corrosion	Danger	Causes severe skin burns and eye damage	Irritation on the human skin is observed in the state of steam, and when being a liquid (13degC or less), it becomes stronger and is described that it "will burn skin" (HSDB (2003)). Moreover, it is described as "when touching liquid: frostbite" (ICSC (1999)). Based on above, it was classified as Category 1A-1C.
3	Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	It is described to be "severe eye irritation" (ACGIH (2001)) in human studies. Furthermore, since irritation became strong in the state of the liquid (13degC or less), and it was described to be "will burn eyes" (HSDB (2003)), and "frostbite, redness, and a pain" (ICSC (1999)), it was judged as the critical obstacle and set as Category 1.
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)–	No data available
5	Germ cell mutagenicity	Classification not possible	–	–	–	No data available
6	Carcinogenicity	Classification not possible	–	–	–	No data available
7	Toxic to reproduction	Classification not possible	–	–	–	No data available

8	Specific target organs/systemic toxicity following single exposure	Category 2 (respiratory, central nervous system)	Health hazard	Warning	May cause damage to organs (respiratory, central nervous system)	Although there is the statement that "pulmonary irritant and lacrimator effects"((HSDB (2003))) as the symptom of low concentration, there is the acute or delayed effect to respiratory system including pulmonary oedema generally (HSDB (2003)). Furthermore, there is the description about the symptoms via central nerve such as lethargica, confusing, unconsciousness (ICSC (1999)). And it is classified into Category 2 (respiratory systems, central nervous system).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (respiratory organs); Category 2 (central nervous system)	Health hazard	Danger; Warning	Causes damage to organs (respiratory organs) through prolonged or repeated exposure; May cause damage to organs (central nervous system) through prolonged or repeated exposure	This product affects cellular respirations (ICSC (1999)), besides of stimulative to a respiratory tract or an eye in humans toxic effects such as congestion and edema of lungs (ACGIH (2001), ICSC (1999)), and giddiness, convulsions, unconsciousness, etc. are reported (ICSC (1999), HSDB (2003)). Based on above, it was classified to as Category 1 (respiratory system) and 2 (central nervous systems)
10	Aspiration hazard	Not applicable	–	–	–	Gas (GHS definition)

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 48-hour LC50=0.029mg/L of Crustacea (Daphnia magna) (ECETOC TR91, 2003).
11	Hazardous to the aquatic environment (chronic)	Category 1	Environment	Warning	Very toxic to aquatic life with long lasting effects	Classified into Category 1, since acute toxicity was Category 1, and behavior in water and bioaccumulative potential are unknown.