

GHS Classification

ID312

Arsine

CAS 7784-42-1

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	—	—	—	Classified as "gas" according to GHS definition
2 Flammable gases	Category 1	Flame	Danger	Extremely flammable gas	Based on the description in ICSC (2004); the lower explosion limit is 4.5vol%. Classified into Division 2.1 (UN#2188) (UN Recommendations on the Transport of Dangerous Goods)
3 Flammable aerosols	Not applicable	—	—	—	Not aerosol products
4 Oxidizing gases	Not classified	—	—	—	Classified into Division 2.1 and Division 2.3 (UN#2188) (UN Recommendations on the Transport of Dangerous Goods)
5 Gases under pressure	Liquefied gas	Gas cylinder	Warning	Contains gas under pressure; may explode if heated	The boiling point is -62degC (ICSC (2004)) and the critical temperature is 100degC (HSDB (2006)), i.e., liquefied gas. Classified into Division 2.1 and Division 2.3 (UN#2188) (UN Recommendations on the Transport of Dangerous Goods).
6 Flammable liquids	Not applicable	—	—	—	Classified as "gas" according to GHS definition
7 Flammable solids	Not applicable	—	—	—	Classified as "gas" according to GHS definition
8 Self-reactive substances and mixtures	Not applicable	—	—	—	Classified as "gas" according to GHS definition
9 Pyrophoric liquids	Not applicable	—	—	—	Classified as "gas" according to GHS definition
10 Pyrophoric solids	Not applicable	—	—	—	Classified as "gas" according to GHS definition
11 Self-heating substances and mixtures	Not applicable	—	—	—	Classified as "gas" according to GHS definition
12 Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	—	—	—	Classified as "gas" according to GHS definition
13 Oxidizing liquids	Not applicable	—	—	—	Classified as "gas" according to GHS definition
14 Oxidizing solids	Not applicable	—	—	—	Classified as "gas" according to GHS definition
15 Organic peroxides	Not applicable	—	—	—	Classified as "gas" according to 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	—	—	—	No data available
1 Acute toxicity (dermal)	Classification not possible	—	—	—	No data available
1 Acute toxicity (inhalation: gas)	Category 1	Skull and crossbones	Danger	Fatal if inhaled	Based on the rat LC50 (inhalation of gas) value of 16.2ppm (4 hours).
1 Acute toxicity (inhalation: dust, mist)	Not applicable	—	—	—	Due to the fact that the substance is "gas" according to the GHS definition and inhalation of its vapour is not expected.
1 Acute toxicity (inhalation: dust, mist)	Not applicable	—	—	—	Due to the fact that the substance is "gas" according to the GHS definition and inhalation of its dust/mist is not expected.
2 Skin corrosion / irritation	Classification not possible	—	—	—	No data available
3 Serious eye damage / eye irritation	Classification not possible	—	—	—	No data available
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	—	—	—	No data available As for the health hazards, refer to "ID1075, Sodium Arsenate, CAS: 13464-38-5," "ID1088, Sodium Arsenite, CAS: 7784-46-5," "ID54, Arsenic, CAS: 7440-38-2" and "ID55, Diarsenic Trioxide (Arsenious Acid), CAS: 1327-53-3."
6 Carcinogenicity	Category 1A	Health hazard	Danger	May cause cancer	Due to the fact that the substance is classified as Category 1 (as ARSENIC AND ARSENIC COMPOUNDS) by IARC (1987) and Category K (as Arsenic Compounds, Inorganic) by NTP (2005).
7 Toxic to reproduction	Classification not possible	—	—	—	No data available As for the health hazards, refer to "ID1075, Sodium Arsenate, CAS: 13464-38-5," "ID1088, Sodium Arsenite, CAS: 7784-46-5," "ID54, Arsenic, CAS: 7440-38-2" and "ID55, Diarsenic Trioxide (Arsenious Acid), CAS: 1327-53-3."
8 Specific target organs/systemic toxicity following single exposure	Category 1 (central nervous system, blood system, cardiovascular system, respiratory organs, liver, kidneys)	Health hazard	Danger	Causes damage to organs (central nervous system, blood system, cardiovascular system, respiratory organs, liver, kidneys)	Based on the human evidence: "clinical symptoms include transient hemolytic anemia, nausea, headache, anemia, decreased hemoglobin levels, erythema of the skin, jaundice, hemoglobinuria and shock" (IARC 84 (2004)), "pulmonary edema and acute circulatory disorder," "hepatitis on the 20th day after the acute hemolysis" (CICAD 47 (2002)), "hemolysis and nephropathy" (ACGIH (7th, 2001)), and the evidence from animal studies including "a 10.5% reduction in hematocrit levels observed in the 26ppm dose group" (CICAD 47 (2002)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1.

9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (blood system)	Health hazard	Danger	Causes damage to organs through prolonged or repeated exposure (blood system)	Based on the human evidence including "a decrease in hemoglobin level to 32g/L and basophilic stippling (in red blood cells)" (IARC 84 (2004)), and the evidence from animal studies including "anemia (decreased hemoglobin/hematocrit/RBC)" (CICAD 47 (2002)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1.
10	Aspiration hazard	Not applicable	—	—	—	Not applicable

Environmental Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
11 Hazardous to the aquatic environment (acute)	Classification not possible	—	—	—	No data available
11 Hazardous to the aquatic environment (chronic)	Classification not possible	—	—	—	No data available