

## GHS Classification

**ID1091**

**arsenic trichloride**

**CAS 7784-34-1**

Date Classified: Sep. 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	-	-	-	There are no chemical groups associated with explosive properties present in the molecules.
2 Flammable gases	Not applicable	-	-	-	Liquid (GHS definition)
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Liquid (GHS definition)
5 Gases under pressure	Not applicable	-	-	-	Liquid (GHS definition)
6 Flammable liquids	Not classified	-	-	-	Non-combustible (ICSC(J), 2000).
7 Flammable solids	Not applicable	-	-	-	Liquid (GHS definition)
8 Self-reactive substances and mixtures	Not applicable	-	-	-	There are no chemical groups associated with explosive or self-reactive properties present in the molecule.
9 Pyrophoric liquids	Not classified	-	-	-	Not combustible (ICSC (J), 2000)
10 Pyrophoric solids	Not applicable	-	-	-	Liquid (GHS definition)
11 Self-heating substances and mixtures	Not classified	-	-	-	Not combustible (ICSC(J) (2000))
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	-	-	-	Although it reacts with water and hydrogen chloride gas occurs, the gas is noncombustible.
13 Oxidizing liquids	Classification not possible	-	-	-	No data available
14 Oxidizing solids	Not applicable	-	-	-	Liquid (GHS definition)
15 Organic peroxides	Not applicable	-	-	-	Inorganic compound
16 Corrosive to metals	Classification not possible	-	-	-	Although HSDB (2003) and ICSC (J) (2000) have the statement which indicates corrosion behavior, since there is no test data and data is insufficient, it cannot be classified.

### Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 2	Skull and crossbones	Danger	Fatal if swallowed	SPECIES: Rat; ENDPOINT: LD50; VALUE: 48 mg/kg; REFERENCE SOURCE: RTECS (2004)
1 Acute toxicity (dermal)	Category 2	Skull and crossbones	Danger	Fatal in contact with skin	It is based on rat dermal LD50 = 80mg/kg (RTECS, 2004).
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	From the description that this product stimulates (seriously) the human skin (ICSC, 2000;HSDB, 2003), it was set to category 2.
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	Due to the description that this product irritates (seriously) to human eyes (ICSC, 2000;HSDB, 2003), it was classified into Category 2A.
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 : it is not a deterministic conclusion (ATSDR, 2005; HSG, 1992) although there is no knowledge of the quality of a genuine article itself and skin sensitization may be shown to humans as an inorganic arsenic compound, in addition, it was presupposed that it cannot classify from the description in the humans of EHC 224 (2001) "development of the skin sensitization of inorganic arsenic is rare" since data is insufficient.
5 Germ cell mutagenicity	Category 2	Health hazard	Warning	Suspected of causing genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	It was set as Category 2 from the positivity (RTECS, 2004) in the mouse peripheral blood small core examination.

6	Carcinogenicity	Category 1A	Health hazard	Danger	May cause cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	Arsenic and arsenic compound are categorized into the human carcinogens in IARC Suppl.7 (1987), ACGHI-TLV (2004), and MAK/BAT (2004). So it was classified into Category 1A.
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	It was considered as category 2 based on the description that "In animal experiments, a possible that inducing malformation to humans is suggested" in ICSC (2000) of Priority 2 document, and "reproductive effect is suggested" about arsenic and an arsenic compound about a human of EHC 224 (2001) in Priority 1 document. And knowledge in animal "fetus toxicity and teratogenicity at dose in which the maternal toxicity is observed". In addition, there is the description that "the conclusion which inorganic arsenic is not teratogen in humans is advocated" in Catalog of teratogenic agents (2004) equivalent to Priority 1.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (digestive system, cardiovascular system, nervous system, kidneys, liver, respiratory)	Health hazard	Danger	Cause damage to organs (digestive system, cardiovascular system, nervous system, kidneys, liver, respiratory)	The substance was classified as Category 1 (gastrointestinal system, cardio-vascular system, nervous system, kidneys, liver, respiratory system) based on the following reports that it affects the gastrointestinal system, cardio-vascular system and central nervous system and may cause serious gastroenteritis, bodily fluid and electrolyte losses, cardiac problems and convulsions, and cause severe irritation to the airways (ICSC, 2000), and that it affects the heart, liver, kidneys, pancreas and stomach, and causes irritation to the airways (HSDB, 2003), and that in the forms of the arsenic and inorganic arsenic compounds it causes "symptoms in the gastrointestinal organs, disorders in the functions of the cardio-vascular and nervous systems, myelosuppression, alteration in the blood system and nephropathy" in humans (EHC 224 (2001)) and a similar report in PIM (Poisons Information Monographs) G042 (WHO/IPCS, 1996), and that it affects the liver, upper airways and lungs (ACGIH (7th, 2001)).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (digestive system, nervous system, blood system, cardiovascular system, kidneys, liver, skin, respiratory organs)	Health hazard	Danger	Causes damage to organs (digestive system, nervous system, blood system, cardiovascular system, kidneys, liver, skin, respiratory organs) through prolonged or repeated exposure	Based on the description that it affects mucosa, the skin, the peripheral nervous system, liver, and marrow, and pigment disorders, hyperkeratosis, nasal septal perforation, neuropathy, liver damage, and anemia may be occurred (ICSC, 2000), the description in the humans about arsenic and inorganic arsenic compounds, "gastrointestinal disturbances, neuropathy, affect to blood systems, and disorders of cardiovascular systems, kidney, and liver were observed in the long term administration of inorganic arsenic. Target organ are gastrointestinal, heart, brains and kidney. The skin, marrow and peripheral nerves were also affected." (EHC 224 (2001), and PIM (Poisons Information Monographs) G042 (WHO/IPCS, 1996)) and the description of effect on the top respiratory tract and lungs (ACGIH (7th, 2001)), therefore it was classified into Category 1 (digestive tract, cardiovascular systems, nervous systems, kidney, liver, blood systems, skin, respiratory system).
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)	Classification not possible	-	-	-	Insufficient data available.
11 Hazardous to the aquatic environment (chronic)	Classification not possible	-	-	-	Classification not possible due to lack of data