

GHS Classification

ID1092

CAS 12279-90-2

Physical Hazards

Tetraarsenic tetrasulfide

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

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	-	-	-	Solid (GHS definition)
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Solid (GHS definition)
5 Gases under pressure	Not applicable	-	-	-	Solid (GHS definition)
6 Flammable liquids	Not applicable	-	-	-	Solid (GHS definition)
7 Flammable solids	Not classified	-	-	-	CHRIS-Chemical Hazards Response Information System (U. S.DOT/U.S.Coast Guard, 1999) has the statement that it is nonflammable (as CAS No.1303-32-8). It was classified as out of Category. However, Merck (13th, 2001) also has the description "it ignites at elevated temperatures."
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 applicable	-	-	-	Solid (GHS definition)
10 Pyrophoric solids	Not classified	-	-	-	Not classified because of "Non-combustible" (CHRIS-Chemical Hazards Response Information System, U.S.DOT/U.S.Coast Guard, 1999, as CAS No.1303-32-8) though "It ignites at a high temperature." (Merck, 13th, 2001)
11 Self-heating substances and mixtures	Not classified	-	-	-	CHRIS-Chemical Hazards Response Information System (U. S.DOT/U.S.Coast Guard, 1999) has the statement with nonflammable (as CAS No.1303-32-8), and it carried out outside of category.
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	-	-	-	Stable to water (insoluble in water)
13 Oxidizing liquids	Not applicable	-	-	-	Solid (GHS definition)
14 Oxidizing solids	Not applicable	-	-	-	Inorganic compounds containing no oxygen and halogen.
15 Organic peroxides	Not applicable	-	-	-	Inorganic compound
16 Corrosive to metals	Classification not possible	-	-	-	Test methods applicable to solid 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	-	-	-	Without data. [Note] The datum on the "health hazards" of this product is the same as ID 1093 (sulfides arsenic, As ₂ S ₂ , CAS 1303-32-8).
1 Acute toxicity (dermal)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Solid (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 3	-	Warning	Causes mild skin irritation	The knowledge of this product was not acknowledged. But it was judged to have slight irritation, and it was set to category 3 from the description which indicates that an inorganic arsenic had irritation (DFGOT 21, 2005).
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	Although there was no evidence of this product, due to the description that the arsenic compounds particulate irritates to the eye (DFGOT 21, 2005), it was classified into Category 2B.
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	Classification not possible	-	-	-	Without data. In addition, arsenic and inorganic arsenic compound are classified into the germ-cell mutagenicity category 3A (equivalent for GHS Category 1B-2) in Germany DFG (MAK/BAT, 2005).

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	Although the knowledge of this product was not observed, it was considered as Category 2 based on the description related to human of EHC 224 (2001) which is Priority 1 document, about arsenic and arsenic compound, "the effect on reproduction is suggested", and knowledge of animals "fetus toxicity and teratogenicity in dose in which maternal toxicity is observed". In addition, there is the description that "the conclusion which is 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)	Although there was no information about this substance, the substance was classified as Category 1 (gastrointestinal system, cardio-vascular system, nervous system, kidneys, liver, respiratory system) based on the report 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 based on a similar report in PIM (Poisons Information Monographs) G042 (WHO/IPCS, 1996). In addition, there is a report in ACGIH (7th, 2001) that it affects the liver, upper airways and lungs.
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	Although the knowledge of this product was not observed, based on the description in the humans about arsenic and inorganic arsenics 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 upper 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	-	-	-	No data available
11 Hazardous to the aquatic environment (chronic)	Classification not possible	-	-	-	No data available.