

GHS Classification

ID580

Phosphorous trichloride

CAS 7719-12-2

Date Classified: May 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	-	-	-	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 (Hommel, 1991).
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	-	-	-	Non-combustible (Hommel (1991))
10 Pyrophoric solids	Not applicable	-	-	-	Liquid (GHS definition)
11 Self-heating substances and mixtures	Not classified	-	-	-	Non-combustible (Hommel, 1991)
12 Substances and mixtures, which in contact with water, emit flammable gases	Category 1	Flame	Danger	In contact with water releases flammable gases which may ignite spontaneously	It is based on the statement that it reacts violently with water, generates inflammable Phosphine with fever, and has the possibility of fire and explosion (NFPA (13th, 2002)), and accompanied by generating of a diphosphan with ignitability (Bretheric (J) (5th, 1998)).
13 Oxidizing liquids	Classification not possible	-	-	-	Classification not possible due to lack of data on oxidation nature, though compounds containing chlorine.
14 Oxidizing solids	Not applicable	-	-	-	Liquid (GHS definition)
15 Organic peroxides	Not applicable	-	-	-	Inorganic compound
16 Corrosive to metals	Classification not possible	-	-	-	No data available

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	From oral, rat: 18mg/kg (RTECS (2004)), it was set as Category 2. There were two reports and both were priority 2, the higher one of toxicity was adopted.
1 Acute toxicity (dermal)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: dust, mist)	Category 2	Skull and crossbones	Danger	Fatal if inhaled	It was classified as Category 2 based on rat LC50: 104ppm/4h (ACGIH (2001)).
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Category 1A	Corrosion	Danger	Causes severe skin burns and eye damage	Since severe corrosiveness with 60 second exposure on rabbits (IUCILID (2000)), severe irritation on human (ACGIH (2001)) and severe irritation or corrosive on humans (HSDB (2005)) are reported, and also since the UN classification is subsidiary risks class 8, it was classified as Category 1A.
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	There is a statement that corrosive to the human eye (ICSC (J), (1997)). Since skin caustic / irritant was categorized into Category 1A, it was set as Category 1.
4 Respiratory/skin 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	Not classified	-	-	-	The substance was regarded as outside the categories. Because of the reports indicating negative results in the chromosome aberration tests and micronucleus tests using both mouse bone-marrow cells and human peripheral blood lymphocytes (IUCILID (2000)). The substance was also negative in the in vitro Ames test (IUCILID (2000)).
6 Carcinogenicity	Classification not possible	-	-	-	Classification not possible due to lack of data and reports
7 Toxic to reproduction	Classification not possible	-	-	-	Although there is a statement which was normal in mouse and rat sperm and did not have changes of fetal bone of rat (IUCILID (2000)), since data is insufficient, it cannot classify.

8	Specific target organs/systemic toxicity following single exposure	Category 1 (respiratory)	Health hazard	Danger	Cause damage to organs (respiratory)	In the human inhalation exposure, the irritation to throat and pharyngeal mucous membrane, bronchitis, breathing difficulty, nausea, reduction in lung capacity (ACGIH (2001)), pulmonary edemas (ICSC (J) (1997)), burning eye or throat, chest pressure sensation, photophobia, heartache, wheezing, itchiness, blar eye feeling, and lung function abnormalities (IUCRID (2000)) were reported. So it classified into Category 1 (respiratory system). About the irritations of the skin and eye, they are described in the section of skin corrosivity/skin irritation, and eye irritation.
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (respiratory organs); Category 2 (bone)	Health hazard	Danger; Warning	Causes damage to organs (respiratory organs) through prolonged or repeated exposure; May cause damage to organs (bone) through prolonged or repeated exposure	Because of the statement (ACGIH (2001)) which causes a disorder in the respiratory systems, such as bronchitis, emphysema, and decreased lung function in repeated inhalation exposure of humans, it was classified in Category 1 (respiratory systems). Moreover, although the osteomyelitis of the jawbone called "Phossy jaw (phosphorus necrosis)" was reported (HSDB (2005)) , since it was priority2, it was classified in 2 (bone tissue).
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