GHS Classification

ID1009 **tris(2,3-dibromopropyl) phosphate**

CAS 126-72-7 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	–	–	–	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	–	–	–	Flash point: >93degC
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	Classification not possible	–	–	–	No data available
10	Pyrophoric solids	Not applicable	–	–	–	Liquid (GHS definition)
11	Self-heating substances and mixtures	Classification not possible	–	–	–	Test methods applicable to liquid substances are not available
12	Substances and mixtures, which in contact with water, emit flammable gases	Classification not possible	–	–	–	No data available
13	Oxidizing liquids	Classification not possible	–	–	–	No data available
14	Oxidizing solids	Not applicable	–	–	–	Liquid (GHS definition)
15	Organic peroxides	Not applicable	–	–	–	Containing no -O-O- structure
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 4	Exclamation mark	Warning	Harmful if swallowed	Rat LD50 value: 5.24g/kg (EHC 173, 1995; IARC 20, 1979), 1.88g/kg and 3.12g/kg (all data from EHC 173, 1995) and 810mg/kg (MOE Risk Assessment the 3rd volume, 2004). Calculated based on the data above. It was classified to category 4 based on the acquired calculated value of 1202mg/kg.
1	Acute toxicity (dermal)	Not classified	–	–	–	Based on rabbit LD50: 17.6g/kg (EHC173, 1995) and >8g/kg (EHC173, 1995;IARC 20, 1979), it was set as the outside of Category.
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	Not classified	–	–	–	Based on description without irritation by the skin irritation test using a rabbit (EHC 173, 1995;IARC 20, 1979-ATTY 4th, 1994), it was carried out the outside of Category.
3	Serious eye damage / eye irritation	Not classified	–	–	–	Based on the descriptions that it showed no irritant property in the eye irritation tests applied to the eyes of the rabbits (EHC 173 1995; IARC 20, 1979-ATTY 4th, 1994), we classified it as Out Of Category.
4	Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Not classified	–	–	–	Respiratory organ: No data. Skin : Based on the description that skin sensitization property was not acknowledged (EHC 173, 1995; IARC 20, 1979; PATTY 4th, 1994) in the Landsteiner method (Modified Landsteiner Methods) using the guinea pigs, and based on the several sorts of reports which examined skin sensitization in human, potential of skin sensitization to the humans of this substance was evaluated to be low (EHC 173, 1995), therefore we classified it to be Out Of Category.
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)	Although there is no in vivo mutagenicity test data using a germ cell, it is negative in the chromosomal aberration test using the rat marrow cell which is the in vivo mutagenicity test using a somatic, and it is indicated that the hamster is positive and the mouse is weakly positive in the small core examination which used the hamster and the mouse (all are EHC 173, 1995;IARC 20, 1979; IARC 71, and 1999). But there was no data of the in vivo heredity toxicity examination by the productive cell. So it is set as Category 2. In addition, in the DNA damage examination and in vitro mutagenicity test using a somatic which are in vivo genotoxicity studies, the examination data of the other kinds in which a positive is indicated is obtained (EHC 173, 1995;IARC 20, 1979;IARC 71, 1999).

6	Carcinogenicity	Category 1B	Health hazard	Danger	May cause cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	Since it was classified into group 2A in IARC (IARC 71, 1999), 2A in Japan Assoc. of Industrial Health (industrial hygene academic society recommentation, 2005), and R in NTP, it was considered as Category 1B.
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the undorn child	There are effects on male genitalia that it is observed that decreased weight of testis, epididymis and prostate, atrophy, reduction of spermatogenesis ability, decrease germ cell count of tubulus seminiferus contortus and reduction of sperm motility in male rat repeated intraperitoneal injection test (30 times/72 days), and that increase of abnormal spermatozoa in male rat after 5-days intraperiotoneal injection and 35 days breeding (all are EHC 173 and 1995). On the other hand, it was classified into Category 2 based on the description that there is increases of skeletal mutation but no teratogenecity and fetal dysgenesis at dose causing general toxicity to maternal animals to pregnant rat oral administration test in fetal period of organogenesis (EHC 173, 1995;IARC 70, 1999).
8	Specific target organs/systemic toxicity following single exposure	Classification not possible	-	-	-	No data available.
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (kidneys)	Health hazard	Warning	May cause damage to organs (kidneys) through prolonged or repeated	We classified it into Category 2 (kidney) based on the description that in the 90-days repeated oral administration test of a rat, chronic nephritides, such as the denaturation, hyperplasia, and dysplasia of the kidney nephric tubule epithelial cells was observed with the dosage of the guidance value of Category 2 (EHC 173, 1995).
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)	Category 2	-	-	Toxic to aquatic life	It was classified into Category 2 from 96-hour EC50=3100microg/L of algae (Scenedesmus) (MOE Risk Assessment No.3, 2004).
11	Hazardous to the aquatic environment (chronic)	Category 2	Environment	-	Toxic to aquatic life with long lasting effects	Classified into Category 2, since acute toxicity was Category 2 and not rapidly degrading (BOD: 2% (existing chemical safety inspections data)), though less bio-accumulative (BCF=4.3 (existing chemical safety inspections data)).