

GHS Classification

ID1131

bis(acetato-O)dioxouranium

CAS 541-09-3

Date Classified: Mar. 15, 2007 (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	-	-	-	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	-	-	-	Not classified because of "Almost non-combustible" (HSDB, 2005)
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 "Almost Non-combustible" (HSDB, 2005)
11 Self-heating substances and mixtures	Not classified	-	-	-	Not classified because of a almost non-combustible substance(HSDB, 2005)
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	-	-	-	Stable to water. (There is a literature with the description that dihydrate of this product is "soluble to the water".)
13 Oxidizing liquids	Not applicable	-	-	-	Solid (GHS definition)
14 Oxidizing solids	Classification not possible	-	-	-	No data available
15 Organic peroxides	Not applicable	-	-	-	Organic compounds containing no -O-O- structure
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)	Category 3	Skull and crossbones	Danger	Toxic if swallowed	There is no information about this substance. But we calculated the LD50 value of this substance using the molecular weight (Uranyl acetate:388, Uranyl acetate (dihydrate): 424), and it was classified as Category 3. The LD50 of this substance is about 187mg/kg, which was converted from the LD50 value in rats for the dihydrate of uranyl acetate: 204mg/kg (RTECS (1998)). [Note] We made the health hazard-related classification by using information about uranyl acetate (dihydrate) (ID1130, CAS#6159-44-0), because there is little information about this substance.
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 2	Exclamation mark	Warning	Causes skin irritation	Since there was description that human skin is stimulated (HSDB (2002), HSFS (2000)), it was set as Category 2.
3 Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	Due to the description that it irritates to human eye (HSDB(2002), HSFS(2000)), it was classified into Category 2A-2B. In addition, it is difficult to subdivide the Category of this data.
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)-	No data available

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)	Since the chromosomal abnormalities was acknowledged in the uranium compounds in peripheral lymphocyte of workers by which occupational exposure was carried out (PATTY (5th, 2001)), it was set as Category 2 according to classification guidelines.
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)	As uranium and its soluble and insoluble compounds, it was categorized into A1(IARC78 (2001)) in ACGIH, and as radionuclide which deposited in the body, it was categorized into 1 in A1 (ACGIH (7th, 2001)). So it was classified into Category 1A.
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	In administration in pregnant perinatal mice test, falling of average number of child, survival rates, childcare rate and pregnancy rate was observed (the toxicity to parent animals is unknown) and in tetis toxicity study and a mating trials with the non-taken female, the effects of father animal tetis was acknowledged only the highest concentrations. However, the thing for which the significant decline in a pregnancy rate was acknowledged in all 4 dose although there was no dose dependent (toxicity to a father animal was only acknowledged by highest dosesignificant as weight decrease), (all PATTY(s) (5th, 2001)). And the dose which maternal toxicity (decrease of weight and intakes) is regarded as a teratogenicity study, increase of cleft palates and skeletal mutation was acknowledged (Catalog of teratogenic agents (2004), RTECS (1998)). So it was set as Category 2.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (kidneys); Category 3 (respiratory tract irritation)	Health hazard	Danger	Cause damage to organs (kidneys); May cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract	The substance was classified as Category 1 (kidneys) because there is a report in Priority 1 of the effects on the kidneys, such as necrosis of the proximal convoluted tubules and collecting tubules, after exposure to the uranium compound in humans (ACGIH (7th, 2001)). The substance was also classified as Category 3 (airway irritant) because its dust causes irritation to nose and throat (HSDB (2002)).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (kidneys)	Health hazard	Danger	Causes damage to organs (kidneys) through prolonged or repeated exposure	Since there is description that the major target organ of the chronic toxicity in a uranium compound was the kidney (mainly proximal tubule) (in Priority 1,ACGIH (7th, 2001)), it was classified into Category 1 (kidney).
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 LC50=3.05mg/L of fishes (Zebrafish) (AQUIRE, 2003).
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 it is a metallic compound, behavior in water and bioaccumulative potential are unknown.