

GHS Classification

ID835

(N-(1,1,2,2-Tetrachloroethylthio)-1,2,3,6-tetrahydrophthalimide); Captafol

CAS 2545-06-1

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	-	-	-	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	Classification not possible	-	-	-	No data available
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 ignite spontaneously on coming into contact with air at normal temperatures
11 Self-heating substances and mixtures	Classification not possible	-	-	-	No data available
12 Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	-	-	-	The chemical structure of the substance does not contain metals or metalloids(B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At).
13 Oxidizing liquids	Not applicable	-	-	-	Solid (GHS definition)
14 Oxidizing solids	Not applicable	-	-	-	Organic compounds containing oxygen and chlorine and these elements are chemically bonded only to carbon and hydrogen (but not to other elements).
15 Organic peroxides	Not applicable	-	-	-	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 5	-	Warning	May be harmful if swallowed	From description that rat LD50 values: 2500 to 6200 mg/kg (JMPR (1969), PIM 097 (1990), IARC 53 (1991)), 5000mg/kg (JMPR, 1969), and 2500 to 6200 mg/kg (AI exchange: 2000 to 4960 mg/kg) about 80% Wetttable Powder, statistics calculation was done. It was set as Category 5 based on the calculated value 3067mg/kg.
1 Acute toxicity (dermal)	Not classified	-	-	-	Based on the description that >15400mg/kg (AI reduced value: >12321mg/kg) about rabbit LD50 value: 15400mg/kg (IARC 53 (1991)) and 80% Wetttable powder, it was set as the outside of Category
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	It was set as Category 2 by description that there was moderate irritation to the skin of the rabbit (ACGIH (7th, 2001)), and by description that many stimulative and allergic examples of contact dermatitis development of symptoms were reported in the agriculture and forestry pursuers of handling KYAPUTAFORU in Kumamoto, other domestic areas, and New Zealand (PIM 097 (1990), ACGIH (7th, 2001)).
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	There is the description that in the test applied to the eye of the rabbit, corneal opacities, irritation responses to iris and conjunctival continued 21 days after the application (PIM(2005)), and the description that there is a report in humans occupational exposure causes conjunctivitis and eyelid edema (PIM 097 (1990)). Based on these description (in the ACGIH (7th, 2001)), it was set as Category 2A.
4 Respiratory/skin sensitization	Respiratory sensitization: Category1; Skin sensitization: Category1	(Respiratory sensitization)Health hazard; (Skin sensitization)Exclamation mark	(Respiratory sensitization)Danger; (Skin sensitization)Warning	(Respiratory sensitization)May cause allergy or asthma symptoms or breathing difficulties if inhaled; (Skin sensitization)May cause allergic skin reaction	Respiratory organ :It was classified as Category 1 based on the description of PATTY (4th, 1994) and ACGIH (7th, 2001) that "Captafol has skin sensitizing effect and respiratory sensitization effect in human." Cutaneous : It was categorized as Category 1 based on the descriptions in PIM 097 (1990), IARC 53 (1991), PATTY (4th, 1994) and ACGIH (7th, 2001) that many cutaneous sensitization properties and optical allergic reactions were acknowledged in the farmers of Japan, silviculture workers of New Zealand, and the researchers of the chemistry maker laboratories, and the descriptions of PATTY (4th, 1994) and ACGIH (7th, 2001) that "Captafol has cutaneous sensitizing property and respiratory sensitizing property in human."

5	Germ cell mutagenicity	Category 1B	Health hazard	Danger	May cause genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	Although the result of dominant lethal test on mouse, an in vivo generation mutagenicity test on germ cells, was negative (JMPR (1997) and IARC 53 (1991)), the results of the dominant lethal test on rats, both IP injection and oral administration, were weak positivities (IARC 53 (1991)). So it was classified as Category 1B. In addition, it is positive in the test systems which does not include metabolic activation system in the chromosomal aberration test and micronucleus test which are in vitro mutagenicity test using somatic cells (IARC 53 (1991)).
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)	It was classified into A4 in ACGIH (7th, 2001), but it was classified into 2A in IARC 53 (1991) and was classified into the category 2 in EU (an evaluation year was unknown). So it was considered as Category 1B, prioritizing evaluation of IARC.
7	Toxic to reproduction	Not classified	-	-	-	Since malformation and toxicity was not observed of fetuse in rat teratogenicity test with the dose affecting maternal, and only the minimum effect was observed in the fetal in the rat two-generation reproduction study at the dose affecting maternal, it was considered as the outside of Category.
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 1 (kidneys, bladder); Category 2 (liver)	Health hazard	Danger; Warning	Causes damage to organs (kidneys, bladder) through prolonged or repeated exposure; May cause damage to organs (liver) through prolonged or repeated exposure	Based on descriptions that in study of dogs, it was observed that degeneration of the transitional-epithelium cell of the kidney and the bladder with the oral dosage of the guidance value range of Category 1 in the 12-month (IRIS, 1987 evaluation), and that in the chronic toxicity study of a rat it was observed that organization injury, such as degeneration of hepatocytes of liver and renal tubules at the dosage of the guidance value range of Category 2 in the feeding administration during two years (JMPR, 1977;IRIS, and 1987, and PATTY, 4th, and 1994), it was classified into Category 1 (the kidney, bladder) and Category 2 (liver).
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 1	Environment	Warning	Very toxic to aquatic life	It was classified into Category 1 from 96-hour LC50=20.6microg/L of fishes (Rainbow trout) (AQUIRE, 2003).
11 Hazardous to the aquatic environment (chronic)	Category 1	Environment	Warning	Very toxic to aquatic life with long lasting effects	Classified into Category 1, since acute toxicity was Category 1, supposed not rapidly degrading (BIOWIN), though supposed less bioaccumulative (log Kow=3.8(PHYSROP Database, 2005)).