

## GHS Classification

**ID572**

**chlordane , pur**

**CAS 57-74-9**

Date Classified: Apr. 20, 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	Classification not possible	-	-	-	No data available
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	Classification not possible	-	-	-	No data available
9 Pyrophoric liquids	Not applicable	-	-	-	Solid (GHS definition)
10 Pyrophoric solids	Not classified	-	-	-	Judging from the description that "it does not burn itself due to its noncombustibility" (NAERG (J), (2001)), even if it contacts air at room temperature, it does not ignite spontaneously.
11 Self-heating substances and mixtures	Not classified	-	-	-	It is based on the description "it is nonflammable and does not burn itself" (NAERG (J) (2001)).
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 chlorine (but not oxygen and fluorine) and the chlorine is chemically bonded only to carbon (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. Melting point: >55degC

**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	11 rat LD50 values corresponded (EHC 34 (1984), IARC vol.79 (2001), ACGIH (2001), JMPR 180 (1970)), and it was set as Category 4 based on 314 mg/kg from statistical calculations.
1 Acute toxicity (dermal)	Category 3	Skull and crossbones	Danger	Toxic in contact with skin	In the rat and rabbit data, lower rat LD50 value was adopted (EHC 34 (1984)). It was set as Category 3 based on LD50 = 205 mg/kg (the lower one among two LD50).
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Solid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Classification not possible	-	-	-	Since LC50 value on rodent is unknown, it cannot be classified only based on the data on cats (RTECS (2005)).
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 is reported that when human skin was irritated by exposed (HSDB (2005), HSFS (2005)), a feeling of warmth, itching, and rash often appear (ATSDR (1994), HSFS (2005)). Animal data which follows standard skin irritation test is not found. But in single or repeated exposure tests, description that "a severe irritation is caused" is seen about skin symptoms (EHC 34 (1984)). Based on what mentioned above, this product is thought to have irritativeness and it was classified as Category 2.
3 Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	It was set as Category 2A-2B based on the description that stimulates eyes or mucosa according to an accident to humans (HSDB (2005), HSFS (2005)), that atomizing of the mixture which includes this product always starts conjunctivitis (ATSDR (1994)).
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)	Although several dominant lethal tests in mice (in vivo multi-generation mutagenicity tests) were negative (EHC 34(1984), IARC 79(2001)), there are positive results from the in vivo micronucleus test and chromosome aberration test (the in vivo mutagenicity test in somatic cells) (ATSDR (1994), IARC 79(2001)). Some in vivo genotoxicity tests (DNA damage tests, sister chromatid exchange tests) are also positive (IARC 79(2001)). So the substance was classified as Category 2.
6	Carcinogenicity	Category 2	Health hazard	Warning	Suspected of causing cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	It was set as Category 2 based on being classified into 2B by IARC (2001), and into 2B by Japan Society for Occupational Health (2002), and being classified into A3 according to ACGIH (1996), respectively.
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	With exposure in perinatal or lactational periods, the increase of the child mortality rate during lactation period is observed (ATSDR (1994), EHC 34 (1984), IRIS (1997)), and neurobehavioral effects are observed in some cases (IARC 79 (2001), ATSDR (1994)). Development of general toxicity of the examination substance is also described at such dose (EHC 34 (1984), IRIS (1997)). Therefore, it was classified into Category 2. In addition, although the increase in mortality rate of child during lactation period is observed, there is also a report that indicates the possibility that it is the influence via lactation (ATSDR (1994), IRIS (1997)).
8	Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system, liver)	Health hazard	Danger	Cause damage to organs (nervous system, liver)	There are many reports of neurological symptoms, such as spasm, vomiting, ataxia, and distraction after being exposed to humans (IARC 79 (2001), EHC 34 (1984), PIMs (2000)). Moreover, the elevation of liver enzymes is reported (IARC 79 (2001)). On the other hand, it is described that the significant increase in the lipid peroxidation of the liver was observed in the rat (IARC 79 (2001)). Based on these findings in human and animal it was classified into Category 1 (nervous systems, liver).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (liver, nervous system, brainblood vessels, blood)	Health hazard	Danger	Causes damage to organs (liver, nervous system, brainblood vessels, blood) through prolonged or repeated exposure	In two or more examinations using a rat, a mouse, and a dog, a rise of liver enzymes, an increase in liver weight, and the hepatocytes enlargement accompanied by histologic changes, such as uniformity, margination of cytoplasm, and a necrosis, are seen with a low doses (IARC 79 (2001), EHC 34 (1984), JMPR 080 (1967), and IRIS (1997)), moreover, a spasm, a trembling, the influence on autonomic nerves and a sense organ, etc. are seen (IARC 79 (2001), EHC 34 (1984)). Moreover, in investigation of the humans who received prolonged exposure by aerosols, neurophysiological effect is ascertained (IRIS (1997), JMPR 080 (1967)), and there is also a report (IRIS (1997)) of a cerebrovascular disease, anemia and a decrease of platelets by occupational exposure or epidemiological study. It was classified in Category 1 (liver, nervous systems, cerebrovascular, blood) based on the above result.
10	Aspiration hazard	Classification not possible	-	-	-	Insufficient 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=0.4microg/L of Crustacea (Pink shrimp), and others (EHC34, 1984).
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 is Category 1, not rapidly degrading (BOD: 0% (existing chemical substances safety inspections data)), and bioaccumulative (BCF=27900 (existing chemical substances safety inspections data)).