

GHS Classification

ID112

Atrazine

CAS 1912-24-9

Date Classified: Aug. 18, 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	-	-	-	Although ICSC (J) (1994) has the description "it is a flammable under specific conditions", there is no test data and it cannot be classified.
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	-	-	-	Non-pyrophoric when in contact with air at a room temperature and used as agricultural chemicals.
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 chlorine and the chlorine is chemically bonded only to carbon (but not to other elements).
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. Non-corrosive to metals (HSDB, 2004)

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	The higher toxicity (female 3000mg/kg) was adopted among male LD50 = 3520 mg/kg and female 3000 mg/kg of the oral administration examination using a rat (Agricultural Chemical Registration Data, 2002), and it was set as Category 4.
1 Acute toxicity (dermal)	Not classified	-	-	-	It was set as the outside of Category. Since fatal cases was not seen 5000mg/kg in rat dermal administration test LD50 >2000mg/kg (Agricultural Chemical Registration Data, 2002) and >5000 mg/kg (Agricultural Chemical Registration Data, 1987).
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)	Category 5	-	Warning	May be harmful if inhaled	In both LC50 >5.82mg/L (Agricultural Chemical Registration Data, 2002) and >5.148mg/L (Agricultural Chemical Registration Data, 1991) of an inhalation exposure test using rats, no death cases were reported. But the oral acute toxicities of category 4 were indicated, it was set as Category 5. In addition, the saturated concentration of this product is 3.81*10 ⁻⁴ ppm (equivalent 3.36*10 ⁻⁶ mg/L), and it is presumed that all inhalation tests are done in dust mists conditions.
2 Skin corrosion / irritation	Not classified	-	-	-	Since irritation was not observed in the rabbit skin primary irritation test with 50% hydrated agent was classified as in GLP (Agricultural Chemical Registration Data, 1989), it was classified as out of Category.
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	Since mild irritation was admitted in the rabbit eye membrane primary irritation examination by the 50% wettable powder carried out in GLP (Agricultural Chemical Registration Data, 1989), it was set as Category 2B.
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Category 1	(Respiratory sensitization)-; (Skin sensitization)Exclamation mark	(Respiratory sensitization)-; (Skin sensitization)Warning	(Respiratory sensitization)-; (Skin sensitization)-; (Skin sensitization)May cause allergic skin reaction	Respiratory sensitization: No data. Skin sensitization: Classified as Category 1 because positive finding was obtained by the skin sensitization test (Maximization method) using guinea pigs in accordance with the OECD Guidelines (Agricultural Chemical Registration Data, 1997). In addition, the skin sensitization test with 50% wettable powder by the Buehler method using guinea pigs showed negative (Agricultural Chemical Registration Data, 1997).
5 Germ cell mutagenicity	Not classified	-	-	-	The substance was regarded as outside the categories by the guidelines. Because the results of the chromosome aberration test using mouse spermatocytes, the micronucleus test in Chinese hamster bone-marrow cells (Agricultural Chemical Registration Data, 1981) and the in vivo micronucleus test using mouse bone-marrow cells (Agricultural Chemical Registration Data, 2005) are negative. And the in vitro mutagenicity test using bacteria (Agricultural Chemical Registration Data, 1981, 2005) is also negative.

6	Carcinogenicity	Not classified	-	-	-	Since it was classified into Group 3 according to IARC (IARC 73, 1999), it was set as the outside of Category. In addition, in pesticide registration trial in Japan, incidence of mammary gland tumors increased for females which received 70 – 1000ppm in the carcinogenicity tests using rat (Agricultural Chemical Registration Data, 1987). But in the test using rat which was performed in after years, generating of the tumor relevant to dose even at the dose of a maximum of 400ppm was not seen (Agricultural Chemical Registration Data, 1995). Moreover, in carcinogenicity tests using mice, generating of the tumor relevant to administration up to 3000ppm was not observed (Agricultural Chemical Registration Data, 1989). And as a result of estimation by the pesticide residues safety assessment committees, it is concluded that there is no fear of carcinogenicity to humans.
7	Toxic to reproduction	Not classified	-	-	-	Reproductive toxicity was not observed in the two-generation reproduction study using rats (Agricultural Chemical Registration Data, 1989). However, in the teratogenicity test, in the highest dose group where mild toxic effect was observed in the mother animals, the increase in the incomplete ossification of embryo was observed (Agricultural Chemical Registration Data, 1989). Moreover, also in teratogenicity test on rabbits, in the highest dose group where mild toxic effect was observed in the mother animals, the increase of delayed ossification rate of embryo were observed (Agricultural Chemical Registration Data, 1987). Since these were slight influences, they were out of the Category according to the guideline. In addition, as a result of being evaluated in the Committee for Safety Evaluation of Residual Pesticides, it is concluded that there is no effect of reproductive toxicity in humans.
8	Specific target organs/systemic toxicity following single exposure	Not classified	-	-	-	In oral study in rats, some symptoms such as hypoactivity, ataxia, emaciation, lacrimation, nasal discharges, polyuria, a ptosis, and salivation, are observed (Agricultural Chemical Registration Data 2002), and in inhalation exposure test symptoms such as hypoactivity, lacrimation, nasal discharges, polyuria, blepharoptosis, salivation, a bowing position, dyspnea, and less spontaneous activity, was observed in inhalation exposure studies (Agricultural Chemical Registration Data, 1991, 2002). But all applied dose were beyond the range of guidance value. Therefore, they were out of the Category.
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (heart, spleen)	Health hazard	Warning	May cause damage to organs (heart, spleen) through prolonged or repeated exposure	In the subacute toxicity study (52-week dose) using dog, electrocardiographic abnormalities, atrium extension, and atrium line denaturation were observed at 1000 ppm (approximately 34mg/kg/day) (Agricultural Chemical Registration Data, 1991). This dose is guidance value within the Category 2. Moreover, in the subacute toxicity study (13-week treatment) using rat, the hemosiderin deposition of the spleen was observed at 500 ppm (equivalent: 34.0 mg/kg (male), 35.3 mg/kg (female)) (Agricultural Chemical Registration Data, 2005). This dose is also within the Category 2 in a guidance value, and it was classified into Category 2 (heart, spleen) based on the above results.
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 72-hour EbC50=0.043mg/L of algae (Green algae) (Agricultural Chemical Registration Data, 2005).
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, not rapidly degrading (BOD: 1% (existing chemical safety inspections data)), though supposed less bioaccumulative (log Kow=2.61 (PHYSPROP Database, 2005)).