GHS Classification

ID698 Phthalonitrile

CAS 91-15-6 Date Classified: Mar. 23, 2006 (Environmental Hazards: Feb. 10, 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	–	–	–	Flash point: >580degC (ICSC, 2004)
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 metaloids(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 no oxygen, fluorine and chlorine.
15	Organic peroxides	Not applicable	–	–	–	Organic compounds containing no -0-0- 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	It was set as Category 3 based on rat LD50= 86.1mg/kg. This value was calculated by four data (85mg/kg, 85 mg/kg, 125 mg/kg, and 125 mg/kg) (the Health, Labor and Welfare Ministry reports (2005), SIDS (2001)).
1	Acute toxicity (dermal)	Classification not possible	–	–	–	Although there are data (IUCLID (2000)) of rat, rabbit and cat, since test concentration of rat is unknown. LD50 value is not obtained in both rabbit and cat, it cannot be classified due to the insufficient data.
1	Acute toxicity (inhalation: gas)	Not applicable	–	–	–	Solid (GHS definition)
1	Acute toxicity (inhalation: vapour)	Classification not possible	–	–	–	Since LC50 is not obtained with saturated vapor pressure concentration (39.6ppm) in seven data (SIDS (2001), IUCLID (2000)), it cannot be classified due to data insufficiency.
1	Acute toxicity (inhalation: dust, mist)	Classification not possible	–	–	–	No data available
2	Skin corrosion / irritation	Not classified	–	–	–	Slight irritation was reported for the 24-hour test on guinea pigs. But based on the results that irritation was not observed in four rabbit examinations (SIDS (2001), IUCLID (2000)), it was classified as out of Category.
3	Serious eye damage / eye irritation	Not classified	–	–	–	Since irritation was not seen by the test (SIDS (2001), IUCLID (2000)) using a rabbit, it was carried out the outside of Category.
4	Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Not	(Respiratory sensitization)–; (Skin sensitization)–	(Respiratory sensitization)–; (Skin sensitization)–	(Respiratory sensitization)–; (Skin sensitization)–	No data available
5	Germ cell mutagenicity	Not classified	–	–	–	Based on the negative result (SIDS (2001)) by the in vivo micronucleus test of the mouse and lymphocyte chromosomal analysis of the exposed humans (somatic cell in vivo mutagenicity test), we classified it as Out Of Category.
6	Carcinogenicity	Classification not possible	–	–	–	Although the tumor was seen by the examination (SIDS (2001)) of a rat and a mouse, it is reported that the frequency of origin of controls is not indicated. Although a tumor is looked at by the rat at IUCLID (2000), it is indicated that it is too inadequate data. Therefore, since data was insufficient, it was presupposed that it cannot classify.
7	Toxic to reproduction	Not classified	–	–	–	Based on not observing of reproductive toxicity in rat administration test (Ministry of Health, Labour and Welfare (2005), SIDS (2001)) , it was considered as on the outside of Categry.

8	Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system)	Health hazard	Danger	Cause damage to organs (nervous system)	There is the movement disorder in t wo tests n the concentration in the range of the guidance value in the Category 1(the Health, Labor and Welfare Ministry reports (2005), RTECS (2004)). And there is spasm in one test (IUCLID (2000)). Vertigos, nausea, vomiting, headaches, unconsciousness, and epileptic episode were reported by exposure of humans (SIDS (2001)). It is classified into Category 1 (nervous system) based on these descriptions.
9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	–	–	–	Although some effects were observed to the liver and the kidney in the combined test of two reproduction tests (the Ministry of Health and Welfare (2005), SIDS (2001)), affect against specific organ is not seen in other three examinations (IUCLID (2000), SIDS (2001)). However, each examination was in the dosage of guidance value within the limits of Category 1, and since any test did not have higher-dose data, it was considered that it cannot be classified.
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 3	–	–	Harmful to aquatic life	It was classified into Category 3 from 96-hour LC50=22.6mg/L of fishes (Oryzias latipes) (SIDS, 2003).
11	Hazardous to the aquatic environment (chronic)	Category 3	–	–	Harmful to aquatic life with long lasting effects	Classified into Category 3, since acute toxicity was Category 3 and not rapidly degrading (BOD: 3.3% (existing chemical safety inspections data)), though less bio-accumulative (BCF=1.3 (existing chemical safety inspections data)).