

GHS Classification

ID713

[(2-chlorophenyl)methylene]malononitrile

CAS 2698-41-1

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	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	-	-	-	Although it could be used as an aerosol, this evaluation is done with "solid" of the bulk substance.
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	-	-	-	There is no information that it ignites spontaneously.
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 (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.

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	From rat oral LD50=1325mg/kg: average of male and female (ACGIH(2004)), it was set as Category 4 .
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	-	-	-	Classification not possible due to lack of data
1 Acute toxicity (inhalation: dust, mist)	Category 2	Skull and crossbones	Danger	Fatal if inhaled	Since particulate aerosol inhalation LC50 of rat was 0.5 or less in 4-hour translation, it was set as Category 2.
2 Skin corrosion / irritation	Category 3	-	Warning	Causes mild skin irritation	Since there was a result of Mild in skin application test on rodent (RTECS (2004)), it was classified as "Category 3."
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	There is tear effect and it is used for mobs suppression. However, a sequelae does not remain and it was set as "Category 2B" by that which is judged in the experiment of the rabbit to be Mild (RTECS (2004)).
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)May cause allergic skin reaction	Since there is no information on respiratory sensitization, it cannot be classified. Since there is a report on skin sensitization(ACGIH (2001)) that the skin sensitization was observed in workers at the manufacturing site, it was referred to as Category 1.
5 Germ cell mutagenicity	Not classified	-	-	-	Since it gave negative in micronucleus test with mice bone marrow cells (ACGIH (2001)), we classified it as "Out Of Category." In addition, in the in vitro test, we found a positive report for the chromosome aberrations which used CHO (NTP TR377 (1990)).
6 Carcinogenicity	Not classified	-	-	-	There is no laboratory reports which suggests carcinogenic. And ACGIH had made the judgment of A4. It carried out "Category Outside."
7 Toxic to reproduction	Classification not possible	-	-	-	There is no effect in the inhalation exposure test to pregnancy rat and rabbit (ACGIH (2001)), but there is no exposure test data before mating. Data is insufficient and it cannot be classified.

8	Specific target organs/systemic toxicity following single exposure	Category 1 (respiratory)	Health hazard	Danger	Cause damage to organs (respiratory)	In addition to the lachrymal action, the influence (temporary ?) on the respiratory system is reported by the experiment by a human volunteer (ACGIH (2001)). Also by the animal experiments, in the range of a Category 1 guidance value, the effects on the respiratory system was reported. So it was set as "Category 1 (respiratory tracts)." Therefore, it is not adopted as Category although there may be a respiratory irritation.
9	Specific target organs/systemic toxicity following repeated exposure	Not classified	-	-	-	There was no harmful effects which needs particular reference in long-term (2W) low concentration exposure (ACGIH (2001)). Since it is data of the intraperitoneal administration, animal studies reports of adverse effects is not adopted. Since the effects on the respiratory system was taken up by single exposure, repeated exposure was considered "Outside Category."
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=220microg/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=2.76(PHYSROP Database, 2005)).