

## GHS Classification

**ID765**

**Cyclohexane**

**CAS 110-82-7**

Date Classified: Jun. 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	-	-	-	Liquid (GHS definition)
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Liquid (GHS definition)
5 Gases under pressure	Not applicable	-	-	-	Liquid (GHS definition)
6 Flammable liquids	Category 2	Flame	Danger	Highly flammable liquid and vapour	It was classified as Category 2 (GHS standard: flash point being less than 23 degC, and initial boiling point being more than 35 degC) as its flash point being -20 degC and initial boiling point 80.7 degC.
7 Flammable solids	Not applicable	-	-	-	Liquid (GHS definition)
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 classified	-	-	-	Flash point: 245-260degC(ICSC (1994), NFPA (13th, 2002), Chapman (CD-ROM ver. 13.2 2005))
10 Pyrophoric solids	Not applicable	-	-	-	Liquid (GHS definition)
11 Self-heating substances and mixtures	Not classified	-	-	-	Not classified because of UNRTDG Class: 3
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	-	-	-	Organic compounds containing no oxygen, fluorine and chlorine.
14 Oxidizing solids	Not applicable	-	-	-	Liquid (GHS definition)
15 Organic peroxides	Not applicable	-	-	-	Organic compounds containing no -O-O- structure
16 Corrosive to metals	Classification not possible	-	-	-	No data available

## Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Not classified	-	-	-	Based on LD50= 7729.9 mg/kg calculated from five data (EU-RAR (2004)) of rats, it was set as the outside of Category.
1 Acute toxicity (dermal)	Not classified	-	-	-	Based on the description that death was not observed at 2000mg/kg of dose in a rabbit (EU-RAR (2004)) , it was set as the outside of Category.
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Not classified	-	-	-	The saturated vapor pressure concentration of this product is 125743ppm, and it is thought that all inhalation tests were done with vapor. Based on LC50 of 4-hour exposure on rats >9500ppm (EU-RAR (2004)), it was classified as out of Category.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	There are statements of skin irritation on rabbits and humans (DFGOT vol.13 (1999), EU-RAR (2004), ACGIH (2002), and ICSC (J) (1994)). Although the crack and bleeding was observed on the skin by the repeated administration on rabbits, it recovered in one week after the end of medication (DFGOT vol.13 (1999)). And there is a description that when concentrate solution adhered on humans for 1 hour, it caused redness and wheal (EU-RAR (2004)), but this is also considered to be a disorder of recovery nature. It was classified as Category 2 from what mentioned above.
3 Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	Since there was a statement that in rabbits corneal cloudings, iritis, conjunctival hyperemias, and chemosis each are seen reversible (EU-RAR (2004), as well as in animals and in humans irritation is in the eye (PATTY (5th, 2001), EU-RAR (2004), ICSC (J), (1994), HSDB (2005)), it was set as Category 2A-2B.
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)-	Respiratory sensitization: No data Skin sensitization: Although a result that did not have skin sensitization in the GLP test is indicated(EU-RAR (2004)), this test is described to have been an inadequate one. On the other hand, it is indicated that there is no example in humans in the reserve column. It was decided that it could not be classified from the above information since data was insufficient.
5 Germ cell mutagenicity	Not classified	-	-	-	Based on the fact that there was no result of human over generation epidemiology, over generation mutagenicity test, and the productive cell in vivo mutagenicity test, and based on the negative result in the somatic cell in vivo mutagenicity test (chromosomal aberration test using rat myeloid cells) (DFGOT vol.13 (1999)). So we classified it as Out Of Category according to the technical guideline.
6 Carcinogenicity	Not classified	-	-	-	Based on being classified according to EPA with I, it considered as the outside of Category.

7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	It was classified into Category 2 based on the statement that in the dosage with parents' weight decrease, or dosage without the statement about general toxicity of parents, the low weight value of the child at the lactation period and an decrease fetal weight are observed, and the influence to the male genitals (atrophia of testis, the spermatic toxicity) was observed (ACGIH (2002), EU-RAR (2004), DFGOT vol.13 (1999)).
8	Specific target organs/systemic toxicity following single exposure	Category 2 (cardiovascular system); Category 3 (respiratory tract irritation, narcotic effects)	Health hazard; Exclamation mark	Warning	may cause damage to organs (cardiovascular system); May cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract irritation, narcotic effects)	Although there are many statements that central nerve inhibition is reported in many animals tests, and there is many reports about an anesthetic actions, there is no data of the amount of exposure. In oral administration to rabbits, there was a statement that vascular injury was seen by the dosage of guidance value within the Category 2 (ACGIH (2001)), it is classified into Category 2 (vascular systems). A statement that there is respiratory irritation in humans (ACGIH and (2001), ICSC (J) (1994)), central inhibition, such as nausea, unconsciousness, and reflective loss, occurs and it may die (PATTY (5th, 2001)). So it is classified into Category 3 (respiratory irritation, anesthesia action).
9	Specific target organs/systemic toxicity following repeated exposure	Not classified	-	-	-	In humans, there is no statement of apparent toxicity development by this substance (ACGIH and (2002),EU-RAR (2004)) and in animal, development of toxicity is not observed with a given dose higher than the guidance value range of Category 2 (ACGIH and (2002), EU-RAR (2004) and PATTY (5th, 2001)). According to that, it was considered the outside of Category.
10	Aspiration hazard	Category 2	Health hazard	Warning	May be harmful if swallowed and enters airways	Category 2 because of "possible to cause chemical pneumonia by misswallowing of the liquid."(ICSC(J), 1999)

### 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 48-hour EC50=0.9mg/L of Crustacea (Daphnia magna) (EU-RAR, 2004).
11 Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since rapidly degrading (28-day decomposition rate of the OECD test guideline 301F: 77% (EU-RAR, 2004)), and less bio-accumulative (BCF=129 (Existing Chemicals Safety Check Data)).