

GHS Classification

ID977

Methyl cyclohexane

CAS 108-87-2

Date Classified: Jul. 24, 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	UNRTDG Class: 3; PG II
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	-	-	-	Not ignite spontaneously on coming into contact with air at normal temperatures
10 Pyrophoric solids	Not applicable	-	-	-	Liquid (GHS definition)
11 Self-heating substances and mixtures	Classification not possible	-	-	-	Test methods applicable to liquid substances are not 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	-	-	-	Organic compounds containing no oxygen, fluorine and chlorine.
14 Oxidizing solids	Not applicable	-	-	-	Liquid (GHS definition)
15 Organic peroxides	Not applicable	-	-	-	Containing no -O-O- structure
16 Corrosive to metals	Not classified	-	-	-	Steel and aluminum can be used as a container.

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	Rabbit LDLo: 4000 - 4500mg/kg (PATTY 4th, 1994), rat LD50 value: >3200mg/kg (RTECS, 2005) and mouse LD50 value: 1200mg /kg (RTECS, 2005). Based on the lowest LD50 value of the mouse data, it was classified to category 4.
1 Acute toxicity (dermal)	Not classified	-	-	-	Based on rabbit LD50 value: >86700mg/kg (PATTY 4th, 1994), 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	-	-	-	There is description of LC50 (2 hours) value: 36.9mg/L (4-hour equivalent: 26.1mg/L). But death is not observed with 7500 - 10000ppm on mouse but observed with 2-hour exposure to 10000 - 12,500ppm (4-hour equivalent assuming 10000ppm: 28.399mg/L) (ACGIH (7th, 2001) and Industrial Hygiene Society advice state). It was judged that there is no death observed below 28.399mg/L (equivalent of 7082ppm), and it was classified as out of Category by the ppm concentration standard.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Category 3	-	Warning	Causes mild skin irritation	It was set as Category 3 from description that the skin was stimulated without concrete case report (ICSC (J) (1997), HSDB (2005), and SITTIG (4th, 2002)), and description that mild irritating was acknowledged in the test applied to the skin of the rabbit although it was exposure for 24 hours (RTECS (2005)).
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	Based on the description in RTECS (2005) that mild irritant property was acknowledged in the test applied to the eyes of the rabbits, and on the descriptions in ICSC (J) (1997) and SITTIG (4th, 2002) that it stimulated the eyes, we categorized it as Category 2B although there were no concrete case reports.
4 Respiratory/skin sensitization	respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	-	-	-	No data available
5 Germ cell mutagenicity	Classification not possible	-	-	-	No data available
6 Carcinogenicity	Classification not possible	-	-	-	No data available
7 Toxic to reproduction	Classification not possible	-	-	-	No data available

8	Specific target organs/systemic toxicity following single exposure	Category 3 (narcotic effects)	Exclamation mark	Warning	May cause respiratory irritation or may cause drowsiness and dizziness (narcotic effects)	Because of descriptions in ACGIH (7th, 2001) and Japan Society for Occupational Health recommendation (1993) referring to confirmation of abdominal positions in inhalation exposure tests with mice, and of a description in ACGIH (7th, 2001) referring to that anesthetic actions were confirmed in an inhalation exposure test using rabbits, and of descriptions in ICSC (J) (1997), HSDB (2005), HSFS (2002), and SITTING (4th, 2002) referring to that central nervous systems were affected. So it was judged that there were anesthetic actions, and determined as Category 3 (anesthetic actions).
9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	-	-	-	Classification not possible due to lack of data
10	Aspiration hazard	Category 1	Health hazard	Danger	May be fatal if swallowed and enters airways	Since it is a hydrocarbon and the dynamic viscosity is about 0.95 mm ² /s at 20 degrees C (viscosity/density = 0.732 (mPas)/0.7694 (g/cm ³)), and the dynamic viscosity at 40 degrees C is considered to be less than 20.5 mm ² /s, we classified it as Category 1.

Environmental Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
11 Hazardous to the aquatic environment (acute)	Category 2	-	-	Toxic to aquatic life	It was classified into Category 2 from 96-hour LC50=3300microg/L of Crustacea (Brown shrimp) (AQUIRE, 2003).
11 Hazardous to the aquatic environment (chronic)	Category 2	Environment	-	Toxic to aquatic life with long lasting effects	Classified into Category 2, since acute toxicity was Category 2 and not rapidly degrading (BOD: 0% (existing chemical safety inspections data)), though less bio-accumulative (BCF=321 (existing chemical safety inspections data)).