

GHS Classification

ID672

Ethanol, 2-(1-methylethoxy)-

CAS 109-59-1

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 3	Flame	Warning	Flammable liquid and vapour	Category 3 because of its flash point: 33.3degC (Solvent Pocket Book, 1997)
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	-	-	-	Since the fire points is 240 degC (ICSC (J) (2004)) which exceed 70 degC, it was classified as the outside of Category.
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 oxygen (but not chlorine and fluorine) chemically bonded only to carbon and hydrogen (but not to other elements).
14 Oxidizing solids	Not applicable	-	-	-	Liquid (GHS definition)
15 Organic peroxides	Not applicable	-	-	-	Diluent type A >=55%, Available oxygen <=10%, UNRTDG No.3105, Class:5.2, GHS Classification, Organic peroxides type D
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	-	-	-	Two sorts of LD50 values were indicated as a result of oral administration in rats. And the lower value of LD50=5600 mg/kg (ECETOC TR64 (1995)) was taken, it was set as the outside of Category.
1 Acute toxicity (dermal)	Category 4	Exclamation mark	Warning	Harmful in contact with skin	It was set as Category 4 from rabbit percutaneous LD50 = 1440mg/kg (1.6ml/kg) (DFGOT vol.V (1993)).
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Category 4	Exclamation mark	Warning	Harmful if inhaled	It was classified as Category 4 based on rat inhalation LC50 = 4000ppm (DFGOT vol.V (1993), ECETOC TR64 (1995)).
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	Saturated concentration is 6961ppm and it is guessed that each inhalation study is performed in the state of steam. Since there is no data about mists, it cannot be classified.
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	Since it was classified as Moderate according to the Draize method (RTECS (2004)), it was classified as Category 2.
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	It was set as Category 2B based on the statement of recovering within seven days although there was irritation (DFGOT vol.V (1993), ECETOC TR4 (1982), PATTY(5th, 2001) vol.7).
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Not possible	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	Skin sensitization: Based on the test report with guinea pigs that sensitization was not identified(PATTY(5th, 2001) vol.7), it was put outside of the Category. Respiratory sensitization: Since there was no data, it was decided that it could not be classified.
5 Germ cell mutagenicity	Classification not possible	-	-	-	Since there was only in vitro data for mutagenicity test, we presupposed that we could not classify it according to the technical guideline.
6 Carcinogenicity	Classification not possible	-	-	-	No data available
7 Toxic to reproduction	Not classified	-	-	-	Since it is not observed of changes, considered cause using 2-(1-methyl ethoxy) ethanol, of items as estrous cycle, pregnant period, delivery and nursing condition etc. in rat oral administration during pre-mating to pregnant period (Ministry of Health and Welfare reports (2005)), it was considered as on the outside of Category.

8	Specific target organs/systemic toxicity following single exposure	Category 1 (blood system)	Health hazard	Danger	Cause damage to organs (blood system)	Addition to the blood (hemoglobinuria), central nervous system, liver, kidney, and spleen are mentioned as target organ. Among these, there is the report about the blood (much blood passed in urine), and the kidney (severely affected kidney) (PATTY (5th, 2001) vol.7). Although it is in the guidance value of Category 1, the kidney is considered as the secondary effects by hemolysis, it is classified into Category 1 (blood). Since dose is unknown and dose symptoms was weak about a central nervous system, liver and spleen, it was not able to classify.
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (blood)	Health hazard	Warning	may cause damage to organs (blood) through prolonged or repeated exposure	It was classified to as Category 2 (blood), since within the limits of the guidance value of Category 2, an anemia by oral (Ministry of Health and Welfare reports (2005)) and hemolysis (hemoglobinuria) and anemia (DFGOT vol.V (1993)) by inhalation were reported.
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)	Not classified	-	-	-	It carried out the outside of Category from 96-hour LC50>100mg/L of fishes (<i>Oryzias latipes</i>) (MOE eco-toxicity tests of chemicals, 2001).
11 Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since not water-insoluble (water solubility=1.00*10 ⁶ mg/L(PHYSROP Database, 2005)) and acute toxicity is low.