

GHS Classification

ID617

Methanamine

CAS 74-89-5

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	-	-	-	Gas (GHS definition)
2 Flammable gases	Category 1	-	Danger	Extremely flammable gas	Flammable range with air is 4.9-20.7 vol%.
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not classified	-	-	-	Flammable gas
5 Gases under pressure	Low pressure liquefied gas	Gas cylinder	Warning	Contains gas under pressure; may explode if heated	Critical temp: 156.9degC
6 Flammable liquids	Not applicable	-	-	-	Gas (GHS definition)
7 Flammable solids	Not applicable	-	-	-	Gas (GHS definition)
8 Self-reactive substances and mixtures	Not applicable	-	-	-	Gas (GHS definition)
9 Pyrophoric liquids	Not applicable	-	-	-	Gas (GHS definition)
10 Pyrophoric solids	Not applicable	-	-	-	Gas (GHS definition)
11 Self-heating substances and mixtures	Not applicable	-	-	-	Gas (GHS definition)
12 Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	-	-	-	Gas (GHS definition)
13 Oxidizing liquids	Not applicable	-	-	-	Gas (GHS definition)
14 Oxidizing solids	Not applicable	-	-	-	Gas (GHS definition)
15 Organic peroxides	Not applicable	-	-	-	Gas (GHS definition)
16 Corrosive to metals	Classification not possible	-	-	-	Test methods applicable to gas 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	Calculated based on rat LD50: 100 to 200 mg/kg (ACGIH (2001) and DFGOT (1996)) and 698mg/kg (DFGOT (1996)). Since the calculated values was less than the lowest value, it was set as Category 3 based on 100mg/kg of the lowest value.
1 Acute toxicity (dermal)	Classification not possible	-	-	-	The data of the guinea pigs were in PATTY (1994). But LD50 was not clear, it could not be classified due to the insufficient data.
1 Acute toxicity (inhalation: gas)	Category 4	Exclamation mark	Warning	Harmful if inhaled	Statistics calculation was done based on rat LC50 (4 hours): 4400ml/m3 and 6400 - 9100ml/m3 (all are DFGOT Vol.7 (1996)). Since the calculation value of 4400ml/m3 (4400ppm) was the same as the lowest value, it was considered as Category 4.
1 Acute toxicity (inhalation: dust, mist)	Not applicable	-	-	-	Gas (GHS definition)
2 Skin corrosion / irritation	Category 1A-1C	Corrosion	Danger	Causes severe skin burns and eye damage	There was no skin irritation test data of this product (gas). But based on the description that 40% aqueous solution caused necrosis on skin of rabbits (PATTY, 4th 1994), it was judged to have skin corrosiveness, and it was classified as Category 1A-1C. Since detailed data was unknown, sub-categorization was not available. [Display] It is more desirable to be classified as 1A from a viewpoint of safety, when it is necessary to sub-categorize.
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	There is no data in eye irritation tests by this product (gas). But there is description that 40% solution has strong stimulativeness in the eye of a rabbit (ACGIH, 7th, 2001) and the lesional of a corneal (PATTY, 4th, 1994), it was set to Category 1.
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: Although the allergenic or irritation data of bronchitis can be found on unpublished cases (ACGIH, 7th, 2001). since there is no case report in well known literature, it was decided that it could not be classified due to lack of sufficient data. Skin sensitization: No data

5	Germ cell mutagenicity	Category 1B	Health hazard	Danger	May cause genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	We classified it as Category 1B. Based on the description (RTECS (2005)) that there was a positive result in the dominant lethality examination by rat inhalation exposure examination.
6	Carcinogenicity	Classification not possible	-	-	-	No data available
7	Toxic to reproduction	Classification not possible	-	-	-	There is a statement that post-implantation fetal death increases depending on a dose in an inhalation exposure test of pregnant rats (DFGOT (1996)). However, it is indicated that evaluation is impossible, since details are not shown in the source material in the reference. On the other hand, although there is a report that reproductive toxicity tests in murine intraperitoneal administration did not show any effects (IUCRID (2000)), it will not negate the rat data of Priority 1. Therefore, since data was insufficient, it was considered unable to be classified.
8	Specific target organs/systemic toxicity following single exposure	Category 3 (respiratory tract irritation)	Exclamation mark	Warning	May cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract irritation)	Although it is a Priority 2 information, since there is a description that it has respiratory irritation against mucous membranes and may cause lung edemas at high exposure levels (HSFS (2004) and SITTIG (2002)), and it is classified as a substance which has an irritant action against the respiratory systems in the EU classification of dangerous substances as well. So it was set as Category 3 (respiratory irritant).
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (respiratory organs, liver)	Health hazard	Warning	May cause damage to organs (respiratory organs, liver) through prolonged or repeated exposure	The details are unknown, although the deviation enzyme in the blood including a nervous system, liver, and an immunology parameter and the morphological defect of organs, etc. in the nasal region exposure test for rats in DFGOT (1994) are reported. On the other hand, it was classified to Category 2 (respiratory systems, liver), since it is reported bronchitis and it has a potential to effect on liver by higher concentration exposures in HSFS (2004) and SITTIG (2002).
10	Aspiration hazard	Not applicable	-	-	-	Gas (GHS definition)

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 48-hour EC50=163000microg/L of Crustacea (Daphnia magna), and others(AQUIRE, 2003).
11 Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since not water-insoluble (water solubility=1.08*106mg/L(PHYSROP Database, 2005)) and acute toxicity is low.