

GHS Classification

ID965

Acetic anhydride

CAS 108-24-7

Date Classified: May 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 3	Flame	Warning	Flammable liquid and vapour	Flash point: >=23degC and <=60degC
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: 316degC (ICSC (J), 1993)
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	-	-	-	Containing no -O-O- structure
16 Corrosive to metals	Classification not possible	-	-	-	Although there is also information that it is classified into the UNRTDG class 8 and it corrodes many metals (ICSC (J) (1993)), there is no data based on set test methods.

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	Rat LD50 value: 630mg/kg (CERI Hazard Data, 2001, DFGOT vol.13, 1999), and 1780mg/kg (CERI Hazard Data, 2001, DFGOT vol.13, 1999, SIDS, 1997). Based on the above data, it was classified as category 4.
1 Acute toxicity (dermal)	Category 5	-	Warning	May be harmful in contact with skin	It was set as Category 5 based on rabbit LD50 value: 4000mg/kg (CERI Hazard Data, 2001, DFGOT vol.13, 1999, SIDS, 1997), and 4321 mg/kg (CERI Hazard Data, 2001).
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Category 3	Skull and crossbones	Danger	Toxic if inhaled	Lower value was adopted from rat LC50 (4 hours) value: 1000ppm (equivalent: 4.167mg/L) (CERI Hazard Data 2001, SIDS, 1997) and 2000ppm (equivalent 8.334mg/L) (CERI Hazard Data, 2001). 1000ppm was considered as the steam with almost no mist from vapor pressure. And classified as Category 3 by the ppm concentration standard.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Category 1A-1C	Corrosion	Danger	Causes severe skin burns and eye damage	There is description that mild to moderate skin stimulativeness was acknowledged in the test which was used the rabbit (CERI Hazard Data (2001), DFGOT (vol.13, 1999), and SIDS (1997)). But from description that serious burn and blister formation are reported in the skin of the humans (CERI Hazard Data (2001) and SIDS (1997)), it was judged that it was caustic, and it was set as Category 1A-1C.
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	There is the description that severe irritant property was acknowledged in the tests applied to the eyes of the rabbits (CERI Hazard Data (2001), DFGOT (vol.13, 1999) and SIDS (1997)), and on the description that the drug-induced severe burn injury on the cornea, loss of eyesight, etc. were reported in the occupational exposure examples (CERI Hazard Data (2001), DFGOT (vol.13, 1999), SIDS (1997) and Japan Society for Occupational Health Recommendation of Occupational Exposure Limits (1990)). So we judged it had causticity and classified it as Category 1.
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	-	-	-	No data available
5 Germ cell mutagenicity	Not classified	-	-	-	There is a negative result (SIDS, 1997) by the micronucleus test which used the rat erythrocyte, which is the in vivo mutagenicity tests using a somatic. So it carried out the outside of Category.

6	Carcinogenicity	Classification not possible	-	-	-	No data available
7	Toxic to reproduction	Classification not possible	-	-	-	There is a description that in an inhalation exposure test using pregnant rats in SIDS (1997) whole embryos absorption was observed in two of four at the concentration in which general toxicity is observed in parental animals. Therefore, it may be classified into Category 2. However, there are only four pregnancy animals in each group, and the data is insufficient. Therefore, since the data is insufficient, it cannot be classified.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (respiratory organs); Category 3 (narcotic effects)	Health hazard; Exclamation mark	Danger; Warning	Cause damage to organs (respiratory organs); May cause respiratory irritation or may cause drowsiness and dizziness (narcotic effects)	It was judged as Category 1 (respiratory tracts) because of a description in accidental exposure cases of CERH Hazard Data (2001) referring to confirmation of pulmonary edemas, and of descriptions in DFGOT (13 vol. 1999) and SIDS (1997) referring to that airways can be stimulated seriously and sores of nasal mucosas and bronchospasm may be caused. Moreover, it was judged as Category 3 (anesthetic actions) because of a description in SIDS (1997) referring to confirmation of central nervous system depressions at high concentrations as an effect on humans.
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (respiratory organs)	Health hazard	Danger	Causes damage to organs (respiratory organs) through prolonged or repeated exposure	It was classified into Category 1 (respiratory tracts) from description that the effects on the respiratory system was observed with the concentration within the guidance value range for Category 1 in 13-week inhalation exposure test on rats (SIDS (1997)).
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 3	-	-	Harmful to aquatic life	It was classified into Category 3 from 24-hour LC50=55mg/L of Crustacea(Daphnia magna), and others (SIDS, 2002).
11 Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since rapidly degrading (it hydrolyzed and acetic acid (BOD: 74% (Existing Chemicals Safety Check Data)) is generated, and supposed less bio-accumulative (log Kow=-0.58 (PHYSPROP Database, 2005)).