GHS Classification

ID1213 Propanenitrile, 2-methyl-

CAS 78-82-0 Date Classified: Mar. 15, 2007 (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	Category 2 because of UNRTDG No. 2284 Class: 3(6.1), PGII and its flash point: 8degC and initial boiling point (boiling point): 107degC (Sax, 11th, 2004).
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	–	–	–	Even if it contacts the normal temperature air, it does not ignite spontaneously (ignition points is 482 degC (NFPA, 13th, 2003)).
10	Pyrophoric solids	Not applicable	–	–	–	Liquid (GHS definition)
11	Self-heating substances and mixtures	Not classified	–	–	–	CHRIS-Chemical Hazard Response Information System (U. S.DOT/U.S.Coast Guard, 1999) has the description "it is stable during transportation", and it carried out the outside of Category.
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 metaloids(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 -0-0- 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)	Category 3	Skull and crossbones	Danger	Toxic if swallowed	Based on the LD50 value of 50-100mg/kg in rats (PATTY (5th, 2001)), the substance was classified as Category 3. There are also mentions of LD50= 50mg/kg (RTECS(1997)) and 100mg/kg (HSDB(2003)).
1	Acute toxicity (dermal)	Category 2	Skull and crossbones	Danger	Fatal in contact with skin	Rabbit dermal LD50 = 200mg/kg (RTECS (1997)) and 310 mg/kg (HSDB (2003)). The higher toxic value (LD50 = 200mg/kg) was adopted, and it was set as Category 2.
1	Acute toxicity (inhalation: gas)	Not applicable	–	–	–	Liquid (GHS definition)
1	Acute toxicity (inhalation: vapour)	Category 3	Skull and crossbones	Danger	Toxic if inhaled	There are descriptions that all rat died with about 1 hour inhalation administration of vapor with 5500ppm (5500ppm/1H = >3.9mg/L/4H: Category 3 range) (PATTY (5th, 2001)) and that lowest lethal concentration of rat inhalation exposure is 1000ppm/4H (it is 2.8mg/L/4H as steam equivalent: Category 3 range). It was not LC50 value, but it was guessed that an acute toxicities estimates in the range of Category 3, it was classified as Category 3.
1	Acute toxicity (inhalation: dust, mist)	Classification not possible	–	–	–	No data available
2	Skin corrosion / irritation	Category 3	–	Warning	Causes mild skin irritation	Since there was description that there is slight (Mild) irritation is indicated by Draize's method which carried out open application to the rabbit (RTECS (1997)), and the description that humans skin is stimulated (HSDB (2003), HSFS (2000)), it was set as category 3.
3	Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	There is the description that "blister and watering eye, reddens eyelid and reddens conjunctiva" are caused to eyes of rabbit (RTECS (1997)), and there is stimulant also to human eyes (HSDB (2003), HSFS and (2000)). So it is set as Category 2A-2B. In addition, the detailed categorization from this data is difficult.
4	Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Classification not	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	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	–	–	–	Although there is description that the fetal death/fetal toxicity in concentration with clear maternal toxicity were seen in rat inhalation developmental toxicity studies. (PATTY (5th, 2001). However, according to PATTY, there was no maternal toxicity while the original text says that there was maternal toxicity.) Since there is no other data, and data is insufficient, it cannot be classified.
8	Specific target organs/systemic toxicity following single exposure	Category 2 (liver); Category 3 (respiratory tract irritation)	Health hazard	Warning	May cause damage to organs (liver); May cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract irritation)	When the amount which corresponds to Category 1 in a guidance value is administered orally to a rat, the description that it has impact on liver were seen (HSDB (2003)) but it is data of Priority 2 document and was considered as Category 2 (liver) according to the technical indicator since it does not suit the acceptance criteria for classifying into Category 1. Moreover, since the throat was stimulated by inhalation to humans (HSDB (2003), HSFS (2000)), it was considered as Category 3 (respiratory irritant). In addition, description that the this product affects the human heart in the document of Priority 2 were seen (SITTIG (4th, 2001)), but the data which is supported was not found.
9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	–	–	–	Insufficient data available
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)	Classification not possible	–	–	–	No data available
11	Hazardous to the aquatic environment (chronic)	Classification not possible	–	–	–	No data available.