GHS Classification

ID205 2-Propenenitrile, 2-methyl-

CAS 126-98-7 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 2	Flame	Danger	Highly flammable liquid and vapour	Flash point <23 degC, boiling point (initial boiling point)> 35 degC [special note] Although it will be classified as Category 1 according to the fact that it is classified into PGI in UNRTDG, it is clearly classified as Category 2 from the initial boiling point (boiling point substitute). Therefore, regarding the appropriateness of above classification, expert's judgement is required.
7	Flammable solids	Not applicable	–	–	–	Liquid (GHS definition)
8	Self-reactive substances and mixtures	Not classified	–	–	–	Classified in UNRTDG Class: 3, Subsidiary risks Class: 6.1
9	Pyrophoric liquids	Not classified	–	–	–	UNRTDG Class: 3 Subsidiary risks Class: 6.1
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 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	–	–	–	Containing no -0-0- structure
16	Corrosive to metals	Not classified	–	–	–	UNRTDG Class: 3, Subsidiary risks Class: 6.1

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	Statistical calculations was applied based on rat LD50 values: 64, 240, 120, 25, 50, and 200 mg/kg (the Health, Labor and Welfare Ministry reports (2005), SIDS (2002), ACGIH (7th.2001)). Calculated values: It was set as Category 3 based on 58.3mg/kg.
1	Acute toxicity (dermal)	Category 3	Skull and crossbones	Danger	Toxic in contact with skin	Statistical calculations was applied based on rabbit LD50: 250, 280 and 256 mg/kg (SIDS (2002), ACGIH (7th.2001)). It was set as Category 3 based on calculation value: 250 mg/kg.
1	Acute toxicity (inhalation: gas)	Not applicable	–	–	–	Liquid (GHS definition)
1	Acute toxicity (inhalation: vapour)	Category 2	Skull and crossbones	Danger	Fatal if inhaled	Statistical calculations was applied based on LC50 on rats: 0.899, 0.899, 1.92, and 1.36mg/L (SIDS 2002). It was classified as Category 2 based on calculated value of 0.899mg/L (equivalent to 328 ppm).
1	Acute toxicity (inhalation: dust, mist)	Not classified	–	–	–	No data available
2	Skin corrosion / irritation	Category 3	–	Warning	Causes mild skin irritation	Based on the descriptions that there was mild skin irritation in Draize test on rabbits (SIDS, 2002) and it may cause dermatitis by repetitive or long-term skin contacts on humans, (MOE Risk Assessment the 3rd volume, 2004), it was judged to have mild irritativeness and was classified as Category 3.
3	Serious eye damage / eye irritation	Category 2B	–	Warning	Causes eye irritation	Mild irritation was indicated to eye of rabbit. But it recovered within 1 hour (ACGIH 7th.2001). So it was set as Category 2B.
4	Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Classification not	–	–	–	Respirator: No data Skin: Although no skin sensitization is assumed to be found in guinea pigs (PATTY 4th.1994), this is uncategorizable because there is no data that clearly negate skin sensitization.
5	Germ cell mutagenicity	Not classified	–	–	–	The substance was regarded as outside the categories based on the fact that it was negative in vivo micronucleus tests using both rat and mouse bone-marrow cells and mouse peripheral erythrocytes (SIDS 2002, NTP DB 2005, NTP TR 497, 2001).
6	Carcinogenicity	Classification not possible	–	–	–	Carcinogenicity is not observed in a study using rats and mice in which repetitive oral administration was performed for two years (NTP TR 497, 2001, MOE Risk Assessment SIDS, 2002, the 3rd volume, 2004). But data is insufficient, it cannot be classified.

7	Toxic to reproduction	Category 1B	Health hazard	Danger	May damage fertility or the undorn child	Since the significant low sperm count of F1-generation male in two generation reproduction study, or the delay of estrous cycle of male after the last administration for 13 weeks (all are done by oral administration to rat, SIDS 2002, NTP DB 2005, MOE Risk Assessment the third volume 2004, NTP TR 497 2001), and the decrease of the male rate of offspring per litter in teratogenicity test (rabbit oral administration. SIDS 2002, CERI Hazard Data, 2001), the decrease of weight of fetus (rat inhalation exposure. SIDS 2002, CERI Hazard Data 2001, and NTP TR 497 2001) was observed, it is classified into the Category 1B.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (central nervous system)	Health hazard	Danger	Cause damage to organs (central nervous system)	When it administers orally to rat in the range of guidance value of Category 1 (less than 300mg/kg), the symptom of central nervous systems, such ataxia, tremor, clonic convulsion, and hygrostomia, were observed (NTP TR 497 2001, the Ministry of Health, Labour and Welfare report 2005, SIDS 2002, ACGIH 7th. 2001), the same symptom was also observed in the aerial density about 1-2mg/L by inhalation to rat. So it was classfied into Category 1 (central nervous system).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (blood, central nervous system, sensory organ)	Health hazard	Danger	Causes damage to organs (blood, central nervous system, sensory organ) through prolonged or repeated exposure	Due to repeated oral administrations to rats, some conditions, such as anemia, clonic convulsion, tremors, salivation, and ataxia, and histologic changes of the olfactory epithelium were observed in dosage within Category 1 (MHLW reports 2005, SIDS 2002, the 3rd volume of MOE Risk Assessment 2004, NTP DB 2005 and NTP TR 497 2001), the target organs were judged to be blood, the central nervous system, and the sense organ. When it makes dogs inhale, the symptoms of these central nervous systems was observed, and a histologic changes of brain was also observed (SIDS 2002 and ACGIH 7th.2001 and IRIS 2005, MOE Risk Assessment the 3rd volume 2004).
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 72-hour ErC50=25mg/L of algae (Selenastrum) (MOE eco-toxicity tests of chemicals, 1999).
11	Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since rapidly degrading (BOD: 83% (existing chemical safety inspections data)), and less bio-accumulative (log Kow=0.68 (PHYSPROP Database, 2005)).