GHS Classification

ID927 1-Propanol

CAS 71-23-8 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	Classification not possible (Category 2 or Category 3)	Flame	Danger; Warning	Highly flammable liquid and vapour; Flammable liquid and vapour	The data obtained from materials are distributed in two Categories. Therefore, if the flash point is not measured with a real sample, it cannot be judged. The acceptance criteria are as follows: (The initial boiling point is substituted with boiling point). Category 2: flash point <23 degC; Category 3: 23 degC<= flash point <=60 degC
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: 371degC (ICSC (J), 1999)
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 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	Not classified	–	–	–	UNRTDG Class: 3

Health Hazards

	Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1	Acute toxicity (oral)	Category 5	–	Warning	May be harmful if swallowed	Calculated based on the following values: Rat LD50 value: 1900mg/kg (ACGIH, 2004), 1870mg/kg (PATTY 4th, 1994, EHC 102, 1990), 5400mg/kg (PATTY 4th, 1994) and 6500mg/kg (PATTY 4th, 1994, EHC 102, 1990). Since the calculated values was 2695mg/kg, it was classified to category 5.
1	Acute toxicity (dermal)	Category 5	–	Warning	May be harmful in contact with skin	Calculated based on rabbit LD50 value: 6700mg/kg (PATTY 4th, 1994, ACGIH, 2004), 4060mg/kg (ACGIH, 2004), 4000mg/kg (PATTY 4th, 1994), and 4050mg/kg (EHC 102, 1990). Since the calculated values was 4031mg/kg, it was set as Category 5.
1	Acute toxicity (inhalation: gas)	Not applicable	–	–	–	Liquid (GHS definition)
1	Acute toxicity (inhalation: vapour)	Classification not possible	–	–	–	There are descriptions that death was not observed in rat 1-hour exposure with 20000 ppm (4 hour equivalent: 24.531mg/L) (PATTY (4th, 1994)) and that 2 of 6 rats died with 4-hour exposure to 4000 ppm (9.84mg/L) (EHC 102 (1990) and PATTY (4th, 1994)). But LC50 value was not indicated, it cannot be classified due to data insufficiency.
1	Acute toxicity (inhalation: dust, mist)	Classification not possible	–	–	–	No data available
2	Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	There is possibility of Category 3 from description that the skin of the rabbit was stimulated very slightly (PATTY (4th, 1994)). But it was set as Category 2 from description that erythema was accepted by 9 among 12 examples in the test applied to the skin of the humans (EHC 102 (1990)).
3	Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	We classified it as Category 2A based on the descriptions that severe conjunctivitis, iritis, corneal opacity and ulcerations were acknowledged in the test applied to the eyes of the rabbits (ACGIH (2004) and PATTY (4th, 1994)).
4	Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	–	–	–	Respiratory organ: No data. Skin: Although we found description of one case report in which the allergic response was acknowledged by the patch test in EHC 102 (1990), there was no other data and we presupposed that we could not classify it since data was insufficient.
5	Germ cell mutagenicity	Classification not possible	–	–	–	Classification not possible due to lack of data

6	Carcinogenicity	Category 2	Health hazard	Warning	Suspected of causing cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	Category 2 based on "A3" (ACGIH, 2004)
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the undorn child	It was considered as Category 2. Based on the description that malformation increases was observed at the dose in which general toxicity is observed in the dam animals in the test which carried out inhalation exposure in the rat pregnant (ACGIH (2004), PATTY (4th, 1994)), and the description that the male reproduction ability fall and the deformed (crooked tail) increase in a child were observed at the dose in which general toxicity is observed in the inhalation exposure test using the male and female rats (ACGIH (2004), PATTY (4th, 1994), EHC 102 (1990)).
8	Specific target organs/systemic toxicity following single exposure	Category 3 (narcotic effects, respiratory tract irritation)	Exclamation mark	Warning	May cause respiratory irritation or may cause drowsiness and dizziness (narcotic effects, respiratory tract irritation)	Because of descriptions in ACGIH (2004), EHC 102 (1990), and PATTY (4th, 1994) referring to the confirmation of anesthetic actions in inhalation exposure or oral administration examinations using rats, mice and rabbits, and of a description in EHC 102 (1990) referring to that a reduction of breathing rates indicating respiratory irritant was confirmed in an inhalation exposure test using mice, it was judged as Category 3 (anesthetic actions, respiratory irritant).
9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	-	-	-	Classification not possible due to lack of data
10	Aspiration hazard	Category 2	Health hazard	Warning	May be harmful if swallowed and enters airways	Category 2 because of being a primary normal alcohol composed of carbon atoms (3<=n>=13).

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 LC50=3025mg/L of Crustacea (Water flea) (EHC102, 1990).
11	Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since not water-insoluble (water solubility=1.00*106mg/L(PHYSPROP Database, 2005)) and acute toxicity is low.