

GHS Classification

ID926

Propionic acid

CAS 79-09-4

Date Classified: Feb. 20, 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 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	-	-	-	UNRTDG Class: 8
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 it is classified into the class 8 in UNRTDG, distinguish with skin caustics is not made. Moreover, information that it corrodes metal (ICSC (J) (1997)), there is no data by standard test methods.

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	Category 5 based on SPECIES: Rat; ENDPOINT: LD50; VALUE:2600mg/kg (PATTY, 4th, 1994), 4260mg/kg (ACGIH, 7th, 2001; PATTY, 4th, 1994)
1 Acute toxicity (dermal)	Category 3	Skull and crossbones	Danger	Toxic in contact with skin	It was set as Category 3 based on rabbit LD50: 496mg/kg (ACGIH, 2001, PATTY, 4th, 1994).
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Not classified	-	-	-	Based on the description that death is not observed in rat 8-hour inhalation exposure with saturated vapor (4650ppm) (ACGIH, 2001), it was considered as out of Category because 4 hour exposure equivalent of 6580ppm.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	Classification not possible due to lack of data
2 Skin corrosion / irritation	Category 1A-1C	Corrosion	Danger	Causes severe skin burns and eye damage	It was set as Category 1A-1C based on the description that there was severe irritation (PATTY (4th, 1994), RTECS (2005)) and the description that necrosis was acknowledged (ACGIH, 2001, PATTY, 4th 1994), or it was caustic (IUCLID, 2000) in the skin irritation test in rabbits.
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	We classified it as Category 1 based on the descriptions that it had the severe irritant property (RTECS, 2005) or it had the caustic property (IUCLID, 2000) in the eye irritant property test with the rabbits.
4 Respiratory/skin sensitization	Classification not possible; Skin sensitization: Classification not possible	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	Respiratory organ: Although in the HSFS (2001) of priority 2 and SITTIG (4th, 2002) there was description that it may cause asthmatic allergy, it was not clear, therefore we presupposed that we could not classify it. Skin: No data.
5 Germ cell mutagenicity	Not classified	-	-	-	Based on description that it is negative (PATTY (4th, 1994), IUCLID (2000)) by the micronucleus test which used the Chinese hamster, it considered as the outside of Category. In addition, about calcium propionate, it was negative in the rat dominant lethal test and the rat marrow cell chromosomal aberration test (PATTY, 4th, 1994), (IUCLID, 2000).
6 Carcinogenicity	Classification not possible	-	-	-	Classification not possible due to lack of data

7	Toxic to reproduction	Not classified	-	-	-	It was considered as the out of Category based on the description (PATTY, 4th, 1994) that survival of dam and child is not affected and fetus abnormality increases is not observed in rats, mice, hamster and rabbits gestation periods of by the study which carried out mixed feed medication.
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)	Because of a description in ACGIH (7th, 2001) referring to confirmation of coughs and asthmatic reactions in human exposure cases, and of a description in HSFS referring to that noses, throats, and lungs may be stimulated. So it was considered as respiratory tract irritation, determining as Category 3.
9	Specific target organs/systemic toxicity following repeated exposure	Not classified	-	-	-	We classified it as Out Of Category because minimum toxicity expression levels in the repeated oral administration test for 110 days and for two years in the rat, and the repeated oral administration test for 90 days in the dog exceeded over the guidance value range of Category 2 by 10 or more times (RTECS (2005)). In addition, it is recognized that it does not affect human, or it is safe even if human ingests it, and it has description that it is used as an antiseptic etc (PATTY (4th, 1994)).
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 48-hour EC50=22.7ppm of Crustacea (Daphnia magna) (AQUIRE, 2003).
11 Hazardous to the aquatic environment (chronic)	Category 3	-	-	Harmful to aquatic life with long lasting effects	Classified into Category 3, since acute toxicity was Category 3 and rapid degradability is unknown, though supposed less bio-accumulative (log Kow=0.33 (PHYSPROP Database, 2005)).