

GHS Classification

ID988

2-Pentanone

CAS 107-87-9

Date Classified: Jun. 20, 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: <23degC, Initial boiling point: >35degC, UNRTDG Class: 3, PG II
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: 452degC (NFPA (12th, 1997) p.325-72)
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	Not classified	-	-	-	UNRTDG Class: 3

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: 3730mg/kg and 1600 - 3200 mg/kg (PATTY 4th, 1994). Calculated based on the data above, and the lowest value of 1600mg/kg was adopted to be classified as category 4.
1 Acute toxicity (dermal)	Not classified	-	-	-	Based on rat LD50 value: 6480mg/kg (PATTY 4th, 1994), it was set as the outside of Category.
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Category 3	Skull and crossbones	Danger	Toxic if inhaled	Based on rat LC50 (4 hours) value : 2000ppm (7.032mg/L) (ACGIH 7th, 2001, PATTY 4th, 1994), which indicates steam with almost no mist from its vapor pressure, it was classified as Category 3 by the ppm concentration standard.
1 Acute toxicity (inhalation: dust, mist)	Category 5	-	Warning	May be harmful if inhaled	There is the description in the inhalation exposure test using a guinea pigs that it died from 50000ppm of 50-minute exposure (4-hour equivalent 36.478mg/L) (ACGIH 7th, 2001), or 50000ppm of 30 - 60-minute exposure (4-hour equivalent 21.974mg/L at the time of considering it as exposure for 30 minutes) (PATTY 4th, 1994). LC50 (4 hours) value is judged that it became 21.974mg/L or more, and it was set as category 5.
2 Skin corrosion / irritation	Category 3	-	Warning	Causes mild skin irritation	It was set as Category 3 from description that mild irritation was acknowledged by apply on the skin of a rabbit (ACGIH 7th, 2001) and a guinea pig (PATTY 4th, 1994).
3 Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	We classified it as Category 2A-2B based on the description that it had mild to moderate stimulativeness in the test applied to the eyes of the rabbits (PATTY (4th, 1994)).
4 Respiratory/skin sensitization	respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	-	-	-	Skin: No data. Respiratory organ: No data.
5 Germ cell mutagenicity	Classification not possible	-	-	-	Classification not possible due to lack of data
6 Carcinogenicity	Classification not possible	-	-	-	No data available
7 Toxic to reproduction	Classification not possible	-	-	-	No data available

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 (7th, 2001) and PATTY (4th, 1994) referring to confirmation of anesthetic actions or respiratory irritant in inhalation exposure tests using guinea pigs or rats, and of descriptions in ACGIH (7th, 2001) and PATTY (4th, 1994) indicating respiratory tract irritation to humans, it was judged as Category 3 (anesthetic actions, respiratory irritant).
9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	-	-	-	Based on the description that significant toxicity was not observed with the dose which exceeds the guidance value range of Category 2 in the administration test in drinking water and inhalation exposure test using the rat (PATTY (4th, 1994)), there was a possibility that it was Out Of Category, however, the number of the animals tested is unknown for the test in drinking water and the number of the animals tested was small (5) in inhalation exposure test, so we thought the data is too insufficient to determine it to be Out Of Category, therefore we presupposed that we could not classify it.
10	Aspiration hazard	Category 2	Health hazard	Warning	May be harmful if swallowed and enters airways	Category 2 because of a ketone composed of 13 carbon atoms or less.

Environmental Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
11 Hazardous to the aquatic environment (acute)	Classification not possible	-	-	-	Insufficient data available.
11 Hazardous to the aquatic environment (chronic)	Classification not possible	-	-	-	Classification not possible due to lack of data