

GHS Classification

ID985

2-Heptanone

CAS 110-43-0

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 3	Flame	Warning	Flammable liquid and vapour	Flash point: >=23degC and <=60degC, UNRTDG Class: 3, PGIII
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: 393degC (ICSC (J), 1996)
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	Calculated based on the rat LD50 value: 1670mg/kg (ACGIH 7th, 2001, PATTY 4th, 1994), 2407mg/kg (PATTY 4th, 1994) and approximately 1600mg/kg (PATTY 4th, 1994). Since the calculation value was lower than 1600mg/kg which was the lowest value, 1600mg/kg was adopted to classify as category 4.
1 Acute toxicity (dermal)	Not classified	-	-	-	Based on rabbit LD50 value: 12.6mL/kg (PATTY 4th, 1994) (reduced values = 10300mg/kg), it was set as the outside of Category.
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Classification not possible	-	-	-	There are the description that death was not observed with rat 4-hour inhalation exposure to 2000ppm (vapor with almost no mist from its vapor pressure) (PATTY (4th, 1994)), and that all 6 rats died from exposure to 4000ppm (vapor with almost no mist from its vapor pressure). By the ppm concentration standard, it was presupposed that it cannot be classified although it is considered to be either Category 3 or Category 4.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	There is the description that the all three rat died from 5100ppm (equivalent 23.8mg/L) within 4 hours in the inhalation exposure test (PATTY (4th, 1994)). But there is no other data. Therefore, it cannot be classified since data is insufficient for specifying category.
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	It was set as Category 2 from description that the moderate irritation was admitted in the test applied to the skin of the rabbit for 24 hours (ACGIH (7th, 2001) and PATTY (4th, 1994)).
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	Change of the eyes which corresponds to the standard of irritation was not admitted in the eye irritation tests using the rabbit (ECETOC TR48 (1992)). However, there is the description that slight irritation was acknowledged in the eyes of the rabbits (PATTY (4th, 1994)). So we classified it as Category 2B
4 Respiratory/skin sensitization	respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	-	-	-	Respiratory organ: No data. Skin :Although there was description that it gave no positive reaction in the skin sensitivity test for humans in PATTY (4th, 1994), subjects of this small-scale test were 26 examples and since there was no other data, we presupposed that it is considered lack of data and we could not classify it.
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	-	-	-	No data available
8	Specific target organs/systemic toxicity following single exposure	Category 3 (respiratory tract irritation, narcotic effects)	Exclamation mark	Warning	may cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract irritation, narcotic effects)	Because of descriptions in ACGIH (7th, 2001) and PATTY (4th, 1994) referring to that respiratory irritant and anesthetic actions were confirmed in inhalation exposure tests using guinea pigs, and of a description in PATTY (4th, 1994) referring to confirmation of respiratory irritant and anesthetic actions (symptoms indicating effects on nervous systems) in an inhalation exposure test using rats, it was judged as Category 3 (respiratory irritation, anesthesia action).
9	Specific target organs/systemic toxicity following repeated exposure	Not classified	-	-	-	Based on the descriptions that no effect was observed with the concentration exceeding the guidance value range for Category 2 in the nine-month inhalation exposure test on rats (ACGIH (7th, 2001) and PATTY (4th, 1994)), and that no effect was observed with the dose exceeding the guidance value range for Category 2 in the repetitive oral administration test on rats (PATTY (4th, 1994)), it was classified as out of Category.
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)	Not classified	-	-	-	It carried out the outside of Category from 96-hour LC50=131mg/L of fishes (Fathead minnows) (HSDB, 2004).
11 Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since not water-insoluble (aqueous solubility =4300mg/L(PHYSPROP Database, 2005)) and acute toxicity is low.