

## GHS Classification

**ID955**

**Pentanal**

**CAS 110-62-3**

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: <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: 195degC (Hommel, 1991 Card No.570)
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 5	-	Warning	May be harmful if swallowed	Rat LD50 value: 4590mg/kg (ACGIH 7th, 2001) and 3200 – 6400mg/kg (PATTY 4th, 1994). Based on the data above, the lowest values was adopted, and it was classified as category 5.
1 Acute toxicity (dermal)	Category 5	-	Warning	May be harmful in contact with skin	It was set as Category 5 based on rabbit LD50 value: 4860mg/kg (ACGIH 7th, 2001).
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Category 4	Exclamation mark	Warning	Harmful if inhaled	Based on description that 3 out of 6 rats died with 4-hour exposure to 4000ppm (equivalent: 14.06mg/L) in the inhalation exposure test (ACGIH (7th, 2001)). LC50 (4 hours) value was judged to be almost equivalent to 4000ppm. 4000 ppm could be judged from vapor pressure as the steam with almost no mist, and classified by the ppm concentration standard as Category 4.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	There was description that three among three rat died from 4800ppm 1.2-hour exposure (4 hour equivalent: 50.6mg/L) (PATTY (4th, 1994)). But it was presupposed that it cannot classify since data is insufficient for specifying Category.
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	From description that the skin of the guinea pigs was stimulated seriously (ACGIH (7th, 2001) and PATTY (4th, 1994)), and from description that the moderate irritation was admitted in the test applied to the skin of the rabbit (RTECS (2005)), it was set as Category 2 .
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 it stimulated the eyes of the rabbits seriously (ACGIH (7th, 2001) and PATTY (4th, 1994)).
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	-	-	-	No data available
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 (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 a decreased respiratory rate through an inhalation exposure test using mice, it was judged as respiratory irritant, and determined to be Category 3 (respiratory irritant).
9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	-	-	-	No data available
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 96-hour LC50=13mg/L of fishes ( <i>Oryzias latipes</i> ) (MOE eco-toxicity tests of chemicals, 1998).
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=1.31 (PHYSPROP Database, 2005)).