GHS Classification

ID989 **2-Butanone, 3-methyl-**

CAS 563-80-4 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: 475degC (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 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	Rat LD50 value: 4585mg/kg (ACGIH 7th, 2001, PATTY 4th, 1994), 3200mg/kg (ACGIH 7th, 2001), 4100mg/kg and 2572mg/kg (PATTY 4th, 1994). Calculated based on the data above. Since the calculated values was 2875mg/kg, it was classified to category 5.
1	Acute toxicity (dermal)	Not classified	-	-	-	Based on rabbit LD50 value: 6.35ml/k (reduced value = 5144mg/kg), and >5000mg/kg (ACGIH 7th, 2001, 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 5	-	Warning	May be harmful if inhaled	It was classified based on rat LC50 (6 hours) value: 6377ppm (4-hour equivalent: 27.46mg/kg) (PATTY 4th, 1994). Such concentration could be judged to be steam with almost no mist from its vapor pressure, and it was classified as Category 5 by the ppm concentration standards.
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 was no animal test data in application of less than 4 hours. But it was set as Category 2 from description that the moderate irritation was admitted in the test applied to the skin of rabbit and guinea pig for 24 hours (PATTY (4th, 1994)).
3	Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	We classified it as Category 2B based on the description hat slight damaging property was acknowledged in the test applied to the eyes of the rabbits and it recovered within seven days (PATTY (4th, 1994)).
4	Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	-	-	-	Respiratory organ: No data. Skin :Based on the description that skin sensitization was not acknowledged with the guinea pigs in PATTY (4th, 1994), and description that skin sensitization was not acknowledged by the test for human, it may have been Out Of Category, however, the test method was unknown for the test of the guinea pigs, and since test subjects for human was the small-scale test of 25 examples, we thought the data is too insufficient to classify it to be Out Of Category, 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 (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 a description in PATTY (4th, 1994) referring to confirmation of temporary central nervous system depressions in an inhalation exposure test using rats, and of a description referring to that it was used in order to measure relative susceptibility of human lungs to irritant gas. So it was judged that there were anesthetic actions and respiratory irritant, and determined to be 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 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=864mg/L of fishes (Fathead minnows) (ECETOC TR91, 2003).
11	Hazardous to the aquatic environment (chronic)	Not classified	–	–	–	Since not water-insoluble (aqueous solubility =60800mg/L(PHYSPROP Database, 2005)) and acute toxicity is low.