

GHS Classification

ID978

CAS 12108-13-3

Physical Hazards

methyl cyclopentadienyl manganese tricarbonyl

Date Classified: Jun. 20, 2006 (Environmental Hazards: Mar. 31, 2006)

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	Classification not possible (Category 4 or Not classified)	-	Warning	Combustible liquid	In the information with 93 degC (weiss (Zhd, 1980) p.092) is adopted, it will be classified as Category 4, but there are multiple data with more than 93 degC. Therefore, if the flash point is not measured with a real sample, it cannot be judged. The acceptance criteria are as follows: Flash point > 93 degC, but not > 93 degC, or flash point > 93 degC
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	Classification not possible	-	-	-	No data available
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	Classification not possible	-	-	-	No data available
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	-	-	-	No data available

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 2	Skull and crossbones	Danger	Fatal if swallowed	Rat LD50 value: 58mg/kg (ACGIH 7th, 2001, NICNAS, 2003, EHC 17, 1981), 22.9mg/kg, 16.8mg/kg, 50mg/kg, 23 - 176 mg/kg and 9->80mg/kg (NICNAS, 2003), 175mg/kg and 89mg/kg (EHC 17, 1981). Calculated based on the data above. Since the calculated values was 39.9mg/kg, it was classified to category 2.
1 Acute toxicity (dermal)	Category 3	Skull and crossbones	Danger	Toxic in contact with skin	It was set as Category 3. Based on the value of 212.7mg/kg calculated from rabbit LD50 values: 140mg/kg and 795mg/kg (ACGIH 7th, 2001, NICNAS, 2003), 196.7mg/kg and 420mg/kg (NICNAS, 2003), 1350mg/kg (NICNAS, 2003, PATTY 4th, 1994, EHC 17, 1981), and rat LD50 value: 665mg/kg (NICNAS, 2003, PATTY 4th, 1994, EHC 17, 1981).
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Category 1	Skull and crossbones	Danger	Fatal if inhaled	Calculated based on rat LC50 (4 hours) : 0.076mg/L (ACGIH 7th, 2001, NICNAS, 2003), LC50 (1 hour) : 0.247mg/L (4-hour equivalent: 0.124mg/L) (ACGIH 7th, 2001, NICNAS, 2003), LC50 (1 hour) : 0.22mg/L (4-hour equivalent: 0.11mg/L) (NICNAS, 2003). Since the calculated value was 0.08mg/L, it was classified as Category 1.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Category 3	-	Warning	Causes mild skin irritation	There is description that there was no irritation in single contact to the human cutaneous (ACGIH (7th, 2001)). But it was set as Category 3 from description that slight irritation was admitted in the skin irritation test using the rabbit (NICNAS (2003)).
3 Serious eye damage / eye irritation	Not classified	-	-	-	In the test applied to the eyes of the rabbits, the change of the eyes applicable to 1-3 of the stimulative judging standard was not acknowledged (NICNAS (2003)). Therefore we classified it as Out Of Category.
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	-	-	-	Respiratory organ: No data. Skin: Since data was insufficient, we could not classify it.

5	Germ cell mutagenicity	Not classified	-	-	-	There is a negative result by the dominant lethal test using the mouse which is an in vivo multigeneration mutagenicity test using a germ cell (NICNAS, 2003), and the micronucleus test which used the mouse erythrocyte, which is the in vivo mutagenicity test using a somatic (NICNAS, 2003). So it carried out the outside of Category.
6	Carcinogenicity	Classification not possible	-	-	-	No data available
7	Toxic to reproduction	Not classified	-	-	-	It was considered as out of Category based on the description that clear reproductive toxicity was not observed even at the dose in which the significant inhibit weight gains is observed in a mother animal in an oral administration examination during the pregnancy using the rat (NICNAS (2003)).
8	Specific target organs/systemic toxicity following single exposure	Category 1 (lung); Category 3 (narcotic effects)	Health hazard; Exclamation mark	Danger; Warning	Cause damage to organs (lung); May cause respiratory irritation or may cause drowsiness and dizziness (narcotic effects)	It was judged as Category 1 (pneumoconiosis) because of a description in NICNAS (2003) referring to confirmation of effects on lungs at a given dose within the guidance value of Category 1 in oral administration studies using rats. Moreover, because of descriptions for human exposure cases in ACGIH (7th, 2001) and NICNAS (2003) referring to that conditions, such as temporary giddiness, nausea, and headache, were confirmed. So it was judged that there were anesthetic actions, and determined to be Category 3 (anesthetic actions).
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (liver, kidneys)	Health hazard	Warning	May cause damage to organs (liver, kidneys) through prolonged or repeated exposure	It was classified into Category 2 (liver, kidney) duing to description that the effects on the liver and kidney were observed with the exposure concentration within the guidance value range for Category 2 in the inhalation exposure test on rats and mice (NICNAS (2003)).
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 1	Environment	Warning	Very toxic to aquatic life	It was classified into Category 1 from 96-hour TLm=0.2mg/L of fishes (Bluegill) (NICNAS, 2003).
11 Hazardous to the aquatic environment (chronic)	Category 1	Environment	Warning	Very toxic to aquatic life with long lasting effects	Classified into Category 1, since acute toxicity was Category 1, supposed not rapidly degrading (BIOWIN), though supposed less bioaccumulative (log Kow=3.7(PHYSPROP Database, 2005)).