

## GHS Classification

**ID703**

**Methyl formate**

**CAS 107-31-3**

Date Classified: Apr. 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 1	Flame	Danger	Extremely flammable liquid and vapour	Flash point: 31 degC (<-23degC), Boiling point: 31.5degC (>-35degC)
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	-	-	-	It is the liquid with ignition points of 449 degC (ICSC (1997)), and it does not ignite in room temperatures.
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 (but not to other elements).
14 Oxidizing solids	Not applicable	-	-	-	Liquid (GHS definition)
15 Organic peroxides	Not applicable	-	-	-	Organic compounds 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 4	Exclamation mark	Warning	Harmful if swallowed	It was set as Category 4 based on rat LD50: 475 mg/kg (RTECS (2004)). Although Priority2 had two reports, the value of the lower one was adopted.
1 Acute toxicity (dermal)	Not classified	-	-	-	Based on rat LD50> 4g/kg and rabbit LD50> 5g/kg (RTECS (2004)), 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	It was classified as Category 3 based on rat LC50: 2116ppm/4h (RTECS (2004)). (The saturated vapor concentration at 20degC is 6.2*10 <sup>5</sup> ppm)
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Category 3	-	Warning	Causes mild skin irritation	There was a report of having no irritation on rabbits (IUCLID (2000)). But based on the statement of stimulativeness on humans (PATTY (5th, 2001)), it was classified as Category 3.
3 Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	There are statements of stimulative with humans (PATTY (5th, 2001)), and of stimulative in rabbit test (IUCLID (2000)). But there is no resilience data, Category of 2A and 2B is not made. When a display is required, it is recommended of making it 2A from a viewpoint of safety.
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	No data available
5 Germ cell mutagenicity	Classification not possible	-	-	-	Ames test: We found a negative statement (IUCLID (2000)), but we did not have the in vivo report. Therefore we presupposed that we could not classify it according to the technical guideline.
6 Carcinogenicity	Classification not possible	-	-	-	Classification not possible due to lack of data and reports
7 Toxic to reproduction	Classification not possible	-	-	-	Since there was no data, it was presupposed that it cannot classify. [special notes] Should the reproductive toxicity of the generated methanol (since methyl formates are easily hydrodisid intravital) also be referred to?

8	Specific target organs/systemic toxicity following single exposure	Category 1 (central nervous system); Category 2 (optic organ); Category 3 (respiratory tract irritation, narcotic effects)	Health hazard; Exclamation mark	Danger; Warning	Cause damage to organs (central nervous system); May cause damage to organs (optic organ); May cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract irritation, narcotic effects)	High concentration exposure causes a convulsion (PATTY (5th, 2001)), there is the description that it is with coma, central nervous system inhibition (HSDB (2005)), and it is classified into Category 1 (central nervous). And the vision disorder may come to be blind (HSDB (2005); priority 2). And there is the description that it come to mucosa irritation (PATTY (5th, 2001)), nose irritation (HSDB (2005)), so it is classified into Category 3 (respiratory irritation). And there is the description that there is anesthetic action (PATTY (5th, 2001)), it is classified into Category 3 (anesthetic action).
9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	-	-	-	Classification not possible due to lack of data
10	Aspiration hazard	Classification not possible	-	-	-	Although dynamic viscosity could be calculated (0.332mm <sup>2</sup> /s), we could not classify it since we found no animal experiment data of chemical pneumonia.

### 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