ID798 Dimethyl carbamyl chloride

CAS 79-44-7 Date Classified: Jul. 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 4	-	Warning	Combustible liquid	Category 3 because of its flash point: between 60 and 90 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	Not classified	-	-	-	The ignition points is 410 degC, and it is thought that 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 metaloids(B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At).
13	Oxidizing liquids	Not applicable	-	-	-	Organic compounds containing oxygen and chlorine (but not fluorine) and these elements are chemically bonded only to carbon (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 on a corrosive rate to metals

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	There were two data of rat LD50: 1170mg/kg (ACGIH (2001)) and 1000mg/kg (RTECS (2004)). Both were in 300 to 2000 mg/kg, and they were set as Category 4.
1	Acute toxicity (dermal)	Classification not possible	-	-	-	There is no data of acute dermal toxicity, so it cannot be classified.
1	Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1	Acute toxicity (inhalation: vapour)	Category 2	Skull and crossbones	Danger	Fatal if inhaled	There is data of rat steam inhalation LC50 (6 hours): 180ppm (RTECS (2005)), and it is 220.5ppm if it is converted for 4 hours. Since it fall into the range of 100 - 500ppm, it was classified as Category 2.
1	Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	Classification not possible due to lack of data
2	Skin corrosion / irritation	Classification not possible	-	-	-	Since data from animal studies cannot be found, it cannot be classified. Since there is description that the skin of rodent is stimulated (IARC 71 (1999)) and R38 is designated in EU, it is supposed to be Category 2 or 3.
3	Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	Since there is the desceiption that the eye of the rabbit is stimulated in IARC 71(1999), it was referred to as "Category 2". It is indicated that there is strong tearing property in HSDB (2005). Since there is no data of recover days, subdividing into 2A and 2B is not possible.
4	Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Not classified	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	About respiratory sensitization, there is no information and we could not classify it. Although we were not able to find out the experimental data for skin sensitization, we classified it to be"Out Of Category" since IARC 71 (1999) describes that "the proof of sensitizing property was not able to be found out with guinea pigs."
5	Germ cell mutagenicity	Category 2	Health hazard	Warning	Suspected of causing genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	We found the positive findings of two affairs for In vivo micronucleus tests of the mouse (IARC 71 (1999)), however, there were no data for the over generation mutagenicity test and the In vivo productive cell mutagenicity test, we classified it as "Category 2." Many positive findings were obtained in the In vitro tests.

6	Carcinogenicity	Category 1B	Health hazard	Danger	May cause cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	There is no anecdotal report about humans, but positive finding is obtained by many animal studies (ACGIH (2001), IARC 71 (1999).). It was set as "Category 1B" from the assessment of 2A of IARC, and A2 of ACGIH, and the carcinogenic category 2 of EU.
7	Toxic to reproduction	Classification not possible	–	–	–	Classification not possible due to lack of data
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	Rat inhalation experiment results damages to nasal mucosa, throat and lungs (IARC 71 (1999)). But we does not classify it into Category 1 and 2 because there is no description about exposure concentration to be compared with the guidance value. HSFS (1998) has the descriptions of "respiratory irritation" and "headache, nausea and vomiting.". We classified it as "Category 3 (respiratory irritation)."
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (liver); Category 2 (respiratory organs)	Health hazard	Danger; Warning	Causes damage to organs (liver) through prolonged or repeated exposure; May cause damage to organs (respiratory organs) through prolonged or	Since IARC 71 (1999) had description of liver disorders, it was classified into "Category 1 (liver)." In HSFS (1998), the warning of lungs and bronchitis is indicated, too. Despite the information on the inhalation test (15 days) of a rat, there was no effect description except for deaths (ACGIH (2001)). Therefore, Category 2 (respiratory systems) was added.
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)	Classification not possible	–	–	–	No data available
11	Hazardous to the aquatic environment (chronic)	Classification not possible	–	–	–	No data available.

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