

GHS Classification

ID796

N,N-Dimethylaniline

CAS 121-69-7

Date Classified: Sep. 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 4	-	Warning	Combustible liquid	Flash point: 62degC
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 371 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 metalloids(B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At).
13 Oxidizing liquids	Not applicable	-	-	-	Organic compounds containing no oxygen, fluorine and chlorine.
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 corrosion 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	Mean 1088 mg/kg was obtained from five data (ACGIH (2001), DFGOT vol.3 (1991), RTECS (2005), IUCLID (2000)) covering rat oral LD50: 951 to 1410 mg/kg. Since it was in the range of 300 to 2000 mg/kg, it was set as Category 4.
1 Acute toxicity (dermal)	Category 4	Exclamation mark	Warning	Harmful in contact with skin	There are rabbit dermal absorption acute LD50s = 1770mg/kg 8ACGIH (2001) and 1692mg/kg (DFGOT vol.3 (1991)). All were in the range of 1000 - 2000 mg/kg, it was set as Category 4.
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Classification not possible	-	-	-	There is no data of LC50 with steam inhalation, and it cannot be classified. There is a rat lower fatality report of 50ppm/4H (ACGIH (2001)), and it is thought that toxicity is high.
1 Acute toxicity (inhalation: dust, mist)	Category 4	Exclamation mark	Warning	Harmful if inhaled	There was no 50% lethal dose data in mist inhalation. But there is information that 40% died within four days from inhalation exposure of mist 1.88mg/L for 4 hours (DFGOT vol.3 (1991)), and it is thought that LC50 goes into 1.0 - 5.0mg/L... It was set as Category 4.
2 Skin corrosion / irritation	Category 3	-	Warning	Causes mild skin irritation	There is a report on human patch test that there was no irritation (IUCLID (2000)). But it was classified as Category 3 because there is a statement of "MILD" with skin application test on rabbits (RTECS (2005)).
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	Since there is the report of "MODERATE" in the administration test to the eyes of the rabbit, it was set as "Category 2A".
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	-	-	-	It gave a weak positive result in the in vivo study report (IUCLID (2000)). Although the in vitro results were described in ACGIH (2001), DFGOT vol.3 (1991), and IARC 57 (1993), that it gave negative for bacteria and it gave positive for mammals cultured cells. However, these articles did not state about the In vivo examination, and these have not carried out overall rating, either
6 Carcinogenicity	Not classified	-	-	-	There is a report that the papillomatosis at the front stomach of male mouse and the growth of sarcoma at spleen of male rat were seen in the carcinogenesis bioassay which was carried out by NTP. It was judged with "2B" by Japanese industrial hygiene academic Society acceptable limit recommendations for Hygiene and with "3" by the EU category. But IARC is set to "3" and ACGIH to "A4." According to the opinion of a specialist, it carried out "Category Outside."

7	Toxic to reproduction	Classification not possible	-	-	-	The bad influence to the newborn infant was not observed in two administration experiments to the pregnant female mouse (ACGIH (2001), DFGOT vol.3 (1991)). However, there is no test report about the reproductive potential of a male rat, and data is insufficient to make it the outside of category synthetically.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (blood system, nervous system); Category 3 (narcotic effects)	Health hazard	Danger	Cause damage to organs (blood system, nervous system); May cause respiratory irritation or may cause drowsiness and dizziness (narcotic effects)	Symptoms accompanied by methemoglobin production are found in humans (ICSC (1998)) as well as in dogs and rats within the guidance value to Category 1 (ACGIH (2001), DFGOT vol.3 (1991)). In addition, asneuropathy and anesthetic actions are observed in humans (ICSC (1998), ACGIH (2001)). Therefore we classified it into "Category 1 (blood system, nervous system) and Category 3 (anesthetic action)."
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (blood, spleen, liver)	Health hazard	Danger	causes damage to organs (blood, spleen, liver) through prolonged or repeated	Based on that in repeated exposure experiments of rats with exposure-dose equivalent to the guidance value of Category 1, the affect on blood (methemoglobinemia, anemia), a spleen, and liver (no detailed statements) is observed (ACGIH (2001), RTECS (2005), IUCLID (2000)), it was classified into "Category 1 (blood, spleen,liver)".
10	Aspiration hazard	Classification not possible	-	-	-	Classification not possible due to lack of data on chemical pneumonia

Environmental Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
11 Hazardous to the aquatic environment (acute)	Category 2	-	-	Toxic to aquatic life	It was classified into Category 2 from 48-hour EC50=5mg/L of Crustacea (Daphnia magna) (IUCLID, 2000).
11 Hazardous to the aquatic environment (chronic)	Category 2	Environment	-	Toxic to aquatic life with long lasting effects	Classified into Category 2, since acute toxicity was Category 2 and not rapidly degrading (BOD: 1.9% (existing chemical safety inspections data)), though less bio-accumulative (BCF=13.6 (existing chemical safety inspections data)).