

## GHS Classification

**ID589**

**Dimethylamine**

**CAS 124-40-3**

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	-	-	-	Gas (GHS definition)
2 Flammable gases	Category 1	-	Danger	Extremely flammable gas	Ignitable when in a mixture of 13% or less by volume in air. UNRTDG Class: 2.1
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not classified	-	-	-	Not classified in UNRTDG Subsidiary risks Class: 5.1
5 Gases under pressure	Liquefied gas	Gas cylinder	Warning	Contains gas under pressure; may explode if heated	Critical temp: >-50degC (Partially liquid at temperatures above -50degC)
6 Flammable liquids	Not applicable	-	-	-	Gas (GHS definition)
7 Flammable solids	Not applicable	-	-	-	Gas (GHS definition)
8 Self-reactive substances and mixtures	Not applicable	-	-	-	Gas (GHS definition)
9 Pyrophoric liquids	Not applicable	-	-	-	Gas (GHS definition)
10 Pyrophoric solids	Not applicable	-	-	-	Gas (GHS definition)
11 Self-heating substances and mixtures	Not applicable	-	-	-	Gas (GHS definition)
12 Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	-	-	-	Gas (GHS definition)
13 Oxidizing liquids	Not applicable	-	-	-	Gas (GHS definition)
14 Oxidizing solids	Not applicable	-	-	-	Gas (GHS definition)
15 Organic peroxides	Not applicable	-	-	-	Gas (GHS definition)
16 Corrosive to metals	Classification not possible	-	-	-	Liquid at a test temperature, 55degC. Test methods applicable to solid substances are not available.

## Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 4(aqueous solution)	Exclamation mark	Warning	Harmful if swallowed	As a result of the examination using water solutions, based on rat LD50 value: 698mg/kg (ACGIH (7th, 2001), DFGOT vol.7 (1996)), it was set as Category 4. (water solutions)
1 Acute toxicity (dermal)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: gas)	Category 4	Exclamation mark	Warning	Harmful if inhaled	It was considered as Category 4 based on rat LC50 (4 hours) value: 4700 ml/m3 (DFGOT vol.7 (1996)).
1 Acute toxicity (inhalation: dust, mist)	Not applicable	-	-	-	Gas (GHS definition)
2 Skin corrosion / irritation	Category 1A-1C(3 - 6% solution)	Corrosion	Danger	Causes severe skin burns and eye damage	There are descriptions that in 3 or 6% aqueous solutions skin application test on rabbits, erythema and edema, and following ulcer was observed of the skin (DFGOT vol.7, 1996, ACGIH, 7th, 2001) and that the test in which the tip of mice tail was dipped in 6% aqueous solutions for 2 hours, congestion with a clear boundary and following tissue necrosis was observed (DFGOT vol.7, 1996, ACGIH, 7th, 2001). It was judged to have corrosivity and was classified as Category 1A-1C (3-6% aqueous solutions). Since the details of development and course of the corrosive reaction were unknown, it was not subcategorized.
3 Serious eye damage / eye irritation	Category 1(1 - 5% solution)	Corrosion	Danger	Causes serious eye damage	To eye of rabbit, conjunctivitis, conjunctival edemas, keratitis and corneal opacity are caused 1% aqueous solution, and conjunctival hemorrhage, corneal edemas, turbidity and neovascularization are caused 5% aqueous solution, and it will continue 28 days. Furthermore, in higher concentrations, skin corrosiveness that a corneal becomes the translucent of blue and white in several seconds (DFGOT vol.7 (1996), ACGIH 7th, (2001)). So it was set as Category 1 (1-5% water).
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Category 1	(Respiratory sensitization)-; (Skin sensitization)Exclamation mark	(Respiratory sensitization)-; (Skin sensitization)Warning	(Respiratory sensitization)-; (Skin sensitization)May cause allergic skin reaction	Respirator tract: No data Skin : In Maximization test (closed epicutaneous test) using a guinea pigs, it is positive (the rate of positivity: 100%) (DFGOT vol.7 (1996)) and, as a description states that this substance has skin sensitization (ACGIH 7th, 2001), it was referred to as Category 1.
5 Germ cell mutagenicity	Not classified	-	-	-	Although there are no data from the tests in germ cells, the report of the negative result of the in vivo chromosome aberration test using bone-marrow cells taken from rats that have been subjected to exposure to this substance for 3 months through inhalation (DFGOT vol.7 (1996)). So the substance was regarded as outside the categories.

6	Carcinogenicity	Not classified	-	-	-	Since it was classified into A4 according to ACGIH (7th, 2001), it carried out the outside of Category.
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 1 (central nervous system, respiratory organs)	Health hazard	Danger	Cause damage to organs (central nervous system, respiratory organs)	Due to the descriptions that the tissue injury is observed in respiratory mucosa by the exposure concentrations at 600ppm or more by single inhalation exposure test in rats (PATTY (5th, 2001)), that the RD50 value in short time inhalation exposure in rat and mouse (50% breathing rates inhibitory concentration) is calculated (DFGOTvol.7 (1996)), that it has respiratory irritation, and that the central nervous system effects (incoordination and depressomotor) were observed in the dosage of the guidance value of Category 1 in the oral administration examination in rat, mouse, rabbit, and guinea pig (ACGIH (7th, 2001)). So it was classified into Category 1 (central nervous system, respiratory system).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (respiratory organs)	Health hazard	Danger	Causes damage to organs (respiratory organs) through prolonged or repeated exposure	In the inhalation exposure test in rats and mice for two years, it was classified to as Category 1 (respiratory systems) from the description that inflammation, denaturation, and hyperplastic injury at the rhinal mucosas were acknowledged in the exposure group of 50 ppm or more of the guidance value range maximum of Category 1 (ACGIH (7th, 2001), DFGOT vol.7 (1996), PATTY (5th, 2001)).
10	Aspiration hazard	Not applicable	-	-	-	Gas (GHS definition)

### 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 96-hour EC50=6200microg/L of algae (Selenastrum) (AQUIRE, 2003).
11 Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since rapidly degrading (BOD: 88% (existing chemical safety inspections data)), and less bio-accumulative (log Kow=-0.38 (PHYSPROP Database, 2005)).