

## GHS Classification

**ID144**

**Diphenylamine**

**CAS 122-39-4**

Date Classified: Jun. 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	—	—	—	Containing no chemical groups with explosive properties
2 Flammable gases	Not applicable	—	—	—	Classified as "solid" according to GHS definition
3 Flammable aerosols	Not applicable	—	—	—	Not aerosol products
4 Oxidizing gases	Not applicable	—	—	—	Classified as "solid" according to GHS definition
5 Gases under pressure	Not applicable	—	—	—	Classified as "solid" according to GHS definition
6 Flammable liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
7 Flammable solids	Classification not possible	—	—	—	Classification not possible due to lack of data, though classified as "flammable" according to ICSC (2004).
8 Self-reactive substances and mixtures	Not applicable	—	—	—	Containing no chemical groups with explosive or self-reactive properties
9 Pyrophoric liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
10 Pyrophoric solids	Not classified	—	—	—	Not pyrophoric when in contact with air at ordinary temperatures: the auto-ignition temperature is 634degC (ICSC, 2004)
11 Self-heating substances and mixtures	Classification not possible	—	—	—	Test methods applicable to liquid substances are not available (melting point: 53degC (ICSC, 2004), test temperature: 140degC)
12 Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	—	—	—	Containing no metals or metalloids (B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At)
13 Oxidizing liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
14 Oxidizing solids	Not applicable	—	—	—	Organic compounds containing no oxygen, fluorine and chlorine
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	Based on the rat LD50 (oral route) value of 1,120mg/kg (MOE Risk Assessment vol.3 (2004)).
1 Acute toxicity (dermal)	Classification not possible	—	—	—	Insufficient data available
1 Acute toxicity (inhalation: gas)	Not applicable	—	—	—	Due to the fact that the substance is "solid" according to the GHS definition and inhalation of its gas is not expected.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	—	—	—	No data available
2 Skin corrosion / irritation	Classification not possible	—	—	—	A report on rabbit skin irritation tests suggest that the substance is "non-irritating" (IUCLID (2000)) while epidemiological cases provide evidence of "skin, eye and mucosal irritation as major effects" (CERI Hazard Data 98-13 (1999)). These equivocal data do not allow the degree of skin irritation to be determined, and thus classification is not possible.
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Based on the description in the report on rabbit eye irritation tests (IUCLID (2000)): "slightly irritating" and "corrosive." In classification, priority was given to the severer reactions (i.e., "corrosive"), and thus classified into Category 1.
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	Respiratory sensitization: No data available Skin sensitization: Based on an epidemiological case report of skin sensitization (CERI Hazard Data 98-13 (1999)) and two case reports of positive patch test reactions (CERI Hazard Data 98-13 (1999), MOE Risk Assessment vol.3 (2004))
5 Germ cell mutagenicity	Classification not possible	—	—	—	Based on the absence of data on multi-generation mutagenicity tests, germ/somatic cell mutagenicity tests in vivo and germ/somatic cell genotoxicity tests in vivo, and the absence of strong positive data on mutagenicity tests in vitro (CERI Hazard Data 98-13 (1999), NTP DB (Access on February 2006)).
6 Carcinogenicity	Not classified	—	—	—	Due to the fact that the substance is classified as Category A4 by ACGIH (2001).
7 Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Based on the evidence of adverse effects on reproduction at dosing levels toxic to parental animals or in the absence of data on parental toxicity, described in CERI Hazard Data 98-13 (1999).
8 Specific target organs/systemic toxicity following single exposure	Category 1 (blood system, urinary organs)	Health hazard	Danger	Causes damage to organs (blood system, urinary organs)	Based on the human evidence: "major effects include irritation of the skin/eye/mucosa, methemoglobinemia and effects on the urinary organs" (CERI Hazard Data 98-13 (1999)).

9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (cardiovascular system, blood, bladder) Category 2 (kidneys)	Health hazard	Danger Warning	Causes damage to organs through prolonged or repeated exposure (cardiovascular system, blood, bladder) May cause damage to organs through prolonged or repeated exposure (kidneys)	Based on the human evidence including "bladder damage, tachycardia, elevated blood pressure and eczema as clinical symptoms of poisoning" (ACGIH (7th, 2001)), and the evidence from animal studies including "anemia" (IRIS (1987)), "dose-dependent decreases in RBC count/hematocrit, statistically significant at medium to high doses" (JMPPR (1998)), "renal tubular dilation, reversible anemia; histopathological changes were limited to the urinary organs, associated with interstitial nephritis and cystic dilation of the renal tubules" (ACGIH (7th, 2001)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1 (blood) and Category 2 (kidneys).
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 72 hours ErC50=360microg/L of the algae (Green Algae) (MOE Risk Assessment vol. 3, 2004).
11 Hazardous to the aquatic environment (chronic)	Category 1	Environment	Warning	Very toxic to aquatic life with long lasting effects	Although acute toxicity is Category 1 and bio-accumulation is low (BCF=253(Existing Chemical Safety Inspections Data, )), since there was no rapidly degrading (the decomposition by BOD: 0%(Existing Chemical Safety Inspections Data)), it was classified into Category 1.