

GHS Classification

ID171

Aniline, 4-nitro-

CAS 100-01-6

Date Classified: Oct. 1, 2005 (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 classified	-	-	-	UNRTDG Class: 6.1
2 Flammable gases	Not applicable	-	-	-	Solid (GHS definition)
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Solid (GHS definition)
5 Gases under pressure	Not applicable	-	-	-	Solid (GHS definition)
6 Flammable liquids	Not applicable	-	-	-	Solid (GHS definition)
7 Flammable solids	Not classified	-	-	-	UNRTDG Class: 6.1
8 Self-reactive substances and mixtures	Not classified	-	-	-	Classified in UNRTDG Class: 6.1
9 Pyrophoric liquids	Not applicable	-	-	-	Solid (GHS definition)
10 Pyrophoric solids	Not classified	-	-	-	Flash point: 510degC (Hommel, 1991, Card No.293)
11 Self-heating substances and mixtures	Not classified	-	-	-	UNRTDG Class: 6.1
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	-	-	-	Solid (GHS definition)
14 Oxidizing solids	Not classified	-	-	-	UNRTDG Class: 6.1
15 Organic peroxides	Not applicable	-	-	-	Containing no -O-O- structure
16 Corrosive to metals	Not classified	-	-	-	UNRTDG Class: 6.1

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	Calculated based on rat LD50 value: 3249mg/kg (Japan Society for Occupational Health advice, 1995), 3250mg/kg (CERI Hazard Data, 2002), and 750mg/kg (CERI Hazard Data, 2002). Since the calculated values was 1049mg/kg, it was set as Category 4.
1 Acute toxicity (dermal)	Classification not possible	-	-	-	There was description of rat LD50 value:>2500mg/kg in IUCLID (2000). But there was no other data and it was not able to judge Category 5 or outside of Category, itcannot be classified.
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Solid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Not classified	-	-	-	In the application test on rabbit skin, irritation was not observed (CERI Hazard Data (2002)), therefore, it was classified as out of Category.
3 Serious eye damage / eye irritation	Classification not possible	-	-	-	There is description that irritation was not admitted in the test applied to the eye of the rabbit (CERI Hazard Data (2002)). But there is description that an eye was slightly stimulated as human impact (ACGIH (7th, 2001)). It was not clear about the irritation presence to eyes, it could not be classified.
4 Respiratory/skin sensitization	respiratory sensitization: Classification not possible; Skin sensitization: Not classified	-	-	-	Respirator: No data Skin: Classified as out of category because CERI Hazard Data Category (2002) describes that a test using guinea pigs finds no sensitization.
5 Germ cell mutagenicity	Not classified	-	-	-	The substance was regarded as outside the categories because there is a record of a negative result from the micronucleus test (subjected tissue unknown), which is an in vivo mutagenicity test in IUCLID (2000).
6 Carcinogenicity	Not classified	-	-	-	Not classified because of "A4" (ACGIH, 7th, 2001)
7 Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	There is the description that there is the increased of number of resorptions and fetal malformations only in the dose causing general toxicity to dam animals in peroral administration during pregnancy using rat (ACGIH (7th, 2001), PATTY (4th, 1994), CERI Hazard Data, and NTP TR418 (1993)). And it was considered as in the Category 2.

8	Specific target organs/systemic toxicity following single exposure	Category 1 (blood system); Category 3 (narcotic effects)	Health hazard; Exclamation mark	Danger; Warning	Cause damage to organs (blood system); May cause respiratory irritation or may cause drowsiness and dizziness (narcotic effects)	Due to the descriptions that methaemoglobinaemia, giddiness and consciousness loss were observed in human accidental exposure in industrial hygiene academic society advice (1995), ACGIH (7th, 2001), Patty (4th, 1994), and CERH Hazard Data (2002), and that somnolence and convulsion were observed by oral administration to the guinea pigs in CERH Hazard Data (2002). So blood is the internal target organ, and it is judged that it has anesthetic actions. Therefore, it was classified into Category 3 (anesthesia action).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (blood)	Health hazard	Danger	Causes damage to organs (blood) through prolonged or repeated exposure	In industrial hygiene academic society advice (1995), ACGIH (7th, 2001), CERH Hazard Data (2002), and NTP TR418 (1993), due to the description that the effect to the blood on methemoglobinemia etc. was observed within the dosage of the guidance value range of Category 1 in the two-week oral study using mouse or the four-week inhalation atmospheric exposure test using rats, it was classified into Category 1 (blood).
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 3	-	-	Harmful to aquatic life	It was classified into Category 3 from 24-hour EC50=25mg/L of Crustacea (Daphnia magna) (CERH Hazard Data, 2002).
11 Hazardous to the aquatic environment (chronic)	Category 3	-	-	Harmful to aquatic life with long lasting effects	Classified into Category 3, since acute toxicity was Category 3 and not rapidly degrading (BOD: 0% (existing chemical safety inspections data)), though less bio-accumulative (BCF=3.6 (existing chemical safety inspections data)).