

## GHS Classification

**ID880**

**2-Nitrotoluene**

**CAS 88-72-2**

Date Classified: Sep. 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	-	-	-	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	Not classified	-	-	-	Flash point: >93degC, UNRTDG Class: 6.1
7 Flammable solids	Not applicable	-	-	-	Liquid (GHS definition)
8 Self-reactive substances and mixtures	Not classified	-	-	-	Classified in UNRTDG Class: 6.1
9 Pyrophoric liquids	Not classified	-	-	-	Flash point: 420degC (ICSC (J), 2000)
10 Pyrophoric solids	Not applicable	-	-	-	Liquid (GHS definition)
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 classified	-	-	-	UNRTDG Class: 6.1
14 Oxidizing solids	Not applicable	-	-	-	Liquid (GHS definition)
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 the rat LD50 value: 890mg/kg (CERI Hazard Data, 1999, DFGOT vol.8, and 1997), 891mg/kg (NTP TR 504, 2002, IARC 65, 1996), 2100mg/kg(IARC 65, 1996) and 2546mg/kg (CERI Hazard Data, 1999, DFGOT vol.8, 1997). Since the calculated value was 1221mg/kg, it was classified to category 4.
1 Acute toxicity (dermal)	Not classified	-	-	-	Based on rat LD50 value: >5000mg/kg (CERI Hazard Data, 1999), it was set as the outside of Category.
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Classification not possible	-	-	-	There is description that rat LC50 (8 hours) value: >197ppm (4-hour equivalent >1.56mg/L) (CERI Hazard Data(1999)). But there is no other data, and data is insufficient, it cannot be classified.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Not classified	-	-	-	It was carried out the outside of Category from description that irritation was not indicated in the skin of the rabbit on CERI Hazard Data (1999) and DFGOT (vol.8, 1997).
3 Serious eye damage / eye irritation	Not classified	-	-	-	Based on the description that the eye is not stimulated (DFGOT (vol.8, 1997)), it was set as the outside of Category.
4 Respiratory/skin sensitization	respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	-	-	-	No data available
5 Germ cell mutagenicity	Not classified	-	-	-	Since there was a negative result (NTP TR 504, 2002) with micronucleus test on rat and mouse red corpuscles which is an in vivo mutagenicity test using somatic cells, it was classified as out of Category.
6 Carcinogenicity	Not classified	-	-	-	It was classified into category 2 (EU-Annex I, 2005) in EU. But it was classified into the group 3 (IARC 65, 1996) in IARC. So it was considered as the outside of Category. Expert judgement is required for appropriateness of the categories.
7 Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	It was classified into Category 2 based on the description that the denaturation of a testis, the reduction of sperm motility, decrease of a sperm count, and extension of the female estrous cycle were observed at the dose causing the decreased weight gains in the rat feeding oral administration tests during 90 days (DFGOT (vol.8, 1997), IARC 65 (1996), ACGIH (7th, 2001)).

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)	It was set as Category 1 (blood), from description in ACGIH (7th, 2001), PATTY (4th, 1994), and CERI Hazard Data (1999) that methemoglobinemia is caused. Moreover, CERI Hazard Data (1999) shows that influence on the central nervous system, which is considered to be transient, was seen in the oral administration examination using rats and the dermal administration test using rabbits, it was judged that there was an anesthetic actions and was set as Category 3 (anesthetic actions).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (blood); Category 2 (liver)	Health hazard	Danger; Warning	Causes damage to organs (blood) through prolonged or repeated exposure; May cause damage to organs (liver) through prolonged	Based on the description that anemia is occurred in chronic exposures (PATTY (4th, 1994)), it was classified into Category 1 (blood). Based on the description that in the 14-days feeding oral administration tests using the rat, the effects on the liver were observed with the dosage a little exceeding the Category 2 guidance value range (CERI Hazard Data (1999), DFGOT (vol.8, 1997), IARC 65 (1996)), it was classified into Category 2 (liver).
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 2	-	-	Toxic to aquatic life	It was classified into Category 2 from 48-hour EC50=5.4 mg/L of Crustacea (Daphnia magna) (CERI Hazard Data, 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: 0.5% (existing chemical safety inspections data)), though less bio-accumulative (BCF=29.9 (existing chemical safety inspections data)).