

GHS Classification

ID174

p-Nitrochlorobenzene

CAS 100-00-5

Date Classified: Mar. 23, 2006 (Environmental Hazards: Feb. 10, 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	-	-	-	Containing nitro groups, with the oxygen budget calculated at -122. However, No data available on kick-off temperatures and decomposition energy. Not classified, based on the classification by UN Recommendations on the Transport of Dangerous Goods (Division 6.1, UN#1578)
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	Not classified	-	-	-	Classified into Division 6.1 (UN Recommendations on the Transport of Dangerous Goods, UN#1578)
8 Self-reactive substances and mixtures	Not classified	-	-	-	No data available, though containing nitro groups. Not classified, based on the classification by UN Recommendations on the Transport of Dangerous Goods (Division 6.1, UN#1578)
9 Pyrophoric liquids	Not applicable	-	-	-	Classified as "solid" according to GHS definition
10 Pyrophoric solids	Not classified	-	-	-	Classified into Division 6.1 (UN Recommendations on the Transport of Dangerous Goods, UN#1578)
11 Self-heating substances and mixtures	Classification not possible	-	-	-	Test methods applicable to liquid substances are not available - melting point: 82-84degC (ICSC, 1999), 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 classified	-	-	-	No data available, though being organic compounds containing oxygen bound to carbon and hydrogen. Not classified, based on the classification by UN Recommendations on the Transport of Dangerous Goods (Division 6.1, UN#1578)
15 Organic peroxides	Not applicable	-	-	-	Organic compounds containing no "-O-O-" structure
16 Corrosive to metals	Classification not possible	-	-	-	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	Exclamation mark	Warning	Harmful if swallowed	Based on the LD50 value of 433mg/kg calculated from the testing data of rat LD50 (oral route) of 530mg/kg (ACGIH (7th, 2001)), 294mg/kg (SIDS (2002)), 565mg/kg (SIDS (2002)), 664mg/kg (SIDS (2002)) and 694mg/kg (SIDS (2002)).
1 Acute toxicity (dermal)	Category 4	Exclamation mark	Warning	Harmful in contact with skin	Based on the rat LD50 (oral route) value of 750mg/kg representing the lower of the two testing data, 750mg/kg (SIDS (2002)) and 1,722mg/kg (SIDS (2002)).
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
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Classification not possible	-	-	-	Insufficient data available
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	Based on the description in the report on rabbit eye irritation tests (CERI-NITE Hazard Assessment No.57 (2005)): The substance causes mild irritation, if any, to the eyes.
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) -	Respiratory sensitization: No data available Skin sensitization: Insufficient data available
5 Germ cell mutagenicity	Category 2	Health hazard	Warning	Suspected of causing genetic defects	Based on the absence of data on germ cell multi-generation mutagenicity tests and mutagenicity tests in vivo, positive data on somatic cell mutagenicity tests in vivo (micronucleus tests) and the absence of data on germ cell genotoxicity tests in vivo, described in CERI-NITE Hazard Assessment No.57 (2004).
6 Carcinogenicity	Category 2	Health hazard	Warning	Suspected of causing cancer	Classified into Category 3 by IARC (1996), and into Category A3 by ACGIH (2001); priority is given to the latest evaluation document according to the guidelines.
7 Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Based on the description in CERI-NITE Hazard Assessment No.57 (2004) and SIDS (2005): Continuous breeding studies in mice indicate a significant decrease in conception rates; rat teratogenicity tests indicate skeletal malformations (mainly curved ribs) in offspring at dosing levels toxic to dams; repeated inhalation exposure in rats and mice results in spermatogenic disorder, shorter sexual cycles (rats) and longer sexual cycles (mice).
8 Specific target organs/systemic toxicity following single exposure	Category 1 (blood)	Health hazard	Danger	Causes damage to organs (blood)	Based on the description in CERI-NITE Hazard Assessment No.57 (2004): hemolytic anemia due to methemoglobin formation, and cyanosis are observed in human cases.

9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (blood, testes)	Health hazard	Danger	Causes damage to organs through prolonged or repeated exposure (blood, testes)	Based on the evidence from animal studies including "cyanosis, an increase in methemoglobin concentrations, a decrease in red blood cell count, a decrease in hematocrit/hemoglobin values, an increase in the absolute/relative weight of the spleen, splenic hypertrophy, splenic extramedullary hematopoiesis, hemosiderin deposition, bone marrow hyperplasia, a decrease in spermatid count and sperm concentrations, impaired sperm mobility, testis atrophy, seminiferous tubule atrophy" (CERI-NITE Hazard Assessment No.57 (2004)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1.
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 96 hours LC50=2.14mg/L of the crustacea (Penaeus Chinensis) (CERI/NITE Hazard Assessment Report, 2004).
11 Hazardous to the aquatic environment (chronic)	Category 2	Environment	-	Toxic to aquatic life with long lasting effects	Although acute toxicity was Category 2 and the bio-accumulation potential was low (BCF=20.9(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 2.