

GHS Classification

ID375

m-Chloroaniline

CAS 108-42-9

Date Classified: May 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	—	—	—	Containing no chemical groups with explosive properties
2 Flammable gases	Not applicable	—	—	—	Classified as "liquid" according to GHS definition
3 Flammable aerosols	Not applicable	—	—	—	Not aerosol products
4 Oxidizing gases	Not applicable	—	—	—	Classified as "liquid" according to GHS definition
5 Gases under pressure	Not applicable	—	—	—	Classified as "liquid" according to GHS definition
6 Flammable liquids	Not classified	—	—	—	The flash point is 118degC (c.c.) (ICSC, 2001)
7 Flammable solids	Not applicable	—	—	—	Classified as "liquid" according to GHS definition
8 Self-reactive substances and mixtures	Not applicable	—	—	—	Containing no chemical groups with explosive or self-reactive properties
9 Pyrophoric liquids	Not classified	—	—	—	Not pyrophoric when in contact with air at ordinary temperatures; the auto-ignition temperature is >540degC (ICSC, 2000)
10 Pyrophoric solids	Not applicable	—	—	—	Classified as "liquid" according to GHS definition
11 Self-heating substances and mixtures	Classification not possible	—	—	—	Test methods applicable to liquid substances are not available
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	—	—	—	Organic compounds containing chlorine (but not oxygen and fluorine), with the chlorine bound to carbon and hydrogen (but not to other elements)
14 Oxidizing solids	Not applicable	—	—	—	Classified as "liquid" according to GHS definition
15 Organic peroxides	Not applicable	—	—	—	Organic compounds containing no "-O-O-" structure
16 Corrosive to metals	Not classified	—	—	—	Classified into Division 6.1 (UN#2019 chloroaniline (liquid)) (UN Recommendations on the Transport of Dangerous Goods)

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 3	Skull and crossbones	Danger	Toxic if swallowed	Based on the rat LD50 (oral route) value of 256mg/kg (MOE Risk Assessment vol.2 (2003)).
1 Acute toxicity (dermal)	Category 3	Skull and crossbones	Danger	Toxic in contact with skin	Based on the rat LD50 (dermal route) value of 250mg/kg (RTECS (2004)).
1 Acute toxicity (inhalation: gas)	Not applicable	—	—	—	Due to the fact that the substance is "liquid" 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)	Category 3	Skull and crossbones	Danger	Toxic if inhaled	Based on the rat LD50 (4 hour inhalation exposure) value of 0.783mg/L (equivalent to 150ppm) (MOE Risk Assessment vol.2 (2003)) was higher than the saturated vapour concentration of 90 ppm under a saturated vapour pressure of 9Pa (20degC), the substance was considered as "mist."
2 Skin corrosion / irritation	Category 3	—	Warning	Causes mild skin irritation	Based on the description in CERH Hazard Data 2000-35 (2001) of skin irritation tests performed in accordance with OECD Test Guideline: "Mild erythema and edema were induced at 24 and 48 hours, with recovery observed by 72 hours." The substance is thus considered "mildly irritating."
3 Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	Based on the description in CERH Hazard Data 2000-35 (2001) of eye irritation tests performed in accordance with OECD Test Guideline: "Mild corneal lesion (irreversible) and moderate corneal irritation were observed." Classified as Category 2A-2B, as it is unclear whether the responses resolve by 7 days of observation. The substance should be placed in Category 2A from the viewpoint of safety, if further subclassification is needed.
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: No data available
5 Germ cell mutagenicity	Not classified	—	—	—	Based on the absence of data on multi-generation mutagenicity tests and germ cell mutagenicity tests in vivo, and negative data on somatic cell mutagenicity tests in vivo (micronucleus tests), described in NTP DB (Access on January 2006).
6 Carcinogenicity	Classification not possible	—	—	—	No data available
7 Toxic to reproduction	Classification not possible	—	—	—	Insufficient data available
8 Specific target organs/systemic toxicity following single exposure	Category 1 (blood system, central nervous system, heart, kidneys, liver)	Health hazard	Danger	Causes damage to organs (blood system, central nervous system, heart, kidneys, liver)	Based on the human evidence including "cyanosis, Heinz bodies in 5-28% of red blood cells, delirium, ataxia, dizziness, ear noise, disorientation, debility, lethargy, coma, cardiac block, cardiac dysrhythmia, shock, painful urination, bloody urine, hemoglobinuria, renal failure" (CERH Hazard Data 2000-35 (2001)), "liver and kidney damage" (NTP TOX43 (1998)), and the evidence from animal studies "increased blood methemoglobin concentration" (CERH Hazard Data 2000-35 (2001)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1.

9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (blood system) Category 2 (liver, kidneys)	Health hazard	Danger Warning	Causes damage to organs through prolonged or repeated exposure (blood system) May causes damage to organs through prolonged or repeated exposure (liver, kidneys)	Based on the evidence from animal studies "anemia, decreases in RBC count/hemoglobin concentration/hematocrit, reticulocytosis, increases in methemoglobin concentration/alkaline phosphatase/AST, cyanosis, adipose degeneration of the kidney and liver" (CERI Hazard Data 2000-35 (2001)). The effects on the blood system were observed at dosing levels within the guidance value ranges for Category 1, while effects on the liver and kidneys for Category 2.
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 48 hours EC50=350microg/L of the crustacea (Daphnia magna) (MOE Risk Assessment vol. 3 (2004) and others.)
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 (log Kow=1.88(PHYSROP Database, 2005)), since there was no rapidly degrading (the decomposition by BOD: 1%(Existing Chemical Safety Inspections Data)), it was classified into Category 1.