

GHS Classification

ID28

CAS 143-33-9

Physical Hazards

Sodium cyanide

Date Classified: Mar. 23, 2006 (Environmental Hazards: Feb. 10, 2006)

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 atom 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	Not classified	—	—	—	Non-flammable (ICSC,2004)
8 Self-reactive substances and mixtures	Not applicable	—	—	—	Containing no atom groups with explosive or self-reactive properties
9 Pyrophoric liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
10 Pyrophoric solids	Not classified	—	—	—	Non-combustible (ICSC,2004)
11 Self-heating substances and mixtures	Not classified	—	—	—	Non-combustible (ICSC,2004)
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	—	—	—	Stable to water (water solubility: 58g/100mL(20degC), ICSC (2004))
13 Oxidizing liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
14 Oxidizing solids	Not applicable	—	—	—	Inorganic compounds not containing oxygen or halogen
15 Organic peroxides	Not applicable	—	—	—	Not organic compounds
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 2	Skull and crossbones	Danger	Fatal if swallowed	Based on the testing data of rat LD50 (oral route) of 0.117mmol/kg (equivalent to 5.733 mg/kg NaCN).
1 Acute toxicity (dermal)	Category 1	Skull and crossbones	Danger	Fatal in contact with skin	Based on the testing data of rabbit LD50 (dermal route) of 14.602 mg/kg (CICAD 61, 2004).
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	Category 3	—	Warning	Causes mild skin irritation	Based on the following description found in CICAD (2004): "Cyanide is slightly irritating to the skin and eye", although no data is available for sodium cyanide. Although the present substance is a salt of a weak acid and a strong base and the pH of its aqueous solution is expected to exceed 11.5, no description specifying the pH could be found, so classification by pH was not conducted.
3 Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes strong eye irritation	Based on the following description found among the data on cyanide in CICAD (2004): "conjunctival hyperaemia with mild chemosis, lacrimation, photophobia, and tingling sensation", although the substance should be placed in Category 2A from the viewpoint of safety. Although the present substance is a salt of a weak acid and a strong base and the pH of its aqueous solution is expected to exceed 11.5, no description specifying the pH could be found, so classification by pH was not conducted.
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	Classification not possible	—	—	—	Due to the lack of in vivo data and the presence of only one negative data from in vitro reverse mutation test, the substance could not be classified, following the guideline.
6 Carcinogenicity	Classification not possible	—	—	—	No data available
7 Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Based on the evidence of malformation of the fetuses in Golden Syrian hamster teratogenicity tests, described in CICAD 61 (2004), and the absence of description of the effects on parent animals.
8 Specific target organs/systemic toxicity following single exposure	Classification not possible	—	—	—	No data available

9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (central nervous system, testes, kidneys, adrenal gland, spleen)	Health hazard	Danger	Causes damage to organs (central nervous system, testis, kidneys, adrenal, spleen) through prolonged or repeated exposure	Based on the human evidence including "headache, debility, dysgeusia, dysosmia, dizziness, sensitive pharynx, vomiting, exertional dyspnea, watery eyes and anterior chest pain" (CICAD 61 (2004)) and the evidence from animal studies including "reduced sperm mobility, weight loss of the epididymal head" and "nephropathy, adrenal hypertrophy, necrosis and fibrosis in the pancreas, testicular germ cell degeneration" (CICAD 61 (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 1	Environment	Warning	Very toxic to aquatic life	It was classified into Category 1 from 96 hours LC50=0.05–0.075mg/L of the fish (Rainbow Trout) (IUCLID, 2000).
11 Hazardous to the aquatic environment (chronic)	Category 1	Environment	Warning	Very toxic to aquatic life with long lasting effects	Since acute toxicity was Category 1 and an underwater action and bio-accumulation were unknown, it was classified into Category 1.